



Commonwealth of Massachusetts  
Executive Office of Energy & Environmental Affairs

# Department of Environmental Protection

100 Cambridge Street Suite 900 Boston, MA 02114 • 617-292-5500

Maura T. Healey  
Governor

Kimberley Driscoll  
Lieutenant Governor

Rebecca L. Tepper  
Secretary

Bonnie Heiple  
Commissioner

## **INTRODUCTION**

Pursuant to M.G.L. c. 30A, the MA Department of Environmental Protection (MassDEP) has proposed amending 310 CMR 10.00 *Wetlands Protection* and 314 CMR 9.00 *Water Quality Certification for Discharges of Dredged or Fill Material, Dredging, and Dredged Material Disposal in Waters of the United States Within the Commonwealth* to accomplish key climate resilience and environmental goals including updates related to precipitation estimates and stormwater management, and new provisions for Land Subject to Coastal Storm Flowage (LSCSF).

The proposed regulatory text and a background document are available on MassDEP's website at: <https://www.mass.gov/regulations/310-CMR-1000-wetlands-protection-act-regulations/>

MassDEP held virtual hearings on the proposed amendments on January 31, 2024 and February 1, 2024, and conducted a public comment period beginning on December 22, 2023 that was extended until April 30, 2024, requesting written comment. All unique comments are included below. Numerous copies of the same comment were submitted as part of an email campaign. One copy of the email campaign letter is included here with a list of names of those who participated, as well as any variations to the letter.



February 1, 2024

The Honorable Bonnie Heiple  
Commissioner, Massachusetts Department of Environmental Protection  
State House  
Boston, MA 02134  
[Bonnie.Heiple@mass.gov](mailto:Bonnie.Heiple@mass.gov)

Dear Commissioner Heiple:

AMWS appreciates the opportunity to provide comments in response to the proposed regulatory updates of 310 CMR 10.00: Wetlands Protection Act Regulation Amendments and 314 CMR 9.00: 401 Water Quality Certification Regulation Amendments. As members of MassDEP's Stormwater and Land Subject to Coastal Storm Flowage Advisory Committees, AMWS understands the critical importance of updating these regulations to reflect the climate realities of today.

The Association of Massachusetts Wetland Scientists (AMWS) is a professional non-profit organization providing opportunities for learning, networking and scientific input associated with wetland protection. Our membership includes wetland specialists, Conservation Commissioners and Agents, attorneys, and state and federal environmental staff, among others.

While we acknowledge that the initial comment period is already somewhat longer than usual, we are concerned with the relatively brief length of the comment period given the need for these regulatory updates to be thorough, understandable, and implementable, in order to best position the Commonwealth in facing climate and resiliency challenges.

In our review of the proposed regulations to date, including a standing weekly working group meeting with other organizations, it has become clear that the current comment period, starting the week before the Christmas holiday, is inadequate to properly review the draft resiliency regulatory package. The resiliency package includes three sets of regulations with extensive changes proposed, along with an ±800 page, highly technical stormwater document. To our knowledge, a proposed regulatory package of this magnitude has not been previously undertaken at once.

The Land Subject to Coastal Storm Flowage (LSCSF) performance standards have been in process for at least a decade, and the Stormwater updates for several years. While the Department has facilitated advisory committees and informal industry presentations in advance of the potential changes, it is reasonable to request adequate time to process updates that have required this thoughtful amount of time and level of consideration to issue. The diverse community of stakeholders implementing, administering, and working under these regulations is invested in their success, but is also addressing their main day to day responsibilities. Now is not the time to rush to the end, when allowing proper review time will facilitate the adoption of a regulatory package that will achieve imperative resiliency goals.





Therefore, AMWS formally requests that the public comment period for 310 CMR 10.00: Wetlands Protection Act Regulation Amendment and 314 CMR 9.00: 401 Water Quality Certification Regulation Amendments be extended 60 days to April 30, 2024.

Additionally, we would appreciate the opportunity to meet with MassDEP to discuss our initial feedback and questions in a working session format, either just with individuals from AMWS, or combined with other relevant groups. Doing so will allow us to hone our comments and avoid including items that may be readily answerable or already considered and determined infeasible.

Thank you in advance for your consideration of this request, and for all of MassDEP's hard work over the years and currently to advance these regulations.

Submitted on behalf of AMWS by its Board of Directors:

Stacy H. Minihane, President  
Diana Walden, Vice President  
David Gorden, Secretary  
Richard Kirby, Immediate Past President

cc:

Secretary Rebecca Tepper, Executive Office of Energy and Environmental Affairs via [env.internet@mass.gov](mailto:env.internet@mass.gov)

Stephanie Moura, Director of Wetlands and Waterways  
[Stephanie.Moura@mass.gov](mailto:Stephanie.Moura@mass.gov)

Lisa Rhodes, Wetlands Program Chief  
[lisa.rhodes@mass.gov](mailto:lisa.rhodes@mass.gov)

[dep.wetlands@mass.gov](mailto:dep.wetlands@mass.gov)

**From:** [Nathaniel E. Mahonen](#)  
**To:** [DEP Wetlands \(DEP\)](#)  
**Subject:** Wetlands-401 Resilience Comments  
**Date:** Sunday, February 4, 2024 11:54:03 AM  
**Attachments:** [image001.png](#)

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Good morning,

Bohler will be providing a list of written comments via email prior to the 3/1/2024 comment period. However, our initial comment is that the current review period is not enough time and additional time is needed to fully review these extensive changes. We would request additional time be added to the review cycle, 60 days is preferred but 30 days at a minimum. This will provide additional time for all stakeholders to properly review and provide well thought through comments as well as recommended resolutions.

Thanks

**Nathaniel E. Mahonen, P.E.**

Chief Engineer

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**BOHLER //**

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**From:** [Zeus Smith](#)  
**To:** [DEP Wetlands \(DEP\)](#)  
**Cc:** [Julie Wood](#); [Max Rome](#)  
**Subject:** Wetlands-401 Resilience Comments  
**Date:** Wednesday, February 7, 2024 1:04:40 PM

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Hello,

Charles River Watershed Association (“CRWA”) would like to express our appreciation for MassDEP’s exemplary work in crafting and promulgating proposed updates to 310 CMR 10.00: Wetlands Protection Act, the Massachusetts Stormwater Handbook, and 314 CMR 9.00: 401 Water Quality Certification. We are reviewing these proposed updates. **However, as we stated during our testimony at the hearings on these regulations, we respectfully join the chorus of other partner organizations, conservation professionals, and municipal employees in formally requesting that the public comment period for these proposed updates be extended 60 days to April 30, 2024.**

As one of the country’s oldest watershed organizations, CRWA protects, preserves, and enhances the Charles River and its watershed through science, advocacy, and the law. Our initiatives over the last five decades have dramatically improved the quality of water in the watershed, fundamentally changed approaches to water resource management, and protected the Charles River as a public resource for current and future generations. CRWA has been reviewing these proposed updates from the moment they were announced. Many of the proposed updates appear to be steps in the right direction.

However, as many others have noted, a 70-day comment period during the holiday season simply is not enough time to provide the sort of granular review that regulatory updates of this sort deserve. Furthermore, many of CRWA’s members have let us know they are interested in reviewing and commenting but would like CRWA’s guidance before they draft their letters and conduct their own review. CRWA and partner organizations need more time to review, comment, and provide guidance to our members. Moreover, this comment period is certainly not enough time for our members - many of whom may be directly affected by these updates, but are nonetheless comparatively inexperienced in reading through these types of regulations - to make time to review these important updates for themselves. CRWA and our members are committed to helping MassDEP craft the best set of regulations possible. To enable us to do so, **please extend the comment periods for these regulations to April 30, 2024.**

Thank you again for these updates. We look forward to submitting our substantive comments.

Respectfully,

--

**Zeus Smith, Esq.** | he/him

Associate Attorney

**Charles River Watershed Association**

*Lands of the Massachusett, Nipmuc, and Wampanoag tribes*

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**From:** [Wilcox, Jim](#)  
**To:** [DEP Wetlands \(DEP\)](#)  
**Cc:** [Falise, Kara](#); [Letourneau, Jennifer](#); [Ung, Cambria](#); [Wilcox, Jim](#)  
**Subject:** Wetlands-401 Resilience Comments  
**Date:** Tuesday, February 6, 2024 1:10:33 PM

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**CAUTION:** This email originated from a sender outside of the Commonwealth of Massachusetts mail system. Do not click on links or open attachments unless you recognize the sender and know the content is safe.

We start by offering a message of support for your efforts on updating the Stormwater, Wetland Regulations and associated guidance materials. The City appreciates the efforts to establish Regulations that are more consistent with the EPA's Permits and also that reflect the changing conditions of our climate. We are actively reviewing the changes and plan to follow up with comments.

We are writing now, consistent with requests that we heard at the Public Hearings, to respectfully request that the deadline for comment be extend beyond the current March 1<sup>st</sup> date. An extension of a minimum of 60 days would be appreciated. As a municipality, we are reviewing the changes under multiple jurisdictional lenses. With the volume of the document and the breadth of the proposed changes, additional time would be beneficial for a more thorough review. In addition, we feel that some more time will allow for us to better coordinate our comments between the various groups and submit clearer more concise comments for your consideration.

We appreciate your consideration of this request.

James Wilcox  
City Engineer

Kara McSweeney Falise, PE  
Supervising Engineer

Jennifer Letourneau  
Director of the Conservation Commission/ Senior Engineer

Cambria Ung, P.E.  
Stormwater Program Manager

City of Cambridge Department of Public Works  
147 Hampshire Street  
Cambridge, MA 02139

# ***Massachusetts Society of Municipal Conservation Professionals, Inc.***

*MSMCP, Inc. is a 501(c)(3) non-profit, educational organization under the Federal tax code, Tax Id. Number 22-3061734.*



*c/o Conservation  
1000 Commonwealth Ave.  
Newton, MA 02459  
massconpros@gmail.com*

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February 1, 2024

The Honorable Bonnie Heiple  
Commissioner, Massachusetts Department of Environmental Protection (DEP)  
State House  
Boston, MA 02134

**RE: Public Comment Extension Request - Proposed Climate Resilience Reg Change Package 1.0**

Dear Commissioner Heiple:

The Massachusetts Society of Municipal Conservation Professionals (MSMCP) is a non-profit organization dedicated to serving the professional staff members that work for Massachusetts Conservation Commissions.

MSMCP appreciates the opportunity to provide comments in response to DEP's proposed regulatory updates of 310 CMR 10.00: Wetlands Protection Act and the Massachusetts Stormwater Handbook, 310 CMR 9.00: Waterways Regulation, and 314 CMR 9.00: 401 Water Quality Certification. Many of the proposed changes seem appropriate for addressing the pressing environmental circumstances we face, but not all are readily interpretable or readily implementable.

Given the tremendous extent and technical detail of the proposed changes (the Stormwater Handbook alone is 860 pages of new technical text), our members need more time to review the draft proposals and formulate meaningful feedback. A 70-day comment period following the release of the three regulations and an entirely new Stormwater Management Handbook during the Christmas/New Year holidays is not sufficient for busy professionals to properly review such a volume of information, digest the consequences, and provide suggestions to DEP for necessary improvements so that together we can craft regulations that will help us achieve our common goals of wetland protection and restoration.

**MSMCP formally requests that the public comment period for all the above cited draft documents be extended 60 days to April 30, 2024, and that DEP offer opportunities to**

**statewide professional organizations such as MSMCP to join working group sessions to help DEP understand, address, reconcile, and incorporate the comments received.**

Submitted on behalf of the MSMCP Board of Directors:

Regen Milani (Canton), President

Kathy Sferra (Stow), Co-Vice President

Angela Panaccione, Co-Vice President

Jennifer Steel (Newton), Co-Treasurer

Leah Grigorov (Longmeadow), Co-Treasurer

Brian Vasa (Plympton), Clerk

Liz Allard (Harvard), Board Member

Rebecca Bucciaglia (Bolton), Board Member

Jennifer Carlino (Easton), Board Member

Michelle Greene (West Newbury), Board Member

Michele Grzenda (Lincoln), Board Member

Samantha Holt (Newbury), Board Member

John Keeley (Burlington), Board Member

Cassie Tragert (Easthampton), Board Member

Dorothy McGlincy, Ex-Officio Board Member, Massachusetts Association of Conservation Commissions

CC: Secretary Rebecca Tepper, Executive Office of Energy and Environmental Affairs  
Stephanie Moura, Director, Division of Wetlands and Waterways at MassDEP  
Lisa Rhodes, Wetlands Program Chief at MassDEP

*The Massachusetts Society of Municipal Conservation Professionals (MSMCP) was founded in 1984 to provide networking and educational opportunities to these municipal professionals focused specifically on their needs. MSMCP works to raise the level of professionalism by providing a forum for professional information exchange, sponsoring technical and scientific seminars and conferences, and fostering cooperation among contiguous or regionally related conservation commissions and their staffs. <https://www.msmcp.org/>*



**From:** [Jason Mammone](#)  
**To:** [DEP Wetlands \(DEP\)](#)  
**Cc:** [Leon Goodwin](#); [Nancy Baker](#); [Patrick Hogan](#); [Meredith Labelle](#); [Joseph Flanagan](#)  
**Subject:** Wetlands-401 Resilience Comments  
**Date:** Wednesday, January 24, 2024 10:26:45 AM

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Good Morning,

The Town of Dedham would respectfully request that the period for public comment be extended to June 1, 2024 to allow adequate time to read through all of the materials associated with this draft and provide appropriate comment. This draft has been looming over the Commonwealth for several years and to drop this draft and only allow about 2 months to read, comprehend and comment on approximately 900 pages of materials is unreasonable and should be reconsidered. Apologies if this email should be sent to incorrect email address handling this type of comment/request. If so, it would be appreciated if this email could be forwarded to the correct party. Thank you for your time and consideration.

Jason L. Mammone, P.E.  
Director of Engineering  
Town of Dedham  
55 River Street  
Dedham, MA 02026  
(781) 751-9350  
[jmammone@dedham-ma.gov](mailto:jmammone@dedham-ma.gov)



**TOWN OF WEST NEWBURY  
CONSERVATION COMMISSION**  
381 Main Street, West Newbury, Mass. 01985  
978-363-1100 x126 | [conservation@wnewbury.org](mailto:conservation@wnewbury.org)

February 7, 2024

Commissioner Bonnie Heiple  
Massachusetts Department of Environmental Protection (DEP)  
100 Cambridge St., Suite 900  
Boston, MA 02114

**RE: Public Comment Extension Request - Proposed Climate Resilience Reg Change Package 1.0**

Dear Commissioner Heiple:

I appreciate the opportunity to provide comments in response to DEP's proposed regulatory updates of 310 CMR 10.00: Wetlands Protection Act and the Massachusetts Stormwater Handbook, 310 CMR 9.00: Waterways Regulation, and 314 CMR 9.00: 401 Water Quality Certification. Many of the proposed changes seem appropriate for addressing the pressing environmental circumstances we face, but not all are readily interpretable or readily implementable.

Given the tremendous extent and technical detail of the proposed changes (the Stormwater Handbook alone is 860 pages of new technical text), I, and likely many conservation professionals, conservation commissions, consultants, and others that will be responsible for interpreting and applying the revised regulations, need more time to review the draft proposals and formulate meaningful feedback. A 70-day comment period following the release of the three regulations and an entirely new Stormwater Management Handbook during the Christmas/New Year holidays is not sufficient time for busy professionals, volunteer commission members many of whom have other fulltime obligations, and consultants who have a responsibility to ensure their projects continue to move along to properly review such a volume of information, digest the consequences, and provide meaningful comments and suggestions to DEP for necessary improvements so that together the regulations help us achieve our common goals of wetland protection and restoration.

**I am formally requesting that the public comment period for all the above cited draft documents be extended 60 days to April 30, 2024, and that DEP create working group sessions with representation of conservation organizations, conservation professionals, and environmental consultants and engineers to help DEP understand, address, reconcile, and incorporate the comments received.**

Signed:

Michelle Greene  
Conservation Agent, Town of West Newbury



April 30, 2024

MassDEP - BWR Wetlands Program  
Attn: *Wetlands-401 Resilience Comments*  
100 Cambridge Street, Suite 900  
Boston, MA 02114  
dep.wetlands@mass.gov

Re: Wetlands-401 Resilience Comments

Dear MassDEP Wetlands Program:

We thank you for the opportunity to comment on the proposed changes to MassDEP 310 CMR 10 Wetland Protection Act (WPA).

DCR, a state agency of the Executive Office of Energy and Environmental Affairs (EEA), stewards more than 480,000 acres of parks, forests, beaches, bike trails, watersheds, dams and parkways, making it the largest landowner in Massachusetts.

In addition to managing the Massachusetts park system, , DCR oversees many urban public recreation facilities, including pools and rinks, and more than 530 miles of state parkways and roads in the metropolitan Boston region. The agency is also responsible for more than 10,000 inlets and more than 600 stormwater control measures across the state, which are managed through an agency-wide programmatic operations and maintenance program.

DCR's mission is "to protect, promote and enhance our commonwealth of natural, cultural and recreational resources for the well-being of all." Therefore, DCR prioritizes achieving the highest level of environmental protection for the resources it stewards. On more rural properties and parklands, DCR promotes using nonstructural methods to manage stormwater runoff from impervious surfaces by utilizing site topography and vegetation. We commend your new ESSD chapter which quantifies and values the benefits of these types of important measures and aligns with DCR's recently released [DCR Stormwater Design Handbook](#).

DCR provides the following comments in light of our mission, and most importantly, our ability to carry out safety and connectivity projects in coastal flood zones in a timely and cost-effective manner. For DCR parkway projects, DCR requests that the agency be afforded the same consideration provided to MassDOT and municipal projects funded by MassDOT

COMMONWEALTH OF MASSACHUSETTS · EXECUTIVE OFFICE OF ENERGY & ENVIRONMENTAL AFFAIRS

Department of Conservation and Recreation

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[www.mass.gov/dcr](http://www.mass.gov/dcr)



Maura T. Healey

Governor

Kimberley Driscoll

Lt. Governor

Rebecca L. Tepper, Secretary

Executive Office of Energy & Environmental Affairs

Brian Arrigo, Commissioner

Department of Conservation & Recreation

This letter summarizes our comments on the regulations and provides background information on why we think our proposed changes are necessary while continuing to protect the Massachusetts waters. The requested changes are organized by sections of the proposed regulations and numbered for ease of reference, although more than one change may be included in each numbered section. In many sections we have included redline strikeout of requested changes and bold for requested additions of the section in the proposed regulation.

## Section 10.02 Statement of Jurisdiction

### 10.02(2) Activities Subject to Regulation under M.G.L. c. 131, § 40.

1. 10.02(2)(a) Activities Within the Areas Subject to Protection under M.G.L. c. 131, § 40. The list of Minor Activities within this section that are exempt from filing a Notice of Intent should be expanded to include all activities currently listed as exempt in 10.02(2)(b) including installation of underground utilities, repair of sewer lines, pavement repair, resurfacing, exploratory borings, etc.
2. 10.02(2)(b) Activities Within the Buffer Zone.
  - a. DCR requests revising the definition of Minor Activities (310 CMR 10.02(2)(b)1) to include in-kind pavement resurfacing and repair within the land subject to flooding resources; thereby indicating that an RDA/NOI is not needed for this type of project.
  - b. Section 10.02(2)(b)2 defines which minor activities do not require filing of an NOI. Part p should be revised to indicate "~~Pavement repair, resurfacing, and reclamation of existing roadways within the right-of-way configuration~~ **Maintenance of an Existing Public Roadway provided no increase in impervious area**, no staging or stockpiling of materials, all disturbed road shoulders are stabilized within 72 hours of completion of the ~~resurfacing or reclamation work~~, and no work on the drainage system is performed, other than adjustments and/or repairs to respective structures within the roadway;".  
**"Maintenance of existing stream crossings and equalizing culverts including sediment removal, cleaning, and minor repairs."** Should also be added as a minor activity not requiring filing of an NOI.
3. Section 10.02(3) includes a provision that *"maintenance of stormwater management systems would not require a RDA/NOI if the stormwater system was constructed and/ or improved as defined in 310 CMR 10.04 from November 18, 1996 through January 1, 2008, in accordance with the Stormwater Management Standards, as provided in the Massachusetts Stormwater Policy, issued by the Department on November 18, 1996 or on or after January 2, 2008, in accordance with the Stormwater Management Standards as provided in 310 CMR 10.05(6)(k) 1. through -11..."*. This date limitation should be removed as many roadway stormwater structures have been built over time as part of parkway and facility construction. Putting a date limitation on the construction of these systems which will impact essential maintenance of these facilities by requiring them to apply for a permit creates significant additional obstacles and costs to maintaining these facilities.

## Section 10.04 Definitions

4. **Alter** – This definition has been changed to include *“the changing of the water level or water table”* and *“increasing of the volume of untreated stormwater runoff directed to a wetland Resource Area”*. Further guidance should be included as to how to evaluate these parts of the definition. Other sections of these regulations specifically encourage recharge which is meant to increase water table levels. In addition, we request that the definition of “alter” be clarified to specify that conducting maintenance to existing drainage infrastructure is not an alteration.
5. **Highway Specific Considerations** – The definition should be updated to include DCR as one of the entities that can use the measures for the State parkway system.
6. **Impervious Surface** – This definition now states *“Impervious surface means, for purposes of stormwater management (310 CMR 10.05(6)(k)-(q)), any surface that prevents or significantly impedes the infiltration of water into the underlying soil, including, but not limited to artificial turf, Compacted Gravel or Soil, roads, building rooftops, solar arrays, parking lots, Public Shared Use Paths, bicycle paths, and sidewalks paved with concrete, asphalt, or other similar materials. For purposes of this definition, porous pavements are Impervious Surfaces in order to size the depth of the underlying reservoir course to meet recharge and Total Suspended Solids/Total Phosphorus removal requirements pursuant to 310 CMR 10.05(6)(k)3. And 4.”* The change to include this formal definition and inclusion of artificial turf, Compacted Gravel or Soil will have a significant impact on DCR projects. The definition of compacted gravel should be clarified and specifically indicate it does not include crushed stone and/or stone dust paths as these still allow for infiltration.
7. **Impracticable** - The definition for impracticable which is being added to the regulations states *“Impracticable for use in 310 CMR 10.05(6)(k)-(q) for purposes of stormwater management means impossible in practice to do or carry out based solely on physical constraints.”* This definition removes the factor of cost or safety as part of the equation for determining practicality of moving forward with these measures. This conflicts with DCR's mission to use taxpayer dollars responsibly. The definition should be revised to include these factors.
8. **Saturated Hydraulic Conductivity Test** – The definition states “A Title 5 percolation test, as defined at 310 CMR 15.002, is not an acceptable Saturated Hydraulic Conductivity Test for purposes of stormwater management.” Title 5 percolation test are a current standard practice for purposes of stormwater management. DCR requests restoring Title 5 testing as one of the alternatives for field testing.

## Section 10.05 Procedures

### Section 10.05(6)(k)

9. The Highway Specific Considerations should be extended to DCR projects. We suggest the following changes (in bold) to the proposed language in the introduction paragraph of Section 10.06(6)(k):  
“MassDOT **and DCR** may use the Highway Specific Considerations, including the Macro-Approach and the Watershed-scale Accounting Method, to comply with or be presumed to comply with applicable Stormwater Management Standards. MassDOT **and DCR** will be presumed to comply with

applicable Stormwater Management Standards when applicable Highway Specific Considerations are implemented in accordance with Section 5.7 of the Massachusetts Stormwater Handbook [2023 Edition]. MassDOT-funded municipal roadway projects where MassDOT has approved the design may use the Highway Specific Considerations except for the operation and maintenance approach and the Watershed-scale Accounting Method.”

### Stormwater Standards

#### **Standard 1 No Untreated Discharges or Erosion to Wetlands**

DCR has no comments.

#### **Standard 2 Peak Discharge Rate Control**

10. DCR supports that the Massachusetts Stormwater Handbook adopts the use of the National Oceanic Atmospheric Association Atlas 14-Precipitation-Frequency Atlas of the U.S. Volume 10, Version 3.0: Northeastern States (NOAA Atlas 14) for hydrologic and hydraulic analyses. DCR is concerned that including a specific dataset will mean that the regulations will not keep up with changing science. DCR requests that MassDEP incorporate the flexibility to have MassDEP approve the use of future atlases published by NOAA/USGS that supersede NOAA Atlas 14.
11. MassDEP should confirm that the precipitation data used by these regulations does not conflict with the future guidelines proposed by the Resilient Massachusetts Action Team (RMAT) who is currently preparing Climate Resilience Design Standards and Guidelines for the State.
12. DCR has a vested interest in using the appropriate precipitation data for designing our infrastructure. Appropriate design will protect our investments, reduce damage due to flooding or scouring, and maintaining safe public use space. Rainfall data is used in DCR design and analysis of our infrastructure including bridges, culverts, and drainage conveyance systems. The adoption of NOAA 14+ in state regulations could make this the default engineering standard for practitioners and DCR would likely be requested to use NOAA 14+ during regulatory reviews even outside the jurisdiction of the Stormwater Standard adding significant, and potentially unwarranted, construction costs to bridges, culverts, and drainage conveyance systems. MassDEP should review how use of NOAA 14+ may affect the design approaches for hydraulically dependent structures.
13. DCR requests that compliance with Standard 2 consider the influence of the project’s peak discharge rates on the peak flows of the receiving water versus the discharge from the site.
14. We request that DCR projects meet Standard 2 provision to match pre-development peak rates for the 100-year event to the maximum extent practical. DCR projects follow MassDOT’s Project Development and Design Guide which indicates that stormwater conveyance systems must be sized to the 10-year event, therefore on-site flooding would be expected for larger events. Developing detention systems to match peak rates for larger events would be unreasonable, would not meet the green infrastructure trends which encourage small, local treatment to keep the water near where it falls, and may conflict with DCR’s natural landscape design goals for park facilities. Often DCR’s facilities are long linear parks along our rivers (like Lowell Heritage Park along the Merrimac River) where construction of large drainage treatment sites to address peak rate for nearby improvements would not be in keeping with the use intent of the park.

### **Standard 3 Recharge**

15. The recharge language doesn't align with the Massachusetts MS4 permit. The MS4 allows for retention OR treatment with a goal of water quality treatment. The goal of recharge is to replenish groundwater and support baseflows in waterways which is different than onsite retention. MS4 does not require recharge or even retention. However, the MS4 permit requires treatment through an optional retainment of the 1 inch of runoff volume, not 1 inch of recharge. The 1 inch of retainment option allows the designer to use the EPA curves for meeting the treatment requirements. By providing options, designers are allowed more flexibility to provide the right type of treatment for the site and to maximize the areas which can provide treatment while still encouraging recharge.
16. The recharge rate should be based on site soil conditions as is current practice. A requirement of static 1-inch recharge volume for all sites appears excessive given the distribution of small storms over the course of a year and the natural variability of site soils. For many sites, this requirement will require structural BMPs with very large and costly footprints to provide enough surface area for stormwater to infiltrate within 72 hours, the opposite of what low impact development promotes, if even possible. We understand that MassDEP has asked for input from stakeholders on whether a 0.8-inch recharge volume would be a better value to use. Since the soil infiltration rates are paramount to the quantity of annual recharge at a site, we continue to advocate that recharge requirements should be aligned with the soil types of the site and not be universal.
17. The new requirements for subsurface investigation for infiltration SCMs (Section 6.2.3 of the proposed Massachusetts Stormwater Handbook) have more than doubled the number of test locations required and no longer allow the use of Rawls Rate for infiltration/ dewatering calculations, instead requiring in-situ hydraulic conductivity testing at every test location. This will have serious impacts to DCR projects. We request restoring the previous requirements for infiltration testing and allowing the use of the Rawls Rates.
18. We request that the allowances for when this standard can be met to the maximum extent possible (Section 10.05(6)(k)3.d) include for scenarios of high groundwater and bedrock. This allowance would be important for encouraging some groundwater recharge in scenarios where fully meeting the standard, including mounding analysis and draw down times, may be infeasible.
19. The definition of Saturated Hydraulic Conductivity Test states "A Title 5 percolation test, as defined at 310 CMR 15.002, is not an acceptable Saturated Hydraulic Conductivity Test for purposes of stormwater management." Title 5 percolation test are a current standard practice for purposes of stormwater management. We request restoring Title 5 testing as one of the alternatives for field testing.
20. The elimination of a soil evaluator as a Competent Soil Professional provides undue burden and costs in performing the required soil analysis to support BMPs. We request that MassDEP maintain flexibility in this requirement and allow the professional soil evaluators - who have performed soil evaluation training - to continue to be allowed as a Competent Soil Professional.

### **Standard 4 Water Quality**

21. Since Standard 3 requires 1-inch of recharge, the flexibility of Standard 4 to meet water quality through treating 1-inch or a smaller amount by prioritizing treatment on your site based on water quality treatment curves is no longer applicable. The MassDEP regulation's use of both the water



quality volume and the pollutant percent reduction targets creates confusion and incongruence with the MS4 permit.

#### **Standard 5 LUHPPL**

DCR has no comments.

#### **Standard 6 Critical Areas**

22. The treatment requirements for this standard include both the 90% TSS/ 60% TP and 1-inch water quality volume requirements. MassDEP should simplify the requirement to only the pollutant removal standard (90% TSS / 60% TP) to allow for more flexibility to the designer while still being protective.
23. The regulations indicate that *"Unless a discharge to a Cold-water Fishery is infiltrated or an ESSD practice measure is used, the temperature of the stormwater shall not exceed 68 degrees F at the discharge point to ensure that there will be no thermal impact to the existing ambient temperature of the receiving water."* There is no guidance on how an applicant could ensure that the temperature would never exceed this temperature. The regulations should clearly state that as long as the discharge is infiltrated or an ESSD practice is included in the design, then the applicant will not have to further prove that this temperature will not be exceeded.

#### **Standard 7 Redevelopment**

24. The current proposed regulation redefines Redevelopment projects to include Improvement projects that widen less than a single lane (including adding shoulders, correcting substandard intersections, and installing new sidewalks). This change will impact many of DCR's projects and increase project timelines, costs, and complexity likely leading to disincentivizing these important safety and mobility projects, especially within constrained urban cores and Environmental Justice communities. Furthermore, these types of projects are important for ADA compliance, provide upgrades for the intended use and accessibility of our parks and facilities, and allow for safety and intersection improvements. Currently, improvement projects must meet Standard 4 Water Quality to the maximum extent practical (MEP); however, including Improvement projects in the redevelopment definition will require full Standard 4 compliance including treating the entire Improvement project's pavement footprint. MassDEP must align with the MS4 Permit application of site water quality standards by allowing these projects to continue to meet requirements to the maximum extent practicable (included in 310 CMR 10.05(6)(m)).
25. If the water quality performance standard cannot be met fully either within the project site area or the project locus area, the permittee must now provide treatment off-site. Off-site mitigation is not a viable solution for DCR as it introduces additional planning, permitting, land-takings, and more complex long-term operation and maintenance while likely reducing areas for recreation and other uses which are consistent with DCR's mission. This provision will cause significant cost increases and project delays which may lead to lost funding opportunities. Ultimately these impacts will disincentivize critical Redevelopment projects that are relatively minor in nature and in stormwater impact, but which provide major benefits to connectivity, accessibility, and safety. MassDEP should remove the off-site mitigation requirement.

#### **Standard 8 Construction Related Impacts**

26. Standard 8 indicates that no post-construction BMPs may be used to manage construction period runoff. While this is an appropriate goal, it should not be stated as a definitive requirement since constrained sites may have to reuse areas for construction management and post-construction

conditions. MassDEP can add measures that a project must implement between construction and post-construction to ensure the BMPs are acting as designed in these situations.

27. The proposed regulation requires the submission of a construction period erosion, sediment control, and pollution prevention plan with the permit application. DCR advertises construction contracts with secured permits and Contractors are selected and as part of building the project must maintain compliance. The Contractor is responsible for developing and managing the erosion and sedimentation control plan and maintains responsibility and liability for environmental compliance. It is standard practice to fully task a Contractor with environmental compliance responsibility and liability as they are the entity with daily operational control of a site. MassDEP could modify the standard to indicate that Orders of Conditions include a condition requiring that DCR submit a copy of the plans during the pre-construction phase of a project once the Contractor has developed the plan.

#### **Standard 9 LTPPP**

28. DCR must be allowed to provide operation and maintenance of our stormwater system on a programmatic level across our facilities instead of on a project by project or site by site basis. MassDEP should clearly indicate that DCR receives the O&M specific consideration.

#### **Standard 10 IDDE**

DCR has no comments.

#### **Standard 11 TMDL**

29. The regulations include a new standard for impaired waters with Total Maximum Daily Loads (TMDLs) that present a limited prescribed list of potential SCMs when discharging to these waters (Table 2-6). The MassDEP Handbook does not allow bioretention and sand filters thereby limiting the filtering SCMs for total nitrogen or total phosphorus TMDLs. This is not aligned with the MS4 Permit which has required permittees track and report SCMs for TMDLs for years now, with the full suite of SCMs available for use. MassDEP's adoption of a more limited list of control measures prevents flexibility, optimization, and cost savings for DCR.
30. The list of SCM options in Table 2-6 indicates that street cleaning is "Unlikely to provide significant reduction of target pollutant". This conflicts with Table 2-2, in addition to the MA MS4 Permit and latest science as documented in various places including the Clean Sweep study<sup>1</sup>. Meeting TMDL goals needs to be flexible and based on the latest information about technologies and the performance of various measures. MassDEP should include street sweeping as an allowable measure.
31. The TMDL standard indicates that the TMDL treatment can be provided to the MEP for Redevelopment projects with off-site mitigation. There is conflicting language on page 2-37 which says off-site mitigation "must" be provided to meet Standard 11 when it cannot be met fully on-site. Requiring project-specific off-site mitigation for TMDL standards does not align with MS4 requirements which require mitigation on a watershed scale for compliance with impaired water and TMDLs. DCR recommends that project proponents be required to show how the project contributes to TMDL compliance at the project level and allow the MS4 permittees to track how the TMDL is

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PREP and UNH Stormwater Center, "Clean Sweep: Recommendations for New and Updated Credits for Street Cleaning in New Hampshire" (2022). *PREP Reports & Publications*. 458.  
<https://scholars.unh.edu/prep/458>

being met for overall DCR facilities in the watershed in line with the MS4 Permit and the specific consideration.

### **Section 10.05(6)(m) Maximum Extent Practicable Allowance**

32. While DCR appreciates that unpaved footpaths, unpaved and paved bicycle paths, and other unpaved or paved paths for pedestrian and/or nonmotorized vehicle access and also maintenance of existing public roadway have been clarified as being eligible for this MEP flexibility, we are deeply concerned that paved sidewalks located near or adjacent to roads have been excluded. Adding sidewalks is an important safety measure which will be hampered by requiring full stormwater compliance. DCR advocates for continuing to include the other project types which had previously been defined as Limited Project including widening less than a single lane, adding shoulders, correcting substandard intersections, and improving drainage systems to the MEP allowance.

### **Section 10.05(6)(q) Minimum Setbacks for Stormwater Management System**

33. MassDEP should clarify that the setback provisions in 310 CMR 10.05(6)(q) apply only to the Stormwater Control Measures treatment component itself, not to "any component of the Stormwater Management System" which could include pipes, outfalls, erosion controls, culverts and other features which may be within setback and needed to properly site and discharge a SCM. We suggest the language be revised to state "(q) The following minimum Setbacks from the **stormwater control measure (SCM) treatment** component of a Stormwater Management System shall be met."
34. DCR is concerned about the minimum setback from a property line for components of a stormwater management system. Components of the stormwater system are often much closer than 10 feet due to constraints and need to discharge at appropriate elevations. This setback provision should be removed.
35. DCR is concerned that the 2-foot vertical separation from lowest engineered portion of SCM (includes media), except for constructed stormwater wetlands, wet basins and wet water quality swales, will reduce the ability to install retrofit SCMs which may not fully meet the best case scenario design criteria but will still provide important treatment and groundwater recharge locally. DCR has similar concerns about the vertical separation to bedrock minimum setback. These suggested design criteria should be included in the Stormwater Handbook and encouraged but should not be included in the regulations as absolutes.
36. The proposed regulations require setbacks from certain SCMs to sloped areas of varying grade. These setbacks introduce additional restrictive constraints when siting stormwater controls that will make more SCMs infeasible. We request that MassDEP avoid including restrictive setbacks and instead include guidance in the handbook about the design measures to address the intent of this setback (e.g. site SCMs such that break out will not occur). Furthermore, there is an inconsistency between the proposed regulations and handbook. The regulations state that an infiltration basin, surface exposed or underground infiltration trench, or infiltrating bioretention area must be a minimum of 100-feet away from any slope greater than 5% while the Handbook's Table 2-8 does not include these same setback values/ slope criteria for these SCMs.

37. The proposed 2-foot setback from the bottom of an SCM or "any component of a stormwater management system" is infeasible for several locations with shallow groundwater that require stormwater inlets, pipes, ditches, etc. This requirement would prohibit deep sump catch basins in areas that do not have groundwater at least 10 feet deep and would not support any SCMs in adjacent areas, making both proper drainage and stormwater treatment impossible. MassDEP should eliminate this setback from stormwater system components that are not an infiltrating SCM.

### Section 10.10 Effective Date

38. Section 10.10 indicates that these regulations must be met if a project has not submitted an NOI application within 6 months of the regulation effective date. DCR funding occurs on an annual basis and projects often take several years from initial project development through to permitting. These significant changes, which will impact the design, will mean that projects underway will have to extend schedules and have increased costs to meet the requirements. The timeline between the regulations and the effective date should be extended to be at least two years to allow for projects to plan for meeting these new standards.

### Section 10.24 General Provisions

#### Section 10.24(7) Limited Project Provision

39. The regulations should provide more clarity that roadway projects that raise roadways for resiliency purposes will be allowed as a limited project (10.24(7)(c)). The provision that roadway widths remain the same are not feasible and should be modified. Raising the roadway will almost always require embankments and safety features which extend beyond the original width. Specific criteria for determining impact and performance criteria should be added to this provision to give guidance on acceptable designs. We suggest the following changes to the language in this provision:

10.24(7)(c) The following projects may be permitted as a limited project pursuant to 310 CMR 10.24(7) provided the project complies with all applicable provisions of 310 CMR 10.24(1) through (6) and (9) and (10):

1. Maintenance and improvement of existing public roadways, ~~but limited to widening less than a single lane, adding shoulders, correcting substandard intersections, and improving drainage systems.~~ Existing public roadways may be elevated to reduce impacts from sea level rise or coastal storm flowage; provided that:
  - a. the width of the elevated roadway surface is the same as the existing roadway surface **to the maximum extent practicable**;
  - b. **minimize** unavoidable loss of Salt Marsh, if necessary for adjustment of the toe of slope, ~~is to the maximum extent practicable mitigated by the restoration or creation of an equivalent area of Salt Marsh, with at least 75% of the area established with indigenous salt marsh plant species within two growing seasons, and, prior to the vegetative reestablishment, any exposed soil is temporarily stabilized to prevent erosion in accordance with standard NRCS methods;~~
  - c. the existing hydrology up to and including the highest spring tide of the year between both sides of the roadway is maintained **to the maximum extent practicable**,

~~there is no restriction of flow and no increase in flood stage or velocity~~ **is minimized**, and the existing hydrology is improved where not adequately sustaining the Salt Marsh; provided the Issuing Authority has determined that no adverse flooding impacts to landward properties will occur; and **(specific performance metrics should be added for this section)**

d. the work avoids and minimizes alterations of other coastal Resource Areas to the maximum extent practicable.

**2. The construction of nature-based flood protection solutions that promote resiliency. These solutions may be permitted as a limited project provided that:**

- a. **unavoidable loss of salt marsh and other coastal resource areas are minimized.**
- b. **an alternative analysis is completed to consider alternatives before resource area impacts.**

**Section 10.24(7)(c)(8) Shared Used Paths Converted from Former Railway Bed**

40. MassDEP should remove the LTPPP requirement for shared use paths (10.24(7)(c)(8)) since the use (pedestrian and non-motorized) does not merit the need for LTPPP. Source controls such as snow removal practices, fertilizer use, solid waste storage, etc. which are the focus of LTPPPs are not relevant for these uses.

**Section 10.24(9)(d) Construction Compliance**

41. The proposed language in 310 CMR 10.24(9)(d) requires that "Construction shall not take place during Time of Year Restrictions as identified in 310 CMR 10.35(4)." 310 CMR 10.35(4) indicates that "Unless otherwise allowed by DMF pursuant to M.G.L. c. 130, § 19, dredging, disposal of Dredged Material or filling in a fish run shall be prohibited between March 15 and June 15 in any year." The term "construction" can be interpreted as many different activities, including non-silt producing activities. However, the language within 310 CMR 10.35(4) is more specific. DCR respectfully requests that MassDEP modify the language in 310 CMR 10.24(9)(d) to read, "Dredging, disposal of dredged material or filling in a fish run shall not take place during the Time of Year Restrictions as identified in 310 CMR 10.35(4)."

**Section 10.36 Land Subject to Coastal Storm Flowage**

42. The proposed Land Subject to Coastal Storm Flowage (LSCSF) regulations for 10.36(5)(6) do not allow projects within the V-Zone or MoWA zone to have adverse effects on the critical characteristics of LSCSF. The list of projects that may be permitted in these zones in 10.36(6)(a) through (f) should be expanded to include transportation expansion project for safety improvements, multi-modal transportation (including bike paths), and emergency egress.
43. The proposed LSCSF regulations for redevelopment require an improvement over existing conditions. Although DCR understands the objective of this regulation, the qualitative nature of this regulation with no specific means for a project proponent to satisfy this requirement is likely to introduce confusion, inconsistencies, and uncertainty. MassDEP should add clarity to this section.

44. In 310 CMR 10.36 (8)(g) MassDEP should clarify if the applicant must only demonstrate no adverse effects under current climate conditions or if the applicant must demonstrate no adverse effects in the future conditions. If future impacts must be considered, MassDEP must clarify the future conditions which must be used.

### **Section 10.57(2)(a) Land Subject to Flooding**

45. MassDEP should revise the regulations defining the engineering methods to determine Bordering Land Subject to Flooding (BLSF) to include additional hydrologic calculation methods such as regional regression equations and a Bulletin 17C gage analysis. The proposed regulations are prescribing a runoff curve number/unit hydrograph hydrologic method. This method is typically not used for watersheds greater than 0.5 square miles. The regulation should also allow for use of both steady and unsteady HEC-RAS models.

### **Other Regulations Comments**

#### **Written Alternatives Analysis**

46. MassDEP is requiring a detailed written alternatives analysis when certain criteria are met. The development of an alternatives analysis is additional work which will not lead to a different outcome. MassDEP should revise the requirement to state that a written alternatives analysis is only required when DCR projects need to meet standards through the Watershed Accounting method.

#### **Stand Alone Retrofit Project Streamlining of Permitting**

47. The new regulations do not address a process for stand-alone stormwater retrofit projects. With more of these mitigation and restoration projects being required by the MS4 Permit, MassDEP should add a streamlined permitting path for these projects which will lessen the burden on both the permittee and local Conservation Commissions. This process would likely need to be a new project type in the regulations with reduced criteria and MEP allowance.

### **Handbook Comments**

#### **Environmentally Sensitive Site Design (ESSD)**

48. DCR appreciates the sensitive site design allowances included, which mirror DCR's approach to site development at our facilities. We ask that MassDEP provide flexibility for ESSD use/crediting to maximize their inclusion in designs. For example, DCR has already been identifying and crediting disconnection scenarios as part of MS4 Phosphorous Control Plan analysis without these prescriptive criteria.
49. Page A-8 and 9: We request the following changes to the requirements for Qualifying Pervious Areas
- Allow slopes >5% so long as sheet flow is maintained
  - Allow soil types to be determined by NRCS soil mapping or site-specific soil testing to allow for flexibility and use of the measure for larger areas

- Eliminate setback requirements which are prohibitive and not warranted for a distributed practice like impervious area disconnection.
- Allow for the range of pollutant removal credits for increased pervious area as demonstrated in EPA's SCM Performance curves for IC Disconnection (consistent with the MS4).
- Allow roadways draining to pervious ROW to exceed the 1,000 square feet contributing area threshold due to their continuous nature.
- Allow roadways draining sheetflow to pervious ROW to not require pretreatment pea-gravel diaphragms, which create safety issues.

## Section 5.7 Highway Specific Considerations

In our discussions with MassDEP and attendance at the Advisory Committee Meeting #2 in August 2020 which focused on Stormwater Management Considerations Specific to Highways/ Update on EPA TS4 Permit, DCR identified that the State Highway Specific Considerations are also relevant to DCR and that the regulations should include DCR in these specific considerations. DCR's historic parkways have the same challenges as MassDOT roads, since these linear roadways have constrained right of ways that discharge to multiple wetland resource areas making the installation of stormwater measures challenging. DCR follows MassDOT design specifications for our parkways, whenever possible. In addition, the opportunities for stormwater improvements at our statewide facilities are often constrained due to narrow corridors, urban settings, and addressing their mixed public recreation, conservation, parkway, and greenway uses. DCR submitted a letter to MassDEP in March 2023 requesting this revision.

**Constrained Roadway Corridors:** DCR often owns only the roadway corridor. When DCR does own adjacent land these areas are often designated as parkland with restrictions even to stormwater improvement development. These linear parcels traverse multiple watersheds and municipalities and are often buffered by resource areas including parkland, rivers, and wetlands.

**Meeting Water Quality Requirements for Minor Projects:** Overall, meeting the proposed water quality requirements for Redevelopment requirements will be difficult. Projects that were previously minor projects exempted from meeting MassDEP water quality requirements need to continue with that allowance for them to be viable and for DCR to fulfill their mission to the public. These minor projects include the addition of paved sidewalks adjacent to roadways which provide important access to DCR facilities and natural resources. We appreciate MassDEP's effort to provide more tools in the form of off-site mitigation and the ESSD credits to help support compliance, but these minor projects are often too constrained to use ESSD to fully meet targets, and do not have the budget or capacity to layer on an additional off-site stormwater retrofit project to be cost effective and timely.

**Site Specific vs Watershed Wide Requirements:** DCR is a state-wide agency that is meeting impaired watershed goals on a watershed scale via the MS4 requirements. This scale and approach laid out in the MS4 permit is a reasonable and cost-effective way to allow DCR, as a state-wide property owner, to address water quality issues where they can most cost effectively be addressed within the watershed, while taking advantage of redevelopment projects to incorporate as much as they can on-site. Each DCR project strives to incorporate what is best for the local resources as described in our mission to protect, promote and enhance them, but rigid project-specific requirements will not help us achieve this mission and therefore it is imperative that we receive the same flexibility provided in the specific considerations.



Neither the draft regulations (Section 10.05(4)(k)) or the MassDEP Handbook Section 5.7 include DCR in the specific considerations even though as a state agency we face the same constraints as MassDOT on our properties. DCR again requests that DCR is provided the same approach as MassDOT.

## Applicability Inconsistencies

Part 5.7 of the Handbook continues with "These special considerations recognize the following:

*MassDOT Highway Division is the only entity regulated by the Transportation Separate Storm Sewer System (TS4) permit. "*

While DCR will not be covered under the TS4 permit (which is not published for MassDOT at this time), we are covered within the non-traditional and transportation MS4 sections of the MS4 general permit like MassDOT was in the 2003 general permit.

*"Highway transportation linear shaped projects may necessitate use of linear shaped treatment systems that differ from polygon shaped treatment systems used as part of typical site development."*

DCR parkways necessitate the use of linear shaped treatment systems especially in areas with narrow ROW alongside.

*"MassDOT discharges stormwater to multiple Wetland Resource Areas located along highway routes (in contrast to site development where there may only be a discharge to a single wetland). "*

DCR parkways also often discharge to multiple wetland resource areas along parkway routes.

*"MassDOT Highway Division owns and operates the largest stormwater drainage network in the Commonwealth. "*

DCR also owns and operates a large statewide drainage network which is likely the second largest in the Commonwealth and much larger than a single municipality (10,348 inlets and 2,478 outfalls statewide).

## Requested Handbook Part 5.7 Specific Consideration Wording Revisions

50. The introductory paragraph indicates that these specific considerations do not apply for other transportation projects including "footpaths and bike paths". DCR's mission is dependent upon construction of footpaths and bike paths for our users. Footpaths and bike paths should be included in the specific consideration applicability criteria.

51. We are in support of the draft State Highway Specific Considerations and want to ensure that MassDEP clarifies that DCR parkways and facilities are covered by each of these specific considerations in the Handbook. For each of the draft specific considerations, we have provided background on why these considerations are just as applicable to DCR and indicated the requested applicability language changes (in bold) for each of the State Highway Specific Considerations below.

*"The following Highway Specific Special Considerations may be used by MassDOT to comply with the Massachusetts Stormwater Handbook specifications required at 310 CMR 10.05(6)(k) and 314 CMR 9.06(6)(a). The following Special Considerations may also be used for municipal roadway projects funded by MassDOT and designed to MassDOT specifications, and/or to **DCR or** municipal roadway projects not funded by MassDOT, but only where specified further in this section. As indicated under "applicability",*

*some of these Specific Considerations apply only to new development or Redevelopment projects, while others apply to both project types."*

SC 1: TSS/TP Treatment Credit and Recharge Credit for MassDOT Linear Practices (Bioretention Linear Practice, Wet Pond Linear Practice, and Infiltration Linear Practice)

DCR's parkways have the same linear roadway challenges as MassDOT and municipal roads due to constrained right of ways which discharge to multiple wetland resources which can make the installation of stormwater measures challenging.

*Applicability:* New development and Redevelopment (MassDOT roadway projects, MassDOT funded municipal roadway projects that meet MassDOT design specifications, and municipal **or DCR** roadway projects that are not funded by MassDOT).

SC2: Use of MassDOT Linear Practices for Peak Runoff Rate Reduction

MassDCR's parkways have the same linear roadway challenges as MassDOT and municipal roads due to constrained right of ways which pass over multiple waterbodies that can make the installation of stormwater measures challenging.

*Applicability:* New development and Redevelopment (MassDOT roadway projects, MassDOT funded municipal roadway projects that meet MassDOT design specifications, and municipal **or DCR** roadway projects that are not funded by MassDOT).

SC3: MassDOT Deep Sump Catch Basins Inlet Grate Specifications

DCR's parkway designs include catch basins grates that meet the listed specific provision conditions but are different from the MassDEP specified grates. DCR uses D-frame historic parkway standard grates and non-cascade covers. The allowance of TSS credits when providing vertical curb inlet grates is an impractical measure, as they are not part of DCR standards or specifications and are not a simple retrofit to existing catch basins, would impede catch basin cleaning and maintenance, and would change the flow characteristics of the inlet system potentially increasing clogging and causing flooding. We request that the requirement of vertical curb inlet grates be removed.

*Conditions:*

- The inlet grates are limited to the following MassDOT designs:
  - Cascade grates consist of 20 openings approximately 4.4-inch by 2.7-inch in effective size (at the angle of the openings);
  - Standard municipal (rectangular) grates consisting of 36 openings approximately 2-inch by 2-inch in size; and
  - Parallel bar grates consisting of 10 openings approximately 1.2-inch by 21 inches in size
  - **D-frame historic parkway standard grates**
  - Other inlet grate designs, but only when approved in writing by the MassDEP Wetlands Program. "
- Catch Basins designed for pretreatment must **have a deep sump, defined as a minimum of 4 feet between the bottom of structure and invert of the pipe out**, ~~be in accordance with the Design Specifications and illustration for Deep Sump Catch Basins in~~

MassDOT's Stormwater Handbook for Highways and Bridges (2004 pp. 5-13, 14, 15) which show the "Standard Frame and Grate" covering the entire catch basin inlet without a curb cut.

- Inlets combining a grate with an "open curb inlet," "curb opening inlet," or "combination inlet" configuration (as defined by the Federal Highway Administration, Highway Engineering Circular 12 published in 1984 or 22 published in 2013), or "open throat" inlet, shall ~~not only~~ receive any TSS pretreatment credit **if the structure has a deep sump (4-ft sump)**, for the purposes of 310 CMR 10.05(6)(k)4. and 314 CMR 9.06(6)(a)4. ~~TSS pretreatment credit is available to "open curb inlet," "curb opening inlet," or "combination inlet" only when vertical curb inlet grates are provided.~~

*Applicability:* Redevelopment only (MassDOT **or** DCR roadway projects, municipal roadway projects funded by MassDOT that meet MassDOT design specifications).

#### SC4: Deep Sump Catch Basin Hoods

Since DCR's roadway designs follow MassDOT PDDG and design specifications and will follow a statewide O&M plan, DCR should receive this same specific provision allowing for hoods to only be required in certain locations and not all catch basins. The hood installation locations should be revised to allow locations like those listed but for relevant locations for state public agencies such as DCR. Hoods can only be installed where there is access for future inspection and maintenance but are not appropriate at all junctions. MassDEP should remove the requirement that drainage from Impervious Surfaces of adjacent land uses shall not be directed to the public drainage system. While always a goal of project designs, there are many instances where this is not a practical requirement especially where the roadway is the low point and serves as the collection system and private adjacent areas cannot be regraded to redirect runoff.

We would suggest the language be revised to the following:

#### *Conditions:*

- Hoods may be constructed from multiple materials, including plastic.
- ~~Drainage from Impervious Surfaces of adjacent land uses shall not be directed to the public drainage system located in a State highway or public roadway.~~
- The drainage system shall be inspected to **ensure there are no screen for Illicit Discharges** such as sanitary sewage **during project development or construction.**
- **DCR and** MassDOT shall, at a minimum, install hoods in the deep sump catch basin outlets in the following locations (~~which are specified in its Mass Highway, 2004, Storm Water Handbook, Deep Sump Catch Basin, page 5-14~~):
  - Along roadways in commercial areas;
  - Within rest areas;
  - In **MassDOT**-maintenance yards;
  - Where combination inlets are used (a combination inlet has both an open curb inlet and a grate inlet); and
  - Along **parkways and** highways where no other containment device is provided for a stormwater discharge to or near a "Critical Area." MassDOT **and** DCR may

propose alternative plans that afford equivalent protection based on risk of spills and proximity to Critical Areas, subject to review and approval by the Issuing Authority for compliance with 310 CMR 10.05(6)(k)1-10 and 314 CMR 9.06(6)(a)1-10.

*Applicability:* Redevelopment only (MassDOT or DCR roadway projects, municipal roadway projects funded by MassDOT that meet MassDOT design specifications).

SC5: Operation and Maintenance Approach

DCR is a statewide agency which addresses O&M programmatically versus on a project-by-project basis. DCR is currently implementing a statewide MS4 O&M program as part of our MS4 permit compliance. DCR could generally meet the conditions specified in the specific provision with the suggested revision below. Performing O&M at the frequencies specified in MassDEP Handbook would not be beneficial versus the data driven approach DCR currently uses and this specific provision allows. We request the following changes to allow for DCR to meet this special condition:

Conditions:

o MassDOT and DCR shall implement the following:

- **Develop an agency-wide operation and maintenance plan for the agency's stormwater management system assets. The O&M plan must include protocols for inspection and maintenance and inspection schedule.**
- Until an interim and final Operation and Maintenance (O&M) plan is approved in writing by MassDEP, MassDOT **the agency** shall submit a O&M plan to the Issuing Authority as part of filing each individual Wetlands Notice of Intent **indicating the planned** meeting the O&M plan specifications and BMP maintenance frequencies specified in the MassDEP Stormwater Handbook.
- *Interim O&M Plan* - ~~MassDOT~~**The agency** shall submit a proposal to MassDEP, for its review and approval, proposing interim measures to maintain SCMs at a sufficient frequency to ensure that pollutant reduction credits awarded or credited as part of Wetlands permitting will continue to be achieved. **MassDEP must approve or provide comments to the respective Agency within 60 days from receipt. Unless comments are provided within 60 days, the Interim Plan is considered approved.** After receipt of written approval, ~~MassDOT~~**the agency can reference the approved Interim O&M plan** submit and Individual Project Specific O&M plan to the Issuing Authority as part of filing each individual Wetlands Notice of Intent, meeting the O&M plan specifications and BMP maintenance frequencies specified in the Interim approved O&M Plan. The Interim Plan shall be superseded by the Final O&M plan, after the Final O&M plan is approved.
- *Final O&M Plan* - ~~MassDOT~~**MassDOT/DCR** shall submit a proposal to MassDEP, for its review and approval, proposing a final plan to maintain BMPs at a sufficient frequency to ensure that pollutant reduction credits awarded or credited as part of Wetlands permitting will continue to be achieved. **MassDEP must approve or provide comments to the respective Agency within 60 days from receipt. Unless comments are provided within 60 days, the Interim Plan is considered approved.** After receipt of written approval, ~~MassDOT~~**the agency** must **reference the approved Final O&M plan** submit an Individual Project Specific O&M plan to the Issuing Authority as part of filing each individual Wetlands Notice of Intent, meeting the O&M plan specifications and BMP

maintenance frequencies specified in the Final approved O&M Plan. The Final O&M plan shall supersede the Interim Plan.

- ~~Individual Project Specific O&M Plan – This is a project specific plan submitted to an Issuing Authority as part of a Wetlands NOI on a case-by-case basis. The Individual Project Specific Plan is tailored to the work proposed as part of a Project, and must be consistent with the interim or final O&M plan, depending on whichever one is legally effective.~~
- Maintenance Log – MassDOT /**DCR** shall make available, no later than five business days after request, a maintenance log that is easily accessible to Conservation Commissions (e.g. web based), listing municipality name, roadway name, ~~Wetlands NOI File number~~, SCM numerical designation (e.g. Infiltration Basin 1), annual frequency for routine and non-routine maintenance, and dates when the routine and non-routine maintenance was conducted, and specify the maintenance tasks that were conducted. The maintenance log shall be updated by ~~MassDOT~~ **the agency** on a regular basis. This log may be combined with the log required to be maintained by the TS4/ **MS4** permit, provided it lists the MassDEP required criteria.
- Maintenance is required to be on-going to ensure that pollutant reduction credits awarded or credited as part of Wetlands permitting will continue to be achieved and does not expire upon issuance of a Certificate of Compliance

*Applicability:* MassDOT **and DCR** only.

#### SC6: Macro-Approach

DCR's parkways have the same linear roadway challenges which can make the installation of stormwater measures challenging in constrained right of ways that discharge to multiple wetland resource areas. DCR will also be able to provide better stormwater solutions using the Macro-approach specific provision similar to MassDOT. A written alternatives analysis for use of this entrenched practice creates more work for both consultants and reviewers, when the outcome of the project will remain the same. A written alternatives analysis should not be required as part of the Macro-Approach specific consideration. DCR asks that the following changes be made to this special condition to allow for DCR to meet the specific consideration also.

#### Conditions:

- The Issuing Authority allows use of the Macro-approach with the Massachusetts Stormwater Standards 2, 3, 4, and the pollutant removal requirements of 7 when ~~MassDOT~~ **the Agency** demonstrates:
  - ~~MassDOT~~ **The Agency** has made all reasonable efforts to meet the Stormwater Management Standards 2, 3, 4, and the pollutant removal requirements of 7 on the Project Site at the specific Wetland Resource Area/Buffer Zone being altered.
- ~~A written alternatives analysis is submitted with the Notice of Intent that it is not practicable to meet Stormwater Management Standard 2, 3, 4, and the pollutant removal requirements of 7 at each existing and proposed stormwater outfall and within the same general area of each Wetland Resource Area (see Section 6.1.4, "General Written Alternative Analysis Structure", for information on what must be included in the written alternatives analysis). "Practicable" is defined at 310-CMR 10.04. "Small scale controls" at each Wetland Resource Areas/Buffer Zone being altered must be~~

considered by MassDOT ~~the Agency~~ as part of the written alternatives analysis (see Appendix A for a fact sheet with more information on small-scale controls). When full compliance cannot be achieved on the Project Site, the highest practicable level of stormwater management shall be demonstrated to be provided **at the Project site level** within the same general area of each Wetland Resource Area being altered and the remainder shall be provided utilizing the Macro-approach. The Macro-approach may be utilized anywhere within the Project Locus-Site, but only when within the same subwatershed. Subwatershed boundaries shall be those defined as Hydrologic Unit Code 12 (HUC12) or smaller (e.g. HUC14, HUC16) by the National Watershed Boundary Dataset (WBD) distributed by the USGS/NRCS.<sup>58</sup> The use of the HUC12 boundary data distributed by MassGIS is not acceptable, since it is not updated as often as the USGS/NRCS version.

- When using the Macro-approach, as much peak runoff reduction, water quality treatment, and recharge as possible shall be provided at the specific location where a Wetland Resource Area is proposed to be altered, and the balance shall be provided elsewhere along the Project Locus, but only within the same subwatershed, or as otherwise provided below.
- Stormwater Management Standard 2 (post-development peak discharge rates to Resource Areas do not exceed pre-development peak discharge rates): Design points may be combined to analyze peak runoff rate at one point rather than at each outfall, provided the stormwater runoff hydrographs are combined at the combined design point utilizing the NRCS Unit Hydrograph method specified in National Engineering Handbook, Part 630, Chapter 16, for the 2-year, 10-year, and 100-year 24-hour storms. When using the macro-approach, the peak runoff reduction shall be to the same Wetland Resource Area (e.g., if a proposed project discharges to the Charles River, the peak runoff rate must be reduced to the Charles River, not the Mystic River).
- Stormwater Management Standard 3 (loss of annual recharge to groundwater to Resource Areas shall be eliminated or minimized): Mitigation to offset the loss of annual recharge caused by new and/or existing Impervious Surfaces being redeveloped may be demonstrated to be met on a weighted average basis, weighted by the drainage area to each Wetland Resource Area proposed to be altered, using the recharge targets explicitly specified by MassDEP in the Wetlands/Water Quality Certification regulations and/or Massachusetts Stormwater Handbook **and/ or this Specific Consideration**. When using the macro-approach for new development, the recharge shall be provided to the same Wetland Resource Area. ~~When using the macro-approach for Redevelopment, the off-site stormwater mitigation rules shall apply (first evaluate providing recharge at adjacent site within the same Project Locus, then same wetland system, then same municipality, and then same HUC12 subwatershed. In no circumstances, may the stormwater mitigation be provided in a different subwatershed).~~
- Stormwater Management Standard 4 (for new development, remove 90% of the average annual post-construction load of TSS and 60% Total Phosphorus to Resource Areas): The 90% TSS / 60% TP removal may be demonstrated to be met at the **Project Site calculated as the total load (pounds) provided and load (pound) required to be reduced.** ~~a final outfall or Qualifying Pervious Area using a weighted average, weighted by the drainage area directed to each stormwater outfall and Qualifying Pervious Area. Qualifying Pervious Area is defined in Appendix A (see "Disconnection to Qualifying Pervious Area" Fact Sheet).~~
- Stormwater Management Standard 7 (for Redevelopment, remove 80% of the average annual post-construction load of TSS and 50% Total Phosphorus to Resource Areas): The 80% TSS / 50%

TP removal may be demonstrated to be met **to the maximum extent practicable at the Project Site based on the total load (pounds) provided and load (pounds) required to be reduced at a final outfall or Qualifying Pervious Area using a weighted average, weighted by the drainage area directed to each stormwater outfall and Qualifying Pervious Area. Qualifying Pervious Area is defined in Appendix A (see "Disconnection to Qualifying Pervious Area" Fact Sheet).**

- o Disproportionate impacts to any one Wetland Resource Area shall be demonstrated to be avoided on a case-by-case basis.
  - The macro-approach cannot be used for the following, which constitute disproportionate impacts to Wetland Resource Areas:
    - Any stormwater discharge or recharge to or near a Critical Area **Certified Vernal Pool**.
    - Any stormwater discharge or recharge to or near a flow impaired basin that diverts water away from that basin.
      - Flow impaired basins are those identified by the MassDEP Sustainable Water Management Initiative (SWMI) with a "Net Groundwater Depletion **greater than 25%.**" These are depicted on a map available at MassDEP's website at: <https://www.mass.gov/doc/net-groundwater-depletionstatewide-map/download>  
<https://www.mass.gov/guides/sustainable-water-management-initiative-swmi-technical-resources#-swmi-interactive-gis-map-and-wma-permitting-tool->

*Applicability:* Both new development and Redevelopment projects (MassDOT **or DCR** roadway project, and MassDOT funded municipal roadway projects that meet MassDOT design specifications, **and DCR facility projects.**

#### SC7: Pollutant Removal via the Watershed-scale Accounting Method for Redevelopment

DCR's parkways have the same linear roadway challenges due to constrained right of ways that discharge to multiple wetland resource areas, which make the installation of stormwater measures challenging. DCR, like MassDOT, doesn't own contiguous area like a municipality does and identifying available off-site DCR areas will be challenging and therefore requires more flexibility. DCR has developed a Watershed-scale accounting database for MS4 compliance to document constructed or planned stormwater treatment and account for pollutant removal especially within watersheds with numeric TMDLs, which could be used for this specific consideration. The database would be used to track pollutant removal provided and status of meeting pollutant removal targets in TMDL watersheds and/or documenting continued progress towards removing pollutants in non-TMDL with numeric targets.

DCR can expand upon the Watershed-scale accounting database in place but will only be able to meet the required information for projects permitted after these regulations are in place. Allocating resources to complete the information for SCMs already included will not provide additional water quality benefit and therefore not a good use of limited resources.

The comprehensive O&M plans discussed in other specific consideration will provide the oversight of inspection and maintenance of these constructed treatment systems. The SCMs do not need to be monitored separately.



It is unclear why a rolling 10-year timeframe is included for crediting SCMs. If the SCM is constructed for treatment and not as specific mitigation for a project, then it should always be available for credit to the agency. The credit calculated is based on the design of the system and not on a timeframe of construction.

DCR requests the following changes to the special consideration.

Conditions:

- The project is a MassDOT-owned and maintained roadway, or a MassDOT-funded roadway project where MassDOT agrees to the long-term maintenance of the SCMs (or provides written agreement with responsible entity), **or a DCR project.**
- ~~MassDOT~~ **The agency** demonstrates via a written alternatives analysis that is submitted with the Notice of Intent that the pollutant removal requirements of Stormwater Management Standard 7 cannot be met for Redevelopment projects on the Project Site, **or** by using the Macro-approach, ~~or through Offsite Mitigation (see Section 6.2.7).~~ See Section 6.1.4 for information to include in the written alternatives analysis.
- When full compliance with the pollutant removal requirements of Stormwater Management Standard 7 cannot be achieved on the Project Site, **or** by using the Macro-approach, ~~or through Offsite Mitigation,~~ the pollutant removal deficit for TSS and TP may be calculated quantitatively and compensated through the Watershed-scale Accounting Method. The pollutant removal deficit is expressed as TSS / TP percent removal for the impervious area of the ~~MassDOT~~ **the agency's** roadway or other facility.
- The Watershed-scale Accounting Method may be utilized anywhere within the same Hydrologic Unit Code 10 (HUC10 or smaller as defined by the National Watershed Boundary Dataset (WBD) distributed by the USGS/NRCS.
- Under the Watershed-scale Accounting Method, ~~MassDOT~~ **the agency** will maintain and expand **or develop a program for a** ~~upon MassDOT's Impaired Waters Program (IWP) initially developed to improve the quality of stormwater runoff discharging to "impaired" water bodies (303(d) list) from highways. The IWP expansion, now referred to as the~~ Watershed-scale Accounting Method **which includes tracking and accounting of stormwater runoff discharging to MS4 "impaired" waterbodies (303(d) list) and** waters not on the 303(d) list where water quality improvements can be made.
- **Agency's** ~~MassDOT's~~ already-constructed IWP SCMs, in addition to future Watershed-scale Accounting Method SCMs, may qualify for pollutant removal credits for projects with TSS / TP percent removal deficits.
- The Watershed-scale Accounting Method's tracking and accounting system **must** include the following information **for projects permitted after this regulation is issued as final:**
  - MassDEP Wetlands File Number or 401 WQC number and name of the project where the shortfall occurred.
  - MassDEP Wetlands File Number or 401 WQC number through which those SCMs were constructed (if within a wetland resource area or buffer zone, within another town, within the same town but approved at a different time etc.)
  - SCM location (street address if one assigned and latitude/longitude coordinates) **or be located within a geodatabase.**

- Name of water and/or type of wetland resource area they discharge into
  - Design storage volume, treated impervious cover, and contributing drainage area, and TSS / TP pollutant removal percentages.
  - Design documentation that complies with the **MassDOT Stormwater Design Guide or Massachusetts Stormwater Handbook** and the Appendix A SCM Specifications
  - 303(d) list category of the water (if applicable)
  - Construction date
  - As-builts
  - ~~• Certification that it continues to operate as designed~~
  - **Last inspection date and recommendations**
  - Last maintenance date ~~including what the last inspection entailed~~ **and maintenance activity summary.**
  - **Project status (pre-construction, monitoring year 1, post-monitoring maintenance, etc.)**
- The **agency must submit an** electronic SCM list or **a link to the database** is submitted to MassDEP yearly within 90-days of close of the MS4 or other separate storm sewer system permit reporting period.
  - Methods to calculate pollutant removal follow the Stormwater Management Standard 7 and the Massachusetts Stormwater Handbook. Cumulative deficits **must be** ~~are~~ tracked per HUC 10.
  - New SCMs are designed according to the **MassDOT Stormwater Design Guide or the Massachusetts Stormwater Handbook** ~~with appropriate resource area setbacks and then added to the electronic list with the previously listed parameters along with project status (pre-construction, monitoring year 1, post-monitoring maintenance, etc.).~~ When a proposed design includes drainage from a non-MassDOT/DCR roadway, **the agency must demonstrate** ~~a demonstration is made that the MassDOT-agency's~~ drainage design, including the treatment SCM, treats both the offsite and Project Site runoff volume, to be claimed as a credit. ~~MassDOT~~ **The agency** should attempt to work cooperatively with an interconnected system in instances of discharges impacting either system. Constructed projects are included and maintained according to the ~~DOT~~ Special Consideration for the Operation and Maintenance Approach.
  - Approved IWP/ Watershed-scale Accounting Method SCMs can compensate for pollutant removal shortfalls on more than one project if total SCM removal percentages can be sufficiently divided and appropriately allocated on an area weighted basis. The SCM cannot have been used previously as mitigation to meet Wetland or WQC regulation requirements for stormwater management. The SCMs may only be used once as mitigation for Projects. When a stand-alone SCM is used for mitigation to meet the Wetlands Protection or WQC regulations for stormwater management, ~~MassDOT~~ **the agency will** updates the electronic tracking and accounting list to note the SCM was used for Project mitigation and notifies EPA/**MassDEP** in the quarterly **annual** reporting.

- The tracking and accounting system includes the O/M Plan details as required in the DOT Specific Consideration for the Operation and Maintenance Approach and the LTPPP details including dates of performed maintenance.
- ~~To receive full pollutant removal credit, The IWP projects are implemented within 3 years of the permit receipt, monitored for 3 years and maintained in accordance with the approved MassDOT O&M plan. Credit will be allowed for SCMs that have been built within the appropriate area within a rolling 10-year timeframe.~~
- **Redevelopment projects that increase the impervious footprint by less than 0.5 acre shall meet Standard 7 treatment requirements to the maximum extent practicable and shall improve existing conditions.**

*Applicability:* Redevelopment only (MassDOT or DCR only). **Projects which have not submitted a 25% Design submission to the agency by three years from the effective date of these regulations, must fully meet this special consideration requirement.**

## Specific Provisions Concerns

DCR has concerns about the implementation of some of the specific considerations and therefore is submitting the comments below to request revisions.

### SC1: TSS/TP Treatment Credit and Recharge Credit for MassDOT Linear Practices (Bioretention Linear Practice, Wet Pond Linear Practice, and Infiltration Linear Practice)

52. Bioretention linear practice should not have a prescriptive ponding depth but have the water quality volume described similar to the other linear practices as "below the elevation of the berm crown for each pool" to promote flexibility in design and the use of filtering practices when infiltration is not possible.
53. MassDEP should more generically specify that Bioretention Linear Practice contain a carbon source instead of the prescriptive list of materials ("triple shredded wood chips, biochar, or drinking water residuals blended into the bioretention soil mix that follows the MassDEP design specification for bioretention areas"). The more prescriptive list may not serve to be the most cost effective or optimal for treatment as research progresses.

### SC2: Use of MassDOT Linear Practices for Peak Runoff Rate Reduction

54. MassDEP should remove the prescriptive provisions for slopes and ponding depths in this provision. These limiting requirements will likely make the SCM impractical/ infeasible in most scenarios, therefore negating the benefit of this specific provision. These provisions are not essential to promote peak rate control for these measures.
55. To be consistent with and supportive of recharge and water quality requirements we recommend changing the requirement that "ponded water shall be held no more than 24 hours" to "volumes associated with peak flows shall be held no more than 24 hours" to specify that peak rate storage must be available for subsequent storms while water quality volumes can be drained over longer periods of time.

The remainder of the changes to specific provisions are included in the DCR suggested redline strikeout changes discussed earlier in this memo.

We ask that you seriously consider the implications of the proposed regulation changes on the greater public who benefit from DCR parks and facilities and the need for more overall improvements to happen per tax-payer dollar, not less. We reiterate that we are eager to work with MassDEP to make sure regulation changes are implementable and achievable. If you have any questions or comments, please feel free to contact me at [Robert.lowell@mass.gov](mailto:Robert.lowell@mass.gov).

Sincerely,

A handwritten signature in black ink, appearing to read 'Rob Lowell', with a long horizontal flourish extending to the right.

Robert Lowell  
Deputy Chief, Design & Engineering  
MA Department of Conservation & Recreation

Cc: Patrice Kish, Chief, Design & Engineering



## REGION 1

BOSTON, MA 02109

April 30, 2024

### VIA EMAIL

BWR Wetlands Program  
Massachusetts Department of Environmental Protection  
100 Cambridge Street – Suite 900  
Boston, MA 02114  
[dep.wetlands@mass.gov](mailto:dep.wetlands@mass.gov)

RE: EPA comments on the 2024 Massachusetts Stormwater Management Handbook and Proposed Wetlands Resilience 1.0 Draft Regulations

EPA Region 1 (EPA) has reviewed the Massachusetts Department of Environmental Protection (MassDEP) Draft Massachusetts Wetlands regulations (310 CMR 10.00 and 314 CMR 9.00) and Stormwater Management Handbook. Overall, the proposed revisions represent a major advancement in the management of stormwater for new and redevelopment projects and consideration for how the Commonwealth will protect its coastal resource areas and increase their climate resiliency.

### Stormwater Management Standards

EPA appreciates that the stormwater requirements for new development are focused on improving water quality and adapting to climate change, promoting nature-based solutions, and improving consistency between state regulations and the 2016 Massachusetts Municipal Separate Storm Sewer System General Permit (MS4 Permit). The MS4 Permit currently covers 270 permittees comprising municipalities and non-traditional permittees that implement minimum control measures to protect water quality in Massachusetts. EPA commends MassDEP on updating 310 CMR 10.05(6)(k)(4) and Stormwater Standard 4 to improve consistency with the MS4 Permit, specifically regarding the following elements:

- (1) Pollutant reductions and EPA's performance reduction curves:** MassDEP has incorporated the pollutant reduction requirements of 90% for total suspended solids (TSS) and 60% for total phosphorus (TP) for new development from the MS4 Permit as Stormwater Standard 4 (310 CMR 10.05(6)(k)(4)). In addition, MassDEP integrated the performance reduction curves (PRCs) into this standard and referenced in the MA Stormwater Handbook for the crediting of structural treatments stormwater control measures (SCMs) and certain (Environmentally Sensitive Site Design (ESSD) SCMs. The PRCs were developed using a long-term precipitation record in New England to generate hydrograph and pollutant time series using a land-based hydrologic and water quality model. Stormwater control measures' hydraulic and treatment processes were

then simulated to develop these performance curves, which provide pollutant load reduction estimates for SCMs. A PRC tells a stormwater practitioner how much of a given pollutant may be controlled on an average annual basis simply based on the size of the SCM. This is important because the practitioner need not spend time and resources monitoring SCMs to assess pollutant removal (i.e., treatment) efficiency. Rather, practitioners need only (a) construct SCMs to specification and (b) operate and maintain the SCMs to function as designed. The incorporation of these PRCs into the MassDEP stormwater standards provides a scientifically valid and consistent method to credit SCM performance across the State.

**(2) Low Impact Development (LID) and Environmentally Sensitive Site Design:** MassDEP has updated the stormwater standards at 310 CMR 10.05(6)(k) to require LID/ESSD strategies for treating stormwater runoff to be utilized unless impracticable. This approach is also consistent with the MS4 Permit requirements for new and redevelopment. LID practices manage stormwater by minimizing impervious cover and using natural or man-made systems to filter and recharge stormwater into the ground. The goal of LID is to reduce runoff and mimic a site's predevelopment hydrology by minimizing disturbed areas and impervious cover and then infiltrating, filtering, storing, evaporating, and detaining runoff on site. LID reduces pollutant loading to receiving waters, reduces the potential for erosion, and allows flexibility in site design. Emphasizing the use of LID/ESSD will help to preserve pre-development hydrology and protect surrounding waterbodies. It is far more expensive to clean up waterbodies after they have been polluted or damaged, or to retrofit existing properties with stormwater controls, than to design new and redevelopment projects with protective stormwater controls at the outset. EPA generally supports the revisions emphasizing use of ESSD and LID techniques to meet the stormwater standards.

**(3) Recharge Volume:** EPA supports revisions to Standard 3 (310 CMR 10.05(6)(k)(3)) emphasizing infiltration of 1.0 inch of stormwater runoff as the groundwater recharge standard for new development. Static and Dynamic modeling provided to MassDEP by EPA indicated infiltration at all development sites at all Hydrologic Soil Groups (HSGs) is important to ensure that pollutant loads will not increase over time and will lead to increased baseflow to mimic natural hydrology. In addition, given the increase in frequency and intensity of droughts in the Commonwealth in the past decade, maximizing groundwater recharge at all development sites is important to reduce the number of low and no flows that are being recorded in the state during droughts. The memorandum titled: Summary of Target Recharge Volume Evaluation dated September 27, 2023, indicates that MassDEP may adopt a 0.8-inch retention standard for HSG A, B, and C instead of the proposed 1.0-inch retention standard. While EPA agrees that a 0.8-inch groundwater recharge requirement may be warranted, MassDEP's proposed groundwater recharge requirement for redevelopment does not warrant a relaxing of the 1.0-inch retention standard for new development. MassDEP's proposed groundwater recharge requirement for redevelopment would require recharge at redevelopment sites to the Maximum Extent Practicable only for all HSGs and will result in missed opportunities for groundwater recharge at many development sites in the Commonwealth. If MassDEP chooses to reduce the groundwater recharge requirement at new development sites to 0.8-inches, MassDEP should consider adopting minimum recharge requirements at all redevelopment sites. Absent a groundwater recharge requirement at redevelopment sites in the proposed regulations, new development

sites should be required to maximize recharge on site, and a 1.0-inch groundwater recharge standard for HSG A, B, and C is warranted. EPA supports that the standards and Handbook recognize that there is value in infiltrating on HSG D but the standard of Maximum Extent Practicable for infiltration in HSG D soils is vague and open to interpretation. Additional clarification may be beneficial to practitioners and lead to more consistent implementation.

#### **(4) Pollutant Reductions for Redevelopment and Off-site Mitigation**

EPA supports allowing off-site mitigation for redevelopment as this approach is consistent with the MS4 Permit and recognizes the additional constraints associated with redevelopment sites. The MassDEP stormwater standards and the MS4 are aligned in allowing off-site mitigation within the same USGS HUC12 as the project site. EPA appreciates that MassDEP is encouraging mitigation sites first be considered in the following order: same Project Site, same Project Locust, adjacent site, same wetland Resource Area, same municipality, and the same HUC12 subwatershed. This order encourages the benefits to occur as close to the site as possible.

While EPA appreciates efforts to align the stormwater standards with the MS4 Permit, the standards fall short in providing the flexibility in stormwater control sizing that EPA believes is necessary in promoting LID techniques and overall reducing the impacts of stormwater. The following elements are not cohesive in providing a flexible approach at a site scale, and potentially conflict with the MS4 Permit:

#### **(1) Pollutant Reductions for New Development and EPA's performance reduction curves (PRCs)**

The pollution reduction requirements for new and redevelopment in the MS4 Permit are to be met site wide. This approach would provide maximum flexibility for design engineers to install small-scale stormwater control measures (SCMs) that, in combination, meet the pollutant removal requirements across a site. In contrast, the revised standards appear to set pollution reduction requirements on *each* SCM, thus removing flexibility in site design. 310 CMR 10.05(6)(k)(4)(c) states that the standard is met when "ESSD, LID techniques or practices, SCMs and related stormwater BMPs are sized to capture the volume required to meet the 90% TSS and 60% pollutant reduction standard using the EPA-PRC or other Substitute EPA-PRC approved by MassDEP listed in 310 CMR 10.05(6)(k)(4)." The language is not clear about whether the standard is meant to apply to each SCM or to all techniques and treatments across a site. The Handbook (p. 2-14) explains that Stormwater Management Systems shall be designed to meet the pollutant removal requirement relative to the total average annual post-construction load generated from impervious surface on the site. EPA recommends that the language in the standards and the Handbook clarify that the requirement to remove 90% of TSS and 60% of TP from the post-construction impervious surface load applies at the scale of the Project Site and not for each individual SCM. Finally, 310 CMR 10.05(6)(k)(4) Table 1 directs readers to the EPA Performance Removal Curves at the "BATT Tool" which refers to EPA's Best Management Practice Accounting and Tracking Tool.<sup>1</sup> At this time, the best reference for the EPA PRCs, in addition to their inclusion in Appendix B of the Handbook, is the most recent MA MS4 Permit.

One of the largest benefits of implementing pollutant reduction requirements at a site scale is that it allows distributed SCMs across a development site, in which pollution reduction credits

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<sup>1</sup> <https://www.epa.gov/npdes-permits/stormwater-tools-new-england#swbmap>

for various sizes of SCMs can be summed to ensure a pollution reduction standard is being met site wide consistent with LID and ESSD techniques. The language in the Stormwater Standards and new Handbook could be interpreted to mean each SCM must be sized to remove 90% TSS and 60% TSS of the IC discharging to the control structure and each ESSD SCM must be sized to treat the first inch of runoff from the IC in the drainage area. This approach effectively sets minimum sizing criteria for each SCM and does not allow for flexible sizing on site to meet a site-wide pollution reduction standard. This approach would not be consistent with the post construction stormwater pollution reduction requirements in the MS4 Permit where a site must meet specific pollution reduction targets through a more flexible approach that does not establish pollution reduction requirements for each SCM on a site. The lack of clarity in the Handbook and Standards could provide a disincentive to ESSD and LID techniques and push design engineers towards oversized SCMs whenever installed on a new or redevelopment site.

## **(2) Low Impact Development and Environmentally Sensitive Site Design**

The crediting approach for ESSD should be reconsidered to provide for maximum flexibility in meeting site pollution reduction standards. As written, the Disconnection of Impervious Surfaces Credit can only be claimed in specific situations when the first 1 inch of runoff is managed. This approach disincentivizes disconnecting impervious surfaces in instances when less than the first inch of runoff can be managed, which conflicts with ESSD and LID techniques. The MS4 Permit provides maximum flexibility for new development and redevelopment to either retain and treat a minimum of 1 inch of runoff from total post-construction impervious area or meet the pollutant removal percentages, or a combination of the two. Because Standard 2 requires capture and infiltration of the first inch of stormwater runoff for new development, and because the Handbook recognizes that the full credit is provided under Standard 4 when 1 inch or greater is recharged on site (p. 2-14), it is not clear in what situation the PRC would be employed at a site. In other words, the pollutant removal requirements appear to be redundant since Standards 2 (Peak Attenuation) and 3 (Recharge Volume) will drive the design of any stormwater management system at new development sites.

In addition, the General ESSD Credit 1 should be revised or removed. The minimum criteria to claim Credit 1 (the General ESSD credit) are overly broad and assume all sites with less than 15% impervious cover (IC) on site would infiltrate the first inch of runoff on site and treat 90% of the TSS and 60% of the TP generated on site without scientific support. It is unclear how the General ESSD Credit was derived with respect to meeting Standard 3 and Standard 4 when the minimum criteria are met. Credit 1 encourages the use of ESSD and LID on new and redevelopment sites but it should not come at the expense of an accurate crediting system. The minimum criteria of Credit 1 acts as a disincentive for designers to minimize impervious cover. Specifically, this Credit essentially sets a floor of 15% impervious cover; sites with less than 15% impervious cover, regardless of the quantified acreage, need not be treated. As written, a site with 14% IC could direct all runoff from the IC on site to a town or city owned MS4 system without any treatment and meet the pollution reduction requirements of the proposed Stormwater Standards by simply claiming the General ESSD credit. This same site would be out of compliance with municipal stormwater management regulations that are consistent with the MS4 Permit, which requires pollution reduction from IC on site regardless of overall percent of IC on the site. The General



ESSD Credit should be removed or revised to ensure pollution reduction minimums are met for all discharges from IC on new and redevelopment sites and removes the potential conflict with the MS4 Permit requirements.

### **(3) Pollutant Reductions for Redevelopment**

EPA commends MassDEP on removing the Maximum Extent Practicable standard for pollutant removal on redevelopment and adding 80% TSS and 50% TP reduction requirements consistent with the minimum pollutant removal standards for redevelopment in the MS4 Permit. However, consistent with the comments above on Standard 4, MassDEP should consider revising Standard 7 to clarify that the pollution reduction requirements must be met at the site scale, not require each SCM meet specific pollution reduction requirements. This approach is consistent with the MS4 Permit and is particularly important on redevelopment sites to provide maximum flexibility to meet a site design pollution reduction standard. The pollution reduction requirements in the MS4 Permit are to be met site wide, allowing maximum flexibility for design engineers to install small scale SCMs across a site to meet a total site stormwater pollution design requirement and does not specify pollution reduction requirements for any one SCM on a new or redevelopment site.

### **(4) Total Maximum Daily Loads (TMDLs)**

EPA supports MassDEP's proposal to add Stormwater Management Standard 11 for projects that discharge to wetland Resource Areas designated with an EPA-approved total maximum daily load (TMDL), or Alternative TMDL accepted by EPA, for phosphorus, nitrogen, metals, or pathogens. 310 CMR 10.05(6)(k)(11). The Region supports the requirement to develop and implement a long-term pollution prevention plan and implement Stormwater Control Measures that specifically address applicable TMDL or ARP. An ARP is a plan designed to address impairments for waters that will remain on the Clean Water Act (CWA) 303(d) list (i.e., Category 5), as restoration activities are implemented prior to TMDL development or attainment of water quality standards. In order to address the potential misconception that these plans are an alternative to a TMDL, EPA is discontinuing the use of the term "alternative" moving forward and recommends that MassDEP discontinue the use of the term as well. EPA is not requesting this change in terminology be applied retroactively to plans currently in place.

EPA is concerned, however, with how project Stormwater Management Systems will be presumed to meet this standard. MassDEP explains that the Stormwater Management System will be presumed to meet Standard 11 when, in addition to implementing Stormwater Control Measures and a long-term pollution prevention plan, new development projects comply with the Stormwater Recharge Standard (310 CMR 10.05(6)(k)(3)/Standard 3) and the Pollutant Removal Standard (310 CMR 10.05(6)(k)(4)/Standard 4) and redevelopment projects comply with the Redevelopment Standard (310 CMR 10.05(6)(k)(7)/Standard 7) to the maximum extent practicable. EPA is concerned because these stormwater management standards are not necessarily aligned with the requirements of a TMDL and should not be interpreted to supersede a wasteload allocation or load allocation in a TMDL approved by EPA pursuant to 40 CFR 130.7.

As currently written, the extent to which TMDLs must be considered in SCM sizing and design is unclear. 310 CMR 10.05(6)(k)(11)/Standard 11 directs developers to choose SCMs appropriate for treating pollutant(s) of concern for applicable TMDLs and to design those SCMs to comply with Standard 3 or 4 requirements as applicable. Implementation step 6 of Standard 11 requires the project proponent to prepare a summary in the Stormwater Report demonstrating how the proposed project intends to meet relevant and applicable TMDLs through SCMs and implementation of a long-term pollution prevention plan. It is possible a project proponent designs the SCM(s) in accordance with Standards 3 and 4 but reaches the determination that the proposed project won't meet applicable TMDL(s) when designed to those standards. If this outcome is acceptable to MassDEP, the Stormwater Handbook must clearly state that adherence to 310 CMR 10.05(6)(k)(11)/Standard 11 implementation requirements does not guarantee that any local TMDL thresholds will not be exceeded.

If the goal of this standard is, as stated, to improve success in meeting TMDL goals, then additional guidance on appropriate SCM design and sizing requirements to meet TMDL allocations is needed. A project proponent must be able to demonstrate that the pollutant control measures are sufficient to meet wasteload/load allocations and pollutant reduction targets of approved TMDLs. It should also be noted that, while EPA generally approves of MassDEP's allowance for offsite mitigation, it is not appropriate to allow for offsite mitigation if Standard 11 cannot be fully met for onsite redevelopment areas. Redevelopment discharging to waters with EPA approved TMDLs must ensure TMDL thresholds will not be exceeded due to construction or post-construction runoff.

#### **(5) Single-Family Homes**

310 CMR 10.05(6)(l) states that the stormwater standards shall not apply to single family homes, housing development and redevelopment projects comprised of detached single-family dwellings on four or fewer lots, and multi-family housing development and redevelopment projects with four or fewer units. This exemption is inconsistent with the MS4 Permit. The MS4 Permit's new and redevelopment program applies to all sites that disturb greater than one acre of land regardless of status as a single-family home. In addition, the MS4 Permit's new and redevelopment program applies to sites that are less than one acre if it is part of a larger common plan of development or redevelopment that disturbs more than one acre, regardless of number of dwellings or units. In other words, the development of a single-family house that disturbs more than one acre of land or may be part of a common plan of development that disturbs more than one acre of land must comply with the MS4 requirements. EPA recommends updating the single-family home and four lot/unit exemption to align with the requirements of the 2016 MS4 permit for consistency in implementation of stormwater regulations throughout the Commonwealth.

Given the information above, MassDEP should consider revising Standards 4 and 7 to clarify that the pollution reduction requirements be met at the scale of the project site, not require each SCM meet specific pollution reduction requirements. MassDEP should also consider building in more flexibility to ESSD and LID credits, using EPA PRC methods wherever possible. Finally, Standard 11 should be revised

to ensure pollution reduction requirements at new and redevelopment sites are consistent with any applicable TMDL wasteload allocation.

Overall, EPA recognizes and supports that the revisions to Stormwater Standards 2, 3, 4, and 7 and inclusion of new parameters specifying how to meet each standard will push designs to incorporate ESSD credits, particularly the reduction and disconnection of impervious surfaces and buffer zone improvements. However, EPA is concerned with how developers will implement the standards in practice. Meeting both a peak discharge rate based on the upper confidence of the 100-year, 24-hour storm under Standard 2 and infiltrating at least one inch of runoff over the area of impervious surfaces within 72 hours draining to each stormwater control may drive site designs towards overbuilt, single-purpose, traditional infiltration basins, overlooking the potential co-benefits of small-scale, distributed green stormwater infrastructure. EPA is concerned that alternatively, project proponents may shift their focus from design to demonstrating through a written alternative analysis that such measures are impracticable. If MassDEP chooses to require compliance with Standard 2, 3, 4, and 7 at the site scale instead of at each stormwater control, the Handbook would benefit from including an example of how a combination of ESSD credits and/or SCMs would be employed at a project site. Appendix A of the Handbook includes well written and clear fact sheets for each SCM in Table 2-7 but does not appear to include an example design that illustrates how a combination of ESSD and SCMs would be implemented to meet all specific standards at a given site. EPA is uncertain if the next MA MS4 permit could reference the 2023 stormwater standards and Handbook in the requirements for new and redevelopment as proposed because the inconsistencies described above would likely result in confusion among permittees implementing the permit requirements.

### **Climate Change and Coastal Resilience**

EPA commends MassDEP on the multi-year effort and staff dedication that went into updating the Wetlands Protection Act regulations. EPA also recognizes that the proposed updates to the land subject to coastal storm flowage (LSCSF) is the first time MassDEP is adding performance standards to this WPA resource area. Given that regulatory updates are both time-consuming and infrequent, it is important to ensure the final regulations are protective of resource areas, public health and safety for the Commonwealth well into the future. EPA has the following comments and recommendations:

#### **(1) EPA recommends greater consideration of extreme weather and climate change.**

In order to protect public health and safety, reduce property damage, and create a more resilient coast, MassDEP should determine boundaries that more accurately account for current and future flood risk. Rather than relying primarily upon FEMA's flood insurance rate maps (FIRM) to identify LSCSF and determine its boundaries, MassDEP could instead or in addition utilize its own Massachusetts Coastal Flood Risk Model (MC-FRM), which estimates the extents and depths of near-term (2030), mid-term (2050), and long-term flood risk (2070) throughout the Commonwealth. Given FEMA's FIRMs only include historical data and use coarser modeling approaches, EPA recommends taking a precautionary approach that allows for a more thorough consideration of near-term, mid-term, and long-term flood risk (i.e., areas that are likely to become subject to future coastal storm flowage or tidal action as a result of extreme weather and climate change.) Accounting for future storm surge with sea level rise is an essential part of accurately accounting for coastal flood risks and would allow the appropriate performance

standards to be applied to areas likely to become subject to future coastal storm flowage or tidal action.

Additionally, to distinguish between areas that are currently LSCSF and areas that are likely to become subject to future coastal storm flowage or tidal action, EPA recommends defining specific additional zones. In their “Ordinance Protecting Local Wetlands and Promoting Climate Change Adaptation,” the city of Boston includes the Coastal Flood Resilience Zone (CFRZ) as “the area of land beyond the current boundary of land subject to coastal storm flowage or land subject to tidal action that the Commission determines has a reasonable probability of becoming subject to future coastal storm flowage or tidal action due to sea level rise (SLR) within approximately the next 50 years.” Defining zones beyond the LSCSF boundaries, like CFRZ, is an important opportunity to responsibly develop performance standards for resources that are likely to change over time (e.g., become part of the floodplain, as a result of extreme weather and climate change) and for resources like salt marshes and coastal dunes that may need a more adaptive management approach like facilitated migration. The performance standards that apply to such zones could be tailored to reflect differences between near-term, mid-term, and long-term coastal flood risk. As communities in the Commonwealth work to protect public health and the environment under changing conditions, it is important to anticipate these changes with a policy approach that is adaptive and can help communities more effectively plan for the future.

**(2) EPA encourages continued use of the most current tools available for precipitation projections.**

EPA commends MassDEP in updating the precipitation projections using NOAA’s Atlas 14+ approach of the 90% CI. These precipitation projections are expected to be regularly updated over time. Therefore, MassDEP should utilize the most current tools as they emerge (i.e., Atlas 15 in 2027). Atlas 15 will include projections that integrate climate change, which will be particularly important information for communities in the northeastern United States to use to inform planning for stormwater management systems, as communities work to protect public health and safety under changing environmental conditions and as they work to identify and mitigate new and future flood risks.

EPA also encourages using NOAA’s Atlas 14+ (and future versions) to address areas at particular risk to inland flooding. Similar to the LSCSF zones, EPA recommends creating zones specific to inland areas vulnerable to flooding, one example of which is discussed in Boston’s “Ordinance Protecting Local Wetlands and Promoting Climate Change Adaptation.” Many municipalities throughout the Commonwealth are developing local and regional precipitation models to identify areas within their jurisdiction that are particularly vulnerable to changes in the intensity and duration of precipitation over time, due to extreme weather and climate change. Should the Commonwealth align its own policy framework with those local and regional efforts to identify its own Inland Flood Resilience Zones (IFRZ), the Commonwealth would support and inform more efficient and effective approaches to protect public health and the environment, while helping communities more effectively anticipate changes and optimize their own public investment.

Developing an adaptive management approach to changes in precipitation intensity that is tailored to communities in New England is an important goal for these communities as they seek to protect public health and safety in areas increasingly prone to stormwater-driven flooding, as

it is well known that FEMA's FIRMs do not provide sufficient information on "in-the-pipe" or pluvial flooding associated with heavy rain events that overwhelm a community's stormwater management systems.

**(3) EPA recommends a holistic approach to identifying risk that communities face that integrates across stormwater and coastal risks as described below.**

For many communities, significant risks associated with extreme weather and climate change emerge not only from current and future flood risk associated with precipitation, stormwater management systems, sea level rise, coastal subsidence, coastal erosion, or storm surge alone, but also from these and other similar intersecting risks taken together at local and regional scales. Some entities, including the Boston Water and Sewer Commission, have begun to develop models that integrate these risks to inform their system planning, as part of their coastal stormwater discharge analysis and inundation model projects. Their efforts, for example, estimated the effect of higher sea levels on the efficiency of Boston's largely gravity-driven stormwater system, as well as the relationship between tide gates, coastal flood protection systems, and stormwater pumping and storage systems, to inform both their own systemwide planning, as well as the City's preparations for the impacts of climate change in their Climate Ready Boston program.

By creating a policy framework that identifies current and future LSCSF, i.e. LSCSF and CFRZ, as well as IFRZ, with an appropriate and flexible pathway to adjust the definitions over time as new scientific information and modeling is available, the Commonwealth may establish a consistent policy framework for all communities that creates a clear pathway for communities to identify and differentiate between various risks, encourages thoughtful and integrated consideration of the intersection of these related threats together, and allows communities to effectively mitigate risks to public safety associated with combined threats from stormwater-driven flood risks and coastal-driven flood risks, both current and future, while allowing flexibility for communities to develop approaches to addressing those risks. Without a policy framework that helps communities integrate their approaches to stormwater-driven and coastal-driven flood risk, the Commonwealth may be providing communities fewer incentives to more thoroughly and efficiently protect public safety, by preparing for the impacts of extreme weather and climate change.

EPA recommends the Commonwealth address current policy gaps between stormwater and coastal programs that currently make important public safety work like climate resilience and adaptation at local and regional scales more challenging and less effective. The Commonwealth should do this by, among other actions, more clearly integrating stormwater and coastal risk management through the establishment of additional zones like CFRZ and IFRZ based on best-available climate-informed science approaches to estimating near-term and long-term risks, in addition to updated methodologies to define LSCSF.

**(4) EPA commends the addition of "Scientific Research Project" as an activity not requiring an application under 314 CMR 9.03.**

However, EPA suggests that MassDEP consider extending the maximum timeline of scientific research projects beyond one year (or beyond two years if granted an extension). Otherwise, it

seems unlikely that a project with the aim of determining a resource area's ability to withstand climate change and sea level rise would be able to satisfy provisions 1 and 4 of the order of conditions noted in 310 CMR 10.05(12)(a) concurrently. A scientific research project's study period to establish baseline trends as well as response to experimental manipulation in the context of climate change and sea level rise (two phenomena with temporal scopes of much longer than one year) will often require more than a year's worth of study. Limiting projects to one year would be particularly difficult for projects also affected by a Time-of-Year restriction as determined by the Division of Marine Fisheries. EPA appreciates the MassDEP's scrutiny with regard to potential impacts to resource areas from experimental techniques, but also wants to encourage the facilitation of sound and robust science on novel techniques without unrealistic temporal constraints for applicants.

**(5) EPA appreciates MassDEP's inclusion of public shared use path standards.**

Consider using "native vegetation" in the language as the phrase "noninvasive native vegetation" in 310 CMR 10.24(7)(c)8 and 310 CMR 10.53(u) seems redundant. Preference for planting native vegetation found in the underlying resource area should be encouraged (i.e., reference vegetation with wetland indicator status as determined by the most recent U.S. Army Corps of Engineers National Wetland Plant List when an impacted resource area is a wetland).

Thank you for the opportunity to provide comments on the MassDEP's Draft Massachusetts Wetlands regulations (310 CMR 10.00 and 314 CMR 9.00) and Stormwater Management Handbook. If you have any questions, please don't hesitate to reach out to Rachel Croy ([croy.rachel@epa.gov](mailto:croy.rachel@epa.gov)) of the Water Quality and Wetlands Protection Section or Danielle Gaito ([gaito.danielle@epa.gov](mailto:gaito.danielle@epa.gov)) of the Stormwater Permits Section.

Sincerely,



Ken Moraff, Director  
Water Division

cc: Damien Houlihan, EPA  
Melville P. Coté, Jr., EPA  
Lynne Jennings, EPA





**Massachusetts Port Authority**  
One Harborside Drive, Suite 200S  
East Boston, MA 02128-2909  
Telephone (617) 568-1000  
[www.massport.com](http://www.massport.com)

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April 30, 2024

Lisa Rhodes, Wetlands Program Chief  
MassDEP – BWR Wetlands Program  
100 Cambridge Street Suite 900  
Boston, MA 02114  
Attn: Wetlands-401 Resilience Comments

**Subject: Wetlands and Water Quality Certificate Resilience 1.0 Draft Regulations**

Dear Chief Rhodes:

On behalf of the Massachusetts Port Authority (Massport), thank you for the opportunity to provide comments on the proposed updates to the Massachusetts Wetlands Protection Act (WPA) Regulations (310 CMR 10.00), and 401 Water Quality Certification (WQC) Regulations (314 CMR 9.00).

The Massachusetts Department of Environmental Protection (MassDEP) is advancing the proposed revisions to have state permitting of projects under the WPA and WQC regulations better address the potential effects of climate change, including sea level rise, storm surge and increased precipitation, on natural resources and the built environment. The proposed WPA revisions will promote coastal resiliency through new performance standards for projects within the coastal floodplain (Land Subject to Coastal Storm Flowage, or "LSCSF") to maintain and enhance the resource area's capacity to protect structures and properties from storm damage and support resilient shorelines. Revisions to the stormwater management standards in the WPA and WQC regulations are intended to promote resilience to increased precipitation events, storm damage and pollution from runoff. The proposed regulatory revisions include, but are not limited to, the incorporation of more recent data and rainfall estimates in evaluating stormwater management systems; better alignment of state stormwater standards and Environmental Protection Agency (EPA) stormwater permits; and, promotion of nature based stormwater management strategies in place of structural systems.

Massport is a major landowner along Boston's waterfront, including but not limited to, the Boston Harbor Shipyard and Marina in East Boston, Conley Container Terminal and Flynn Cruiseport in South Boston, and the Autoport in Charlestown. Massport is also the long-term ground tenant of the Massport Marine Terminal in the Raymond L Flynn Marine Park and owner of numerous properties in South Boston, East Boston, and Charlestown waterfront areas. Additionally, Massport owns and

operates Boston Logan International Airport, Hanscom Field in Bedford, Worcester Regional Airport, and several Logan Express facilities in metro Boston. Massport has developed its own policies and guidelines to ensure that infrastructure and the buildings we construct, as well as those of our tenants, are designed to withstand sea level rise and the impact of increased inland and coastal storm events. Massport supports MassDEP's efforts to revise the WPA and WQC regulations to better reflect impacts from a changing climate and offers the following comments regarding the proposed regulatory revisions.

310 CMR 10.36 (1)(3), Boundaries of Land Subject to Coastal Storm Flowage

The proposed revisions for Land Subject to Coastal Storm Flowage (LSCSF) are based on the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRMs), and the geographic extent of the resource area is defined by FEMA's Special Flood Hazard Areas (SFHA), which are areas subject to the 1% annual chance storm event. The SFHA is separated into Velocity Zones, Moderate Wave Action Areas (MoWA) and Minimal Wave Action Areas (MiWA), based upon wave heights. The proposed WPA regulation revisions have different performance standards for activities within the various SFHA zones, ranging from a prohibition on new development in the V-Zone, to building elevation and structural requirements for projects in zones further landward.

The existing WPA regulations do not include performance standards for LSCSF, or differentiate among flood zones within the SFHA. The proposed WPA regulation revisions establish restrictions and requirements that will have significant impacts on projects and activities within the SFHA. Massport has concern with the limits and extent of a resource area established by MassDEP being determined by FEMA and FEMA's map revision process, which lacks any state involvement or oversight. Additionally, FEMA's schedule and process for remapping coastal areas of the Commonwealth are not broadly communicated and there are limited time frames of 90-days to file technical appeals of Preliminary Flood Insurance Rate Maps issued by FEMA. Remapping without adequate notice is of particular concern in Boston Harbor as the Velocity Zone along the shoreline is very limited, and there is no Moderate Wave Action area. Changes by FEMA to these areas could potentially have significant impacts on Massport properties and assets along Boston's waterfront without adequate input from the state and stakeholders on the mapping process. Massport requests that MassDEP provide notice and guidance to all affected federal, state, and local governmental entities, and other public and private property owners, on any proposed remapping by FEMA of a subject area to ensure there is adequate capacity for review, comment, and potential appeal of draft maps.

310 CMR 10.36(4)(d), Water-Dependent Industrial Uses in Designated Port Areas

Many of Massport's waterfront properties along Boston Harbor are located within the state's Designated Port Areas (DPAs), and as part of Massport's mission, we advocate for the working port to ensure the success and growth of our water-dependent industrial tenants, including but not limited to,



our seafood processing and distribution facilities tenants. The proposed WPA regulations revisions provide exemptions from the performance standards in LSCSF for water-dependent industrial uses in DPAs. Massport is supportive of the exemption since the prohibitions on new buildings in the Velocity Zone and elevation requirements for other structures could undermine the operational viability of many water-dependent industrial uses in DPAs. Many of Massport's waterfront properties located within DPAs also have supporting and accessory uses, which provide operational and financial support for the primary water-dependent industrial uses, in accordance with the M.G.L. Chapter 91 regulations. In some cases, supporting and accessory uses are also located in the same building as water-dependent industrial uses. Massport requests that the proposed DPA exemption from the LSCSF performance standards be extended to water-dependent industrial supporting and accessory uses as well in order to prevent conflicts with the siting and location of these uses within, or in close proximity to, water-dependent industrial facilities.

#### 310 CMR 10.24(7)(c), General Provisions - Limited Projects

The proposed WPA regulations revisions to promote coastal resilience include new limited projects that grant the issuing permit authority greater discretion in the review and application of resource area performance standards. The proposed revision allowing for the elevation of existing public roadways to reduce impacts from sea level rise and coastal storms will greatly improve the resilience of the public right of way. The standard, however, is specific to roadways and requires the width of a roadway be maintained. This standard is impractical in urban environments to the extent that it does not also include other public infrastructure such as sidewalks and Harborwalk for roadways that run along the shoreline. There must also be an allowance to elevate these type of public amenities in order to maintain the public realm and ensure safe access not just for motor vehicles, but for pedestrians and bicyclists as well.

#### 310 CMR 10.36(8)(f) and (g), Redevelopment within Previously Developed Land Subject to Coastal Storm Flowage

The proposed WPA regulations revisions include performance standards for projects within LSCSF allow for the placement of fill to support the development of more comprehensive, district scale coastal flood protection structures in more urban areas where impervious surfaces have largely replaced pervious and natural landscape cover. Under these standards, fill is allowed for flood control purposes in the MiWA Zone and existing seawalls and berms may be constructed in V-Zones and the MoWA Zone of LSCSF provided the project is completed by a public entity responsible for the infrastructure, or if on private land, the project is supported by the local municipality. This provision will assist in advancing necessary coastal resilience infrastructure projects in many Commonwealth coastal cities and towns. Massport, however, believes that the proposed revision limiting these types of projects to areas that are predominately impervious will be problematic where district-scale flood protection infrastructure must incorporate existing waterfront parkland and previously developed waterfront

parcels that no longer have structures or paved surfaces. Massport owns and maintains waterfront parks in East Boston and the shoreline areas around the Logan Airport airfield is largely grassland and pervious. Massport requests that MassDEP reconsider establishing this important standard as a “stand alone” provision rather than including it under the redevelopment standards in LSCSF, as this could substantially limit the ability to advance coastal resilience infrastructure projects.

310 CMR 10.05(6)(k) and 314 CMR 9.06(6), Stormwater Management Standards

The proposed WPA and WQC regulations revisions integrate the EPA’s Small Municipal Separate Storm Sewer System (MS4) permit numeric criteria for pollutant removal rates and establish new requirements for the integration of nature based stormwater management strategies into both new construction and redevelopment projects to meet the numeric criteria. The proposed regulation revisions note that all stormwater management systems must provide Environmentally Sensitive Site Design (ESSD) and Low Impact Design (LID) techniques to treat point and non-point stormwater discharges, and traditional structural stormwater control measures should be used for only those components of the Stormwater Management Standards that cannot be met by ESSD or LID. Massport owns and operates a number of properties in marine industrial and coastal urban areas where the installation of ESSD and LID measures may not be practical or functional due to space limitations and subsurface conditions.

The proposed regulations revisions to Storm Water Management Standard 4 – Pollutant Removal (“Standard 4”), establish the numeric criteria and increase the removal of Total Suspended Solids (TSS) from stormwater discharges for new construction projects from 80% to 90%, and include a new 60% removal standard for Total Phosphorus (TP). There are also proposed new standards for redevelopment projects as well, requiring a pollutant removal rate of 80% TSS and 50% for TP. Massport understands the need for increased phosphorus removal rates for waterways with a Total Maximum Daily Load (TMDL) restriction for TP to improve water quality, however, this standard should not be required for stormwater discharges to coastal waters where there is no TMDL for phosphorus, such as Boston Harbor.

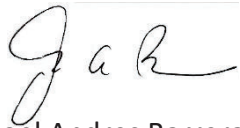
The current regulations allow redevelopment projects to meet Standard 4 to the Maximum Extent Practicable (MEP), however, the proposed regulation revisions will remove this provision. The MEP provision has been a sensible standard for redevelopment projects, particularly in dense urban and coastal areas where there may not be adequate space and infiltration conditions for the level and scale of stormwater infrastructure, including ESSD and LID measures, required with the regulatory revisions. Massport requests that MassDEP should maintain the current MEP standard for projects in industrial and urbanized areas, and not have a comprehensive phosphorus removal standard for waterways that do not have existing water quality issues associated with the pollutant.

April 30, 2024

Thank you for your consideration and please do not hesitate to contact me at (617) 568-3705 or at [jbarrera@massport.com](mailto:jbarrera@massport.com) if you wish to discuss any of our comments.

Sincerely,

**Massachusetts Port Authority**

A handwritten signature in black ink, appearing to read 'J a B', with a horizontal line underneath.

Joel Andres Barrera  
Director, Strategic and Business Planning  
Massachusetts Port Authority

cc: L. Burdi, A. Hargens, J. Morris, B. Washburn, C. Busch/Massport; T. Soleau/CZM



Maura Healey, Governor  
Kimberley Driscoll, Lieutenant Governor  
Monica Tibbitts-Nutt, Secretary & CEO  
Jeffrey DeCarlo, Administrator



VIA EMAIL

April 30, 2024

MassDEP - BWR Wetlands Program  
Attn: Wetlands – 401 Resilience Comments  
100 Cambridge Street, Suite 900  
Boston MA 02114

Re: Wetlands - 401 Resilience Comments

Dear MassDEP:

Please find enclosed MassDOT Aeronautics Division (MassDOT Aeronautics) comments to the draft proposed amendments to the Massachusetts Wetlands Protection Act (WPA), 310 CMR 10.00 and the Massachusetts Department of Environmental Protection (MassDEP) 401 Water Quality Certification (401 Permit) as regulated under 314 CMR 9.00. MassDOT Aeronautics' comments on the draft proposed amendments to the WPA are presented first, followed by comments on the draft proposed amendments to the 401 Permit, as shown below.

Specific excerpts from the proposed amendments are found below in ***bold italics*** text, followed by the MassDOT Aeronautics comment in regular text.

***The soil evaluation shall include a site investigation and shall consist of identifying the U.S. NRCS Soil Series, NRCS soil texture, the Hydrologic Soil Group, depth to the Seasonal High Groundwater Elevation, and the saturated hydraulic conductivity of the soil.***

MassDOT Aeronautics request further specification on the requirements for the "site investigation" of soil.

***MassDOT may use the Highway Specific Considerations, including the Macro-Approach and the Watershed-scale Accounting Method, to comply with or be presumed to comply with applicable Stormwater Management Standards. MassDOT will be presumed to comply with applicable Stormwater Management Standards when applicable Highway Specific Considerations are implemented in accordance with Section 5.7 of the Massachusetts Stormwater Handbook [2023 Edition].***

This category should also apply to airports.

***A Long-term Pollution Prevention Plan will be required at the completion of each project subject to Stormwater Standards 4, 5, 6 and 10.***

At facilities such as airports, MassDOT Aeronautics has concerns that there will be multiple LTPPPs at facilities such as airports that will require resources and be costly to maintain. MassDOT Aeronautics requests that MassDEP consider that LTPPPs for individual projects be incorporated into the existing facility SWPPP.

***Specific category applied to existing public roadway maintenance.***

This category should be applied to airports.

***Additional requirements are placed for building in flood zones.***

A note should be added that this shall apply unless it conflicts with an aviation safety standard.

***The Table on page 74 detailing setback requirements establishes proximity limitations that "any component of a stormwater management system" can be to a protected resource.***

It is the opinion of MassDOT Aeronautics that these new setback requirements should apply only to structural control measures ("SCM's") for new development projects and should not apply to existing stormwater management systems.

Thank you for the opportunity to comment.

Sincerely,

A handwritten signature in cursive script that reads "Jeffrey DeCarlo".

Jeffrey DeCarlo, Ed.D., PMP, ATP  
Administrator  
MassDOT Aeronautics Division



Maura Healey, Governor  
Kimberley Driscoll, Lieutenant Governor  
Monica Tibbitts-Nutt, Secretary & CEO  
Jonathan L. Gulliver, Highway Administrator



April 30, 2024

Bonnie Heiple  
Commissioner  
Massachusetts Department of Environmental Protection (MassDEP)  
100 Cambridge Street, Suite 900  
Boston, MA 02114

**Re: Wetlands-401 Resilience Comments**

Dear Ms. Heiple,

On December 22, 2023, MassDEP released draft revisions to the Massachusetts Wetlands regulations (310 CMR 10.00) and corresponding revisions to the 401 Water Quality Certification (WQC) regulations (314 CMR 9.00), in addition to a new version of the *Massachusetts Stormwater Handbook*. The Massachusetts Department of Transportation (MassDOT) Highway Division reviewed the materials and prepared this letter to share its comments on the proposed revisions.

As owner and operator of the largest separate storm sewer system in the state, MassDOT has extensive experience in the permitting, design, and construction of Stormwater Management Systems, creating a unique opportunity for MassDOT to provide feedback based on experience gained through a wide range of projects over many years. **MassDOT supports MassDEP's mission to improve the Commonwealth's resilience to impacts of climate change and restore and maintain the physical, chemical, and biological integrity of the Commonwealth's waters, but in a way that provides options and flexibility to a project site so that realistic progress can be made.**

As currently proposed, the regulations will pose significant impacts by adding scope, budget, and timeline delays to current and future MassDOT projects, even those with no additional impervious cover. Approximately 43% of MassDOT projects (representing \$520 million programmed for 2025) are roadway improvement projects (e.g., intersection upgrade for safety improvements, bridge replacement) that would now require stormwater treatment that provides 80% total suspended solids (TSS) and 50% total phosphorus (TP) reduction. If this level of stormwater treatment could not be provided at the project site, then off-site mitigation would be required, essentially turning one project into two projects, and delaying safety and accessibility improvements in the process. This proposed change will increase project timelines, costs, and complexity, likely disincentivizing these important safety and mobility projects, especially within constrained urban cores and Environmental Justice communities.

Critical maintenance work for MassDOT assets including the roadways, drainage system, stormwater control measures (SCMs), and culverts is included in the regulations

requiring varying degrees of compliance. For example, activities defined as Maintenance of an Existing Public Roadway (e.g. resurfacing and repaving) must meet the Stormwater Standards to the maximum extent practicable (MEP), requiring extensive permitting and documentation for basic, every-day activities needed to maintain the integrity of built assets. Requiring permitting to maintain existing SCMs and culverts disincentivizes and unnecessarily complicates this critical work that supports water quality and flood control.

In addition, the proposed Land Subject to Coastal Storm Flowage (LSCSF) regulations will significantly impact MassDOT in its core mission to provide transportation infrastructure that is safe, reliable, robust, and resilient, which can strengthen the State's economy and improve quality of life for **all**. Many of the Commonwealth's coastal municipalities have a significant portion of their communities within LSCSF, including residential, commercial, and industrial resources. The proposed LSCSF regulations, as currently structured, would unintentionally cripple the implementation of community enhancement projects such as roadway improvements, accessibility projects, park projects, and resiliency and flood damage prevention projects. In particular, the significant constraints imposed by the proposed LSCSF regulations and the associated ambiguity of the compliance pathway will complicate, and even prevent, the implementation of a broad suite of engineering solutions to prevent flooding and storm damage within the communities that need them the most.

For MassDOT to comply, regulations need to be protective of the environment, while simultaneously allowing projects to fulfill the Department's mission of providing transportation infrastructure that is safe, reliable, robust, and resilient. MassDOT needs to be able to improve existing roadways and make them safer for drivers, pedestrians, and bikers without significant schedule delays, permitting time of variances, or budget increases that will create barriers to project execution or halt a project completely.

In summary, MassDOT's comments on the MassDEP Wetlands and 401 WQC regulations are based on the following needs:

- **Supportive of MassDOT Highway Projects** – need regulations to support MassDOT highway projects and not disincentivize them from occurring in the first place (e.g., due to potential for land takings, high cost). As proposed, the regulations would create barriers to the following types of projects:
  - **Improvement Projects** (i.e., widening less than a single lane, adding shoulders, correcting substandard intersections, and improving drainage systems).
  - **Maintenance Projects** (e.g., guard rail replacement, slope repair).
- **Flexibility** – need to remove overly prescriptive requirements that do not allow for creative options, new ideas, or refined approaches.
- **Practicality** – need regulations to be attainable and reasonable so that MassDOT can comply.



- **Simplicity** – need regulations to be straightforward and not require a complex or complicated process that does not provide an improved result.
- **Clarity and Consistency** – need clear language that does not create ambiguity and that also aligns with and is consistent with other regulations.

MassDOT's needs listed above are woven throughout its comments, which are organized by topic as follows:

- Redevelopment and Improvement Projects
- Maintenance Activities
- State Highway Specific Considerations
- Stormwater Standards and Environmentally Sensitive Site Design (ESSD)
- Definitions, Clarifications, and Setbacks
- Coastal Resource Area Comments

Please note that comments under the Stormwater Standards and ESSD heading apply to both the Wetlands and 401 WQC regulations. All other comments apply only to the Wetlands regulations.

MassDOT believes its comments and suggestions would provide the flexibility, practicality, simplicity, and clarity necessary for project execution and compliance while supporting MassDEP's goals to improve the State's resilience to impacts of climate change, in addition to restoring and maintaining the integrity of its water resources.

MassDOT welcomes the opportunity to discuss these comments further with MassDEP and strongly recommends that MassDEP establish a working group, including community leaders and public and private sector engineers and scientists. This working group would promote sharing perspectives from diverse backgrounds and working together on regulatory revisions with the goal of improving water quality and resiliency in the Commonwealth through achievable progress.

Sincerely,



Carrie Lavallee, P.E.  
Deputy Administrator and Chief Engineer

Enclosure: MassDOT Wetlands-401 Resilience Comments



## **Redevelopment and Improvement Projects**

Redevelopment projects, including “improvement” projects, comprise the majority of MassDOT projects. These projects include critical safety and accessibility improvements for roads and bridges owned by MassDOT, as well as MassDOT-executed municipal projects (i.e., where MassDOT funds and/or constructs the project). The proposed regulations will have significant impact to the cost, scope, and timelines of these projects and will ultimately disincentivize many of them from happening, resulting in less improvements for the Commonwealth. MassDOT requests that the revised regulations maintain and encourage flexibility for roadway Redevelopment project compliance.

### **Practical Compliance for Improvement Projects Under Standard 7**

1. “Redevelopment” projects are defined to include “improvement” projects that widen less than a single lane (including adding shoulders, correcting substandard intersections, and improving existing drainage systems). Under current regulations, improvement projects must meet water quality requirements (Standard 4) to the MEP, but the proposed changes to the regulations will require full water quality compliance for Redevelopment projects (Standard 7) including treating the entire project’s impervious footprint. This change is inconsistent with the Environmental Protection Agency (EPA) National Pollutant Discharge Elimination System (NPDES) General Permit for Stormwater Discharges from Small Municipal Separate Storm Sewer Systems (MS4), which requires these types of projects to provide water quality treatment to the MEP, as opposed to requiring full compliance. MassDEP’s proposed change will impact approximately 43% of MassDOT projects (approximately \$520 million annually projected for 2025) and will increase project timelines, costs, and complexity, likely disincentivizing these important safety and mobility projects, especially within constrained urban cores and Environmental Justice communities. MassDOT and municipalities will both shoulder the burden of this impact since about 50% of these improvement projects support municipal road and bridge improvements. MassDOT strongly requests that MassDEP maintain the current requirement for these projects to meet water quality requirements to the MEP (included in 310 CMR 10.05(6)(m)).
2. Under MassDEP’s proposed Standard 7, if the water quality performance standard cannot be met fully on-site, the permittee must now provide treatment off-site. Off-site mitigation is not a viable solution for MassDOT, as it essentially turns one Redevelopment project into two and would entail an overwhelming number of property investigations and land takings (assuming that there are even suitable parcels for stormwater treatment). This level of effort would hinder MassDOT from executing its core mission as a transportation agency that is responsible for taxpayers’ money and instead refocus the Department on land acquisition for stormwater mitigation. Additionally, if off-site stormwater infrastructure was built, it would potentially require MassDOT to perform inspections and maintenance outside of its corridors, which would increase the complexity and cost for its operation and maintenance (O&M) program. MassDOT-executed municipal projects would be even further impacted due to the complexity of finding municipal-owned land for off-site mitigation, competing with other town-wide interests. This provision will cause significant cost increases and schedule delays, which may lead to lost funding opportunities. Ultimately, these impacts will

disincentivize projects that are relatively minor in nature and in stormwater impact but provide major benefits to connectivity, accessibility, and safety. MassDOT requests that the proposed off-site mitigation requirement for MassDOT be removed, and MassDOT meets the water quality requirements for Redevelopment projects to the MEP on site.

3. MassDOT agrees that Redevelopment projects should improve existing conditions. MassDOT requests that improving existing conditions should be demonstrated more broadly than exclusively defined as “reducing the peak discharge rate, increasing stormwater recharge, and removing pollutants such as TSS and TP from the discharge.”
4. The proposed regulations include a requirement for a detailed written alternatives analysis when certain provisions, already allowed in the regulations, are used. The development of a written alternatives analysis would be extraneous work, for the sole purpose of documentation, which would not change the final design. It would complicate the permitting process and be excessive as nearly every MassDOT project would trigger this additional documentation to utilize already supported approaches. MassDOT requests that written alternative analyses be reserved for variances to the requirements.

### **Definition of Improvement Projects**

5. MassDOT requests that the definition of “Improvement of an Existing Roadway” be revised so a project may be considered an improvement project if it repairs, reconstructs, or replaces a previously authorized infrastructure while improving it (e.g., add bicycle and/or pedestrian accommodations).
6. The definition of “Redevelopment” includes “Remedial projects specifically designed to provide improved stormwater management, such as projects to separate storm drains and sanitary sewers” which means that these types of projects require full compliance with the water quality requirements of Standard 7 for the project’s entire impervious area. This would require a disproportionate amount of mitigation for a project designed specifically for improvement. These remedial projects are, by definition, minor projects designed for improvement, and therefore should not be subject to meeting the water quality standards fully. MassDOT requests that these projects be included in the list of projects to meet requirements to the MEP in accordance with 310 CMR 10.05(6)(m).

### **Shared Use Paths (310 CMR 10.24(7)(c)(8))**

7. 310 CMR 10.24(7)(c)(8) states that a proposed Shared Use Path route outside of the existing rail corridor may be approved under the limited project provision if the different alignment is advantageous to reduce Resource Area alterations. MassDOT requests that MassDEP revise this provision to include proposed Shared Use Paths that may deviate from the footprint of the original rail corridor due to other constraints beyond solely Resource Area implications.
8. MassDOT requests that the provision for Shared Use Path projects listed in the proposed 2023 MassDEP Stormwater Handbook Section 5.6 as being required

within the Notice of Intent (NOI) be clearly required to the MEP with the understanding that constrained right-of-way (ROW)s will present challenges:

- a. MassDOT requests that the requirements set forth in the proposed 2023 MassDEP Stormwater Handbook, regarding the suitable pervious area that stormwater runoff is directed to, allow for flexibility in the condition, size, and location based on site conditions and receiving Resource Area. These requirements are unlikely to be able to be met within constrained former railroad ROW corridors.
  - b. MassDOT requests that the 5% slope requirement for suitable pervious areas be to the MEP due to the nature of the former railroad bed.
  - c. MassDOT requests that designers have flexibility in the approach of how to meet stormwater performance standards to the MEP and remove the prescriptive means and methods related to SCMs to be utilized for these projects.
9. MassDOT requests removing the Long-Term Pollution Prevention Plan (LTPPP) requirement for Shared Use Paths since the use (pedestrian and non-motorized) does not merit the need for LTPPP, which are intended to address source controls such as snow removal practices, fertilizer use, solid waste storage, etc.
10. MassDOT requests removing the requirement of a written alternatives analysis for Shared Use Paths as it would be unnecessary for these projects that are typically highly constrained, and aimed at increasing accessibility and mobility and improving previously developed and underutilized corridors.

## **Maintenance Activities**

MassDOT is committed to maintaining its assets including both roadway elements and stormwater features. Maintenance is critical to cost-effective, long-term function of these assets and subsequent public safety, mobility, water quality, and flood control. The proposed regulations must provide a clear and practical pathway for MassDOT's necessary maintenance activities and must not disincentivize maintenance from being completed.

### **Maintenance as Minor Activity**

11. MassDOT requests expanding the Minor Activities under 310 CMR 10.02(2)(b)2, which do not require an NOI filing, to include the following critical roadway maintenance needs:
  - a. Americans with Disabilities Act (ADA) Retrofit Projects at existing transportation facilities and walkways.
  - b. Fencing, provided it will not constitute a barrier to wildlife movement including roadway guardrail, cable barrier, and wire rope safety barrier; stonewalls; stacks of cordwood.
  - c. Removal of shrubbery, branches, or other vegetation management required to maintain state highway layout clear zones and the visibility of road signs and signals.
12. MassDOT requests that a new definition for "Maintenance of an Existing Public Roadway" be used within 10.02(2)(b)(2)(p) to consistently define roadway maintenance activities as Minor Activities.
13. MassDOT requests that maintenance of Stormwater Management Systems (such as drainage swales) be included as Minor Activities related to "Public Shared Use Path vegetation cutting for public safety and pavement repair and resurfacing in the Buffer Zone and Riverfront Area" under 10.02(2)(b)(s).
14. MassDOT requests that 10.02.(2)(b)(v) section remove the provision that prohibits applications of asphalt mulch or coal tar-based pavement sealants from being considered Minor Activities.
15. MassDOT requests MassDEP to specify clearly in the regulations that "Maintenance of an Existing Public Roadway" is not considered an "alteration."

### **SCM Maintenance**

16. MassDEP is not proposing a substantive change to 10.02(2)(c); however, in order to encourage and expedite maintenance of Stormwater Management Systems, MassDOT requests the provision that allows maintenance activities for Stormwater Management Systems without a wetlands NOI be made more accessible by removing the construction date limitation (i.e., must have been constructed by 1996) and removing the requirement that the system was proposed in an NOI. Roadway Stormwater Management Systems, including conveyances and

stormwater detention and treatment facilities, have a wide range of built dates, with many built the year of original highway/roadway construction. Stormwater Management Systems are necessary in the roadway setting to remove runoff from the roadway surface to improve safety and minimize the risk of flooding. Maintenance of these systems is essential for the safety and durability of MassDOT's roadway network and putting an arbitrary date limitation creates more obstacles and costs to maintaining these systems. In addition, MassDOT requests that all Stormwater Management Systems in the roadway setting, regardless of construction date, do not constitute Wetland Resource Areas or Buffer Zones, and that the definition of "alter" be expanded to clarify that conducting maintenance to existing drainage infrastructure, including SCMs in the roadway setting, is not an alteration.

## **State Highway Specific Considerations**

MassDOT appreciates that State Highway Specific Considerations are granted for MassDOT projects, in addition to MassDOT-executed municipal projects, as described in the proposed 2023 MassDEP Stormwater Handbook in Chapter 5.7. These specific approaches are critical for MassDOT to perform work and achieve the core mission of providing safe, reliable, robust, and resilient transportation infrastructure to the Commonwealth. MassDOT requests the following changes to make these Highway Specific Considerations further aligned with MassDOT's needs and abilities.

17. The introductory paragraph of Chapter 5.7 states that these Highway Specific Considerations do not apply to other transportation projects including "footpaths and bike paths." MassDOT does numerous projects per year, including footpaths and bike paths, and therefore requests that such projects be included in these considerations to provide consistent requirements across all MassDOT projects.

### **Consideration 1: TSS/TP Treatment Credit and Recharge Credit for MassDOT Linear Practices**

18. MassDOT requests that requirements for the Bioretention Linear Practice do not include a prescriptive ponding depth, and instead, align with the definition of water quality volume for other linear practices, which defines ponding depth as "below the elevation of the berm crown for each pool." This request is critical in order to promote the use of filtering practices when infiltration is not possible, providing flexibility during the design process.
19. MassDOT requests that MassDEP more generically specify that Bioretention Linear Practice contain a carbon source in lieu of a prescriptive list of materials (i.e., "triple shredded wood chips, biochar, or drinking water residuals blended into the bioretention soil mix that follows the MassDEP design specification for bioretention areas") that may not be the most cost effective or optimal for treatment. This request will promote flexibility in design as research progresses.

### **Consideration 2: Use of MassDOT Linear Practices for Peak Runoff Rate Reduction**

20. MassDOT requests that MassDEP remove the prescriptive requirements for slopes and ponding depths for Bioretention Linear Practices under this Highway Specific Consideration. These limiting requirements make construction of the SCM impractical/infeasible in most scenarios, thereby negating the benefit of this Highway Specific Consideration.
21. MassDOT requests changing the requirement for Bioretention Linear Practices that "ponded water shall be held no more than 24 hours" to "volumes associated with peak flows shall be held no more than 24 hours" to differentiate the point that peak rate storage must be made available for subsequent storms while water quality volumes can be drained over longer periods of time. This change would be consistent with, and supportive of, the recharge and water quality requirements which require that ponding drawdown is less than 72 hours.



### **Consideration 3: MassDOT Deep Sump Catch Basins Inlet Grate Specifications**

22. In the last bullet under Conditions regarding open curb inlets, MassDOT recommends these features be allowed to receive TSS pretreatment credit with the provision that they contain 4-foot sumps and hoods. The allowance of TSS credit when providing vertical curb inlet grates is an impractical measure, as they are not an approved MassDOT standard or specification, would not be simple to retrofit for existing catch basins, nor are they a supported grate type presented in the recently released 4<sup>th</sup> edition of the Federal Highway Administration (FHWA)'s Hydraulic Engineering Circular No 22. They would impede street sweeping, catch basin cleaning, and maintenance, and would change the flow characteristics of the inlet system, potentially increasing clogging and causing flooding. These grates have not been vetted as a practical or effective measure. MassDOT requests that the requirement of vertical curb inlet grates to receive TSS pretreatment credit be removed and replaced with 4-foot sumps and hoods.
23. In the second to last bullet under Conditions, regarding catch basins designed for pretreatment, MassDOT recommends replacing the outdated reference to the 2004 MassDOT (MassHighway) Stormwater Handbook with a direct requirement for a deep sump, defined as a minimum of 4 feet between the bottom of structure and invert of outlet pipe. At a minimum, MassDOT requests MassDEP reference the more current 2023 MassDOT Stormwater Design Guide (Section 4.1.1, page 4-81), which defines a minimum sump depth of 4 feet for a deep sump catch basin.

### **Consideration 4: Deep Sump Catch Basin Hoods**

24. MassDOT requests removing the requirement that "drainage from Impervious Surfaces of adjacent land uses shall not be directed to the public drainage system". Although this is a goal of MassDOT, it is not a practical requirement in most situations where the roadway is the low point and serves as the collection system. These private areas cannot be regraded with runoff redirected in all cases.
25. MassDOT requests that MassDEP reference the more current 2023 MassDOT Stormwater Design Guide (Section 4.1.1, page 4-82) for the list of project locations requiring hoods.

### **Consideration 5: Operation and Maintenance Approach**

26. MassDOT appreciates the allowance of a program-wide operations and maintenance plan for use in satisfying Standard 9. MassDOT is currently developing a program-level operations and maintenance plan that will support its MS4 O&M requirements in addition to Standard 9's objectives. The goal of the plan is to identify approaches including inspection and maintenance frequencies that are cost effective and practical for MassDOT to execute and will ensure MassDOT's stormwater assets are performing as intended. The current MS4 Permit and the anticipated MassDOT Transportation Separate Storm Sewer Systems (TS4) Permit allow permittees to develop a plan that works within their organization so long as simple performance metrics are achieved, tracked, and reported on work performed. MassDOT requests that this Highway Specific Consideration be aligned

with this approach by more simply requiring MassDOT to develop and implement a programmatic plan that is supportive of maintaining catch basin and SCM performance and for MassDOT to track and report its inspection and maintenance activities annually to achieve compliance with Standard 9.

### **Consideration 6: Macro-Approach**

27. MassDOT requests eliminating the requirement of a written alternatives analysis when using the Macro Approach. Requiring a written alternatives analysis for use of this entrenched MassDOT practice would create extraneous work for both MassDOT and conservation commission reviewers when the outcome of the design would remain the same.
28. MassDOT requests that MassDEP clarify definitions and language around the Macro Approach and “off-site mitigation.” In the draft regulations, MassDEP defines the Macro Approach as when standards are met at the “project locus (lot level)” versus the “project site (limit of work)” level. The reference to a “lot” does not apply to MassDOT’s properties as our property boundaries were developed in a way that does not adhere to drainage or watershed boundaries. MassDOT’s definition of the Macro Approach, since it has been in practice and supported in the 2008 Massachusetts Stormwater Handbook, is that a MassDOT project may demonstrate compliance at the project site level within a subwatershed versus outfall by outfall. Off-site mitigation is separate from the Macro Approach. Please see the MassDOT Stormwater Design Guide for more information regarding MassDOT’s current, in-practice approach for use of the Macro Approach.
29. When using the Macro Approach for complying with the water quality requirements for Standards 4 and 7, MassDOT requests using pollutant load instead of areas to calculate weighted averages and demonstrate compliance, due to varying loading rates of land uses and land cover types. This would be consistent with accounting methodologies to meet MS4 Permit requirements which have been in place by MassDOT for years.
30. When specifying areas where the Macro Approach cannot be used, MassDOT requests changing the restriction of discharges to all Critical Areas to only restrict discharges to Vernal Pools. Vernal Pools are the Critical Areas of concern that would be impacted by meeting discharge volumes and quantities at each outfall versus project site level. In addition, MassDOT requests specifically identifying Net Groundwater Depletion of greater than 25%” for the Sustainable Water Management Initiative watersheds since these are the watersheds that would be critically impacted. Not specifying these specific watersheds would create confusion and inconsistent interpretation.

### **Consideration 7: Pollutant Removal via the Watershed-scale Accounting Method for Redevelopment**

31. The Watershed-Scale Accounting Method does not reflect an agreed upon approach that would be feasible and practical for MassDOT. As stated in Comment #2, off-site mitigation is not a viable solution for MassDOT as it introduces additional planning, permitting, potential land-takings, and more complex, long-term operation and maintenance. MassDOT requests that, instead



of providing Consideration #7, MassDEP allow both MassDOT projects and MassDOT-executed projects that meet the Redevelopment definition to meet the water quality standard to the MEP.

### **Additional Recommended State Highway Specific Considerations**

32. MassDOT requests that MassDOT-executed New Development and Redevelopment projects meet Standard 2's requirement to match pre- and post-development peak rates for the 100-year event to the MEP. In accordance with MassDOT's Project Development and Design Guide, stormwater conveyance systems on roadways are sized for the 10-year event, and therefore on-site flooding is expected for larger events. Developing detention systems to match peak rates for the 100-year event would be unreasonable.
33. MassDOT has been proactively addressing its stormwater discharges to impaired waters and waters with Total Maximum Daily Loads (TMDLs) (i.e., numeric pollutant targets in a watershed) since the inception of the MassDOT Impaired Waters Program in 2010. Given the extent of the program, MassDOT requests that the Impaired Waters Program serve as compliance with Standard 11 and annual progress and reporting would be available through the MassDOT MS4 Annual Report.

## Stormwater Standards and ESSD

It is crucial that the Stormwater Standards provide practical pathways towards achieving resource protection goals throughout the Commonwealth, which require a focus on the outcome of stormwater management strategies as opposed to prescriptive methods that may not be feasible or effective at all project sites. In attempts to align with the MS4 Permit, the proposed Stormwater Standards still contain differences between the two sets of regulations, creating confusion and further continuing two distinct approaches. Additionally, MassDOT appreciates the inclusion of ESSD credits but requests that they include sufficient flexibility to make them more practical and widely implementable. The following comments aim to reconcile the proposed regulations with these ideas.

### Standard 2

34. MassDOT agrees that the proposed 2023 MassDEP Stormwater Handbook should adopt use of the National Oceanic Atmospheric Association Atlas (NOAA) 14- Precipitation-Frequency Atlas of the U.S. Volume 10, Version 3.0: Northeastern States (NOAA Atlas 14) for hydrologic and hydraulic analyses required under Standard 2. The NOAA Atlas 14 precipitation estimates are based on frequency analysis of partial duration series using data up to 2015 that covers the New England and New York region. This dataset is more robust than the current dataset used for Technical Paper No. 40 (TP-40). TP-40 was published in 1961 and is based on historical data from approximately 50 years of observations and does not reflect recent rainfall estimates. Along with using the NOAA Atlas 14, MassDOT requests that MassDEP incorporate the flexibility to adopt any data that supersedes NOAA Atlas 14 in the future, in order to accommodate future atlases published by NOAA/United States Geologic Survey (USGS).
35. MassDOT requests that compliance with Standard 2 may be demonstrated by analyzing the influence of the project's peak discharge rates on the peak flows of receiving waters and demonstrating that there is no net increase in downstream peak rates.
36. MassDOT has a vested interest in using the appropriate precipitation data for designing its infrastructure. Appropriate design will help protect MassDOT's public investments, reduce damage due to flooding or scour, and maintain a safe transportation network. MassDOT regularly utilizes rainfall data for design and analysis of its infrastructure including bridges, culverts, and drainage conveyance systems. Although some of these analyses are outside jurisdiction of the Wetland Protection Act (WPA) or Stormwater Management Standards, the adoption of using the upper confidence of NOAA Atlas 14 multiplied by 0.9 (also known as NOAA Atlas 14+) in State regulations could make this the default engineering standard for practitioners. MassDOT could be requested to use NOAA Atlas 14+ for these analyses during regulatory reviews even if it is outside the jurisdiction of the Stormwater Standards. This has the potential to add significant, and potentially unwarranted, construction costs to bridges, culverts, and drainage conveyance systems. MassDOT requests MassDEP review how use of NOAA Atlas 14+ may affect the design approaches for hydraulically dependent structures (e.g., bridges,

culverts). Additionally, please refer to Comment 34 for MassDOT's request for flexibility.

### **Standard 3**

37. The definition of Saturated Hydraulic Conductivity Test in the proposed regulation states "A Title 5 percolation test, as defined at 310 CMR 15.002, is not an acceptable Saturated Hydraulic Conductivity Test for purposes of stormwater management." Title 5 percolation tests are a current standard practice for purposes of stormwater management and this change would cause unnecessary complexity for this process. MassDOT requests restoring Title 5 testing as one of the alternatives for field testing.
38. It is infeasible to require 1-inch of recharge across all soil types (excluding Hydrologic Soils Group D soils). The natural soil infiltration rates greatly impact the quantity of annual recharge at a site, and matching annual recharge is the goal of Standard 3. The ability of the SCM to provide recharge is greatly impacted by its underlying soils, as indicated in the variability of volume reduction in the EPA's SCM Performance Curves. Requiring 1-inch recharge on all sites would require large and costly structural SCMs, the opposite of what low impact development promotes. The example that MassDEP provided in previous presentations titled "1-inch Recharge Can Be Achieved in All Soils" was based on a SCM that has the same footprint as its contributing watershed. This would essentially apply to porous pavement only.
  - a. MassDOT requests that the recharge volume requirements be set based on the soil types of the site and not be universal for all sites.
  - b. Requiring recharge in soils with permeabilities as low as 0.01 inch/hour would require excessively large SCMs, which is unrealistic and impractical. Therefore, MassDOT requests that the lower limit for infiltration stay at 0.17 inch/hour.
39. MassDEP explained that the update of this standard to require 1-inch of recharge is based on alignment with the MS4 Permit. However, the MS4 Permit requires treatment through an optional retainment of 1-inch of runoff volume, not 1-inch of recharge. The MS4 Permit provides the 1-inch of retainment as an option for how to meet the post-construction treatment requirements. Under the MS4 Permit, the designer may choose to use the EPA curves for meeting the treatment requirements in lieu of demonstrating retainment. By providing options, designers are allowed more flexibility to provide the right approach for treatment of the site and to maximize the areas that can provide treatment. The proposed revisions to this standard are not in alignment with the MS4 Permit.
40. Standard 3 and the proposed 2023 MassDEP Stormwater Handbook discuss compliance as matching annual runoff volumes; however, similar to the 1-inch requirement, they specify a volume based on precipitation, and they do not allow for site-specific recharge based on soils and site conditions. Failing to consider site-specific conditions would result in recharge requirements that do not account for existing conditions. MassDOT requests that the target annual recharge volume be based on estimated annual average recharge of the site.

- a. Additional Note: The proposed 2023 MassDEP Stormwater Handbook also references an automated spreadsheet provided by MassDEP in the "2022 Edition" of the Massachusetts Stormwater Handbook which does not exist.
- 41. MassDOT requests that MassDEP use the EPA SCM Performance Curves to support the recharge requirement since EPA's infiltration SCMs have curves for annual average runoff reduction (recharge) based on continuous simulation modeling.
- 42. MassDOT requests the allowances for when this standard can be met to the MEP include sites with high groundwater where meeting mounding requirements and drawdown times may be infeasible.
- 43. The new requirements for subsurface investigation for infiltration SCMs have more than doubled the number of test locations required. Additionally, they no longer allow the use of Rawl's Rate for infiltration/dewatering calculations, instead requiring in-situ hydraulic conductivity testing at every test location. This will have serious financial impacts to MassDOT projects. For example, for the SCMs included in the Cape Cod Bridges Program, 66 borings and 100 test pits are required in accordance with the 2008 manual, while the proposed 2023 MassDEP Stormwater Handbook would require 241 borings with in-situ testing and 241 test pits for the same number of SCMs. In particular, one test location every 50 feet for linear infiltration and two borings/test pits per test location is excessive and unnecessary to characterize soils for permeability. MassDOT requests restoring the previous requirements for infiltration testing and allowing the use of Rawls Rates.
- 44. The elimination of a soil evaluator as a Competent Soil Professional provides undue burden and costs in performing the required soil analysis to support SCMs, especially in light of the increased testing requirements. MassDOT requests that MassDEP maintain flexibility in this requirement and allow professionals who have performed soil evaluation training to obtain the soil evaluator status and continue to qualify as a Competent Soil Professional.

#### **Pollutant Reduction for Standard 4, Standard 5, and Standard 6**

- 45. Use of both water quality volume and pollutant percent reduction as targets for Standard 4 creates confusion and incongruence with the MS4 Permit. The treatment requirements for this standard include both the 90% TSS / 60% TP and 1-inch water quality volume requirements. MassDOT requests simplifying the requirement to only require the pollutant removal standard to remove confusion, maintain consistency with the MS4 Permit, and allow for more flexibility to the designer while still being protective of receiving waters.
- 46. To remove confusion regarding the two water quality accounting systems (i.e., pollutant percent removal and 1-inch water quality volume) to meet Standard 5 Land Uses with Higher Potential Pollutant Load and Standard 6 Critical Areas, MassDOT requests that pollutant removal targets are solely used and the 1-inch requirement is eliminated. Using the pollutant percent removal to show water quality treatment allows for more flexibility to the designer while still being protective of receiving waters.

## **Standard 6**

47. Standard 6 indicates that “Unless a discharge to a Cold-water Fishery is infiltrated or an ESSD practice measure is used, the temperature of the stormwater shall not exceed 68 degrees Fahrenheit at the discharge point to ensure that there will be no thermal impact to the existing ambient temperature of the receiving water.” There is no guidance on how an applicant could ensure that the temperature would never exceed this threshold. MassDOT requests the regulations clearly state that as long as the discharge is infiltrated or an ESSD practice is included in the design, then the applicant will not have to further prove that this temperature will not be exceeded.

## **Standard 8**

48. Standard 8 indicates that no post-construction SCMs may be used to manage construction period runoff. MassDOT requests that, to accommodate constrained sites, construction period runoff may be allowed to be directed to post-construction SCMs provided that the SCM is cleaned, restored, and/or rebuilt to its specified condition prior to project completion.
49. 310 CMR 10.05(6)(k)8 and 314 CMR 9.06(6)(a)8 require the submission of a construction period erosion, sedimentation, and pollution prevention plan with the NOI permit application. MassDOT advertises construction contracts with secured permits to Contractors, who are then selected to build the project and maintain compliance with permits until project completion. The Contractor is responsible for developing and managing the erosion and sedimentation control plan and maintains responsibility and liability for environmental compliance. MassDOT does not develop the project erosion and sedimentation control plan, as it would allow room for the contractor to share responsibility and compliance with MassDOT, thereby creating opportunity for the Contractor to shift responsibility of compliance to other parties. It is standard practice to fully task a Contractor with environmental compliance responsibility and liability, as they are the entity with daily operational control of a site. MassDOT requests that MassDEP modify this language to allow the option to submit this plan during the pre-construction phase of a project, once the Contractor has been selected.

## **Standard 11**

50. The regulations include a new standard for impaired waters with TMDLs that present a limited prescribed list of potential SCMs for treatment when discharging to these waters (Table 2-6 in the proposed 2023 MassDEP Stormwater Handbook). There is no documentation that this change has any scientific backing, and the SCM list is more restrictive than the MS4 Permit’s list of SCMs. MassDOT has been selecting and implementing stormwater controls to address impaired waters since 2010 based on EPA’s guidance and has often worked with EPA to drive innovation and flexibility in SCM design and implementation. MassDEP’s adoption of a more limited list of control measures prevents flexibility, optimization, and cost savings for MassDOT and other permittees. In addition, it creates inconsistency with MassDOT’s well-established Impaired Waters Program, recently updated Stormwater Design Guide, and general approaches for stormwater practices in New England. The more limited list of options may unnecessarily push even more



mitigation off-site and result in more complex stormwater controls that are not targeting runoff at its source. MassDOT requests to remove the prescriptive list of allowable SCMs for TMDL watersheds.

51. The list of SCM options in the proposed 2023 MassDEP Stormwater Handbook Table 2-6 indicates that street cleaning (i.e., street sweeping) is “Unlikely to provide significant reduction of target pollutant.” This conflicts with Table 2-2 of the proposed 2023 MassDEP Stormwater Handbook, the MS4 Permit, and latest science as documented in the Clean Sweep study performed by the University of New Hampshire (UNH) Stormwater Center with EPA as a participant. Meeting TMDL goals needs to be flexible and based on the latest information about technologies and the performance of various measures. MassDOT requests that street cleaning be an allowable measure to address watersheds of waterbodies with TMDLs.
52. 310 CMR 10.05(6)(k)7.c. states that the TMDL standard is to be met to the MEP for Redevelopment projects and off-site mitigation “may be allowed.” There is conflicting language on page 2-37 of the proposed 2023 MassDEP Stormwater Handbook which says off-site mitigation “must” be provided to meet Standard 11 when it cannot be met fully on-site. Requiring project-specific off-site mitigation for this standard does not align with MS4 Permit requirements which require mitigation on a watershed-scale for compliance with impaired waters and TMDLs. Therefore, to be consistent with the MS4 Permit, MassDOT requests that project proponents show how the TMDL requirements are being progressed on a watershed-scale and how the project contributes to TMDL compliance for the permittee.

## **ESSD**

53. MassDOT requests the following changes to the requirements for ESSD Credit 4 Qualifying Pervious Areas to allow for more flexibility and encourage its use while targeting the performance goal the prescriptive requirement was based on:
  - a. Allow slopes greater than 5% so long as sheet flow is maintained.
  - b. Allow soil types to be determined by the National Resources Conservation Service (NRCS) soil mapping in lieu of site-specific soil testing to provide flexibility and use of the measure for larger areas.
  - c. Eliminate setback requirements which are prohibitive and not warranted for a distributed practice like impervious area disconnection.
  - d. Allow for the range of pollutant removal credits for varying impervious to pervious area ratios as demonstrated in EPA’s SCM Performance Curves for Impervious Cover Disconnection (i.e., consistent with the MS4 Permit).
  - e. Allow roadways draining to pervious ROW to exceed the 1,000 square feet contributing area threshold due to their continuous nature.
  - f. Allow roadways draining sheet flow to pervious ROW to not require pretreatment pea-gravel diaphragms which create safety issues on roadways.

- g. Allow Qualifying Pervious Areas to include pervious areas beyond the state highway layout.

## Definitions, Clarifications, and Setbacks

MassDOT provides the following comments to support clarity and consistency within the regulations.

54. The proposed regulations miss an opportunity to streamline and simplify the permitting process for stand-alone stormwater Retrofit Projects. With more of these mitigation and restoration projects required by the MS4 Permit (which will also be required by MassDOT's future TS4 Permit), MassDOT requests that MassDEP create a simple permitting path to encourage these projects and lessen the burden on both the permittee and local conservation commissions. MassDOT requests the updated regulations allow for projects that meet the definition of Retrofit Projects to be listed under 310 CMR 10.05(6)(l), projects for which the Stormwater Management Standards do not apply since these projects exceed all Stormwater Standard thresholds just by being built (i.e., reduce peak rates, provide treatment, provide recharge if feasible, etc.).
55. The proposed language in 310 CMR 10.24(9)(d) requires that "Construction shall not take place during Time of Year Restrictions as identified in 310 CMR 10.35(4)." 310 CMR 10.35(4) indicates that "Unless otherwise allowed by DMF pursuant to M.G.L. c. 130, § 19, dredging, disposal of Dredged Material or filling in a fish run shall be prohibited between March 15 and June 15 in any year." The term "construction" can be interpreted as many different activities, including non-silt producing activities. However, the language within 310 CMR 10.35(4) is more specific. MassDOT requests that MassDEP modify the language in 310 CMR 10.24(9)(d) to read, "Dredging, disposal of dredged material, or filling in a fish run shall not take place during the Time of Year Restrictions as identified in 310 CMR 10.35(4)."
56. As currently written, the setback provisions in 310 CMR 10.05(6)(q) apply to "any component of the Stormwater Management System" which could include pipes, outfalls, erosion controls, culverts, and other features which may be within setback limits and are needed to properly convey and discharge stormwater. This provision makes drainage design practically impossible given the extent of setbacks applied to all elements of the drainage system. For example, not allowing catch basins within 2 feet of the seasonal high groundwater table only allows deep sump catch basins when groundwater is approximately 10 feet deep when accounting for the structure and sump.
  - a. MassDOT requests that MassDEP clarify the setback provisions in 310 CMR 10.05(6)(q) to apply only to the SCM's treatment component itself, not to "any component of the Stormwater Management System."
  - b. The proposed regulations require setbacks that create restrictive constraints when siting stormwater controls, especially in tight corridors. MassDOT requests that MassDEP avoid creating restrictive setbacks and instead state the intent (e.g. in lieu of prescribed setbacks to certain slopes, specify that SCMs must be sited such that breakout will not occur).
  - c. In addition, MassDOT would like to note an inconsistency between the regulations and the proposed 2023 MassDEP Stormwater Handbook.



The regulations state setbacks from any slope greater than 5% be a minimum of 100 feet for infiltration basins, surface exposed or underground infiltration trench, or infiltrating bioretention area. Table 2-8 gives different values for these SCMs.

- d. The proposed 2-foot setback from the bottom of an SCM or "any component of a stormwater management system" is infeasible for locations with shallow groundwater that require stormwater inlets, pipes, ditches, etc. MassDOT requests that MassDEP eliminate this setback from any stormwater system component that is not an infiltrating SCM.

57. The new definition of "impracticable" means "impossible in practice to do or carry out based solely on physical constraints." This definition does not take into account costs, technological feasibility, constructability, or practicality of implementation. This is infeasible and conflicts with MassDOT's mission to use taxpayers' dollars responsibly. MassDOT requests that impracticable be redefined to include considerations for more than just physical constraints.

58. "The definition of "alter" has changed from "lowering" to "changing" the water level or water table. This change in definition will mean that providing recharge that raises groundwater tables will meet the definition of "alter." MassDOT requests that this definition be clarified to not include required mitigation measures as activities that "alter" Resource Areas.

- a. In addition, MassDOT requests that the definition of "alter" be clarified to state that conducting maintenance to existing drainage infrastructure in the highway ROW is not an alteration.

## Coastal Resource Area Comments

The proposed LSCSF regulations, as currently structured, would unintentionally cripple the implementation of community improvement and resiliency enhancement projects. In particular, the significant constraints imposed by the proposed LSCSF regulations in conjunction with the ambiguous explanations of how to demonstrate compliance will lead to confusion and unpredictable permitting. This will affect project planning and funding and ultimately prevent the implementation of a broad suite of engineering solutions to prevent flooding and storm damage within the communities that need them the most. Critical maintenance and improvement work must have a clear permitting pathway.

59. The proposed regulations contain several areas where the Issuing Authority must determine that a project is in compliance with the regulations and/or the Applicant must demonstrate compliance, but clear and specific performance metrics and compliance approaches are not provided. This leaves ambiguity and uncertainty for project permitting, which greatly impacts project costs and timelines and prevents reliable project planning and implementation. MassDOT requests that a formal stakeholder group be convened to revisit these proposed regulations and the best available and actionable engineering and science on coastal resilience. Relevant factors may include adaptation strategies, equity, and cost efficiency. The group should include coastal engineering experts, including those at the FHWA, setting industry guidance for coastal highways and private sector experts, to help identify provisions that protect coastal Resource Areas and reduce flooding and storm damage of transportation networks within the Commonwealth. The group could be led by the Executive Office of Energy and Environmental Affairs (EEA) in coordination with MassDOT, planning organizations, and entities that have developed watershed models (Deerfield, Neponset, Mystic, and Charles). MassDOT recommends that the working group provide more definition for the following sections:

- a. 10.24(1)(b) work in coastal Resource Areas and Buffer Zones – defining data sets, required analysis, and performance metrics.
- b. 10.36(1) demonstrating a “clear showing” that a LSCSF area is significant to storm damage prevention and flood control.
- c. To comply with 10.36(8)(e), Redevelopment within previous developed LSCSF.
- d. 10.36(8)(g) demonstrating the work “will achieve the objectives of promoting resiliency and effective flood control” and “there are no adverse effects on any Resource Area.”

60. MassDOT has an obligation to maintain its infrastructure throughout the Commonwealth including in coastal Resource Areas. Currently, certain maintenance activities such as resurfacing projects within land subject to flooding, require a Request for Determination of Applicability (RDA) or NOI, even if the project simply replaces the existing pavement in-kind. To streamline and support efficient maintenance work, MassDOT requests the following modifications to the regulations:

- a. Activities defined as Maintenance of an Existing Public Roadway in previously developed LSCSF and Riverfront Area 10.02(1)(d) and (f) not be required to file an NOI per 10.02(2)(a).
  - b. Activities within LSCSF that are exempt from filing an NOI be expanded to include all activities currently listed as exempt in 10.02(2)(b) for work within a Buffer Zone, including installation of underground utilities, repair of sewer lines, pavement repair, resurfacing, exploratory borings, etc. MassDOT also requests these exemptions be for all zones within LSCSF.
- 61. MassDOT requests that 10.24(7) provide more clarity that raising roadways for resiliency purposes will be allowed as a limited project. MassDOT requests the provision that roadway widths remain the same be modified to allow for necessary embankments and safety features for raised roadways that go beyond the original roadway width and that Salt Marsh loss and hydraulic changes be minimized to the MEP. If this change is not made, project proponents will advance transportation improvement projects without considering resiliency options such as roadway elevation, which is counter to the intent to improve resiliency and reduce flooding and flood damage within LSCSF.
- 62. MassDOT requests that the construction of projects for the sole purpose of flood protection and promoting resiliency are allowable under 10.24(7)(c) as a limited project provided that unavoidable loss of Salt Marsh and other coastal Resource Areas are minimized.
- 63. The proposed LSCSF regulations for 10.36(6) do not allow projects within the Velocity Zone (V-Zone) or Moderate Wave Action (MoWA) zone to have adverse effects on the critical characteristics of LSCSF. MassDOT requests that the list of projects that may be permitted in these zones in 10.36(6)(a) through (f) be expanded to include:
  - a. Maintenance of an Existing Public Roadway.
  - b. Improvement of an Existing Public Roadway.
  - c. Transportation projects including expansion for safety improvement, transportation facilities for the purpose of emergency egress, multimodal transportation projects including bike paths.
  - d. Alterations to transportation-related structures including maintenance facilities.
- 64. MassDOT requests the following changes to 10.36(8), Redevelopment within previously developed LSCSF, to promote flexible approaches, streamlined permitting, and clarity:
  - a. Work to improve existing conditions as described in 10.36(8)(a) may include elevating portions of the site to reduce flooding or other improvements not listed but demonstrated by the permittee.
  - b. Clarification that stormwater management is only required for projects meeting the definition of Redevelopment (not including Maintenance of an Existing Public Roadway).

- c. Mitigation required per 10.36(8)(d) is only required when increased flood velocities result in increased scour or erosion.
  - d. The placement of fill for flood control purposes per 10.36(8)(f) may be allowed in a Minimal Wave Action (MiWA) Zone where impervious surfaces **and/or developed areas (including transportation-related developed areas)** have predominantly replaced the natural coastal floodplain.
  - e. The elevation in height of an existing seawall or the construction of a berm with associated fill for flood control purposes in a V-Zone or a MoWA Zone of LSCSF in an area where impervious surfaces **and/or developed areas (including transportation-related developed areas)** have predominantly replaced the natural floodplain may be allowed per 10.36(8)(g).
65. MassDOT requests the hydrologic and hydraulic computations referenced in 10.57(2)(a)(3)(b) may use USGS regional regression equations or USGS Bulletin 17C gage analysis along with unsteady state hydraulic flow analysis.
66. Federal funding for resilience improvements, such as the Promoting Resilient Operations for Transformative, Efficient, and Cost-saving Transportation (PROTECT) program, fund the incremental resilience activity cost. The cost of designing to NOAA Atlas 14+ would not be eligible as the incremental resilience activity because it is “not a projection of future extreme storms”. Because of this, MassDOT requests that a formal analysis be completed, assessing how the new NOAA Atlas 14+ requirement may impact funding.
67. Proposed revisions to Title 44 Part 9 of the Code of Federal Regulations (CFR): Floodplain Management and Protection of Wetlands were published in 2023 with the goal of implementing the Federal Flood Risk Management Standards (FFRMS). It is unclear if use of the proposed MassDEP method for determining the boundary of Bordering Land Subject to Flooding will be acceptable per FFRMS. MassDOT requests MassDEP clarify plans for future revisions to the regulations once the Federal Emergency Management Agency (FEMA) implements FFRMS.
68. MassDOT requests that MassDEP confirm that the precipitation data used by the MassDEP stormwater regulations does not conflict with the future guidelines proposed by the Resilient Massachusetts Action Team (RMAT), the team responsible for preparing the Climate Resilience Design Standards and Guidelines for the State.
69. In addition, MassDOT has evaluated the proposed LSCSF regulations against FHWA’s Hydraulic Engineering Circular 25 (HEC-25) – Highways in the Coastal Environment (Third Edition, January 2020). This manual presents tools for the planning, design, and operation of highways in the coastal environment to make them more resilient. The HEC-25 manual was developed with substantial contributions through peer exchange workshops, research from laboratory testing and forensic modeling, and underwent a rigorous technical review process. MassDOT found numerous conflicts between the proposed LSCSF regulations and this important nationwide guidance. MassDOT offers the following comments in response to the provisions listed in 10.24(7)(c) regarding maintenance and improvement of existing public roadways:

- a. Roads in V-zones and MoWA areas are more susceptible to damage by wave attack, especially embankments used as approaches to coastal bridges. HEC-25 notes that “increased elevation is the only proven adaptation option for coastal bridges subject to wave attack during extreme events.” The proposed LSCSF regulations only allow the elevation of roadways provided roadway widening is not conducted. Roadway widening projects promote safety and accessibility, including multi-modal improvements. Coastal bridge rehabilitation and replacement projects will have to choose between elevating for resilience or widening for safety, rather than a solution that improves both the safety and resilience of the transportation network in coastal communities.
- b. HEC-25 states that increasing the elevation of the roadway is an adaptation option to improve resiliency for roads that flood because of wave runup and overtopping (V-Zones, MoWA, and FEMA Zone AO) and are already protected by seawalls or revetments. The proposed LSCSF regulations do not provide provisions for elevating roadways behind existing seawalls or revetments due to the provision that there is no restriction of flow. If roadways are already protected by coastal engineering structures, there should be provisions that reflect that existing condition. The proposed LSCSF regulations do not provide provisions to protect vulnerable roadway embankments through the use of coastal engineering structures; for example, constructing a revetment on the embankment of an existing bridge approach within LSCSF would not be permitted as a means to reduce flood damage from wave attack.
- c. Roadway embankments subject to overwash are at risk of “weir-flow” damage, where the road acts like a broad-crested weir to the incoming storm surge. As the surge elevation exceeds the crown of the road, water flows across and down the landward shoulder, which can result in localized erosion and scour. If armoring roadway shoulders are not permitted, HEC-25 recommends alternatives to redesign the roadway so that it does not act like a broad-crested weir. Lowering the roadway crest has significant maintenance and performance implications, so another approach to reducing potential for weir-flow (and that failure mechanism) includes constructing dunes or nature-based solutions on the shoulders that are higher than the crest of the road. This means that the width of the roadway may need to be increased to allow for construction of those solutions to reduce storm damage, as well as maintaining road functions. There are no provisions for LSCSF that support armoring and widening roadways to include nature-based solutions, and MassDOT and municipalities should not be held to standards that would not help prevent weir-flow storm damage.
- d. Maintaining hydrology as required by the LSCSF regulations may require creating new crossings. Culvert crossings do not reduce the risk of weir-flow damage described above. For bridges, most damage occurs when the storm surge (“still” water level) elevation is at or slightly above that of the low chord of the bridge deck. At this condition, the full waves can strike the rigid structures and the loads can be extremely high with each individual wave. This is especially

concerning with sea level rise and getting the right elevation for the bridge chord. In addition to creating more hydraulic infrastructure to keep in state of good repair, creating new crossings does not prevent storm damage (and could increase it).





Maura Healey, Governor  
Kimberley Driscoll, Lieutenant Governor  
Monica Tibbitts-Nutt, Secretary & CEO  
Phillip Eng, General Manager & CEO



April 30, 2024

Bonnie Heiple, Commissioner  
Massachusetts Department of Environmental Protection (MassDEP)  
Attn: Wetlands-401 Resilience Comments  
100 Cambridge Street, Suite 900  
Boston, MA 02114

Re: Wetlands-401 Resilience Comments

Dear Ms. Heiple,

On December 22, 2023, the MassDEP released draft revisions to the Massachusetts Wetlands regulations (310 CMR 10.00) and corresponding revisions to the 401 Water Quality Certification (WQC) regulations (314 CMR 9.00), in addition to a new version of the Massachusetts Stormwater Handbook. Massachusetts Bay Transportation Authority (MBTA) reviewed the materials and prepared this letter to share our comments on the proposed revisions.

The MBTA services 176 cities and towns within the Commonwealth by providing bus, rapid transit, commuter rail transportation as well as paratransit and ferry services to public riders. In 2022, the MBTA provided 212.6 million passenger rides. Our trains run on over 992 miles of tracks that pass through many types of environments, including wetlands, waterways, floodplains forests, and coastal regions including Land Subject to Coastal Storm Flowage (LSCF). Approximately 20% of our facilities are located in the coastal zone.

MBTA is highly committed to sustainability and resiliency by providing a safe, reliable, and accessible transportation system for Massachusetts. By providing a public transit system that meets the needs of the 21st century, the MBTA supports good land use (e.g., natural resource conservation, historic preservation) in Greater Boston. As such, MBTA supports MassDEP's mission to improve the Commonwealth's ability to protect our waters and wetlands resource areas and improve resilience to the impacts of climate change. The MBTA has proposed numerous critical resiliency related projects in the current 5-year capital investment plan (FY25 – 29), many of which target our core goals of fortifying, maintaining or improving aging stormwater infrastructure.

As written, the proposed regulations do not acknowledge the unique physical circumstances of linear railroad and transit corridors, supporting operations, functions, and on-going maintenance needs. For example, the "impervious surface" definition coupled with the extreme physical constraints of railroad rights-of-ways mean more of the MBTA's work would likely either: (i) require land takings which is not a feasible solution for MBTA both financially and logistically; or (ii) require mitigation that does not correlate to the purpose and need of a given project, or potentially does not further MBTA's strategic resilience objectives. In addition, definitions do not reference rail infrastructure; ballast would be characterized as an impervious surface despite a void ratio of approximately 40%; minor activities associated with maintaining, repairing, and

improving rail infrastructure are not included; and existing railways and corridors are not characterized as redevelopments. Railroad and transit corridors are narrow in design and can often not accommodate on-site mitigation. Therefore, if the proposed regulations fail to address these unique needs of the State's transportation sector, beneficial redevelopment projects could be rendered infeasible despite otherwise positively benefitting communities, particularly constrained urban cores and Environmental Justice populations.

Further, the new requirements for Land Subject to Coastal Storm Flowage (LSCSF) present an undue burden on the MBTA with little to no ability to practically comply with the performance standards. Much of the MBTA's rail infrastructure was built decades or even centuries ago along cart paths and colonial roads with an estimated 18% of MBTA's landholdings within a FEMA mapped coastal floodplain. As written, it is impracticable to simultaneously make the needed maintenance and resiliency improvements to existing MBTA facilities in addition to mitigation improvements required by proposed regulation. For instance, the MBTA plays a critical role in achieving the Commonwealth's climate goals by managing stormwater impacts of our infrastructure investments and reducing emissions from the transportation sector. Modifying our complex transit system to progress to system-wide electrification would require the MBTA to carry out major capital improvements to assets within FEMA floodplain and LSCSF. These much-needed future improvements are only feasible if the proposed regulations provide a practical permitting path that allows the MBTA to undertake these improvements in a fiscally responsible manner to provide safe, reliable, and accessible public transit to the Commonwealth of Massachusetts.

The MBTA believes its comments and suggestions would provide the flexibility, practicality, simplicity, and clarity necessary for project execution and compliance while supporting MassDEP's goals to improve the Commonwealth's resilience to impacts of climate change and restore and maintain the integrity of our water resources, in support of the Healey-Driscoll Administration's larger climate agenda. **We strongly urge MassDEP to work together with MBTA with the common goal of improving water quality and resiliency in the Commonwealth**, while enabling the MBTA to undertake critical maintenance, safety and resilience work so that we can better deliver safe, reliable and accessible transportation for our communities of service.

The MBTA supports regulations that are protective of the environment, while simultaneously allowing us to fulfill our core mission of serving the public by providing safe, reliable, and accessible transportation. The MBTA welcomes the opportunity to discuss these comments further with MassDEP.

Sincerely,



Janis Kearney  
Chief of Environmental  
MBTA



## Key Definitions

The draft regulations miss an opportunity to acknowledge and address the unique facilities and activities of the MBTA transportation system. These definitions and clarifications are necessary for clear and practical permitting for MBTA work.

1. We request that the definition of **Compact Soil** specifically exclude railway ballast (rock material that is packed between, below, and around the ties). The definition of compacted soil will subsequently impact what is defined as an impervious surface. The addition or modification of impervious surfaces dictates the compliance needs, and therefore, these definitions are of extreme significance to the implications of the regulations on MBTA work. A standard railway cross section includes ballast that extends 1-foot beyond the end of tie then slopes at 1:1 to either the toe-of-slope or the adjacent drainage ditch. The ties are underlain by 12 inches of ballast plus 8 inches of porous sub-base. This is underlain by subgrade with a 2% grade to shed water from beneath the tracks. This ballast is highly porous with approximately 40% void space, with the ability to capture typical rain events creating little to no runoff. The ballast responds to rainfall very different than typical paved and other impermeable surfaces and should be classified as a porous surface to reflect its differences in runoff and pollutant generation.
2. We request that MassDEP define **Public Railway** to include, but is not limited to, railroad, transitway, trolleys, designated bus lane (e.g. Silverline) and ferry terminals (this would be more encompassing than docks). This definition can then be used to further define Improvement of a Public Railway and Maintenance of a Public Railway as discussed in subsequent comments.
3. The new definition of **Impracticable** means "impossible in practice to do or carry out based solely on physical constraints." This definition does not account for costs, technological feasibility, or practicality of implementation. This is unreasonable and MBTA requests that impracticable be redefined to include considerations more than solely physical constraints, to include cost, logistics and relative level of effort comparative to the scale of the project.
4. "The definition of **Alter** has changed from "lowering" to "changing" the water level or water table. This change in definition will mean that providing recharge that raises groundwater tables will meet the definition of "alter." MBTA requests that this definition be clarified to not include required mitigation measures as activities that "alter" Resource Areas.

## Redevelopment & Improvement Projects

Redevelopment projects, including "improvement" projects, comprise the majority of MBTA projects. These projects include critical safety, accessibility, efficiency, mobility, and environmentally focused improvements. The proposed regulations would have significant impact to the cost, scope, and timelines of these projects and would ultimately disincentivize many of these projects from happening, resulting in less improvements for the Commonwealth. We request that the revised regulations maintain and encourage flexibility for Redevelopment project compliance.

5. "Redevelopment" projects are defined to include "improvement of an existing public roadway" projects that widen less than a single lane, etc. The current regulations fail to define what improvement of an existing **railway** would be and how those projects would be required to comply with the regulations. We request that MassDEP define **Improvement of an Existing Public Railway** as a project that increases total impervious area by less than 5 acres, including work on tracks, stations, and layover facilities, expansion or making other structural changes to an existing drainage system.
6. Under current regulations, improvement projects must meet water quality requirements (Standard 4) to the maximum extent practicable (MEP), but the proposed changes to the regulations would require full water quality compliance for redevelopments (Standard 7) including treating the entire project's impervious footprint. MassDEP's proposed change, as it may apply to MBTA, would significantly impact several of MBTA projects and would increase project timelines, costs, and complexity. In many instances full compliance would be infeasible. MBTA strongly requests that MassDEP maintain the current requirement for improvement projects to meet water quality requirements to the MEP (included in 310 CMR 10.05(6)(m)) and that the regulations allow the MEP threshold to commensurate with the size and scope of a proposed project and include allowable practices that are practical and attainable for MBTA facilities.
7. Under MassDEP's proposed Standard 7, if the water quality performance standard cannot be met fully on-site, the permittee must now provide treatment off-site. Off-site mitigation is not a viable solution for the MBTA, as it essentially turns one Redevelopment project into two and would entail an overwhelming number of property investigations and land takings (assuming that there are even suitable parcels for stormwater treatment). This level of effort would hinder MBTA from executing its core mission as a transportation agency that is responsible for taxpayers' money and instead refocus significant budget on land acquisition for stormwater mitigation. Additionally, if MBTA off-site stormwater infrastructure was built, it would potentially require MBTA to perform inspections and maintenance outside of its corridors and stations, which would increase the complexity and cost for its operation and maintenance (O&M) program. This provision would ultimately cause significant cost increases and schedule delays, disincentivizing projects that are relatively minor in nature and in stormwater impact but provide major benefits to connectivity, mobility, accessibility, and safety. MBTA requests that MassDEP remove the proposed off-site mitigation requirement for MBTA from the regulation, and instead require MBTA to meet the water quality requirements for Redevelopment projects to the MEP on site.
8. We agree that Redevelopment projects should improve existing conditions. MBTA requests that improving existing conditions be allowed to be demonstrated more broadly than exclusively defined as "reducing the peak discharge rate, increasing stormwater recharge, and removing pollutants such as TSS and TP from the discharge" and include activities that are feasible for highly constrained transportation corridors. Allowing the MBTA to remain subject to the MEP for linear transportation projects, particularly those with site constraints, would maintain the goal of providing SW improvements on a site-by-site basis.

9. The proposed regulations include a requirement for a detailed written alternatives analysis when certain provisions, already allowed in the regulations, are used. The development of a written alternatives analysis would be extraneous work, for the sole purpose of documentation, with no benefit to the final design. It would complicate the permitting process and be extremely excessive as nearly every MBTA project would trigger this additional documentation to utilize already supported approaches. MBTA requests that written alternative analyses be reserved for variances to the requirements.
10. The definition of “Redevelopment” includes “Remedial projects specifically designed to provide improved stormwater management, such as projects to separate storm drains and sanitary sewers”. This definition means that these types of projects require full compliance with the water quality requirements of Standard 7 for the project’s entire impervious area which would require a disproportionate amount of mitigation for a project designed specifically for stormwater improvement. These remedial projects are, by definition, minor projects designed for improvement, and therefore should not be subject to meeting the water quality standards fully. MBTA requests that these projects be included in the list of projects to meet requirements to the MEP in accordance with 310 CMR 10.05(6)(m).

## Maintenance Activities

MBTA is committed to maintaining all of its assets, including railway elements and stormwater features. Maintenance is critical to cost-effective, long-term function of these assets and subsequent public safety, mobility, water quality, and flood control. The proposed regulations must provide a clear and practical pathway for MBTA’s necessary maintenance activities and must not disincentivize maintenance from being completed.

### Maintenance as Minor Activity

11. The proposed regulations include **Maintenance of an Existing Public Railway** as a new definition but fail to define what maintenance of an existing railway would include and how that work would be permitted under the regulations. We request that MassDEP work with MBTA to define Maintenance of an Existing Railway and that it includes activities undertaken to a railway and associated railway facilities that do not increase impervious area such as track repair and maintenance, regrading and tamping railway ballast, repairs to underdrains, track replacement, ballast cleaning, and culvert repair or replacement. We request that these activities are not considered alterations when they include standard measures to protect Resource Areas.
12. MBTA requests expanding the Minor Activities under 310 CMR 10.02(2)(b)2, which do not require an NOI filing, to include the following critical railway maintenance needs:
  - a. Americans with Disabilities Act (ADA) retrofit projects at existing MBTA stations and walkways;
  - a. Fencing, provided it will not constitute a barrier to wildlife movement including, cable barrier, and wire rope safety barrier; stonewalls; stacks of cordwood;

- b. Removal of shrubbery, branches, or other vegetation management required to maintain visibility within the right-of-way.
13. We request that a new definition for Maintenance of an Existing Public Railway (see Comment #11) be used within 10.02(2)(b)(2)(p) to consistently define railway maintenance activities as Minor Activities.
  14. MBTA requests that maintenance of Stormwater Management Systems (such as drainage swales) be included as Minor Activities related to “Public Shared Use Path vegetation cutting for public safety and pavement repair and resurfacing in the Buffer Zone and Riverfront Area” under 10.02(2)(b)(s).

### **Stormwater Control Measure (SCM) Maintenance**

15. MassDEP is not proposing a substantive change to 10.02(2)(c); however, in order to encourage and expedite maintenance of Stormwater Management Systems, MBTA requests that the provision that allows maintenance activities for Stormwater Management Systems without a wetlands NOI be made more accessible by removing the construction date limitation (i.e., must have been constructed by 1996) and removing the requirement that the system was proposed in an NOI. Railway Stormwater Management Systems have a large range of built dates, with many built the year of original railway construction. Maintenance of railway stormwater systems is essential for safety and durability of MBTA’s railway network and putting an arbitrary date limitation creates more obstacles and costs to maintaining these systems. In addition, MBTA requests that all Stormwater Management Systems in the railway setting, regardless of construction date, do not constitute Wetland Resource Areas or Buffer Zones, and that the definition of “alter” be expanded to clarify that conducting maintenance to existing railway related drainage infrastructure is not an alteration.

## **Coastal Resource Area Comments**

The proposed LSCSF regulations, as currently structured, would unintentionally cripple the implementation of transportation improvement and resiliency enhancement projects. In particular, the significant constraints imposed by the proposed LSCSF regulations in conjunction with the ambiguous explanations of how to demonstrate compliance will lead to confusion and unpredictable permitting. This will affect project planning and funding and ultimately prevent the implementation of a broad suite of engineering solutions to prevent flooding and storm damage within the communities that need them the most. Critical maintenance and improvement work must have a clear permitting pathway.

16. The proposed regulations contain several areas where the Issuing Authority must determine that a project is in compliance with the regulations and/or the Applicant must demonstrate compliance, but clear and specific performance metrics and compliance approaches are not provided. This leave ambiguity and uncertainty for project permitting which greatly impacts project costs and timelines and prevents reliable project planning and implementation. MBTA requests that a formal stakeholder group be convened to revisit these proposed regulations and the best available and actionable engineering and science on coastal resilience. Relevant factors may include adaptation strategies, equity, and cost efficiency. The group

should include coastal engineering experts, to help identify provisions that protect coastal Resource Areas and reduce flooding and storm damage of our transportation networks. We recommend that the working group provided more definition for the following sections:

- a. 10.24(1)(b) defining data sets, required analysis, and performance metrics for work in coastal Resource Areas and buffer zones:
  - b. 10.36(1) demonstrating a “clear showing” that a LSCSF area is significant to storm damage prevention and flood control
  - c. To comply with 10.36(8)(e): Redevelopment withing previous developed LSCSF
  - d. 10.36(8)(g) demonstrating the work “will achieve the objectives of promoting resiliency and effective flood control” and “there are no adverse effects on any Resource Area”
17. MBTA has an obligation to maintain its infrastructure throughout the state including in coastal Resource Areas. Currently, certain maintenance activities within land subject to flooding, require a Request for Determination of Applicability (RDA) or NOI. To streamline and support efficient maintenance work, MBTA requests the following modifications to the regulations:
- a. Activities defined as Maintenance of an Existing Railway (new definition, see Comment 11) in previously developed LSCSF and Riverfront Area 10.02(1)(d) and (f) not be required to file an NOI per 10.02(2)(a).
  - b. Activities within LSCSF that are exempt from filing an NOI be expanded to include all activities currently listed as exempt in 10.02(2)(b) for work within a Buffer Zone. We also request these exemptions be for all zones within LSCSF.
18. MBTA requests that the 10.24(7) provide more clarity that raising elevations of railways and associated railway facilities for resiliency purposes will be allowed as a limited project. We request that the provisions allow for necessary embankments and safety features for raised railways that go beyond the original footprint and that Salt Marsh loss and hydraulic changes be minimized to the MEP. If this change is not made, project proponents will advance transportation improvement projects without considering resiliency options such as roadway elevation, which is counter to the intent to improve resiliency and reduce flooding and flood damage within LSCSF.
19. MBTA requests that the construction of projects for the sole purpose of flood protection and promoting resiliency are allowable under 10.24(7)(c) as a limited project provided that unavoidable loss of Salt Marsh and other coastal Resource Areas are minimized.
20. The proposed LSCSF regulations for 10.36(6) do not allow projects within the Velocity Zone (V-Zone) or Moderate Wave Action (MoWA) zone to have adverse effects on the critical characteristics of LSCSF. MBTA requests that the list of projects that may be permitted in these zones in 10.36(6)(a) through (f) be expanded to include:
- a. Maintenance of an Existing Railway (new definition, see Comment 11)
  - b. Improvement of an Existing Railway (new definition, see Comment 5)



- c. Transportation project including expansion for safety improvement.
  - d. Alterations to transportation-related structures including train stations, maintenance facilities, layover facilities, ferry terminals and supporting facilities.
21. MBTA requests the following changes to 10.36(8) Redevelopment within previously developed LSCSF to promote flexible approaches, streamlined permitting and clarity:
- a. Work to improve existing conditions as described in 10.36(8)(a) may include elevating portions of the site to reduce flooding or other improvements not listed but demonstrated by the permittee.
  - b. Clarification that stormwater management is only required to the maximum extent practicable for projects meeting the definition of Redevelopment (not including Maintenance of an Existing Railway (new definition see Comment 11)
  - c. Mitigation required per 10.36(8)(d) is only required when increased flood velocities result in increased scour or erosion
  - d. The placement of fill for flood control purposes per 10.36(8)(f) may be allowed in a Minimal Wave Action (MiWA) Zone where impervious surfaces **and/or developed areas (including transportation-related developed areas)** have predominantly replaced the natural coastal floodplain
  - e. The elevation in height of an existing seawall or the construction of a berm with associated fill for flood control purposes in a V-Zone or a MoWA Zone of LSCSF in an area where impervious surfaces **and/or developed areas (including transportation-related developed areas)** have predominantly replaced the natural floodplain may be allowed per 10.36(8)(g).
22. MBTA requests that the hydrologic and hydraulic computations referenced in 10.57(2)(a)(3)(b) may use USGS regional regression equations or USGS Bulletin 17C gage analysis along with unsteady state hydraulic flow analysis.
23. Federal funding for resilience improvements, such as the Promoting Resilient Operations for Transformative, Efficient, and Cost-saving Transportation (PROTECT) program, funds the incremental resilience activity cost. The cost of designing to NOAA Atlas 14+ would not be eligible as the incremental resilience activity because it is “not a projection of future extreme storms”. Because of this, MBTA requests that a formal analysis be completed, assessing how the new NOAA Atlas 14+ requirement may impact funding.
24. Proposed revisions to Title 44 Part 9 of the Code of Federal Regulations (CFR): Floodplain Management and Protection of Wetlands were published in 2023 with the goal of implementing the Federal Flood Risk Management Standards (FFRMS). It is unclear if use of the proposed MassDEP method for determining the boundary of Bordering Land Subject to Flooding will be acceptable per FFRMS. MBTA requests MassDEP clarify plans for future revisions to the regulations once the Federal Emergency Management Agency (FEMA) implements FFRMS.
25. MBTA requests that MassDEP confirm that the precipitation data used by the MassDEP stormwater regulations does not conflict with the future guidelines

proposed by the Resilient Massachusetts Action Team (RMAT), the team responsible for preparing the Climate Resilience Design Standards and Guidelines for the State.

## **State Highway Specific Considerations (Stormwater)**

MBTA is supportive of the addition of the State Highway Specific Considerations and associated chapter within the proposed MassDEP Stormwater Handbook Chapter 5.7. We feel that many of these considerations are applicable to MBTA given the constrained linear transportation corridors and extensive transportation infrastructure and are critical in supporting compliance with the Stormwater Standards for our work. In addition, MBTA is actively seeking a TS4 permit with EPA and will be subject to the same program-wide requirements as MassDOT. We feel that MBTA should be afforded the same considerations for compliance as MassDOT. MBTA offers the following comments on the State Highway Specific Considerations in order for railway considerations to be better represented:

26. MBTA requests inclusion for MBTA projects and public transportation projects funded through MBTA under Applicability for the following State Highways Specific Considerations:
- a. Consideration 1 - TSS/TP Treatment Credit and Recharge Credit for MassDOT Linear Practices
  - b. Consideration 2 - Use of MassDOT Linear Practices for Peak Runoff Rate Reduction Linear Practice Peak Rates
  - c. Consideration 3 - Deep Sump Catch Basins Inlet Grate Specifications
  - d. Consideration 4 - Deep Sump Catch Basin Hoods
  - e. Consideration 5 - Operations and Maintenance Approach
  - f. Consideration 6 - Macro-Approach

## **Stormwater Standards and ESSD**

It is crucial that the Stormwater Standards provide practical pathways towards achieving resource protection goals throughout the Commonwealth, which require a focus on the outcome of stormwater management strategies as opposed to prescriptive methods that may not be feasible or effective at all project sites. In attempts to align with the MS4 Permit, the proposed Stormwater Standards still contain differences between the two sets of regulations, creating confusion and further continuing two distinct approaches. Additionally, we appreciate the inclusion of ESSD credits but request that they include sufficient flexibility to make them more practical and widely implementable. The following comments aim to reconcile the proposed regulations with these ideas.

## Standard 2

27. MBTA agrees that the Handbook should adopt use of the National Oceanic Atmospheric Association Atlas (NOAA) 14-Precipitation-Frequency Atlas of the U.S. Volume 10, Version 3.0: Northeastern States (NOAA Atlas 14) for hydrologic and hydraulic analyses required under Standard 2. The NOAA Atlas 14 precipitation estimates are based on frequency analysis of partial duration series using data up to 2015 that covers the New England and New York region. This dataset is more robust than the current dataset used for Technical Paper No. 40 (TP-40). TP-40 was published in 1961 and is based on historical data from approximately 50 years of observations and does not reflect recent rainfall estimates. Along with using the NOAA Atlas 14, MBTA requests that MassDEP incorporate the flexibility to adopt any data that supersedes NOAA Atlas 14 in the future, in order to accommodate future atlases published by NOAA/ United States Geologic Survey (USGS).
28. MBTA requests that compliance with Standard 2 may be demonstrated by analyzing the influence of the project's peak discharge rates on the peak flows of receiving waters and demonstrating that there is no net increase in downstream peak rates.
29. MBTA requests that New Development and Redevelopment projects meet Standard 2's requirement to match pre- and post-development peak rates for the 100-year event to the MEP. Most stormwater conveyance systems on MBTA facilities are sized for the 10-year event, and therefore on-site flooding is expected for larger events. Developing detention systems to match peak rates for the 100-year event would be unreasonable.
30. MBTA has a vested interest in using the appropriate precipitation data for designing its infrastructure. Appropriate design will protect MBTA's public investments, reduce damage due to flooding or scour, and maintain a safe transportation network. MBTA regularly utilizes rainfall data for design and analysis of its infrastructure including bridges, culverts, and drainage conveyance systems. Although some of these analyses are outside jurisdiction of the Wetland Protection Act (WPA) or Stormwater Management Standards, the adoption of using the upper confidence of NOAA Atlas 14 multiplied by 0.9 (also known as NOAA Atlas 14+) in state regulations could make this the default engineering standard for practitioners. MBTA could be requested to use NOAA Atlas 14+ for these analyses during regulatory reviews even if it is outside the jurisdiction of the Stormwater Standards. This has the potential to add significant, and potentially unwarranted, construction costs to bridges, culverts, and drainage conveyance systems. We request MassDEP review how use of NOAA Atlas 14+ may affect the design approaches for hydraulically dependent structures.

## Standard 3

31. The definition of Saturated Hydraulic Conductivity Test in the proposed regulation states "A Title 5 percolation test, as defined at 310 CMR 15.002, is not an acceptable Saturated Hydraulic Conductivity Test for purposes of stormwater management." Title 5 percolation tests are a current standard practice for purposes of stormwater management and this change would cause unnecessary complexity for this process. MBTA requests restoring Title 5 testing as one of the alternatives for field testing.



32. It is unreasonable to require 1-inch of recharge across all soil types (excluding Hydrologic Soils Group D soils). The natural soil infiltration rates greatly impact the quantity of annual recharge at a site, and matching annual recharge is the goal of Standard 3. The ability of the SCM to provide recharge is greatly impacted by its underlying soils, as indicated in the variability of volume reduction in the EPA's SCM Performance Curves. Requiring 1-inch recharge on all sites would require large and costly structural SCMs, the opposite of what low impact development promotes. The example that MassDEP provided in previous presentations titled "1-inch Recharge Can Be Achieved in All Soils" was based on a SCM that has the same footprint as its contributing watershed. This would essentially apply to porous pavement only.
- a. MBTA requests that the recharge volume requirements be set based on the soil types of the site and not be universal for all sites.
  - b. Requiring recharge in soils with permeabilities as low as 0.01 in/hr would require excessively large SCMs, which is unrealistic and impractical. Therefore, MBTA requests that the lower limit for infiltration stay at 0.17 in/hr.
33. MassDEP explained that the update of this standard to require 1-inch of recharge is based on alignment with the MS4 Permit. However, the MS4 Permit requires treatment through an optional retainment of 1 inch of runoff volume, not 1 inch of recharge. The MS4 Permit provides the 1-inch of retainment as an option for how to meet the post-construction treatment requirements. Under the MS4 Permit, the designer may choose to use the EPA curves for meeting the treatment requirements in lieu of demonstrating retainment. By providing options, designers are allowed more flexibility to provide the right approach for treatment of the site and to maximize the areas that can provide treatment. The proposed revisions to this standard are not in alignment with the MS4 Permit.
34. Standard 3 and the Handbook discuss compliance as matching annual runoff volumes; however, similar to the 1-inch requirement, they specify a volume based on precipitation, and they do not allow for site-specific recharge based on soils and site conditions. Failing to consider site specific conditions would result in recharge requirements that do not account for existing conditions. MBTA requests that the target annual recharge volume be based on estimated annual average recharge of the site.
- a. Additional Note: The Handbook also references an automated spreadsheet provided by MassDEP in the "2022 Edition" of the Massachusetts Stormwater Handbook which is not available.
35. MBTA requests that MassDEP use the EPA SCM Performance Curves to support the recharge requirement since EPA's infiltration SCMs have curves for annual average runoff reduction (recharge) based on continuous simulation modeling.
36. MBTA requests that the allowances for when this standard can be met to the MEP include sites with high groundwater where meeting mounding requirements and drawdown times may be infeasible.
37. The new requirements for subsurface investigation for infiltration SCMs have more than doubled the number of test locations required. Additionally, they no longer

allow the use of Rawl's Rate for infiltration/dewatering calculations, instead requiring in-situ hydraulic conductivity testing at every test location. This will have serious financial impacts to MBTA projects. One test location every 50 feet for linear infiltration and 2 borings/test pits per test location is excessive and unnecessary to characterize soils for permeability. MBTA requests restoring the previous requirements for infiltration testing and allowing the use of Rawls Rates.

38. The elimination of a soil evaluator as a Competent Soil Professional provides undue burden and costs in performing the required soil analysis to support SCMs, especially in lieu of the increase testing requirements. MBTA requests that MassDEP maintain flexibility in this requirement and allow professionals who have performed soil evaluation training to obtain the soil evaluator status and continue to qualify as a Competent Soil Professional.

### **Pollutant Reduction for Standard 4, Standard 5, and Standard 6**

39. Use of both water quality volume and pollutant percent reduction as targets for Standard 4 creates confusion and incongruence with the EPA's approach in the MS4 Permit. The treatment requirements for this standard include both the 90% TSS / 60% TP and 1-inch water quality volume requirements. MBTA requests simplifying the requirement to only require the pollutant removal standard to remove confusion, maintain consistency with the MS4 Permit, and allow for more flexibility to the designer while still being protective of receiving waters.
40. To remove confusion regarding the two water quality accounting systems (i.e., pollutant percent removal and 1-inch water quality volume) to meet Standard 5 Land Uses with Higher Potential Pollutant Load and Standard 6 Critical Areas, we request that pollutant removal targets are solely used, and the 1-inch requirement is eliminated. Using the pollutant percent removal to show water quality treatment allows for more flexibility to the designer while still being protective of receiving waters.

### **Standard 6**

41. Standard 6 indicates that "Unless a discharge to a Cold-water Fishery is infiltrated or an ESSD practice measure is used, the temperature of the stormwater shall not exceed 68 degrees F at the discharge point to ensure that there will be no thermal impact to the existing ambient temperature of the receiving water." There is no guidance on how an applicant could ensure that the temperature would never exceed this threshold. MBTA requests that the regulations clearly state that as long as the discharge is infiltrated or an ESSD practice is included in the design, then the applicant will not have to further prove that this temperature will not be exceeded.

### **Standard 8**

42. Standard 8 indicates that no post-construction SCMs may be used to manage construction period runoff. MBTA requests that, to accommodate constrained sites, construction period runoff may be allowed to be directed to post-construction SCMs provided that the SCM is cleaned, restored, and/or rebuilt to its specified condition prior to project completion.

43. 310 CMR 10.05(6)(k)8 and 314 CMR 9.06(6)(a)8 require the submission of a construction period erosion, sedimentation, and pollution prevention plan with the NOI permit application. MBTA advertises *construction* contracts with secured permits to Contractors, who are then selected to build the project and maintain compliance with permits until project completion. The Contractor is responsible for developing and managing the erosion and sedimentation control plan and maintains responsibility and liability for environmental compliance. MBTA does not develop the project erosion and sedimentation control plan, as it would allow room for the contractor to share responsibility and compliance with MBTA, thereby creating opportunity for the Contractor to shift responsibility of compliance to other parties. It is standard practice to fully task a Contractor with environmental compliance responsibility and liability, as they are the entity with daily operational control of a site. MBTA requests that MassDEP modify this language to allow the option to submit this plan during the pre-construction phase of a project, once the Contractor has been selected.

### **Standard 11**

44. The regulations include a new standard for impaired waters with TMDLs that present a limited prescribed list of potential SCMs for treatment when discharging to these waters (Table 2-6 in the Handbook). There is no documentation that this change has any scientific backing, and the SCM list is more restrictive than the EPA's list of SCMs in the MS4 permit. MassDEP's adoption of a limited list of control measures prevents flexibility, optimization, and cost savings for MBTA and other permittees. The more limited list of options may unnecessarily push even more mitigation off-site and result in more complex stormwater controls that are not targeting runoff at its source. MBTA requests to remove the prescriptive list of allowable SCMs for TMDL watersheds.
45. 310 CMR 10.05(6)(k)7.c. states that the TMDL standard is to be met to the MEP for Redevelopment projects and off-site mitigation "may be allowed." There is conflicting language on page 2-37 of the Handbook which says off-site mitigation "must" be provided to meet Standard 11 when it cannot be met fully on-site. Requiring project-specific off-site mitigation for this standard does not align with MS4 Permit requirements which require mitigation on a watershed scale for compliance with impaired waters and TMDLs. Therefore, to be consistent with the MS4 Permit, MBTA requests that project proponents show how the TMDL requirements are being progressed on a watershed scale and how the project contributes to TMDL compliance for the permittee.

### **ESSD**

46. MassDEP's ESSD Credit 4 includes practices that direct runoff from impervious roads, driveways, and parking lots to Qualifying Pervious Areas (QPAs). We request that MassDEP address how railway disconnection is credited via Environmentally Sensitive design practices. In practice, railways systems direct the minimal runoff from railway ties (wooden or concrete) to a much larger area and depth of gravel (railway ballast) that captures, stores, and filters the runoff, generating little to no runoff in typical storm events. As described in Comment 1 we request that these systems not be considered impervious areas. As such, they are, by nature, environmentally sensitive

site design and should be excluded from requiring further water quality treatment (in the same manner as ESSD Credit 4 presents).

47. MBTA requests the following changes to the requirements for ESSD Credit 4 Qualifying Pervious Areas to allow for more flexibility and encourage its use while targeting the performance goal the prescriptive requirement was based on:
- Allow slopes >5% so long as sheet flow is maintained.
  - Allow soil types to be determined by the National Resources Conservation Service (NRCS) soil mapping in lieu of site-specific soil testing to allow for flexibility and use of the measure for larger areas.
  - Eliminate setback requirements which are prohibitive and not warranted for a distributed practice like impervious area disconnection.
  - Allow for the range of pollutant removal credits for varying impervious to pervious area ratios as demonstrated in EPA's SCM Performance curves for Impervious Cover Disconnection (i.e., consistent with the MS4 Permit).
  - Allow QPAs to include pervious areas beyond the transportation layout.

## Setbacks

MassDEP added extensive list of setbacks to the proposed Stormwater Handbook in addition with a large subset of them directly in the regulations. MBTA has limited corridors and does not often have control of the distance of their infrastructure to surrounding features. These prescriptive provisions are often missing the intent of the setback and do not allow for flexibility in design.

48. As currently written, the setback provisions in 310 CMR 10.05(6)(q) apply to "any component of the Stormwater Management System" which could include pipes, outfalls, erosion controls, culverts, and other features which may be within setback and are needed to properly convey and discharge stormwater. This provision makes drainage design practically impossible given the extent of setbacks applied to all elements of the drainage system. For example, not allowing catch basins within 2 feet of the seasonal high groundwater table only allows deep sump catch basins when groundwater is approximately 10 feet deep when accounting for the structure and sump.
- MBTA requests that MassDEP clarify the setback provisions in 310 CMR 10.05(6)(q) to apply only to the SCM's treatment component itself, not to "any component of the Stormwater Management System."
  - The proposed regulations require setbacks that create restrictive constraints when siting stormwater controls, especially in tight corridors. MBTA requests that MassDEP avoid creating restrictive setbacks and instead state the intent (e.g. in lieu of prescribed setbacks to certain slopes, specify that SCMs must be sited such that breakout will not occur).

- c. In addition, we note an inconsistency between the regulations and Handbook. The regulations state setbacks from any slope greater than 5% be a minimum of 100 feet for infiltration basins, surface exposed or underground infiltration trench, or infiltrating bioretention area. Table 2-8 gives different values for these SCMs.
- d. The proposed 2-foot setback from the bottom of an SCM or "any component of a stormwater management system" is infeasible for locations with shallow groundwater that require stormwater inlets, pipes, ditches, etc. MBTA requests that MassDEP eliminate this setback from any stormwater system component that is not an infiltrating SCM.

### **Shared Use Paths (310 CMR 10.24(7)(c)(8))**

Although a limited subset of MBTA property, shared use paths are critical to the accessibility to MBTA transportation services. They are improving existing developed areas for the good of the community and should be provided a flexible and simple approach for permitting and compliance.

- 49. 310 CMR 10.24(7)(c)(8) states that a proposed Shared Use Path route outside of the existing rail corridor may be approved under the limited project provision if the different alignment is advantageous to reduce Resource Area alterations. MBTA requests that MassDEP revise this provision to include proposed Shared Use Paths that may deviate from the footprint of the original rail corridor due to other constraints beyond solely Resource Area implications.
- 50. MBTA requests that the provision for Shared Use Path projects listed in the proposed Handbook Section 5.6 as being required within the Notice of Intent (NOI) be clearly required to the MEP with the understanding that constrained right of ways will present challenges:
  - a. MBTA requests that the requirements set forth in the Handbook, regarding the suitable pervious area that stormwater runoff is directed to, allow for flexibility in the condition, size, and location based on site conditions and receiving Resource Area. It is unlikely that projects within constrained former railroad right of way corridors will be able to meet these requirements.
  - b. MBTA requests that the 5% slope requirement for suitable pervious areas be required to the MEP due to the nature of the former railroad bed.
  - c. MBTA requests that designers have flexibility in the approach of how to meet stormwater performance standards to the MEP and remove the prescriptive means and methods related to SCMs to be utilized for these projects.
- 51. MBTA requests removing the Long-Term Pollution Prevention Plan (LTPPP) requirement for Shared Use Paths since the use (pedestrian and non-motorized) does

not merit the need for LTPPP, which are intended to address source controls such as snow removal practices, fertilizer use, solid waste storage, etc.

52. MBTA requests removing the requirement of a written alternatives analysis for Shared Use Paths as it would be unnecessary for these projects that are typically highly constrained and aimed at increasing accessibility and mobility thereby improving previously developed and underutilized corridors.

## **Construction Time of Year Restrictions**

53. The proposed language in 310 CMR 10.24(9)(d) requires that "Construction shall not take place during Time of Year Restrictions as identified in 310 CMR 10.35(4)." 310 CMR 10.35(4) indicates that "Unless otherwise allowed by DMF pursuant to M.G.L. c. 130, § 19, dredging, disposal of Dredged Material or filling in a fish run shall be prohibited between March 15 and June 15 in any year." The term "construction" can be interpreted as many different activities, including non-silt producing activities. However, the language within 310 CMR 10.35(4) is more specific. MBTA requests that MassDEP modify the language in 310 CMR 10.24(9)(d) to read, "Dredging, disposal of dredged material or filling in a fish run shall not take place during the Time of Year Restrictions as identified in 310 CMR 10.35(4)."





# MASSACHUSETTS WATER RESOURCES AUTHORITY

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Frederick A. Laskey  
Executive Director

April 30, 2024

Lisa Rhodes  
ATTN: Wetlands-401 Resilience Comments  
MassDEP – Bureau of Water Resources  
100 Cambridge Street, Suite 900  
Boston, MA 02114  
Via email: [dep.wetlands@mass.gov](mailto:dep.wetlands@mass.gov)

**RE: MWRA Comments on Draft Regulations at 314 C.M.R. 9.00: 401 Water Quality Certification and 310 C.M.R. 10.00: Wetlands Protection Act**

Dear Ms. Rhodes,

The Massachusetts Water Resources Authority (“MWRA”) appreciates the opportunity to comment on draft regulations at 314 C.M.R. 9.00: 401 Water Quality Certification for Discharge of Dredged or Fill Material, Dredging, and Dredged Material Disposal in Waters of the United States within the Commonwealth (“401 WQC”), and draft regulations at 310 C.M.R. 10.00: Wetlands Protection Act (“WPA”).

MWRA is a public authority that provides drinking water and sewage services to municipalities and industrial users in the greater Boston area. Serving over three million customers in more than sixty communities in the Commonwealth, MWRA is responsible for maintaining and improving a significant amount of infrastructure to ensure public health and safety. A considerable amount of MWRA’s infrastructure exists in areas regulated under 314 C.M.R. 9.00 and 310 C.M.R. 10.00.

Approximately 130 miles of MWRA’s water and sewer pipes are located within FEMA flood zones with approximately seven of those miles being within the FEMA VE Flood Zone or “V-Zone” as presented in the draft regulations. Sixty-one MWRA facilities associated with these pipeline miles are located within FEMA flood zones and two of those facilities are located in the “V-Zone.” MWRA sewer mains are designed to flow to the lowest points in the system prior to discharging to the Deer Island Treatment Plant. In the MWRA service area, low points of elevation often coincide with areas slightly above or at sea level.

MWRA supports MassDEP’s objectives of promoting coastal resiliency against worsening impacts of storms, flooding and sea level rise, as well as updating stormwater management standards to promote resiliency against storm impacts and runoff pollution. MWRA closely follows the evolving science of climate change to understand potential impacts to MWRA facilities and operations. For several years, MWRA’s practice has been to design and implement projects with climate change adaptation in mind. For example, the Deer Island Treatment Plant,

which represents MWRA's single largest infrastructure investment, is extremely flood resistant due to its 1986 design that considered sea level rise before it became a mainstay issue. In fact, Deer Island was designed to withstand a 100-year storm event plus nearly two feet of sea level rise, a wave run-up of 14 feet on its east side, and two feet on its west side. During design, plant process tanks were raised almost two feet, and the outfall diameter was increased to accommodate sea level rise without reducing plant capacity. In addition, Deer Island is surrounded by a seawall that reflects incoming wave energy back to the ocean.

MWRA has taken a pragmatic approach to climate change adaptation, and efforts have largely focused on the evaluation and implementation of measures to allow its facilities to withstand a significant storm event that could occur in Eastern Massachusetts. Beginning in 2016, MWRA assessed all of its 30 coastal and near coastal facilities for vulnerability to a conservative benchmark: a 100-year flood elevation as set by the Federal Emergency Management Agency (FEMA) plus an additional 2.5 feet to account for projected sea level rise. At the time, this benchmark represented a reasonable estimation in evaluating the potential threat of sea level rise and storm surge on coastal facilities, allowing MWRA to move forward while more detailed modeling of sea level rise was underway.

Since these evaluations, MWRA has protected nearly all its vulnerable facilities with the overall goal of limiting damage, recovering fully, and resuming activity as quickly and efficiently as possible. Flood protection measures include the installation of deployable flood barriers at entrances, construction of protective walls around critical equipment, raised electrical infrastructure, and sandbags. Fortunately, the benchmark used to protect these facilities is in line with the latest climate change projections – the Massachusetts Coastal Flood Risk Model forecasts 2.5 of sea level rise by 2050 – so MWRA is well prepared. In addition to protecting existing facilities, the most up to date climate change projections has been and will continue to be incorporated in the design and construction of new and rehabilitated facilities to ensure they are hardened against severe flooding.

MWRA offers the following comments on the proposed WPA regulations:

- MWRA requests clarification of the implications of the removal of “Combined Application” and “Combined Permit” from the draft WPA (see 310 C.M.R. 10.04 and 10.05(4)) and the 401 WQC regulations (see 314 C.M.R. 9.02 and 9.05(1)). Historically an Order of Conditions issued under the Wetlands Protection Act effectively served as a 401 Water Quality Certification for certain projects under the current regulations.
- MWRA recommends the addition of a section exclusively addressing how projects in service of public health and safety that are currently included as exempt activities under 310 C.M.R. 10.02(2)(a)(2) will be impacted by the formalization of and restrictions associated with the Velocity Zone (“V-Zone”), Moderate Wave Action Zone (“MoWA Zone”), and Minimum Wave Action Zone (“MiWA Zone”).
- Although MWRA understands the environmental value of the proposed requirement for the Applicant to restore, enhance, or create Wetland Resource Areas through natural methods and materials as an alternative to coastal engineering structures in coastal



Resource Areas and Buffer Zones (310 C.M.R. 10.24(1)(b)). This requirement may not be feasible for existing water or wastewater utility infrastructure. For a utility like MWRA, with facilities located within these zones, engineered structures may be the only viable solution for routine infrastructure maintenance and repair work that ensures the protection of important public health infrastructure. MWRA evaluates its coastal facilities to understand each facility's ability to withstand significant storms and has implemented measures to protect these facilities, including raised platforms to prevent equipment damage and stop logs at doorways. MWRA requests that a provision is included that exempts existing water and wastewater infrastructure from these requirements.

- Specificity should be provided under 310 C.M.R. 10.24(9) regarding the relocation of utilities when necessary to mitigate or avoid flooding or coastal storm damage, since it is unclear if this applies to MWRA water and sewer infrastructure given the current wording of the regulation. MWRA has a significant amount of infrastructure in areas subject to these requirements and must continue to operate, maintain and improve these facilities, including pipelines, valves and structures, pumping stations and headworks facilities. Moving this infrastructure is not a viable solution in most cases.
- 310 C.M.R. 10.36(8)(c)&(e) state that buildings in the V-Zone, MoWA, and MiWA Zones may only be reconstructed if elevated on open piles or otherwise. This will not be feasible for the majority of MWRA's existing infrastructure within these Zones and would impede MWRA's ability to maintain and improve critical infrastructure, including pumping stations, CSO control facilities, and headworks facilities.
- MWRA recommends formalizing an exemption from compliance with Stormwater Management Standards when a project does not increase impervious surface area (e.g. pipelines). MWRA further recommends that the definitions of "redevelopment" and "retrofit" include the maintenance, repair and rehabilitation of water and sewer infrastructure. MWRA appreciates that "retrofit" as written includes projects that reduce combined sewer overflows but this should also include other critical infrastructure.

MWRA offers the following comments on the proposed 401 WQC regulations:

- MWRA requests clarification of the implications of the removal of "Combined Application" and "Combined Permit" from the draft WPA (see 310 C.M.R. 10.04 and 10.05(4)) and the 401 WQC regulations (see 314 C.M.R. 9.02 and 9.05(1)). Historically an Order of Conditions issued under the Wetlands Protection Act effectively served as a 401 Water Quality Certification for certain projects under the current regulations.
- The proposed site inspection and corrective action requirements under 314 C.M.R. 9.06(8), while consistent with the requirement of including an erosion and sediment control plan as part of a Notice of Intent application per 310 C.M.R. 10.05 (4), are redundant with site inspection and corrective action requirements required under the United States Environmental Protection Agency ("USEPA") National Pollution Discharge Elimination System ("NPDES") Construction General Permit ("CGP"). Projects that disturb greater than one acre of land or projects that will disturb less than

one acre of land but are part of a common development plan that will disturb greater than one acre of land are eligible for coverage under the NPDES CGP and require the preparation of a Stormwater Pollution Prevention Plan (“SWPPP”), which is typically completed by the contractor prior to construction. MWRA supports the formalization of site inspection and corrective action requirements as described in 314 C.M.R. 9.06(8) for projects below NPDES CGP thresholds, and recommends the addition of language directing project proponents to defer to current NPDES CGP standards for projects meeting or exceeding NPDES CGP thresholds.

MWRA commends the stated goals of revising the WPA and 401 WQC regulations to address climate change vulnerability due to sea level rise and shoreline change, update precipitation data by replacing data from the 1961 US Weather Bureau Technical Paper 40 (“TP40”) with current precipitation data from NOAA Precipitation Atlas 14 Volume 10 (“NOAA Atlas 14”), formally define FEMA Flood Zones within the regulations, and require the submission of an erosion and sediment control plan as part of a Wetlands Notice of Intent.

Please contact Colleen Rizzi ([colleen.rizzi@mwra.com](mailto:colleen.rizzi@mwra.com)) with any questions.

Sincerely,

A handwritten signature in blue ink, appearing to read 'D. Coppes', with a horizontal line underneath.

David W. Coppes, P.E.  
Chief Operating Officer

CC: Fred Laskey, Executive Director  
Matthew Romero, MWRA Advisory Board Executive Director

**From:** [Andrew Koenigsberg](#)  
**To:** [DEP Wetlands \(DEP\)](#)  
**Subject:** Wetlands-401 Resilience Comments  
**Date:** Friday, March 29, 2024 11:26:07 AM  
**Attachments:** [Infiltration Rates Comparison Comment for Stormwater.pdf](#)

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CAUTION: This email originated from a sender outside of the Commonwealth of Massachusetts mail system. Do not click on links or open attachments unless you recognize the sender and know the content is safe.

See attached document about inconsistencies in recharge calculations.

**Andrew Koenigsberg**



**Comment:**

Table 1 is a comparison of various recharge rates and Ksat extracted from the references listed below.

Before continuing further, Recharge Rate and Ksat are not the same thing. The first is a rate of infiltration, the latter is an intrinsic property of a given soil, even though both use the same units of measure, Length/Time. That being said, Recharge Rate and Ksat are used interchangeably throughout the various references listed below.

Note that different recharge rates were used within the Recharge Rationale memorandum. The one used in Appendix B of that document is the same as the Rawls Rate used in the current handbook. In addition, the EPA BATT also uses the Rawls Rate. The draft Stormwater Handbook uses much lower rates.

For comparison purposes the last two columns show Ksat values for NRCS A and C horizons from soils representative of the HSG Soil groups A through C.

What is concerning is that calculations used to determine target recharge values are much higher than those used for Ksat in the new Stormwater Handbook. The design criteria for SCMs in the BATT assume much higher Ksat values than those used in the new Handbook as well. This inconsistency will make design of SCMs difficult since the tools use different standards for recharge.

**Recommendations:**

1. DEP needs to review the methodology used to determine Target Recharge and whether it can actually integrate with the much lower values used in the draft Handbook and the much higher rates in the EPA BATT for SCM design.
2. Use of the Rawls Rate (which is actually a hydraulic conductivity, not a rate), for regional infiltration modeling most likely underestimates the amount of recharge. Rawls Rates may be sufficient for conservatively modeling recharge for simple infiltration analyses used in HydroCAD, but it is problematic for large regional surficial hydrology models. If the standard is to use the hydraulic conductivities specified by Rawls Rates as infiltration rates, it may be more accurate to use the vertical hydraulic conductivities specified in NRCS soil mapping. For HSG A soils, Kv for Hinkley soils is 4 in/hr, not the 1.02 in/hr used in the model, may be more appropriate. Kv data obtained from the MassMapper Physical Resources > Soils > Top 20 Soils: Saturated Hydraulic Conductivities (Ksat) would be a useful spatial data source. DEP should evaluate the models using Kv values provided by NRCS data sources and compare them to the Rawls Rates used in their models.

Table 1 – Comparison of Recharge Rate / Ksat values in references cited in the draft Stormwater Handbook								
Soil Type	Soil HSG	Recharge Rationale Recharge Rate from Text (in/hr) [1]	Recharge Rationale Recharge Rate from Appendix B (in/hr) [2]	BATT Structural BMP Infiltration Rates (in/hr)	Proposed Handbook Ksat (in/hr)	Current Handbook Recharge “Rawls” Rate (in/hr)	NRCS A Horizon Vertical Ksat (in/hr) [4]	NRCS C Horizon Vertical Ksat (in/hr) [4]
Sand	A	1.02	8.27	8.27	1.42	8.27	4.0	25.5
Loamy Sand	A		2.41	2.41		2.41		
Sandy Loam	B	0.52	1.02	1.02	0.57	1.02	1.4	14.1
Loam	B		0.52	0.52		0.52		
Silt Loam	C	0.10	0.27	0.27	0.10	0.27	1.4	0.01
Sandy Clay Loam	C		0.17	0.17		0.17		

## References

[1] Summary of Target Recharge Volume Evaluation Memorandum - See Sub-Bullet 6 on Page 2

[2] ] Summary of Target Recharge Volume Evaluation Memorandum - UNIT-AREA GROUNDWATER RECHARGE ESTIMATES FOR ESTIMATING IMPERVIOUS COVER RUNOFF CAPTURE FOR INFILTRATION FOR NEW DEVELOPMENT ACTIVITIES – DRAFT 04/20/2022 Appendix B

[3] EPA BATT (version 2.1) Add Structural BMP Infiltration Rate Selections.

[4] NRCS A and C horizon Ksat values for Hinkley (HSG A), Agawam (HSG B), and Paxton Soils (HSG C) Soils

**From:** [Andrew Koenigsberg](#)  
**To:** [DEP Wetlands \(DEP\)](#)  
**Subject:** "Wetlands-401 Resilience Comments" - Revised from Andrew Koenigsberg  
**Date:** Thursday, February 8, 2024 5:03:11 PM  
**Attachments:** [SW Handbook Comments - Andrew Koenigsberg PG Revised 02-08-2024.pdf](#)

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I noticed some typographic and grammar errors in the document I sent last night, so please use this one.

Thank you.

**Andrew Koenigsberg**



# Comments on the DRAFT Massachusetts Stormwater Management Handbook, December 2023

Submitted by Andrew Koenigsberg, PG



## Brief CV:

- Practicing Hydrogeologist with current professional experience in analytical and numerical modeling of aquifers and aquifer tests
- Professional Geologist, State of Maine, License Number GE 315, 1993
- Certified Professional Geologist, American Institute of Professional Geologists, Certification Number 7973
- Member of the Westborough Conservation Commission since 2005 and Chair since 2010.
- Contributing author of the Westborough Wetlands Protection Bylaw and Regulations, 2010, revised 2012
- Presenter at the Massachusetts Association of Conservation Commissions, March 2023 and October 2023: *Stormwater Management Systems: Importance of Groundwater Hydrology*
- Author: *Stormwater Infiltration System Design Regulation Flaws Due to Simplistic Assumptions Regarding Site Hydrogeology*, The Professional Geologist, Volume 61 Number 1, January 2024, Pages 22-27
- Cornell University, BA Geological Sciences, 1977
- University of New Orleans, MS Geological Sciences, 1988

## 1 Introduction

My comments focus on the hydrogeology aspects of the proposed revisions to the Massachusetts Stormwater Handbook and the continuing deficiencies in the new handbook in relation to this aspect of geological science. Since recharge to groundwater is one of the primary goals of stormwater policy, hydrogeology should be an important component of the regulations which implement the policy.

The draft revised Handbook has requirements directly related to hydrogeology but provides almost no scientifically valid procedures to evaluate them in contrast to the detailed instructions provided for surface water hydrology and system design. This lack of detail will cause difficulty for applicants, Conservation Commissions, municipal engineering departments, NOI reviewers in DEP, as well as the engineering consultants who prepare or perform peer review of stormwater reports.

The proposed revisions also have new requirements which are not needed when examined from a hydrogeologic perspective. I recommend that they be removed to prevent needless additional work which will increase both design expense and construction costs.

I will discuss these issues in detail in Section 2.

## 2 Comments

### 2.1 Definition of 72-Hour Drainage Time (Page 2-6, Standard 3):

The following standard is vague:

*“... the recharge practice is designed to infiltrate the runoff into the ground fully within 72 hours”.*

The standard does not specify when the clock starts. Is it from the beginning of the 24-hour storm or the end of the storm? This difference is significant and I recommend that the handbook provide a more specific definition.

**I recommend that the definition be revised to specify when the 72-hour range starts.**

### 2.2 Definition of Saturated Hydraulic Conductivity ( $K_{sat}$ ):

The handbook needs to specify if the  $K_{sat}$  is a vertical  $K$  ( $K_v$ ) or a horizontal  $K$  ( $K_h$ ). This distinction is important. A mounding analysis requires the input of  $K_h$ . Vertical anisotropy is a key factor in hydrogeology anywhere, but especially in New England where sediment deposition is due to glaciation. See Figure 1 for a detailed discussion of anisotropy and heterogeneity.

The ratio of  $K_v$  to  $K_h$  is roughly 1:5 for soils derived from glacial outwash such as loamy sands, sands, sand and gravel, essentially HSG A soils. It is 1:10 for finer grained soils derived from glaciolacustrine sediments or soils derived from lodgment or basal glacial tills. Even coarser grained soils can have a high  $K_v/K_h$  ratio if derived from densely compacted basal tills.

**I recommend that the definition of  $K_{sat}$  specify whether it refers to  $K_v$  or  $K_h$ .**

### 2.3 $K_{sat}$ versus Infiltration Rate (Page 2-6, Standard 3)

The following standard is not a valid statement from a hydrogeologic perspective:

*“This standard is met when underlying soils have a saturated hydraulic conductivity rate of at least 0.01 inch/hour . . .”*

This standard reflects confusion between  $K_{sat}$  and Infiltration Rate which was in the 2008 version of the document and DEP has carried it over to this one. Infiltration rate and  $K_{sat}$  are not equivalent.

$K_{sat}$  is a measure of the ability of water to flow through porous media and can only be determined through field tests of the actual saturated soils,

Infiltration rate is determined in an entirely different manner using this formula:

$$R = \frac{\left(\frac{V}{T}\right)}{A}$$

where:

$R$  = infiltration rate (L/T)

$V$  = recharge volume ( $L^3$ )

$T$  = recharge time

$A$  = SCM bottom area ( $L^2$ )



Text in the draft revised Handbook shows clearly that the concepts are used interchangeably. Table 2.3.1 shows examples:

Table 2.3.1 – Text References Demonstrating Confusion Between Infiltration Rate / $K_{sat}$		
Page	Topic	Text
2-7	Standard 3 Definition	This standard is met when underlying soils have a <b>saturated hydraulic conductivity rate</b> of at least 0.01 inch/hour
6-22	Summary of Recharge Requirements Minimum saturated hydraulic conductivity	whether the soils <b>exfiltrate</b> faster than 0.01 inches/hour based on field analyses.
A-136	Dry Wells	Parent soils must have a minimum <b>saturated hydraulic conductivity rate</b> of 0.01 inches/hour.
A-137	Dry Wells	The minimum <b>saturated hydraulic conductivity rate</b> is 0.01 inches/hour
A-148	Infiltration Trenches	Make sure soils have a minimum <b>saturated hydraulic conductivity rate</b> of 0.01 inches per hour.

In addition, a saturated hydraulic conductivity (not rate) of 0.01 inches/hour (0.02 ft/day) is the  $K_{sat}$  of clay or a clayey silt. Neither of these soil types are appropriate for any type of infiltration system, as stated on page A-141 of the Handbook: *“Infiltration basins must not be used at sites where soil have [sic] 30% or greater clay content, or 40% or greater silt clay content.”*

Neither hydraulic conductivity nor infiltration rate are useful standards for compliance. The metric for compliance should be **performance based**, thus the other two standards, drainage time and infiltration volume are appropriate. Infiltration rate is not appropriate.

Furthermore, I suspect in places where the text refers “minimum infiltration rate” is also confusing the two concepts. DEP should review the handbook to ensure that saturated hydraulic conductivity is not being confused with infiltration/exfiltration rate where the term infiltration rate is used.

**In summary, I recommend strongly that the 0.01 in/hour “saturated hydraulic conductivity rate” standard be removed because it is not useful and is in fact, scientifically invalid.**

## 2.4 Minimum Infiltration Rate of 0.01 inch/hour

Above and beyond the discussion in Section 2.3 regarding the draft revised Handbook’s confusion between  $K_{sat}$  and infiltration rate, is the minimum acceptable infiltration rate of 0.01 inch/hour. I cannot find anywhere in the draft revised Handbook a meaningful explanation of how the authors derived that number.

Footnote 12 on page 2-9 says the following:

*“The required minimum infiltration rate is 0.01 inches per hour. To determine the infiltration rate, Applicants must perform a soil evaluation using the methodologies set forth in Section 6.3.13 EPA Region 1 Performance Removal Curves via EPA BATT (version 2.1): <https://www.epa.gov/npdes-permits/stormwater-tools-new-england#swbmp>.”*

I reviewed the instruction manual for the referenced tool available from the EPA Region 1 website. Nowhere in that document does it reference a minimum infiltration rate of 0.01 inch/hour. What the instruction manual does have is a range of infiltration rates for each infiltration BMP as listed in

Appendix A (Design Storage Volume Calculations), Table A1 - Method for determining design storage volume (DSV) (i.e., capacity) using Long-term cumulative performance curves.

For infiltration trenches and basins, the “Applicable Structural Stormwater Control Performance Curve” lists six infiltration rates: 0.17, 0.27, 0.52, 1.02 and 2.41 inches/hour. In the BATT program itself, these rates are the only ones available for any infiltration system as listed in the BMP Information tab.

Note that these values are the same as the “Rawls Rates” for specified soil types used in the current version of the Handbook as shown in Volume 3 Chapter 3 Page 22, Table 3.2.2:

<b>Table 2.4.1 – Rawls Rates from 2008 Handbook Table 3.2.2</b>		
<b>Texture Class</b>	<b>NRCS Hydrologic Soil Group (HSG)</b>	<b>Infiltration Rate Inches/Hour</b>
Sand	A	<b>8.27</b>
Loamy Sand	A	<b>2.41</b>
Sandy Loam	B	<b>1.02</b>
Loam	B	<b>0.52</b>
Silt Loam	C	<b>0.27</b>
Sandy Clay Loam	C	<b>0.17</b>
Clay Loam	D	0.09
Silty Clay Loam	D	0.06
Sandy Clay	D	0.05
Silty Clay	D	0.04
Clay	D	0.02

The 2008 Handbook stated:

*“Minimum infiltration rate: Must be at least 0.17 inches/hour at the actual location where infiltration is proposed on site soil. No stormwater recharge systems shall be sited in soils that infiltrate lower than 0.17 inches/hour due to the potential for failure.”*

Note first that a “Rawls Rates” is not a rate, but a  $K_{sat}$  estimate for a given soil type obtained from a paper published by Rawls et al (1982). The use of “Rawls Rates” in the 2008 Handbook demonstrated the same fundamental confusion between  $K_{sat}$  and Infiltration Rate discussed in Section 2.3 which has been perpetuated in the draft revised Handbook. I have substantial technical issues with “Rawls Rates,” but that’s not the issue here. I will say that I am disappointed that the EPA BATT process perpetuates the issue.

The main point though is that the revision allows for a minimum infiltration rate that is 17 times slower than the current standard, which is disconcerting. There is nothing in the BATT manual specifying a minimum infiltration rate of 0.01 inch/hour. In fact, 0.01 inch/hour is half the “Rawls Rate” for clay.

To illustrate the issue, I again refer to the definition of Infiltration Rate:

$$R = \frac{\left(\frac{V}{T}\right)}{A}$$

where:

R = Infiltration rate (L/T)

V = recharge volume (L<sup>3</sup>)

T = recharge time

A = SCM bottom area (L<sup>2</sup>)

If you rearrange the equation to find the SCM bottom area based on a given infiltration rate, the equation becomes:

$$A = \frac{V}{R}$$

Using the following inputs:

R = 0.02 ft/day (converted from inch/hour)

V = 2722.5 ft<sup>3</sup> (from page 6-38 of the draft revised Handbook)

T = 3 Days (72 hours to drain using Equation 6.5)

A = (2722.5 ft<sup>3</sup>/3 days) / 0.02 ft/day = 45,375 ft<sup>2</sup> which is 1.04 acres.

1.04 acres is an unacceptably large area for an infiltration basin.

This minimum rate is used throughout the handbook. It does not appear to have been derived by any of the means referenced in Footnote 12 and does not represent a realistic value from a hydrogeologic perspective.

**I recommend that the process for specifying this minimum infiltration rate be subject to independent peer review before it is memorialized in the final published version of the revised Handbook.**

## 2.5 Mounding analysis must demonstrate that the Seasonal High Groundwater does not elevate into the infiltration practice (Page 2-3 Standard 3):

This text is not clear:

*"The mounding analysis must demonstrate that the seasonal high groundwater does not elevate into the infiltration practice, rise above the ground surface, or elevate the water surface of any Resource Areas over a 72-hour period."*

This text requires clarification. A mounding analysis may show that the water table rises above the base of the infiltration SCM during and after a stormwater event, but this is different from a permanent increase in SHGW. The definition must make this distinction clear.

**If the implication is that the infiltration practice will permanently raise the water table, I recommend that it be phrased *"The infiltration practice will not permanently raise the elevation of seasonal high groundwater above the base of the infiltration practice or surrounding ground surface."***

## 2.6 Mounding Analysis (Page 6-40)

The text mentions mounding Analysis in the context of requirements in the draft revised Handbook at least six times throughout the text. However, the draft revised Handbook devotes three paragraphs to the subject, not one of which provides instruction on how to properly perform a mounding analysis. This same issue existed in the 2008 Handbook.

Over the last year, the Westborough Conservation Commission has received three NOIs where Mounding Analyses was required. Not one of them was done correctly, even after I created and posted detailed instructions on our town Conservation Department [website](#).

I have attached the instruction document I wrote for the Westborough Conservation Department (Koenigsberg, 2023) to this comment document as Appendix C. I am not telling DEP that they must use what I wrote verbatim, but if DEP is going to require mounding analysis, then this guidance document is a good place to begin.

My experience is that most consultants who prepare stormwater reports use the Stormwater Handbook as a cookbook. Since that is the case, I think DEP should provide sufficient guidance on mounding analysis so that:

- Consultants can competently perform the analyses; and
- Municipal engineering staff, peer reviewers and DEP staff can review them critically to make sure they were done correctly.

Right now, no one can do any of these things with any degree of competence, based on what I have seen. For example, consulting engineers contracted by Westborough to act as stormwater report peer reviewers are reluctant to provide detailed critiques of mounding analyses because the stormwater handbook does not provide detailed instructions on how to perform mounding analyses in the first place. I am the only one who can perform these reviews in Westborough and that should not be the case in my town or anywhere else in Massachusetts.

**I recommend that detailed instructions about how to perform a mounding analysis be added to the Handbook.**

### **2.6.1 Breakout**

The mounding analysis section of the draft stormwater handbook states the following:

*“The mounding analysis must also show that the groundwater mound that forms under the recharge system will not break out above the land or water surface of a wetland (e.g., it doesn’t increase the water sheet elevation in a Bordering Vegetated Wetland, Salt Marsh, or Land Under Water within the 72-hour evaluation period).”*

This requirement is not practical or even needed. Insisting on such a standard means that infiltration systems may have to be substantially increased in size unnecessarily, or moved farther away from resource areas for no scientifically valid reason.

All water that infiltrates into the ground will discharge to a resource area as shown conceptually in Figure 2, which is a fundamental concept that can be found in any hydrogeology textbook. With few exceptions, wetlands, streams, ponds and lakes are all surface expressions of the water table, so recharge from all infiltration SCMs will discharge into resource areas. Runoff into a resource area will also raise water levels in the wetland. As will be shown below, groundwater discharge into a resource area due to an infiltration SCM will be overwhelmed by natural processes which occur far more rapidly than any possible impacts from an infiltration SCM.

The basic hydrogeology concepts and evidence to support my argument is detailed in the following subsections.

#### 2.6.1.1 *Rapid Natural Changes in Wetland Water Levels*

Storm events will rapidly change the surface water level in a wetland, as shown in Figure 3. The information used to create this chart was obtained from publicly available databases of measurements recorded at the Harvard Forest Field Station. Figure 2 shows that wetland water levels can change several tenths of a foot within 24 hours during a storm event. These natural fluctuations will overwhelm any increase in surface water level elevations which could be caused by discharge from an infiltration SCM.

#### 2.6.1.2 *Hydraulic Head and Wetlands Surface Water Levels Are Not the Same Thing*

A mounding analysis shows the increase in hydraulic head in the aquifer caused by an infiltration event. This increase does not directly correspond to an equivalent increase in surface water elevation. When accounting for displacement of water in a porous medium, the equivalent increase in surface water elevation is a fraction of the increase in hydraulic head, as demonstrated in Figure 4.

Figure 4 shows that even a one foot rise in aquifer hydraulic head beneath a wetland would correspond to a 0.3 foot increase in surface water elevation, assuming an effective porosity of 0.30. This increase is equivalent to the variation in wetland water levels that may occur during a storm event as surface water discharges into a wetland. In fact, basic evapotranspiration can cause water levels beneath a wetland to vary as much as 0.10 foot over the course of a single day as shown on Figure 5.

#### 2.6.1.3 *Erosion and Inundation Not Possible*

As the new handbook does not explain why this requirement was added, I can only surmise that the concern is that stormwater discharge from the underlying aquifer will lead to flooding and erosion of the resource area. I can understand the concern, but it is not an actual issue. Groundwater discharge into a resource area cannot cause flooding. In fact, groundwater discharge into a wetland is one of the primary ways wetlands stay wet.

Surface stormwater flows are measured in ft/second. According to the Minnesota Stormwater Manual (MPCA, 2008), surface water flow rates in even poorly vegetated soils composed of sand, silt, sandy loam, or silty loam can be as much as 1.5 ft/second without causing erosion. When these soils are well vegetated, velocities can be as high as 3 ft/second without causing erosion.

Once water infiltrates into the ground, groundwater flow rates are thousands of times slower. Flow rate through a saturated medium is called seepage velocity (Fetter, 2001) and is defined as:

$$v_s = (Kh(dh/dl))/\eta_e$$

Where:

$v_s$  = seepage velocity

$Kh$  = horizontal hydraulic conductivity

$dh/dl$  = horizontal hydraulic gradient

$\eta_e$  = effective porosity

Assuming:

$Kh$  = 100 ft/day (a reasonable  $K$  for a sand)

$dh/dl$  = 0.01 or 1 foot drop in 100 horizontal feet

$\eta_e$  = 0.25 (typical value for a sand sand)

$$V = (100 \times 0.01)/0.25 = 4 \text{ ft/day or } 4.6 \times 10^{-5} \text{ ft/second}$$

This velocity does not account for dispersion which would further slow flow rate (Fetter, 2001).

Seepage of groundwater into a wetland or other resource area simply cannot cause erosion or flooding because it flows far too slowly to cause damage, thus I strongly recommend that this requirement be removed from the Stormwater Handbook.

### 2.6.2 Documentation

What is also missing from the mounding analysis discussion is a requirement for a detailed narrative regarding how all input values into the analysis are derived. Requiring this narrative makes it possible for the analysis to be reviewed. Based on my experience, an applicant should not be able to insert a mounding analysis into a stormwater report without explanation.

**I recommend that a detailed narrative of how mounding analysis inputs were derived be required in a stormwater management report.**

### 2.6.3 Conclusion

Mounding analysis should be reserved for ensuring that a basin will drain within the 72-hour time limit only. Attempting to use mounding analysis to assess impacts to wetlands is not a scientifically valid use of the analysis. The Stormwater Handbook should remain focused on preventing increases in **surface water runoff velocities** that could cause erosion in wetlands and ensuring that infiltration systems function correctly.

As detailed in Section 2.5.1.3, groundwater discharging to wetlands will move too slowly to cause erosion or inundation.

**I recommend that prevention of breakout be removed as a requirement in the Handbook as it is not justified based on basic hydrogeology and documented observations of actual wetlands system response to precipitation and evapotranspiration.**

## 2.7 Aquifer Saturated Thickness and Mounding Analysis

The first sentence of the Mounding Analysis Section is:

*“Mounding analysis is required when the vertical separation from the bottom of an exfiltration system to seasonal high groundwater is less than four (4) feet and the recharge system . . .”*

The standard that a mounding analysis is required when the vertical separation is less than four feet does not take into account that the saturated thickness of the underlying aquifer may not be thick enough to allow the system to drain within the 72-hour requirement. The proposed revision continues to assume that there is no bottom to the underlying aquifer or that the character of the soils do not change with depth.

For instance, bedrock could be two feet below the ESHGW and the system design would still meet the standard.

Using the computer application HANTUSH (Smith, 2024) I ran a series of mounding analyses where I varied only Saturated Thickness (H). *The results shown on Figure 6 demonstrate that as H is decreased, the infiltration SCM fails to drain within the required 72 hour period.*

Furthermore, this standard assumes that the soils are uniform with depth is not the case from a geologic perspective. Even in a sandy soil, the bulk density will increase with depth, which will reduce  $K_{sat}$  as much

as two orders of magnitude, according to the NRCS (2019), as shown on Figure 7. This is especially true for soils derived from lodgment glacial till which are found throughout Massachusetts.

The trigger for a mounding analysis has to include the saturated thickness of the underlying aquifer. Saturated thickness should be defined as follows as the difference between ESHGW and the base of the aquifer. The base of the aquifer should be defined as follows:

- Test pit or boring surface elevation minus depth to bedrock.
- Test pit or boring surface elevation minus depth to clay layer.
- Test pit surface elevation minus depth to the elevation of dense till.
- Test pit or boring surface elevation minus depth to deepest test pit or boring if no exploration reaches bedrock, clay or hardpan (dense unweathered till).
- Boring surface elevation to depth of first instance of very dense soil, determined by blow counts greater than 50 blows per foot for the interval between 0.5 to 1.5 feet of a 2-foot split spoon sample.

**I recommend that the standard that a mounding analysis be expanded to include additional circumstances such as aquifer thickness less than 5 feet thick for soils classified as Hydrologic Soil Group A or B and 10 feet thick for Hydrologic Soil Group C.**

## 2.8 Depth to Bedrock Definition (Page 4-24 Site Suitability)

“Depth to Bedrock” should be renamed “Depth to Limiting Layer” because bedrock is not the only geologic formation that can impede infiltration.

Other limiting layers include:

- Basal or lodgment glacial till. Dense till underlies almost all soils in Massachusetts, with the exception of exposed bedrock.
- Glacio-lacustrine or marine silts and clays. Fine-grained glaciolacustrine soils are often found beneath glacial outwash deposits and can act as de facto aquicludes.

**I recommend that the standard should be “any geological formation that acts as a barrier to infiltration of recharge” and the definition must include how to make that determination.**

## 2.9 Drawdown within 72 Hours (Page 6-37 Equation 6-5)

Equation 6-5 is too simplistic and is, in fact, not conservative. An infiltration SCM can meet this standard, but fail when a more robust groundwater flow model is used to evaluate SCM performance.

The problem with equation 6-5 is that it assumes steady state flow from beginning to end of the exfiltration process, when in fact, the exfiltration process is transient. Stormwater Infiltrating the subsurface will initially flow fast until the soil is saturated. The opposite is true when the soil is saturated and infiltrating water has to disperse into and through the underlying aquifer. The latter process takes much longer than the former. Analytical and numerical groundwater models demonstrate this process, as shown on Figure 6.

It also assumes that there is an infinite volume of soil beneath the SCM, which is not the case in Massachusetts, with the practical exception of the southeastern Massachusetts, Cape Cod, and thick



valley-fill or terrace outwash formations, where the thickness of well-drained soils is often in excess of 50 feet. In such cases, the impact of saturated thickness on the infiltration process is negligible.

Equation 6-5 is adequate for well-drained soils where the depth to SHGW is substantial, but I do not think it should not be used as the basis for determining SCM performance under more marginal conditions, including minimal aquifer saturated thickness, soils derived from dense glacial till and soils containing more than 15% silt and/or clay. This equation should not be used for any soil classified as Hydrologic Soil Group C.

## 2.10 Removal of Time-Drawdown Hydrograph Requirement for Mounding Analysis

One of the statements in the 2008 Stormwater Handbook was that the mounding analysis “... results in a water table recession hydrograph depicting exponential decline.”

This sentence has been removed from the latest version of the Handbook and I recommend that it be put back in.

The Handbook refers to USGS Scientific Investigations Report (Carlton, 2010) as a reference on mounding and its referenced spreadsheet as method to perform mounding analysis. This spreadsheet is attractive because it is free and publicly available. The problem is that it does not provide a time-drawdown hydrograph. This deficiency makes the spreadsheet not useful for the purposes of the Stormwater Handbook. It can only determine mound height at the end of the recharge event.

That is all well and good if the height of the mound does not exceed the bottom of the basin. In the situation where that is not the case, then it cannot provide output which would determine whether the basin would drain in 72 hours. Without that knowledge, an applicant would decide that the basin needs to be redesigned, resulting in needless engineering and construction expense that could be avoided.

The reference to Carlton (2010) should be removed from the Handbook. If DEP decides to keep this reference in the Stormwater Handbook, I recommend that the following be appended to the footnote:

*“This spreadsheet cannot be used to determine whether a basin will drain within 72 hours. If the analysis shows that the mound height exceeds the basin bottom at 24 hours, then the applicant must use the Time-Drawdown analysis methodology detailed in Hantush (1967).”*

**I recommend that the Time-Drawdown hydrograph requirement be re-added to the Mounding Analysis section of the revised Handbook.**

**I recommend that the reference to Carlton (2010) be removed from the revised Handbook.**

## 2.11 MODFLOW

The Mounding Analysis section states:

*“The Hantush method predicts the maximum height of the groundwater mound beneath a rectangular or circular recharge area. As such, Hantush is not an acceptable method for linear features (i.e., infiltration trenches, subsurface infiltrators).”*

This statement is factually incorrect.

Any infiltration SCM, even a trench or subsurface infiltrator will be a rectangle of some sort. The Hantush method (Hantush, 1967) puts no limit on the aspect ratio of the rectangle. The rectangle can be 5 x 200 feet or 31.6 x 31.6 feet and the Hantush method will still produce valid results as long as the inputs are valid.

I used MODFLOW and the program HANTUSH (Smith, 2024) to model mounding of a “linear” infiltration system with the dimensions of 5 x 200 feet. The analyses are included in Appendix B. The resulting Time-Drawdown hydrographs shown in Figure 8 are almost exactly the same. MODFLOW is not required to perform the sort of simple mounding analysis required for a stormwater infiltration system, regardless of the dimensional aspect ratio.

I am also very concerned about requiring the use of MODFLOW. Based on my experience as both a Conservation Commissioner and practicing hydrogeologist, the vast majority of engineering firms in Massachusetts have no expertise in hydrogeology. I have already stated that I have yet to see a valid mounding analysis submitted by an applicant’s consultant using the Hantush method, which is relatively straightforward when a commercially available mounding program is used. Requiring the use of MODFLOW complicates the process by orders of magnitude.

Although MODFLOW is a widely accepted three-dimensional numerical groundwater flow model, it is complex, unintuitive, and requires substantial expertise because it requires a lot of customization in order to use it for any groundwater modeling task, let alone mounding. There are entire textbooks and graduate level college courses devoted to learning how to use MODFLOW.

Furthermore, MODFLOW itself is a command line program written in FORTRAN. It requires use of a wrap-around application to handle pre-post processing of inputs and outputs in order to use it efficiently. There are several commercially available applications which can perform these tasks, and they all use different UIs. Regardless of the UI, the user has to understand many hydrogeologic concepts and how to configure a wide variety of variables. Among these concepts and inputs are:

- Saturated Thickness
- Specific Yield
- Effective Porosity
- Total Porosity
- $K_{x,y}$
- $K_v$
- Unconfined versus confined aquifers
- Model discretization
- Boundary Conditions
- Transient versus steady state flow
- Model boundary types (constant head, general head, river, stream)
- Recharge calculation
- Wetland simulation
- Zone budgets
- Observation well simulation
- Output export
- Super-positioning
- Vertical and horizontal gradients
- Data contouring and plotting

This list is not exhaustive.

Conservation Commissions, conservation officers, municipal engineers, engineering consultants, and DEP staff are all going to be at the bottom of a huge learning curve with no obvious means of gaining the expertise required to use MODFLOW, submit results that would pass scientific muster or even evaluate

their accuracy. As I demonstrate in Figure 8 and Appendix B, it is also unnecessary, even for “linear” systems.

I honestly do not see how requiring the use of MODFLOW will improve mounding analyses submittals or evaluations in any way. In my opinion, the opposite will occur.

**I recommend that the requirement to use MODFLOW for “linear” SCMs be removed.**

## 2.12 Mounding Analysis and Contaminated Sites

Paragraph 3 of the Mounding Analysis Section states:

*“... the mounding analysis must determine whether infiltration of the Required Recharge Volume will cause or contribute to groundwater contamination.”*

The problems with this requirement are twofold.

First, a mounding analysis cannot make this determination on its own. A mounding analysis only shows the increase in hydraulic head beneath and adjacent to the infiltration SCM. This increase does not necessarily indicate a change in groundwater flow direction.

Second, the requirement is vague. It provides no metrics which can be used to decide one way or another that the infiltration SCM has an impact.

I do not see a way for a stormwater infiltration SCM to cause or contribute to groundwater contamination if the surface soils at the site are clean and the runoff discharging to the infiltration SCM meets requirements. If the site where proposed infiltration is to occur is capped or is otherwise a contamination source, the infiltration SCM would not be placed on top of the cap or the known contamination source, but downgradient as a matter of course.

The way to prevent an infiltration SCM from causing or contributing to groundwater contamination is to design stormwater management of the site to prevent contamination which may be present on the site from getting into the infiltration SCM in the first place and placing the SCM downgradient of any existing source of contamination, whether on or off site.

**I have two recommendations here.**

- 1. Remove this requirement as a mounding analysis cannot determine whether an infiltration SCM will cause or contribute to groundwater contamination; OR**
- 2. Provide detailed scientifically defensible metrics which can be used to evaluate how the infiltration SCM is causing or contributing to contamination and how the mounding analysis can be used to make that determination.**

## 2.13 Structural Infiltration - Infiltration Basins - Monitoring Well Requirement (page A-143)

The revised Handbook has the following requirement:

*“Install one monitoring well in the basin floor per every 5,000 square feet of basin floor. Monitoring well(s) must extend at least 5 feet below the lowest engineered depth of the SCM, or to the limiting layer.”*

The issue here is that no reason for their installation or how they should be used is provided. If the Handbook cannot provide a reason for their use, this requirement should be removed.

If DEP keeps this requirement, instructions for their use should be provided and be required to be included in the O&M plan.

### **2.13.1 Recommended O&M Plan Language for Monitoring Wells**

**I recommend the following language for the O&M Plan:**

*Monitoring well water levels will be measured at the end of each major storm and at 72 hours thereafter for the first year of operation for each detention system.*

*These measurements will be reported to the Conservation Department (agent) and the Town Engineer. If the basin still contains water at 72 hours, water levels shall be measured at 24-hour intervals until the basin or infiltration system is empty.*

*These procedures will be incorporated into the Operations & Maintenance Plan for the project.*

*Corrective action will be required if the basin consistently does not empty within 72 hours after two storm events. This standard shall apply during the lifetime of the system.*

### **2.13.2 Other Recommended Changes for Monitoring Wells**

**I recommend the following changes:**

1. A minimum of three wells is excessive, especially for a small basin. One well per 5,000 ft<sup>2</sup> is sufficient with a minimum of 1 well.
2. Monitoring wells should be drilled to at least 5 feet below Estimated Seasonal High Groundwater or to refusal, whichever comes first. If the idea is to evaluate the interaction of the SCM with the underlying aquifer, then the wells should be drilled into the aquifer. The biggest costs associated with drilling wells is mobilization of the equipment to the site and crew labor. The well itself costs about \$20 per foot.

## **2.14 Structural Infiltration - Infiltration Basins – Shallow Bedrock (Page A-142)**

The following text is in paragraph 3:

*Greater separation is necessary for bedrock. If there is bedrock on the site, conduct an analysis to determine the appropriate vertical separation.*

This statement is vague and provides no guidance. The design standards need to provide the following:

1. Details of the analyses to be performed;
2. Specification of the appropriate vertical separation and how to determine that value;

The standard should not be limited to bedrock, but any limiting layer beneath the ground surface which can act as an aquiclude as discussed in Section 2.7.

The presence of bedrock on the site by itself, is not an impediment to the installation of an infiltration SCM. What is important is that bedrock, or a limiting layer, be of sufficient depth below the base of the proposed SCM to allow infiltration of the required recharge volume within 72 hours.

A substantial DEP research project (Winkler et al, 2001) addressed the issue of how to design infiltration systems, including thin unsaturated and saturated soil scenarios. The methodology described in the report can serve as the basis for developing updated infiltration system analyses for shallow conditions. The project would need to be revisited as the report only addressed storms of no more than 6 hours

duration. The report's charts and figures would need to be updated to allow it to be used in the context of the current stormwater management standards.

**I recommend that DEP review the Winkler report to assess its usefulness to provide a more rigorous guidance for stormwater management systems when shallow subsurface conditions exist.**

## 2.15 Testing for Saturated Hydraulic Conductivity

The draft revised Handbook limits testing to a variety of permeameter tests. There are other testing methods which can be used and which are acceptable to DEP Bureaus, such as the Groundwater Discharge Permit program.

First off, these types of tests are limited to determining  $K_v$ , whereas  $K_h$  is required for mounding analyses. The handbook must make this distinction clear.

Other methods are available, including slug tests and estimates based on grain-size analyses. Both of these methods provide a  $K_h$ , which is what is required for mounding analysis. Slug tests are performed directly in the aquifer, if saturated conditions exist beneath the proposed SCM. They require the installation of a monitoring well. Commercial programs are available to analyze the data. Again, expertise is required to perform and analyze slug tests, but slug testing is an acceptable and widely-used process for obtaining these data.

Estimates of  $K_h$  can be made using grain-size analysis. A variety of methods are available, but their applicability is based on the engineering properties of the soil. A method applicable to a sand may not be applicable to a sandy loam. A publicly available Excel-based program called HydroGeoSieveXL (Devlin, 2015) that can evaluate grain-size distribution and determine which methods are applicable is a very useful tool. I have used it to provide estimates of  $K_h$  when obtaining  $K_{sat}$  by in situ methods either failed or were not available. As discussed previously, bulk density of soils must be considered when using grain size methods. Furthermore, grain-size analysis must include the clay fraction, which requires the analysis to include the hydrometer component.

As stated above, these methods are acceptable to other DEP bureaus and used routinely by engineers who submit hydrogeologic reports to DEP.

**I recommend that testing for  $K_{sat}$  be expanded to allow use of slug test and grain-size methodologies.**

## 3 Summary

Section 2 is a detailed analysis demonstrating what I consider to be substantial problems with the proposed revisions to the Stormwater Handbook with regard to hydrogeology. These deficiencies include, but are not limited to:

- Vague definitions of 72-hour drainage time and  $K_{sat}$ .
- Confusion between the concepts of  $K_{sat}$  and Infiltration Rate.
- Misunderstanding of breakout and its applicability to infiltration SCMs.
- Misunderstanding about impact of increasing the water level in a resource area.
- Not providing guidance on how to address shallow limiting layers.
- Vague requirements regarding mounding analysis and contaminated sites.
- Requiring the unnecessary use of MODFLOW.

- Requiring mounding analysis without providing instruction on how it should be performed; how to obtain the correct input values; and how to document implementation.
- Requiring monitoring wells for infiltration SCMs without providing instructions on use.
- Limiting  $K_{sat}$  analyses to just permeameter tests.
- Setting the standard for minimum infiltration rate of 0.01 inch/hour, which is unjustifiably low from a scientific perspective and which requires peer review.

Throughout Section 2, I have provided specific recommendations on how to address these and other issues in the draft revised Handbook.

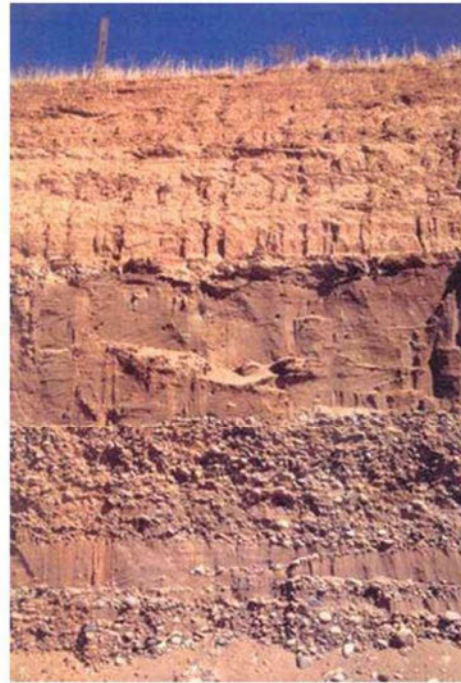
From my perspective as a hydrogeologist and long-serving member of a Conservation Commission, it is in DEP's best interest to address the problems I have identified. The 2008 Handbook had some substantial problems and I do not want to have these existing problems continue, nor do I want to see new ones.

## Appendix B: Figures

# Heterogeneity and Anisotropy

- Homogeneous
  - Properties same at every point
- Heterogeneous
  - Properties different at every point
- Isotropic
  - Properties same in every direction
- Anisotropic
  - Properties different in different directions
- Often results from stratification during sedimentation

$$K_{horizontal} > K_{vertical}$$



www.usgs.gov

Figure 1 – USGS Definitions of Heterogeneity and Anisotropy (Groundwater Hydraulics Daene C. McKinney -<https://slideplayer.com/slide/1625432/>)



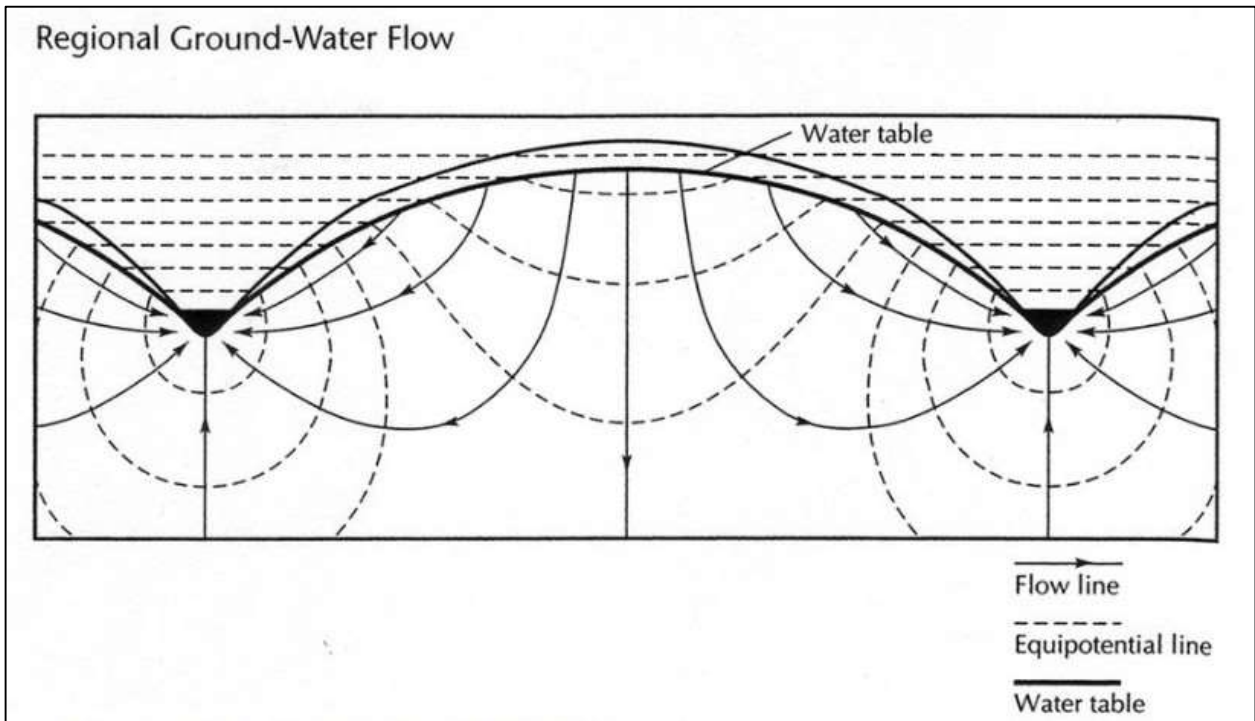


Figure 2 - Regional Groundwater Flow Net (Fetter, 2001)

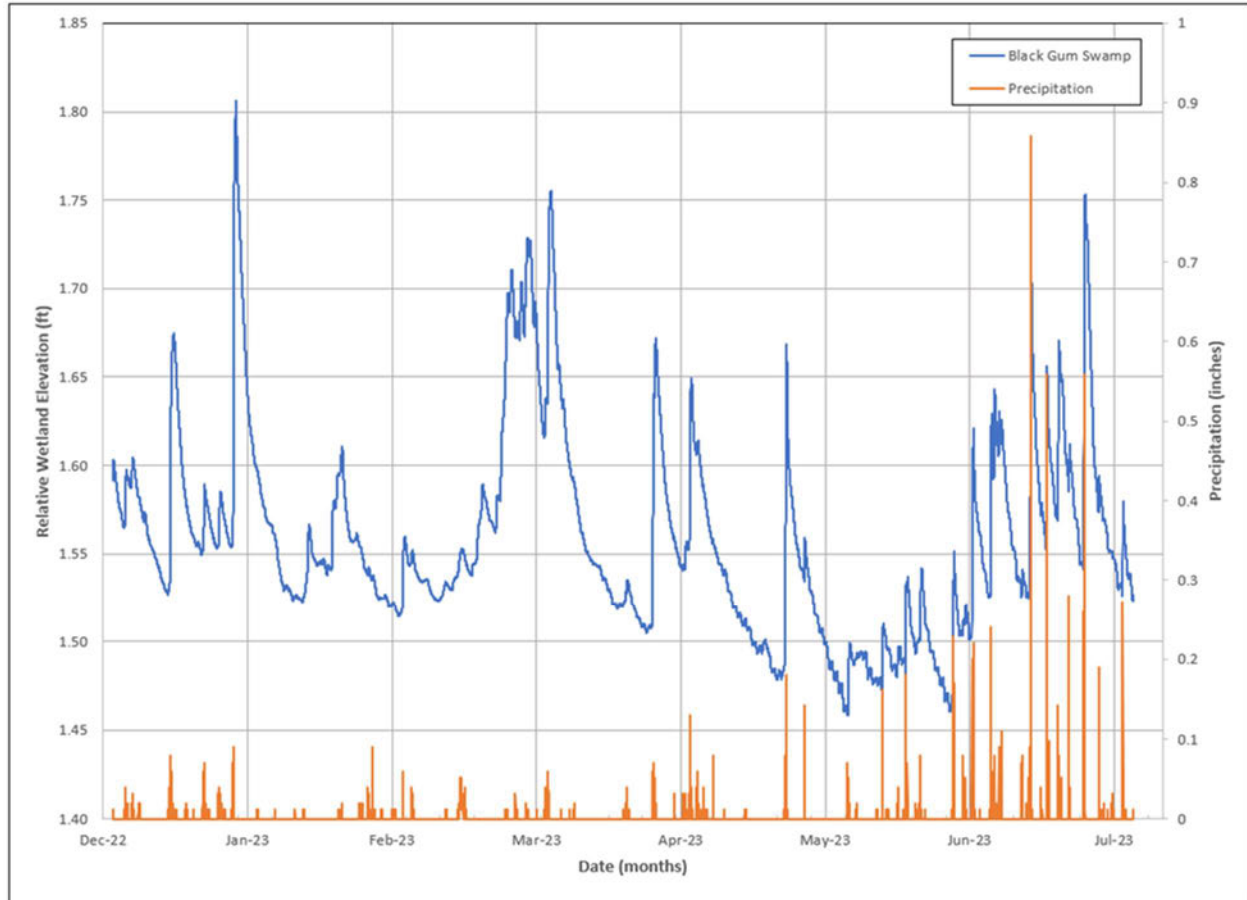


Figure 3 - Harvard Forest Black Gum Swamp Relative Water Level Elevation & Harvard Forest Meteorological Station Precipitation 01/01/2023 to 08/01/2023 (Harvard, 2023)

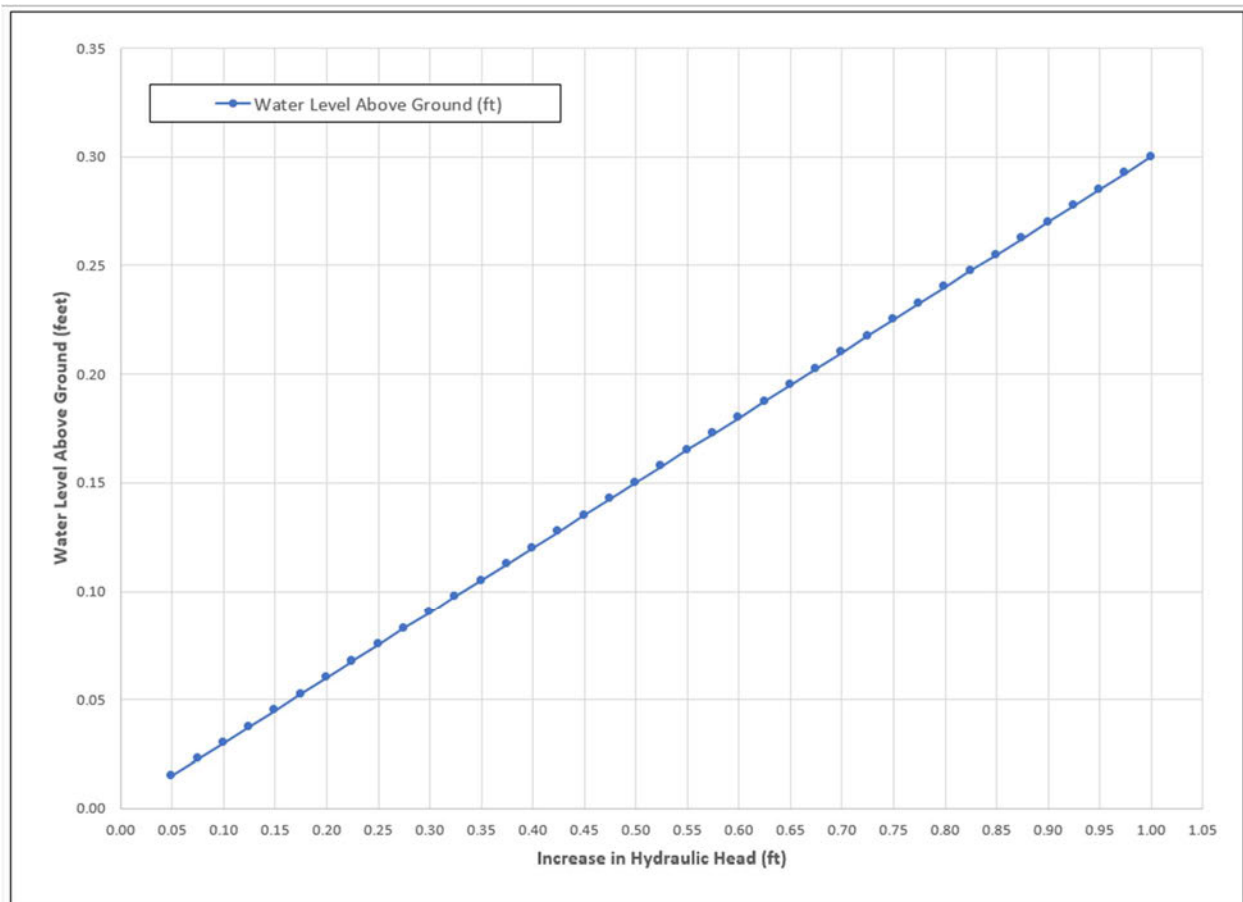


Figure 4 - Water Level Above Ground vs Increase in Aquifer Hydraulic Head Assuming an Effective Porosity of 0.30 (Andrew Koenigsberg)

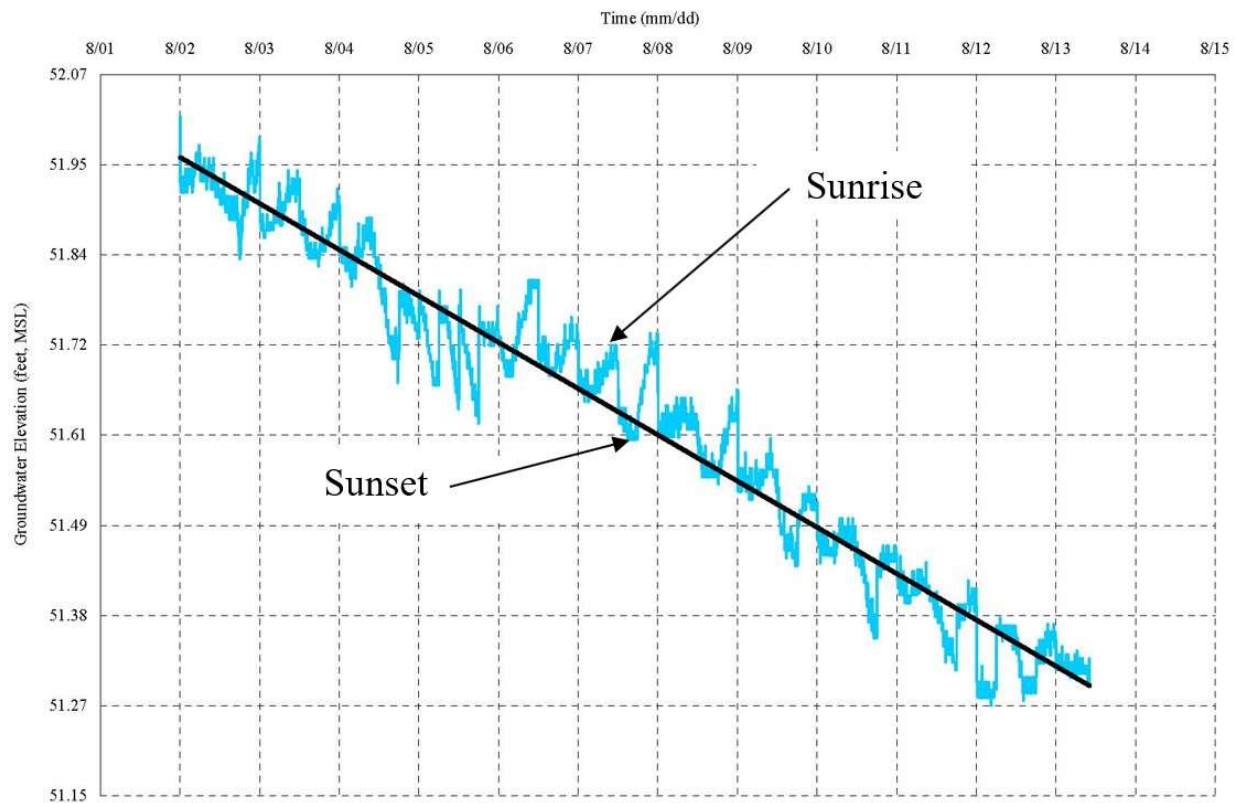


Figure 5 – Variation in groundwater Levels beneath a wetland at Turner Hill, Ipswich, MA (courtesy Stephen W. Smith, PE, PHGW)

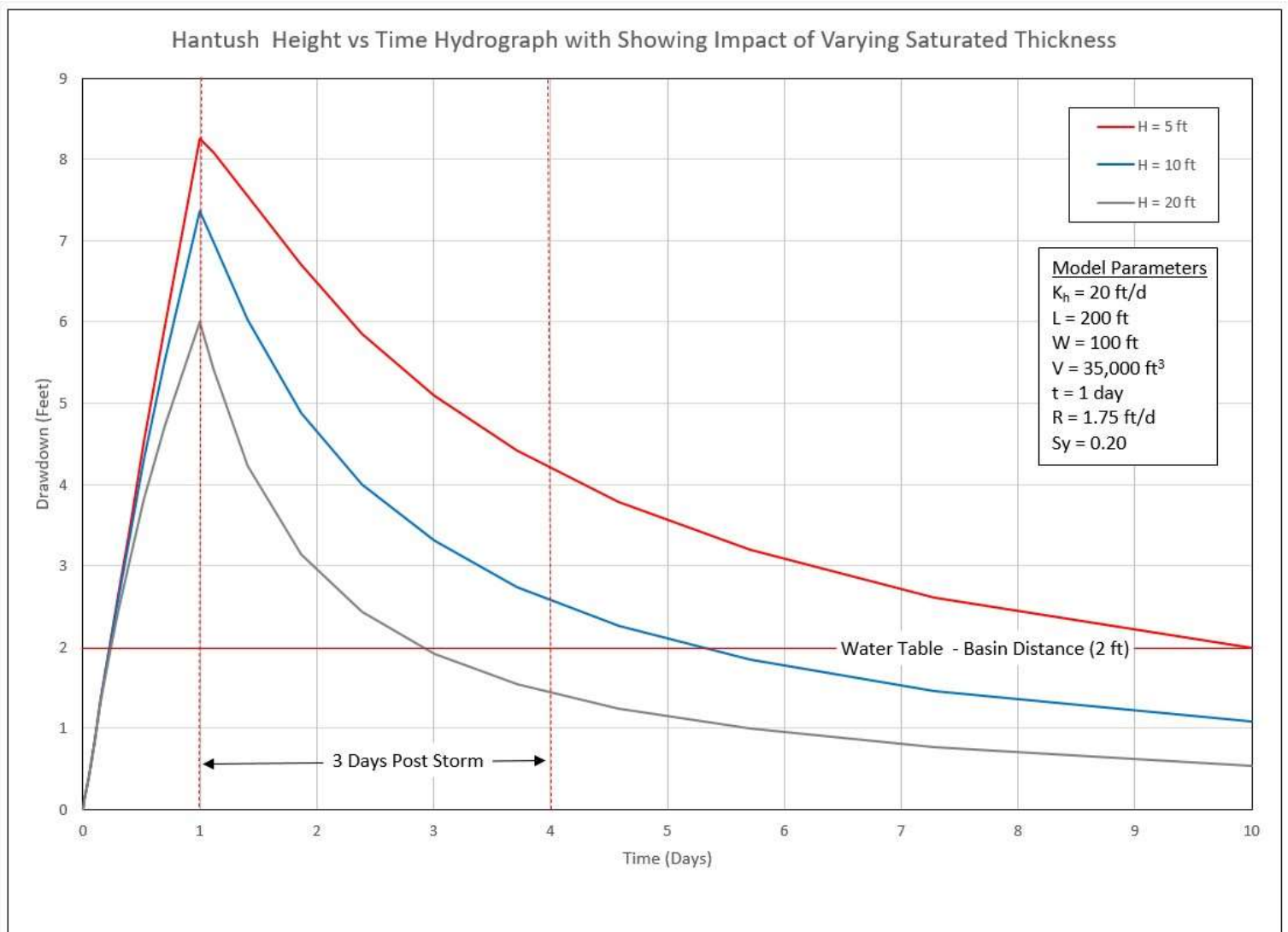


Figure 6 – Mounding analyses demonstrating the impact of varying saturated thickness.

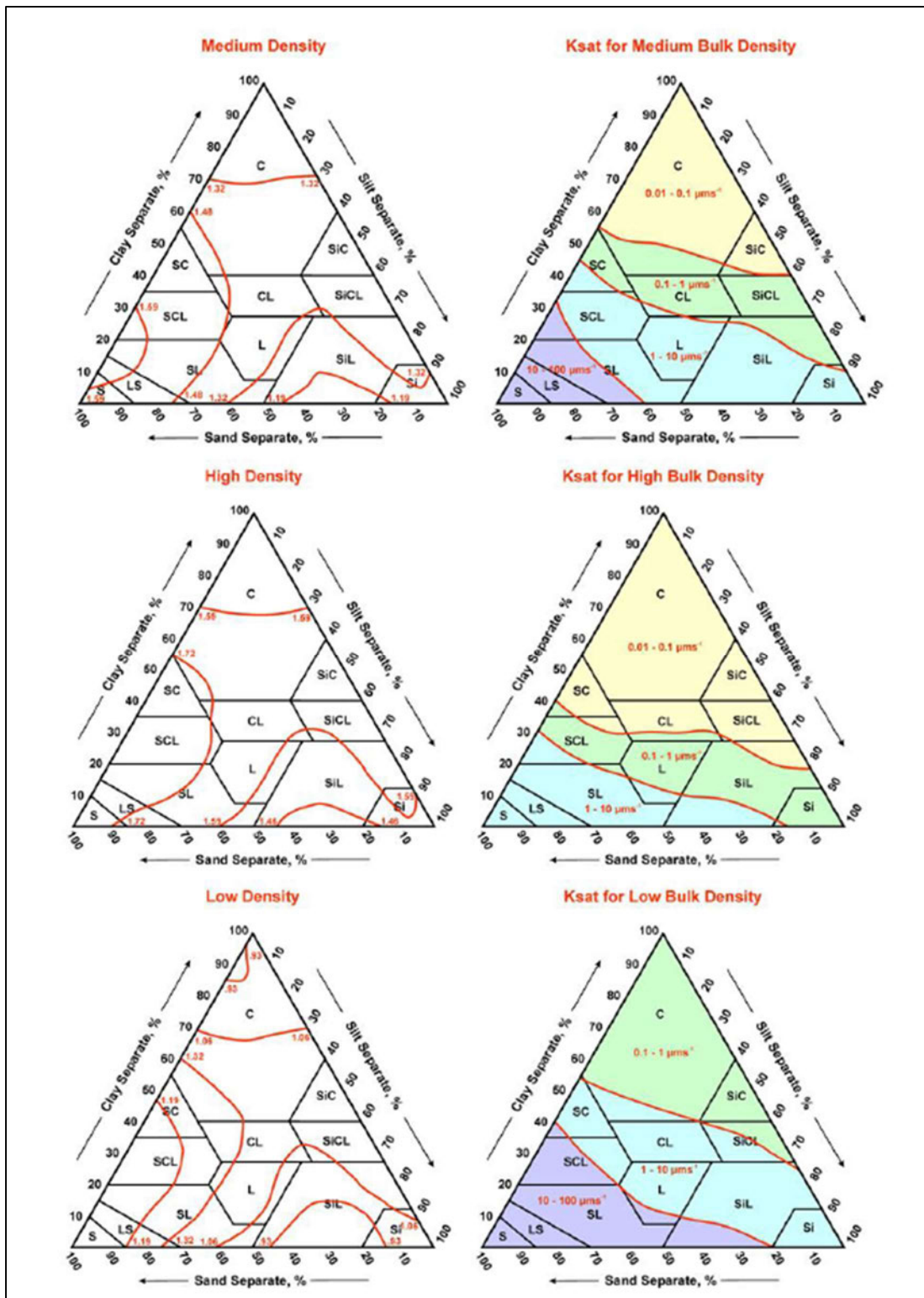


Figure 7 – Impact to Ksat caused by increase in soil bulk density. Copied from NRCS (2019), 618.88 Guide for Estimating Ksat from Soil Properties

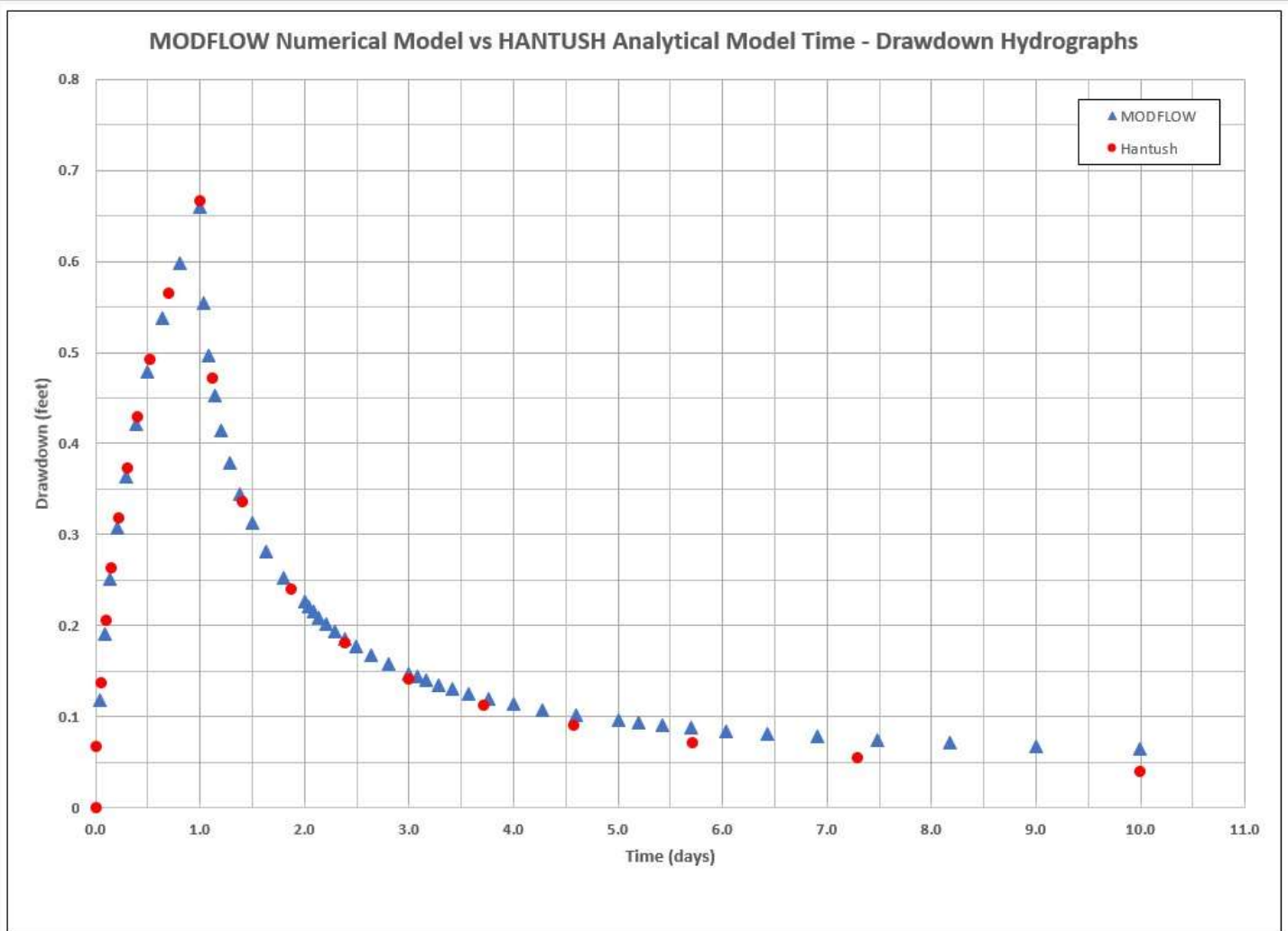
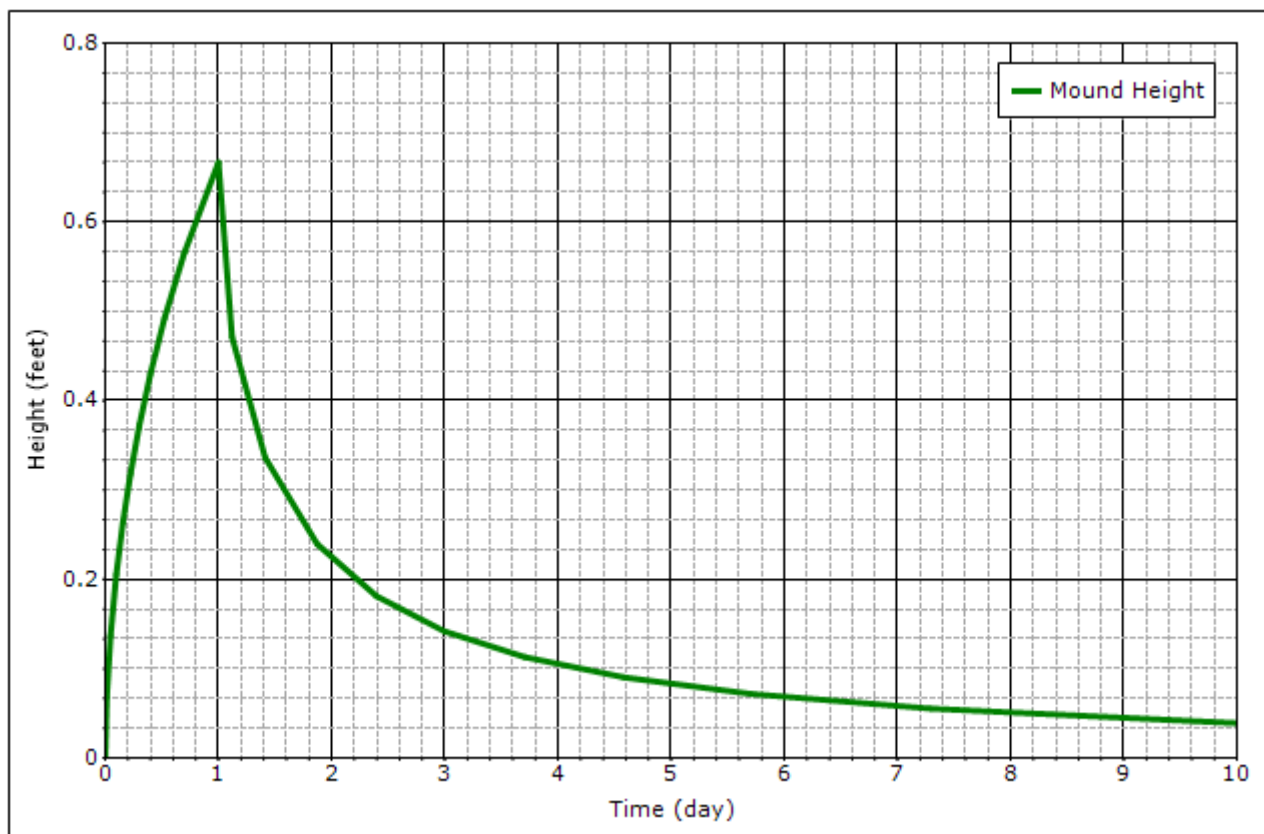


Figure 8 – Time-Drawdown Hydrograph Comparison for MODFLOW and Hantush models



## Appendix B – MODFLOW comparison to HANTUSH Results

# Groundwater Mounding Analysis (Hantush Method using Glover's Solution)



Company:  
 Project: Stormwater Mounding  
 Analyst: Andrew Koenigsberg,  
 P.G.  
 Date: 01/14/2024

## Recharge Basin Dimensions

Length (w): 200 ft  
 Width (l): 5 ft  
 Bottom Area: **1,000 ft<sup>2</sup>**  
 SHGW Separation: 0 ft

## Recharge Rate Calculations

Duration (t): 1 d  
 Volume (V): **2,500 ft<sup>3</sup>**  
 Rate (R): 2.5 ft/d  
 Total Simulation Time: 10 d

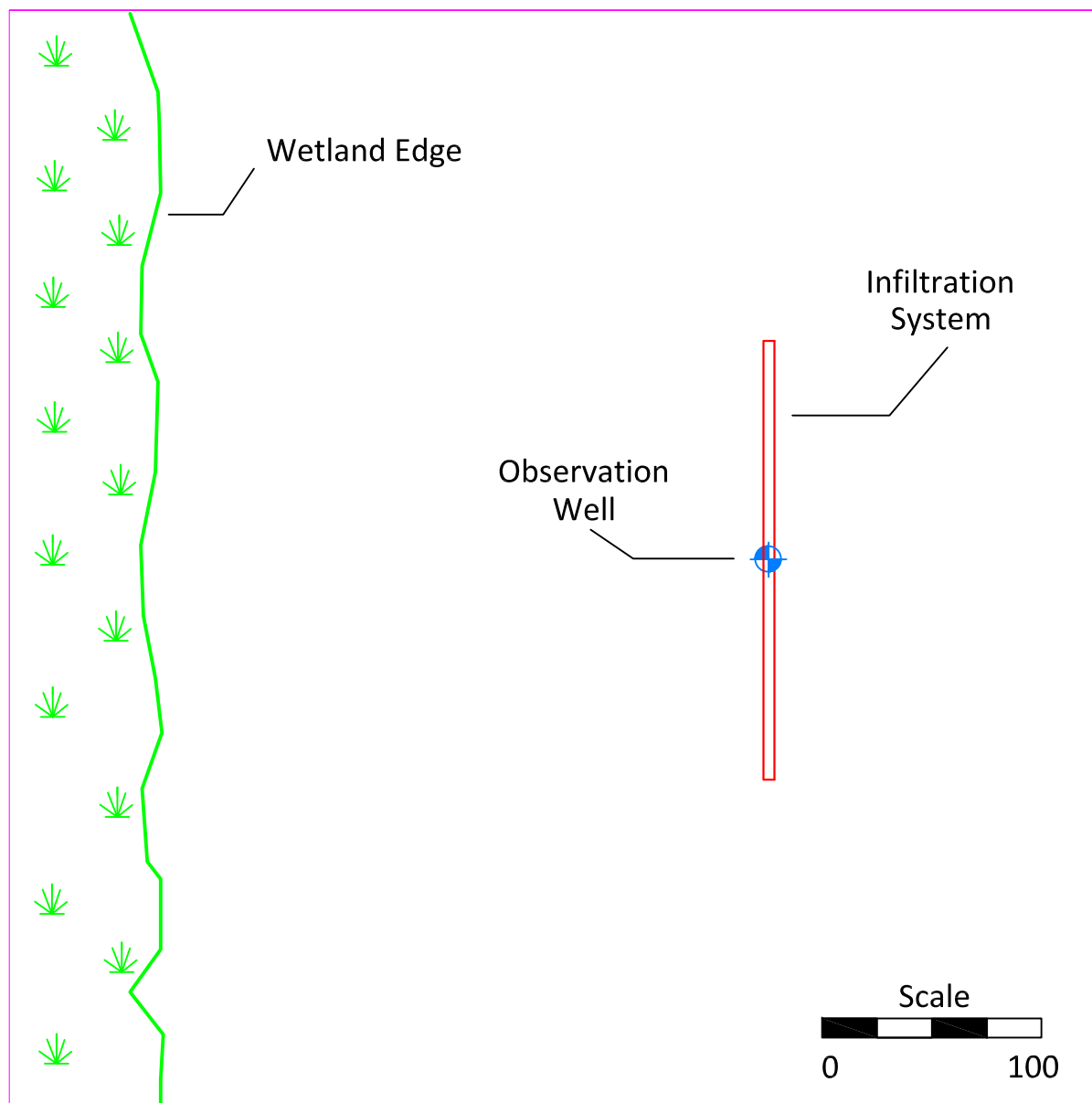
## Aquifer Characteristics

Hydraulic Conductivity (Kh): 25 ft/d  
 Drainable Porosity (Sy): 0.2  
 Saturated Thickness (h): 20 ft

## Plot Geometry




X-Coordinate: 0 ft  
 Y-Coordinate: 0 ft  
 Left Side Plot Distance (DI): 200 ft  
 Right Side Plot Distance (Dr): 285 ft  
 Plot Angle From Y-Axis ( $\Phi$ ): 4.712388980384  
 Constant Head Boundary: Yes

<u>Time (d)</u>	<u>Height (ft)</u>
0.00	0.0000
0.01	0.0678
0.05	0.1371
0.10	0.2055
0.15	0.2635
0.22	0.3180
0.30	0.3727
0.40	0.4297
0.52	0.4922
0.70	0.5659
1.00	0.6668
1.12	0.4716
1.41	0.3362
1.87	0.2395
2.39	0.1814
3.00	0.1419
3.71	0.1130
4.58	0.0904
5.71	0.0719
7.29	0.0555
10.00	0.0392



# MODFLOW Layout

## Legend

-  Infiltraton System
-  Simulated Wetland
-  Observation Well

## Notes

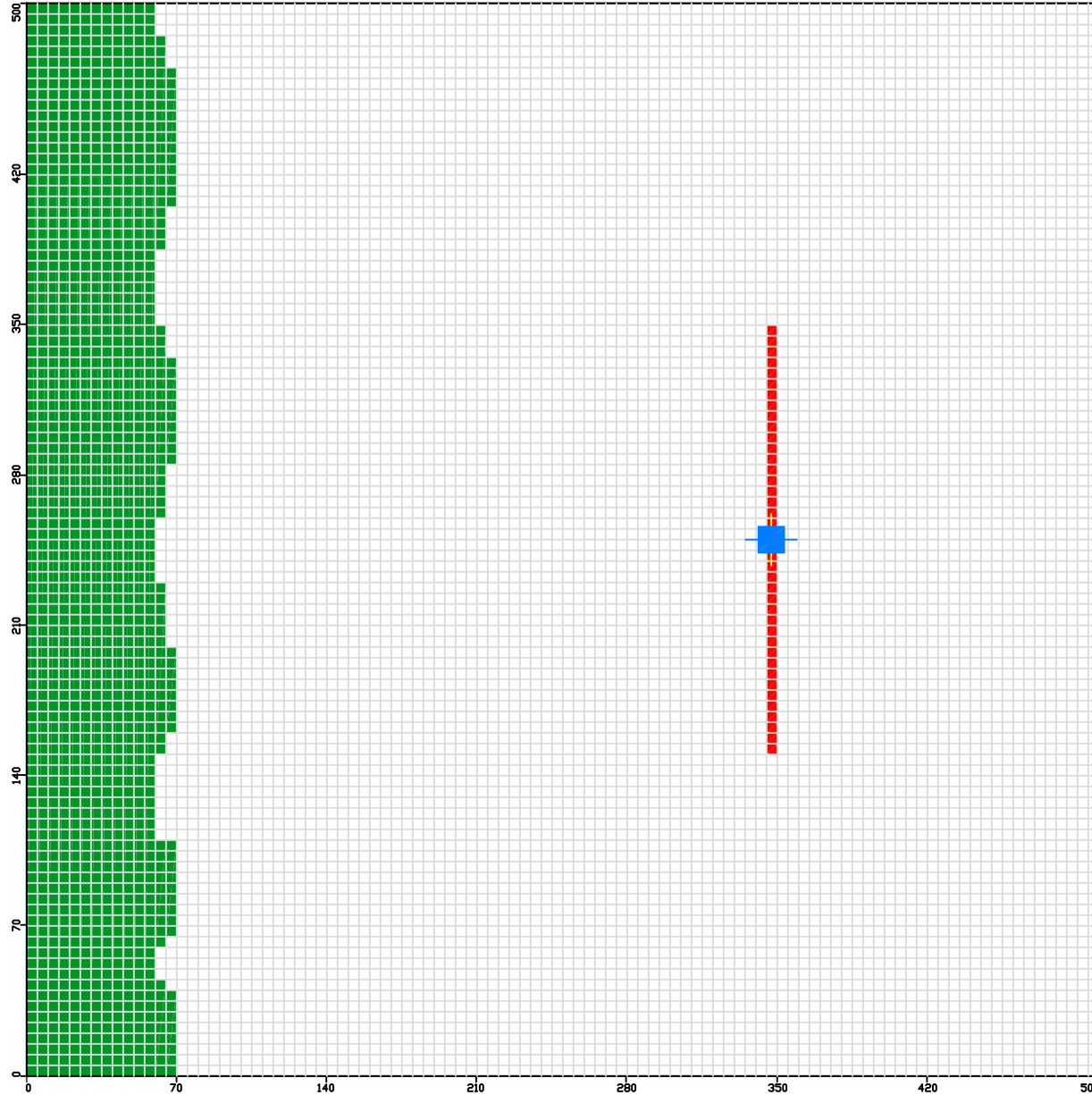
Model width: 500 ft  
Model height: 500 ft  
Grid: 5 ft x 5 ft  
Infiltration System Dimensions: 5 ft x 200 ft

Kxy: 25 ft/day  
Kz: 2.5 ft/day  
Sy: 0.20  
H: 20 ft  
Wetland Conductance: 60 sf/day  
Infiltration Rate: 2,500 cf/day  
Mounding Time: 1 Day  
Recharge Rate: 2.5 cf/day/sf

Scale (ft)







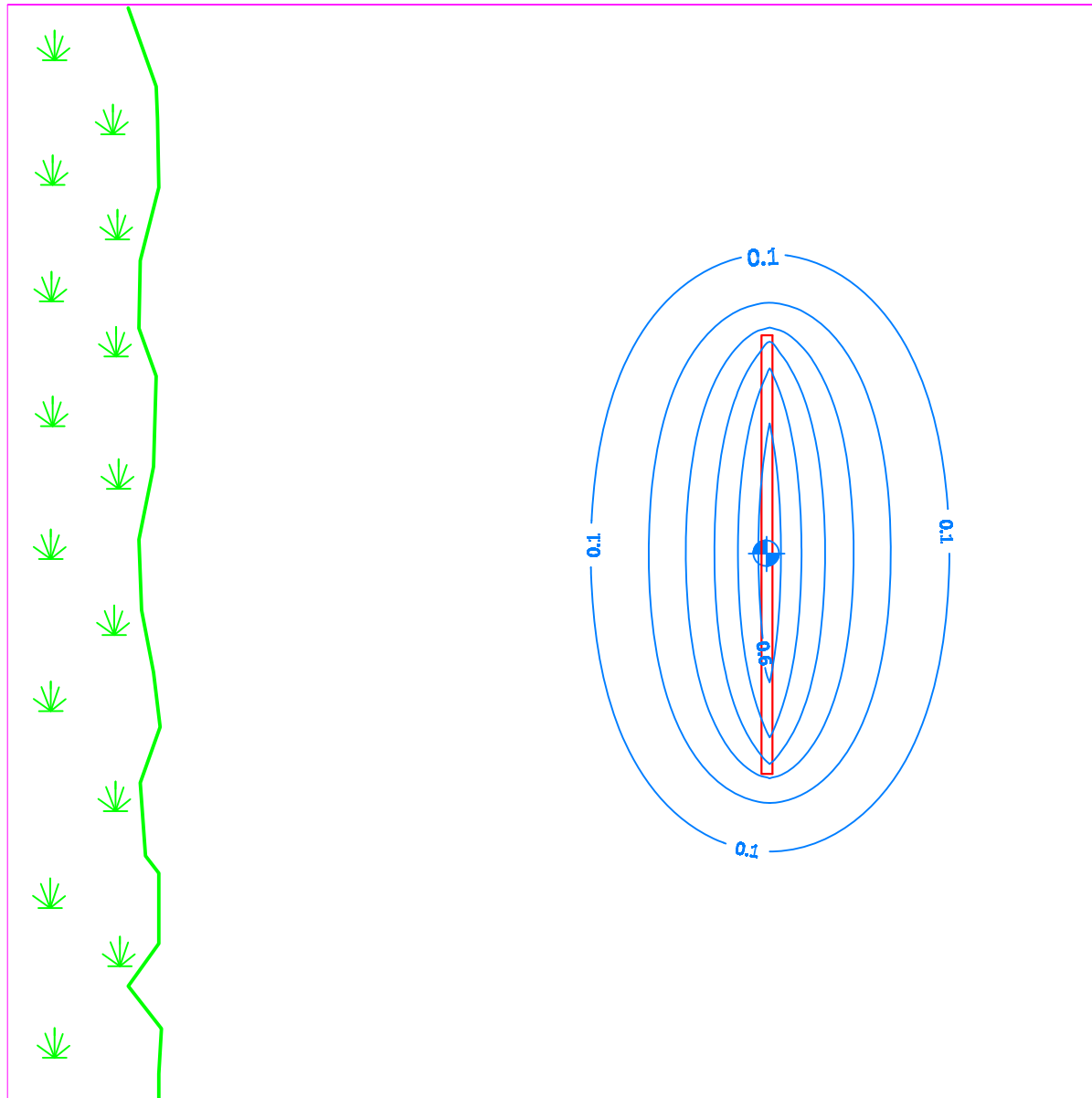
0 100



## MODFLOW Mound at 24 Hours

### Legend

-  Infiltration System
-  Simulated Wetland
-  Observation Well
-  Contours: Interval 0.02 feet



Scale (ft)



## Appendix C – Westborough Conservation Commission Guidance on Mounding Analysis



# Evaluation of Stormwater Management System Mounding Analysis

Andrew Koenigsberg, P.G. Westborough Conservation Commission

## 1 Introduction

The purpose of this document is to ensure that any mounding analysis required in a Stormwater Management System Report is performed in an accurate and scientifically defensible manner. If the inputs are valid, then the output of the model will be sufficiently accurate for the purposes of the report.

There is no expectation that the user of this document be a groundwater hydrologist; however, the user conducting the analysis should demonstrate a basic understanding of mounding analysis concepts and required inputs.

The MA DEP Stormwater Handbook Volume 3 requires a mounding analysis using the Hantush method (Hantush, 1967) when the base of a proposed stormwater detention BMP is less than four (4) feet above Estimated Seasonal High Groundwater and the system must attenuate a 10-year or greater storm OR when the detention BMP is adjacent to a contaminated site as specified in Volume 3. The purpose is to demonstrate that the detention BMP will drain within 72 hours after the storm ends and thus be ready for the next storm event.

Most likely, engineers designing the stormwater management system will be using a computer model to perform the mounding analysis. The model implementation can be in the form of a commercial application or a publicly available Excel workbook **as long as the model produces a water table recession hydrograph depicting exponential decline** as required in the Massachusetts Stormwater Handbook, Volume 3, page 29, Paragraph 1 (MA DEP, 2008). A recession hydrograph is a height versus time plot.

A simplified checklist for mounding analysis review is provided in Section 4.

## 2 Inputs

Regardless of the model, the inputs have to include the following at a minimum:

R - The recharge or infiltration rate.

Sy- Specific Yield or Effective Porosity.

Kh - Horizontal hydraulic conductivity.

L - Detention system length (some models may require half the length).

W - Detention system width (some models may require half the width).

t - Duration of infiltration (should be 24 hours).

h - Initial Saturated Thickness of the aquifer.





## 2.1 Recharge Rate (R)

Fetter (2001) defines recharge rate as:

$$R = \frac{Q}{A}$$

Parameter	Definition	Units	Description
R	Recharge Rate	Length/time – usually ft/d	Calculated recharge rate
Q	Discharge Rate	Length <sup>3</sup> /time - usually ft <sup>3</sup> /d	Total volume to be discharged divided by time over which infiltration will occur.
A	Basin Area	Length <sup>2</sup> – usually ft <sup>2</sup>	Bottom area over which infiltration will occur

This information is extracted from the report as follows:

For each detention basin where a mounding analysis is to be performed, obtain the Required Storage Volume and Bottom Area value for the basin. These values will be used to calculate the Discharge Rate (Q).

These values are found in the portion of the report where Standard 3, Stormwater Recharge is calculated and Drawdown Calculations are displayed. The portion of the report where this information is found will vary. If in doubt, request this information from the applicant.

The drawdown calculation for the basin may look something like the following or be in a tabular format:

$$T_{DR} = \frac{94,701cf}{\left(\frac{1.02in/hr}{12in/ft}\right)(22,329sf)} = 49.9hrs$$

Required Storage Volume

Basin Area

In all cases, the value for “time over which infiltration will occur” will always be one (1) day, as discussed in Section 2.5.

For example, if the Required Storage Volume for the basin is 94,701 ft<sup>3</sup> and the bottom area of the basin is 22,329 ft<sup>2</sup>, Recharge Rate (R) is:

$$Q = 94,701 \text{ ft}^3 / 1 \text{ day} = 94,701 \text{ ft}^3 \text{ day.}$$

$$A = 22,329 \text{ ft}^2$$

$$R = 94,701 \text{ ft}^3 \text{ day} / 22,329 \text{ ft}^2 = 4.24 \text{ ft/d}$$



If there is more than one detention system for a project, you only need to get these values from detention systems for which the mounding analysis is required.

A “Rawls Rate” from the Stormwater Handbook Volume 3 is not a recharge rate. A “Rawls Rate” is a hydraulic conductivity value for a given soil type obtained from laboratory tests (Rawls, 1982). A Rawls Rate cannot be used for a mounding analysis as it does not reflect the volume of recharge or the bottom area of the system. See Section 2.3 for further explanation.

## 2.2 Specific Yield or Effective Porosity (Sy)

The following are acceptable values for Sy:

- Sand and Gravel: 0.25
- Sand: 0.30
- Loamy Sand: 0.25
- Sandy Loam: 0.20
- Loam: 0.10
- Silt Loam: 0.05
- Silty Clay Loam: 0.02

These values were obtained on Johnson (1967). Effective porosity values in Rawls (1982) do not reflect drainable porosity from a groundwater hydrology perspective and should not be used in a mounding analysis.

## 2.3 Hydraulic Conductivity (Kh)

Hydraulic conductivity (K) is a measure of the ability of a porous medium to transmit water (Fetter, 2001).

K is defined as:

$$K = -\frac{Q}{\left(\frac{dh}{dl}\right)A}$$

Parameter	Definition	Units	Description
K	Hydraulic Conductivity	Length/time – usually ft/d	Measure of the ability of water to flow through a porous medium
Q	Discharge Rate	Length <sup>3</sup> /time - usually ft <sup>3</sup> /d	Total volume to be discharged divided by time through a given cross-sectional area.
(dh/dl)	Hydraulic Gradient	Length/Length – unitless	Change in the height of the water column over a specific length
A	Area	Length <sup>2</sup> – usually ft <sup>2</sup>	Cross-sectional area through which flow is occurring

A mounding analysis requires a horizontal hydraulic conductivity (Kh).

There are several ways to obtain a Kh value:



1. Field permeameter test, which is used to obtain a vertical hydraulic conductivity ( $K_v$ ). The test must be performed at a depth equal to the proposed bottom elevation of the detention system.

Depositional processes cause a vertical anisotropy in any unconsolidated sediment. In New England, glacial outwash, glacio-lacustrine deposits and glacial till are all depositionally anisotropic. Therefore,  $K_h$  is derived using the following convention:

Sand or coarser material:  $K_h = K_v \times 5$

All other material:  $K_h = K_v \times 10$

2. Single-well Aquifer or Slug test of a monitoring well, which is used to directly obtain  $K_h$ .
3. Estimates from grain size distribution analysis (Devlin, 2015).

**NOTE: A “Rawls Rate” from the Stormwater Handbook Volume 3 is not a substitution for a hydraulic conductivity derived from field permeameter test.**

## **2.4 Detention System Dimensions (L and W)**

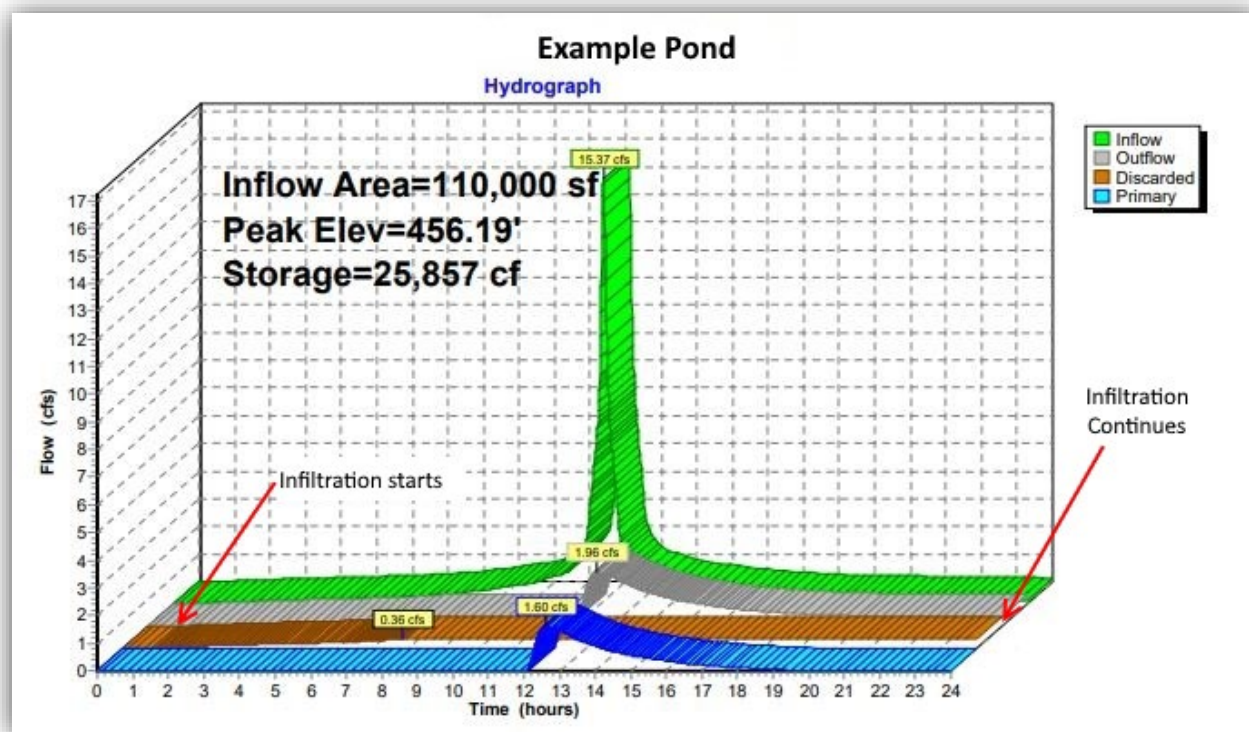
If the detention BMP is a subsurface infiltration basin, the dimensions of the BMP from the plans submitted with the NOI will be used to define these values. The values should be close to the basin area obtained from the recharge calculation.

If the BMP is an irregularly shaped detention basin, use the square root of the basin area obtained from the recharge calculation or a rectangular approximation that has the same basin area and orientation.

## **2.5 Duration of infiltration (t)**

$t = 24$  hours or 1 day.

It does not matter if infiltration starts 12 hours into the storm. HydroCad hydrographs do not show when infiltration ends after the storm ends, as shown in the following example hydrograph. Also note that flow from the detention system also continues after the storm ends. For the purposes of the model, infiltration continues for 24 hours total time by convention.



## 2.6 Initial Saturated Thickness of the aquifer (h)

Initial Saturated Thickness is derived by subtracting the elevation of the base of the aquifer below the basin from Estimated Seasonal High Groundwater (ESHGW) elevation.

ESHGW should be provided in the report narrative. This value is required in order to determine the bottom elevation of the detention BMP.

The base of the aquifer will be one of these values:

- Test pit or boring surface elevation minus depth to bedrock.
- Test pit or boring surface elevation minus depth to clay layer.
- Test pit surface elevation minus depth to the elevation of hard pan (dense till).
- Test pit or boring surface elevation minus depth to deepest test pit or boring if no exploration reaches bedrock, clay or hardpan (dense unweathered till).
- **Boring** surface elevation to depth of first instance of very dense soil, determined by blow counts greater than 50 per foot for the interval between 0.5 to 1.5 feet of a 2-foot split spoon sample.



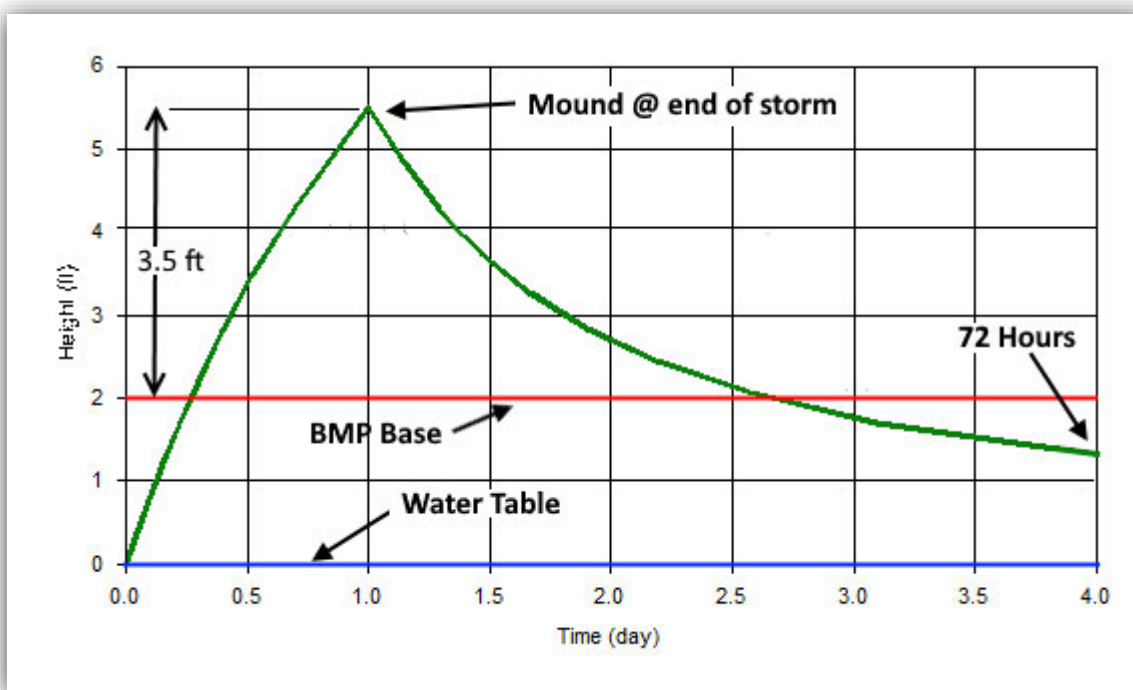
### 3 Hantush Model Result

The whole point of this exercise is to determine the elevation of the mound underneath the approximate center of the detention BMP 72 hours after the end of the design storm event.

This elevation needs to be less than the bottom elevation of the detention BMP. The mound elevation is the height of the modeled mound under the center of the detention BMP plus ESHGW elevation at 72 hours after the end of the storm.

If the model output is simply the mound elevation at the end of the storm event, the result is not acceptable. The applicant must use a model that shows that the basin will be drained within the 72-hour post-storm time frame as required by the regulations. The Stormwater Handbook requires **“a water table recession hydrograph depicting exponential decline.”**

The annotated illustration below, produced by a mounding analysis computer application, shows the decay of a mound beneath the center of a detention BMP. At 4 days (72 hours post storm), the mound height is approximately 0.5 feet below the BMP base, indicating that the BMP is ready to receive the next storm. Note, the actual output is just the green curve.

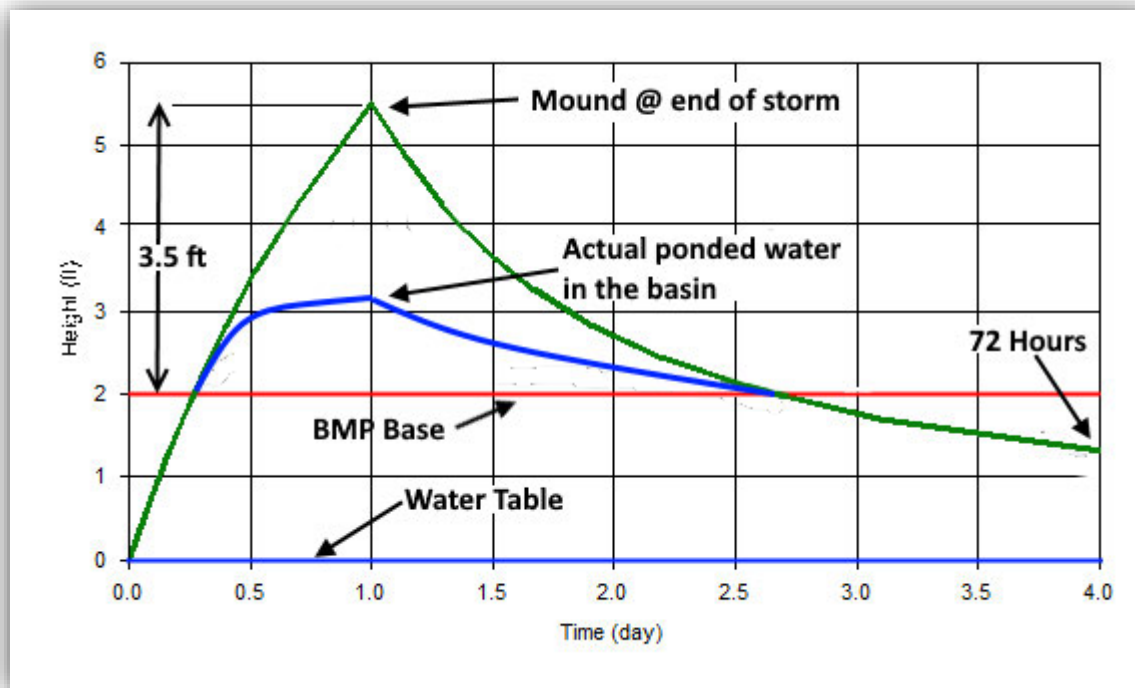


Note that the mound elevation above the system base is NOT the height of the water in the basin. Effective porosity has to be taken into account. Assuming an effective porosity of 30%, the actual water level above the BMP base at 24 hours is:

$$3.5 \text{ feet} \times 0.30 = 1.05 \text{ feet}$$



The estimated ponded surface water elevation is illustrated below:



#### 4 Simplified Checklist

Y	N	Section	Item
		2.1	Is the recharge volume equal to the “Discarded” from the report?
		2.1	Is the surface area of the detention basin correct?
		2.1	Is the recharge rate equal to the “Discarded” value divided by the basin surface area?
		2.2	Is the Specific Yield (Sy) aka Effective Porosity correct?
		2.3	Was a valid method (permeameter, slug test, grain-size) used to derive Kh?
		2.4	Are the dimensions (x, y) of the detention basin valid?
		2.5	Is the duration of infiltration 24 hours (1 day)?
		2.6	Is the estimated elevation of the base of the aquifer correct?
		2.6	Is the initial saturated thickness equal to ESHGW minus the aquifer base elevation?
		3	Does the model show the mound elevation at 72 hours?
			Are the units of length and time consistent for all values of model input?



## 5 References

Devlin, J.F. 2015, HydrogeoSieveXL: an Excel-based tool to estimate hydraulic conductivity from grain size analysis. Hydrogeology Journal, DOI 10.1007/s10040-015-1255-0  
(<https://kuscholarworks.ku.edu/handle/1808/21763>)

Fetter, C.W., 2001, Applied Hydrogeology, Fourth Edition.

Hantush, M.S., 1967, Growth and Decay of Ground-Water Mounds in Response to Uniform Percolation, Water Resources Research, 3: 227-34.

Johnson, A.I., 1967, Specific Yield--Compilation of Specific Yields for Various Materials, USGS WSP 1662-D, <https://pubs.usgs.gov/wsp/1662d/report.pdf>.

Rawls, W.J. et al, 1982, Estimation of Soil Water Properties, Transactions of the ASAE Vol. 25, No. 4, pp 1316 – 20.



**From:** [Nathaniel E. Mahonen](#)  
**To:** [DEP Wetlands \(DEP\)](#)  
**Subject:** Wetlands-401 Resilience Comments  
**Date:** Monday, March 18, 2024 3:13:59 PM  
**Attachments:** [image001.png](#)

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Good afternoon,

Regarding Chapter 6, Sections 6.3.2 & 6.3.3:

- Presuming that the HSG is identified by the NRCS soil survey as part of step 1 and the site visit confirms everything is consistent with the NRCS please confirm if the Static Method can utilize the Ksat values from table 6-4 without any additional in-situ testing.
- Presuming the same above, can the values from table 6-4 also be used for the soils at specific locations where recharge is proposed? Or is additional in-situ testing required at recharge locations

**Nathaniel E. Mahonen, P.E.**

Chief Engineer

352 Turnpike Road

Southborough, MA 01772

o 508-480-9900 / c 978-660-8945 / [nmahonen@bohlereng.com](mailto:nmahonen@bohlereng.com)

[www.BohlerEngineering.com](http://www.BohlerEngineering.com)

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**Subject:** Wetlands-401 Resilience Comments  
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---

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Could you please provide clarification on 10.36(8)(c) where it states:

“A building in the V-Zone that has been substantially damaged or is undergoing substantial improvement may be reconstructed only if elevated on Open Piles as specified in 310 CMR 10.36(4) (a) and if the building was constructed and received an occupancy permit prior to the effective date of this regulation.”

What does it mean to receive an occupancy permit prior to the date of the regulation? If an applicant has been in the process, for 1 or 2 years, of acquiring a property, preparing plans, getting permits and constructing a home but does not receive a Certificate of Occupancy before the effective date of the regulation what would happen?

Thanks,

*Brian R. Grady, R.S.*

**G.A.F Engineering, Inc.**

266 Main Street Wareham, MA 02571

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April 30, 2024

MassDEP - BWR Wetlands Program  
Attn: Wetlands-401 Resilience Comments  
100 Cambridge Street, Suite 900  
Boston, MA 02114

Re: **Wetlands-401 Resilience Comments**  
**2023 Draft MA Stormwater Handbook**

Dear Ms. Rhodes:

Pare would like offer the following comments in regards to section 6.3.2 of the 2023 Draft Stormwater Handbook (Field Verifying HSGs for Peak Runoff Computation) –

This section notes that it is not acceptable to solely perform a textural analysis to determine the HSG. Pare is seeking explanation on why this requirement is being added to the handbook. Our previous understanding was that textural analysis was sufficient for determining HSG, barring groundwater conditions that would otherwise affect HSG. Requiring in-situ saturated hydraulic conductivity testing is a potentially time and resource consuming addition to sites with multiple exfiltrating SCMs being proposed.

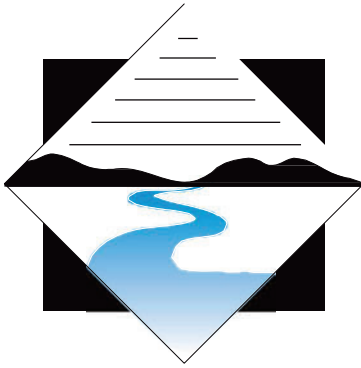
Additionally, it is understood that based on the guidelines given, design K<sub>Sat</sub> values are based on field measured in-situ K<sub>Sat</sub> values for the Simple Dynamic Method, Dynamic Field Method, and Continuous Simulation Method. However, the Static Method (or when incorporating exfiltration into peak rate reduction calculations for applicable infiltration SCMs) utilizes the design K<sub>Sat</sub> values given in Table 6.4. We are seeking clarification on why in-situ saturated hydraulic conductivity testing would be needed to determine HSG when Table 6.4's design K<sub>Sat</sub> values are ultimately used instead of the field measurements taken.

Thank you for your consideration on the matter.

Very truly yours,



Christopher Webber, P.E.  
Project Engineer



# CONNECTICUT RIVER

## Stormwater Committee

April 30, 2024

Ms. Lisa Rhodes

Attn: Wetlands-401 Resilience Comments

MassDEP – BWR, 100 Cambridge Street, Suite 900

Boston, MA 02114

Submitted electronically as requested to: [dep.wetlands@mass.gov](mailto:dep.wetlands@mass.gov)

Re: Wetlands-401 Resilience

Dear Ms. Rhodes,

The Connecticut River Stormwater Committee, a regional group of municipal stormwater professionals, was established by the Pioneer Valley Planning Commission (PVPC) in 2007. Today this coalition, which has grown to 20 members, including UMass-Amherst, works together to meet education and outreach requirements under the Municipal Separate Storm Sewer System (MS4) permit. When grant dollars allow, we also collaborate on other activities toward compliance, including development of an off-site mitigation handbook, nutrient source identification reporting methodology, and a design library of green infrastructure stormwater facilities suited for addressing water quality issues here in the Connecticut River basin. This regional collaboration enables us to streamline implementation of MS4 requirements and share as a community of practice on stormwater management.

We appreciate the effort that MassDEP has put into developing these draft regulation changes and commend MassDEP for focusing on ways to align with the MS4 permit requirements and advance care for our wetland resources for climate resiliency. We see many of the proposed changes to the general and inland wetland regulations as valuable steps toward increased public safety and ecological health in the face of climate change.

Members of our Stormwater Committee have provided careful review of the proposed Stormwater Regulations under 310 CMR 10.00 and the Stormwater Handbook and we offer the following comments and questions for MassDEP's consideration.

### Regulations

#### 10.04 Definitions

Highway Specific Considerations. The definition here seems to give one agency (MassDOT) special rights. Municipal DPWs often have control of roadways of similar size and undertake projects of similar scales, and so should be afforded similar allowances. *We recommend the regulations not be based on the governing agency but instead be based on the size of the roadway, the scale of the proposed project, the intended public benefits, and the potential environmental impacts.*

**Town of Agawam**

**Town of Belchertown**

**City of Chicopee**

**Town of East Longmeadow**

**City of Easthampton**

**Town of Granby**

**Town of Hadley**

**City of Holyoke**

**Town of Longmeadow**

**Town of Ludlow**

**City of Northampton**

**Town of Palmer**

**Town of South Hadley**

**Town of Southampton**

**Town of Southwick**

**City of Springfield**

**Town of West Springfield**

**City of Westfield**

**Town of Wilbraham**

**University of  
Massachusetts, Amherst**

**Pioneer Valley  
Planning Commission**

Impervious Surface. The inclusion of compacted gravel or soil roads generally is concerning in that some of these are in municipal and utility right of ways. The latter especially has minimal traffic and the unintended consequence of moving from “country drainage” to requiring more formalized stormwater management structures, especially in more rural locations could have serious cost implications.

*We recommend finding a better balance for stormwater concerns with what is needed and reasonable.*

Improvement of Existing Public Roadways. While the types of activities listed in this definition are consistent with exemptions provided in the MS4 permit for redevelopment projects, there does not appear to be any relief for such projects in the proposed MA stormwater regulations.

*We urge MassDEP’s reconsideration of these activities for some relief under the standards, especially since the intent of such projects often is to improve safety and accommodate greater shared use of roadways.*

Maintenance of an Existing Public Roadway. *We recommend eliminating this definition* and including all under Improvement definition above. Further, it is important to note that 10.05(6)(m)(7) seems to require that Maintenance of an Existing Public Roadway comply with the Stormwater Standards to the maximum extent practicable, however, 10.02(2)(b)(2)(p) appears to exempt the same roadway maintenance from review.

Impracticable and Practicable. These terms have different qualifications in their definitions. The added definition for “Impracticable” is based on physical constraints while the definition of “practicable” factors in costs, technology, proposed use, logistics, and adverse consequences. We believe this will lead to confusion. These definitions should be updated so that the criteria are consistent, such as updating the definition of “impracticable” to include all of the factors listed in the definition of “practicable.”

Maximum Extent Practicable. This definition references other parts of the regulations and is thus difficult to dig out. Would be best to include full definition here for ease of implementation and for consistency across project permits.

In addition, the definition proposed in the regulations is, “Maximum Extent Practicable, for purposes of stormwater management (310 CMR 10.05(6)(k)-(q)), is defined at 310 CMR 10.05(6)(o).”

310 CMR 10.05(6)(o) states “Project proponents seeking to demonstrate compliance with some or all of the Stormwater Management Standards to the Maximum Extent Practicable shall demonstrate that:

1. They have made all reasonable efforts to meet each of the Standards.
2. They have made a written alternatives analysis and? complete evaluation of possible stormwater management measures including Environmentally Sensitive Site Design (ESSD) and Low Impact Development (LID) Techniques or practices that minimize land disturbance and Impervious Surfaces, structural Stormwater Control Measures (SCMs), Best Management Practices (BMPs), pollution prevention, erosion and sedimentation control, and proper operation and maintenance of Stormwater Best Management Practices, physical constraints (e.g., high groundwater), **and costs;**
3. If full compliance with the standards cannot be achieved, the written alternatives analysis makes a clear showing that they are implementing the highest practicable level of stormwater management.”

The two definitions conflict with each other. Maximum Extent Practicable as defined in 310 CMR 10.05(6)(o) allows for costs to be considered as a justification for “impracticable,” but the new definition of “Impractical” specifically removes financial obligations and focuses solely on physical

constraints. *We recommend MassDEP clarify this prior to promulgation.*

Near (also related to 10.05(6)(k), this definition is problematic and vague and requires use of discretion. What are the meanings for “strong likelihood” and “significant impact”? These can be interpreted differently by consultants and commissioners alike, creating great possibility of inconsistent application.

*We recommend better language to promote ease of consistency for review from one project to the next.*

Redevelopment. As noted above, *we recommend relief for certain improvements of existing public roadways.*

## **10.05 Procedures**

10.05(4)(a) Notices of Intent. The regulations should not require such a high level of stormwater management detail for every NOI filing.

*We recommend two possible alternatives.*

- Strike the new sentence “A construction period .... Activities” and replace with “All projects must address erosion, sedimentation control, and pollution prevention with plans appropriate to and commensurate with the proposed alterations, even those projects otherwise exempt from the stormwater standards.” OR
- Strike the new sentence “A construction period .... Activities” and change the text in the general instructions for NOIs.

Please note there is a typo: “... operation and maintenance plan, and an illicit discharge compliance statement.”

10.05(6)(k)l Stormwater Management Standards. For ease of reference, *we recommend having the standards listed within their own section*, perhaps 10.06 and then number following sections sequentially from there. As it stands, the standards – a critically important element – appear buried in the procedures section.

Exemptions under 10.05(6)(l) and (m) include residential (single and multi-family) with 4 or fewer units, which does not reflect a change to current regulations. The MS4 permit, however, regulates any project disturbing one acre or more.

*We recommend alignment between these regulations and the MS4 permit.*

Standard 2. We support the use of the 100-year storm in all instances, not just “if off-site flooding,” and the use of NOAA+. *We are concerned, however, about the potential challenges for local boards/volunteers and want to underscore the need for MassDEP to help build understanding about these updates, particularly NOAA+, to minimize confusion.*

Standard 3. We understand that MassDEP is considering adjusting the recharge requirement for new development to 0.8 inch for HSG A, B, and C soils as compared to the current proposed 1.0 inch in the draft standards. While we appreciate the work to arrive at this consideration, *we are concerned about the lack of alignment this would cause with the MS4 permit requirement of 1 inch for new development and how this translates into additional challenges to local boards in the review process.*

We are also confused in this standard by the mention of “...met when underlying soils have a saturated hydraulic conductivity rate of at least 0.01 inch/hour, the recharge practice is designed to infiltrate the runoff into the ground fully within 72 hours.” *Is this rate a typo?*

For the mounding analysis required when vertical separation is less than four feet, what are some possible methodologies? Also, what are the implications in all recharge analyses of the recent research presented to the Massachusetts Water Resources Commission by UMass Amherst Professor David Boutt. See especially the projected rises in groundwater for our region here in Western MA on slide # 32 at: <https://www.mass.gov/doc/september-14-2023-wrc-presentation-massachusetts-groundwater-flooding-study/download>. *How do you suggest we account for this so that SCMs remain functional?*

Standard 4. The guidance provided by DEP and EPA to calculate the TP removal focuses on the SCMs but does not differentiate between phosphorus loading from roof runoff vs runoff from areas on a site with higher nutrient loading. Rooftop runoff is essentially clean but gets factored into calculations for TP loading reductions for projects, giving credit for cleaning water that is already clean.

*To ensure that there is appropriate attention to storm flows that carry pollutants, we recommend that MassDEP fine tune the nutrient removal requirement to focus on the areas of a site with higher nutrient loads.*

Standard 6. We appreciate the intent to protect cold water fishery resources with this updated standard, but it seems this could be written with far more clarity. *We recommend clear directions be provided to infiltrate stormflows or show that any stormwater at the point of discharge will not exceed 68 degrees F.*

Standard 7. While PVPC led development of the Off-site Stormwater Mitigation Handbook on our behalf in 2018, the document is in need of important updates to be useful at this point. *Please ensure that these updates are made so that our communities can best work with this guidance.* We also think that the Handbook update process might give renewed consideration to the option of a “payment in lieu of approach” as it was not recommended in the 2018 edition.

Standard 8. We appreciate the update in this standard that includes, “No construction period runoff may be directed to the post construction SCMs or other BMPs.” The value of this cannot be overstated. For erosion and sedimentation inspections, we recommend going beyond requiring inspections occur at least once every 7 calendar days and include an option for inspections to occur once every 14 calendar days *and* within 24 hours of a storm event of 0.25 inches or greater.

*We believe that the latter option may offer greater protection given the increasing frequency of downpours in Massachusetts. This would also create alignment with the EPA Construction General Permit.*

#### Setback requirements

*More information about the rationale for setback requirements would be helpful.* For example, is the setback requirement of 10 feet outside of Zone I and Zone A protective of drinking water supplies? Where does this come from?



## Broader questions

We would like *clarification on the definition of "Project Site,"* the limit of area to fall under requirements. We especially would like to know whether for an improvement project that involves adding a shoulder or sidewalk, whether requirements extend to the entire project or just to that drainage area within a wetlands jurisdictional area.

Soil evaluation - Will the Title 5 code need to be changed because of the setbacks to Soil Absorption Systems in the Stormwater Handbook and the new regulations?

Jurisdiction - Do Conservation Commissions have jurisdiction for the entire site for all stormwater management, even if the stormwater management system is not in a wetland resource area?

## Handbook

Standard #1: A New Stormwater Discharge is defined on Page 2-4 as "new or increased runoff directed to a resource area from new Impervious Surface or through a New Stormwater Conveyance." There are unstable pervious areas that can cause just as much water quality damage through erosion and sedimentation as impervious surfaces. *Expanding the definition outside of impervious surfaces would provide greater ability to address these areas, particularly non-point sources on redevelopment sites.*

Standard #2 Table 2-7 (Pg 2-50): Several smaller SCMs including dry wells, tree box filters, and water quality swales are noted in Table 2-7 as "Does not have the ability to partially or fully meet the specific Standard." However, all of these SCMs can be designed to provide a measure of detention, particularly on smaller sites. For example, a subdivision may have single family houses with individual dry wells and are tributary to larger treatment SCMs. Although the dry wells would only provide detention during smaller rain events, they can decrease the overall size of the downstream SCM, saving on cost and size demands. *We recommend recognizing value of these SCMs to provide some detention.*

Standard #6: In Tables 2-4b through 2-4d, the language reads "only use proprietary manufactured separators for pretreatment." This wording is potentially confusing, implying that only proprietary separators can be used for pretreatment, excluding other forms like deep sump catch basins, vegetated filters, etc. The language in Table 2-4a, "Proprietary manufactured separators may be used only for pretreatment" presents the requirement in a clearer fashion.

Standard #9: It is a step in the right direction to have a post-construction inspection of all SCMs prior to the issuance of a Certificate of Compliance. However, as written on page 2-43, this inspection would be performed either by the Conservation Commission or MassDEP. Understanding the design and signs of failure in SCMs is a technical skill that requires experience and training. *We recommend expanding the definition of inspector to include other municipal employees (e.g., town engineer) and qualified third parties, who may have additional experience with inspecting SCMs.*

Standard #11 Table 2-6 (page 2-47): Table 2-6 lists the suitability of SCMs to treat TMDL pollutants, and several SCMs including bioretention area (filtration), extended dry detention basins, sand/organic filters, wet basins, and green roofs are noted as "unlikely to provide significant reduction of target pollutant." However, these technologies are listed in Appendix F, Attachment 3 of the MS4 permit as approved



structural controls for meeting nutrient load reductions. This is a confusing contradiction between the two regulatory documents that will add to the administration and design burden when considering the selection of appropriate SCMs, particularly in retrofit scenarios. *We recommend alignment and clarification.*

#### Section 2.5.

Setback table 2-8: Several practitioners have expressed concerns with this table. How does one interpret this table if the project and the building are not in a resource area, and the infiltration area is not in a resource area – Is the Conservation Commission supposed to evaluate the project? Some think yes – others say no. In addition, are these setbacks required for all projects? The amount of slope requirement and separation distances seem difficult to comply with, especially for some smaller parcels. Table 2-8 requires that several SCMs have a  $\geq 12$ -foot access perimeter. In many cases, especially smaller applications, a smaller perimeter is sufficient for maintenance access. Having larger access could mean that additional site clearing is needed for space and grading. This could have an overall damaging effect of removing additional forest or undeveloped land that are beneficial for resource areas and for dealing with stormwater.

*We recommend the setbacks in the SW Handbook Chapter 2, Table 2-8 (page 2-54 and 2-55) be provided as general guidance where possible and necessitated by site-specific conditions. MassDEP could provide separate language saying SCM setbacks can be evaluated on a case-by-case basis with the Conservation Commission reviewer and requirements of the local jurisdiction. This would be a good use of the definition of “Nearby.”*

Note 8 states that "Structural Stormwater Management Systems (e.g., pipes, catch basins) and structural SCMs are therefore not allowed to be installed in groundwater". This standard could potentially be onerous to design around, particularly for public entities with large drainage systems located in the public way with a variety of groundwater conditions. For instance, it would be a barrier to the installation of deep sump catch basins, which are much deeper than a typical catch basin but provide a measure of water quality. It could also have the side effect of driving up design costs; test pits to identify groundwater are not a typical component in the design of a typical pipe and catch basin system. For larger systems over a wide area and a myriad of conditions, the implication is that many soil investigations, including potentially at each individual drainage structure, would need to be performed.

Section 5.3.4: For proprietary manufactured SCMs, MassDEP’s guidance for review on a case-by-case basis places tremendous burden on local boards and municipal officials. Following rules and remaining consistent in application will be extremely difficult.

*We strongly urge MassDEP to work again with UMass or another reputable entity to pursue a program of evaluating proprietary manufactured SCMs as a key means of providing essential support across the state for stormwater permitting.*

#### Section 6.2.11 (Standard 11 – Total Maximum Daily Loads):

Language states “Perform steps outlined in Section 6.2.11 to...” *We believe this should reference Section 2.3.11 instead.*

#### Section 6.3 Soil Evaluation Procedures:

Chapter 6 (page 6-72) and Chapter 1 (page viii) each indicate that a Soil Evaluator cannot be considered a competent soil professional. Although the Soil Evaluator title was developed for Title V, the training

involved is very comprehensive and includes a multi-week course (three classroom sessions, three field sessions), a written exam and a field exam; as well as annual continuing education requirements. A large part of the training to become a Soil Evaluator includes being able to clearly define soil profiles & characteristics, determine the depth of overburden above ledge, bedrock, or impervious layer(s), identify redoximorphic features, identify seasonal high groundwater elevations, and analyze ground water mounding to ensure breakouts will not occur under the recharge system. It is unclear why this specific category of professionals was excluded for evaluating soils for stormwater infiltration. Some in our group have noted that such testing for septic has been working for 50 years and that process and institutional knowledge is already in place. Further, the value of witnessing as part of the Title 5 process is very important. Having a representative on site during the test ensures we put these infiltration basins in the best locations, and that they are not an add on, or afterthought.

Language states “*All soil evaluations must be performed by a Competent Soils Professional. A Competent Soils Professional is defined as “A Competent Soils Professional is an individual with demonstrated expertise in soil science, limited to the following: a Massachusetts Registered Professional Engineer in civil or environmental engineering, Engineer in Training (EIT certificate) with a concentration in civil or environmental engineering, or Bachelor of Arts or Sciences degree or more advanced degree in Soil Science, Geology, or Groundwater Hydrology from an accredited college or university, that for purposes of stormwater management, assesses the Seasonal High Groundwater Elevation, soil texture, Saturated Hydraulic Conductivity Test, and hydrologic soil group. A soil evaluator pursuant to 310 CMR 15.017 and 15.018 is not a Competent Soil Evaluator.”*

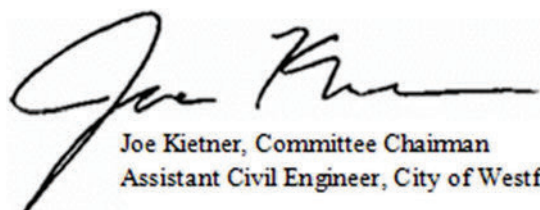
This is a similar definition from the current handbook but the reference to the Soil Evaluator pursuant to 310 CMR 15.017 and 15.018 is new. This language is confusing. Any College graduate with a degree in Civil Engineering is technically a “Competent Soils Professional” under this definition. However, as noted above, the bar to become a Title 5 Soil Evaluator is much higher than a “Competent Soils Professional.” It is likely that most Title 5 Soil Evaluators have the qualifications to be a “Competent Soils Professional”, but the definition is worded in a way that indicates they are precluded from being eligible.

*We recommend that MassDEP reconsider the value of Title 5 percolation tests and the work of Soil Evaluators in identifying best locations for SCMs.*


Consistency of Terminology. There is a great deal of referencing back and forth between the use of LID, SCMs, BMPs, ESSD etc. In some places (4-2) BMPs are not mentioned at all when defining SCMs and providing examples, while BMP is regularly used in Chapter 3. *There should be better consistency in use of these acronyms as they often seem to be referencing or meaning the same thing.*

Thank you very much for your consideration of our comments.

Sincerely,

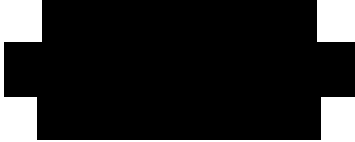


Joe Kietner, Committee Chairman  
Assistant Civil Engineer, City of Westfield



Randal Brown, Committee Vice Chairman  
Public Works Director, Town of Southwick

Connie Glore



February 26, 2024

To: Department of Environmental Protection re. Wetlands Resilience Regulations,

I am a resident of the town of Boxford MA. Wetlands, ponds, lakes, and rivers are found throughout the town and surrounding towns. Our local high school, which includes the towns of Boxford, Topsfield, and Middleton, is attempting to put two artificial turf fields on property that is contiguous with wetlands through which the Ipswich River runs. The Ipswich River is a major water supply for 330,000 residents and businesses in 15 communities. I am concerned that storm run-off from these proposed plastic fields will irreversibly damage the drinking water of thousands of residents by contaminating the critical watershed of the Ipswich River.

During this comment period for the DEP Wetlands Resilience Regulations, I would like to point out two aspects of the updated stormwater management parameters that artificial turf cannot meet.

The DEP Wetlands Resilience Regulation states:

1. "Stormwater management systems shall be designed so that post development peak discharge rates do not exceed pre-development peak discharge rates." Artificial turf will not be able to maintain a peak discharge equal to that of the existing natural grass fields now in use. "Artificial lawns exhibit increased runoff and decreased water retention compared to living lawns following controlled rainfall experiments."<sup>1</sup>
2. "Environmentally Sensitive Site Design" now includes a requirement to "minimize impervious surface." Plastic materials from artificial turf fields are themselves impervious and they spread. "The plastic blades in synthetic turf break down into tiny pieces of plastic called microplastic. Each synthetic turf field loses 0.5 to 8.0% of its blades annually, yielding 200 to 3200 pounds of plastic waste to our environment per year. These microplastics migrate off the field into air, soil, waterways, and oceans."<sup>2</sup> At a time when plastic is now understood to be a major, far reaching environmental and health hazard, the DEP needs to guard the safety of water from microplastics.

I do not see in the Wetlands Resilience Regulations that there is a concern about the well-known problem of ubiquitous "forever chemicals," PFAS, and the other mutagenic, carcinogenic, and endocrine disrupting chemicals in artificial turf that potentially enter our wetlands and watersheds. I hope the DEP becomes a leading voice to end their use.<sup>2</sup>

Thank you for considering my concerns.

Sincerely,

Constance Glore

1.<http://tinyurl.com/57j3hf47>.

2.<https://www.beyondplastics.org/fact-sheets/synthetic-turf>

**From:** [Peter Duclos](#)  
**To:** [DEP Wetlands \(DEP\)](#); [depwaterways@mass.gov](mailto:depwaterways@mass.gov)  
**Subject:** Wetlands-401 and Waterways Resilience Comments  
**Date:** Monday, April 29, 2024 1:33:18 PM  
**Attachments:** [MMTA Combined Comment Letter.pdf](#)

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Gladding-Hearn Shipbuilding, Duclos Corp. is a commercial shipbuilder located in Somerset, MA since 1955. We specialize in small-medium size aluminum and steel commercial vessels such as ferries, pilot boats, patrol boats, tugs and more recently offshore wind farm Crew Transfer Vessels (CTV's). We are members of Massachusetts Marine Trades Association(MMTA). Attached is a February 13, 2024 MMTA letter concerning the December 22, 2023 proposed regulatory changes "Resilience from Coastal and Inland Flooding". Gladding-Hearn fully supports the comments in the attached MMTA letter.

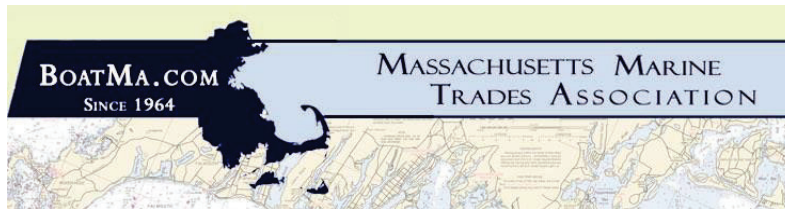
Regards,

Peter J. Duclos  
President  
Director of Business Development

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Duclos Corporation, Gladding-Hearn Shipbuilding is an equal opportunity employer and federal contractor or subcontractor. Consequently, the parties agree that, as applicable, they will abide by the requirements of 41 CFR 60-1.4(a), 41 CFR 60-300.5(a) and 41 CFR 60-741.5(a) and that these laws are incorporated herein by reference. These regulations prohibit discrimination against qualified individuals based on their status as protected veterans or individuals with disabilities, and prohibit discrimination against all individuals based on their race, color, religion, sex, or national origin. These regulations require that covered prime contractors and subcontractors take affirmative action to employ and advance in employment individuals without regard to race, color, religion, sex, national origin, protected veteran status or disability. The parties also agree that, as applicable, they will abide by the requirements of Executive Order 13496 (29 CFR Part 471, Appendix A to Subpart A), relating to the notice of employee rights under federal labor laws.



*Industry growth through Collaboration, Communication and Education*

February 13, 2024

**Via Emails (copy to each):** [dep.wetlands@mass.gov](mailto:dep.wetlands@mass.gov), must include Wetlands-401 Resilience Comments in the subject line; [dep.waterways@mass.gov](mailto:dep.waterways@mass.gov), must include Waterways Resilience Comments in the subject line

Dear MassDEP Waterways, Wetlands and Other Interested Parties:

On behalf of the Massachusetts Marine Trades Association (MMTA), we thank you for the opportunity to comment on four different yet related proposed regulatory changes all released December 22, 2024 concerning “Resilience from Coastal and Inland Flooding.”. We note the effort to address some water dependent uses in some ways, for which we are grateful, especially to the managers and staff who tried to help us educate our members quickly in January. We also appreciate the extension of the comment period until April 30, 2024, and may submit additional comments after participating in the newly scheduled working informational meetings.

**Collectively, these proposed regulations if enacted “as is” would more than likely make recreational boating facilities unfinanceable overnight, due to the uncertainty of being allowed to continue to operate in future years, even without any new buildings, docks or piers, and especially with them. The absence of reliable permit requirements would also impact insurability of existing facilities and operations.**

These comments are combined because the Waterways regulations import the Wetlands regulations by requiring a Wetlands Order of Conditions before any Waterways application will be considered a ‘complete application.’ They are also combined because the Gubernatorial press release addressed all the proposed changes as a package, and we fear all may be advanced in one premature package.<sup>1</sup>

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<sup>1</sup> Announced Proposals December 22, 2023 Gubernatorial Press Release: [Healey-Driscoll Administration Proposes Regulations to Strengthen Resilience from Coastal and Inland Flooding | Mass.gov](https://www.mass.gov/news/healey-driscoll-administration-proposes-regulations-to-strengthen-resilience-from-coastal-and-inland-flooding)

**BOSTON** — The Massachusetts Department of Environmental Protection (MassDEP) today issued draft regulations to strengthen wetlands and stormwater resilience by providing flood control and preventing storm damage to shorelines and infrastructure from the impacts of climate change. The proposed regulations will help protect areas vulnerable to sea-level rise and storm surge, promote nature-based solutions to flooding, streamline certain permitting processes, and use updated precipitation data to inform decision-making...The regulations are proposed under the Wetlands Protection Act and the Massachusetts Public Waterfront Act. MassDEP will accept comments on the draft regulations until March 1, 2024. ...“Data tells us that inland and coastal flooding are two of the biggest threats to Massachusetts. The storms we saw this summer showed us that there is no time to waste,” **said Energy and Environmental Affairs Secretary Rebecca Tepper**. “These updates strike a balance to preserve and protect development along our waterways. These changes also present Massachusetts with another opportunity to lead – we’re promoting the most cutting-edge nature-based solutions along our coastlines.” ...“We cannot continue a ‘business-as-usual’ approach if we want to build more resilient communities,” **said MassDEP Commissioner Bonnie Heiple**. “With these regulations, we’ve integrated the latest science and green infrastructure techniques to mitigate climate change impacts and protect residents, municipalities, and businesses from costly rebuilding efforts. MassDEP is grateful for the engagement of stakeholders and agencies in developing this proposal and looks forward to continued feedback on

**P.O. BOX 325, FOXBORO, MA 02035**

**Tel: 774-404-8005 | Email: [info@boatma.com](mailto:info@boatma.com) | Web: [boatMA.com](http://boatMA.com)**

## **About MMTA and Our Perspective**

*Established in 1964, MMTA is the statewide, non-profit, representative body for over 1,000 marine trades businesses in the Commonwealth. Our businesses employ just under 20,000 men and women and generate over \$5 billion in direct and indirect annual economic activity for Massachusetts. MMTA's mission is to provide the framework for furthering the interests of the marine trades and the boating public through the promotion of boating, participation in legislation and workforce development programs.*

The recreational boating/marine industry contributes positively and significantly to the economic strength and quality of life enjoyed in Massachusetts. The 'business of boating' provides jobs, economic opportunity, public access to our precious waterways, improves aesthetics of inland and coastal waters and supports environmental stewardship while promoting a family-friendly form of recreation and tourism. One of the Massachusetts Marine Trades Association's top priorities is to stem the exodus of recreational boating businesses from the Commonwealth and the loss of waters-edge usage for recreational boating purposes. We actualize the Public Trust Rights to navigate the waterways, and our jobs and our industry of recreational boating generates over \$5 billion in direct and indirect revenue for the Commonwealth. Boating gives families without the resources to purchase waterfront property the opportunity to exercise their public trust rights and enjoy the Massachusetts coast and harbors. While doing so, Massachusetts boaters and those transiting through our waters substantially invest in their destination ports by patronizing shops, restaurants, retailers, fuel sellers and often hotels and resorts. In fact, every \$1 spent on dockage equates to close to \$4 to the local community where those boaters are visiting. The waterfront communities are dependent upon the annual financial boost boaters bring to their local economies.

It is also our perspective that it is dangerous and serious when an element of the government proposes to ban and prohibit what people want to do for themselves and are capable of doing safely. Setting safety standards and engineering requirements and building codes is an entirely rational governmental function. Banning and prohibiting due to the preference or policy of some with government power but without adequate foundation in science is not rational and not a sustainable approach in a democracy. A small but essential portion of these proposed regulations must change or they will fall into this dangerous category. The Wetlands Protection Act already has protections for nature in the resource areas of salt marsh, coastal beach, bank, dune, etc. The Federal Emergency Management Agency already has protections and standards regarding flooding and buildings. It is not helping nature to prohibit sound, adaptive buildings; it is only harming people. It is notable that the photos used in the public information sessions are of old and flimsy structures, not built to withstand wind or water. No photos were used of the

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these regulations." ...The proposed Wetlands regulations will promote resilience by creating performance standards to protect the natural buffering function of wetlands and floodplains and help prevent damage to both the natural and built environment. The standards will require elevation of new development in areas of the coastal floodplain where most storm damage occurs and minimize new development in the most vulnerable area of the coastal floodplain where waves are higher than three feet. The regulations encourage nature-based approaches to improve resilience, such as restoration of salt marshes, coastal dunes, and barrier beaches on the coast, as well as inland wetlands. Updated stormwater management standards will reduce stormwater pollution to water bodies throughout the state, helping to improve the water quality of our rivers and streams. The Waterways regulations allow modifications to licenses for identified smaller structures (primarily small docks and piers) to account for sea-level rise and maintaining public water access.



innumerable buildings around the state and the nation and the world which have been built adaptively and are both safe and protective of nature.

People have lived and worked in inhospitable environments for eons, from the arctic to the desert, adapting their structural designs ingeniously to survive and thrive (and without harming the nature around them). Prohibitions on buildings do not reflect the skills, materials and technologies available now and in the future. Please, modernize these proposed regulations to require adaptive structures, not banned buildings.

## Chapter 91

1. Mass DEP states that the Engineering and Construction Standards at 310 CMR 9.37(1)(d) are proposed to be revised to take projected sea level rise into account. The proposed language introduces the phrase “adequately consider” projected sea level rise, with respect to any new licenses and the renewal of any existing licenses.

**Comments: MMTA agrees that considering projected sea level rise and tidal surge is both sensible and technologically attainable, with an accredited, licensed attestation as to the accuracy of the data being used for the projections. It is our understanding MassDEP anticipates using a website of some data, and to accept any other site-specific or accredited data. Please make this so. There is so much debate over policy-driven data on climate change, rather than facts, it is important to accept that of licensed experts.**

**Regarding implementation, we who work in the water and at the water’s edge know it will be quite expensive to elevate and otherwise modify water and waterfront facilities in the decades and half-century to come. Please find a way to make clear in the proposed regulations that it is not necessary for all facilities to have fully actualized all projected sea level rise all at once, and write in the ability to do “rolling” capital project improvements. It would be deadly if existing water dependent users all had to replace all their facilities at once, at time of Chapter 91 license renewal, in order to obtain a renewed license. Without this flexibility to adjust to changes in sea level rise over time, there simply isn’t enough money in operating water dependent uses to finance a complete retrofit all at once.**

**We also seek more clarity on what “adequately consider” sea level rise actually means. Must one go through MEPA for public comment from any interested party anywhere in the state regarding what ‘adequately consider’ means? Must one always use the maximum available technology and materials or will this decision of “adequate consideration” be a more traditional reliance on the professional stamp of a licensed engineer attesting to the plan’s adequacy for projected impacts? Can one obtain a Chapter 91 license for the usual necessary period of three decades and build in the assumption of using new materials and technologies when they become available?**

2. MassDEP states that the regulations propose exempting from the height restriction at 310 CMR 9.51 moving mechanicals and other elements to the top floor or roof.

Thank you, this is sensible. While the height limits do not apply to Water Dependent Uses anyway, many predominantly water dependent sites also have non-water dependent uses on site and may need this exemption.

3. MassDEP states that there is a minor technical revision to replace the term "grandfather" with the term "exempt" in the section on Private Recreational Boating Facilities at 310 CMR 9.38(2).

Many will not understand this change. Perhaps it would help to explain it in the preamble to the proposed changes. It is our understanding that the term "grandfather" is being eliminated in keeping with the appellate court case authored by Judge Jim Milkey, requiring the removal of the term "grandfather" in land use matters due to social justice reasons, because the term originated with efforts to prevent voting by people of color.

### **310 CMR 10.00/ Wetlands Proposed Regulatory Changes**

#### **General Comments:**

**1. We wish there were the usual Frequently Asked Questions to assist in understanding the proposed changes with examples. No FAQ's have been published and hundreds and hundreds of people came onto the informational calls without getting answers, mainly asking questions central to the proposed changes. All would benefit from FAQ's, meaning the proponent agencies and the regulated entities and areas. Some of these most impactful changes have been under discussion for over 10 years within MassDEP and the Office of Coastal Zone Management without external consultation with practicing non-governmental waterfront experts with actual application experience. We list some of our outstanding questions below.**

**2. We respectfully request the State reach vastly more people and businesses and experts and affirmatively consult with the most impacted and knowledgeable people and businesses and licensed engineers and waterfront project managers. Please, before promulgating these regulations spend time out on the water, at its edge and be there to ask, listen and learn.**

**3. These proposed changes are currently being labeled by the Commonwealth's representatives as "managed retreat" and "nature-based solutions" yet proposed as though they are for the purpose of climate change adaptation and resiliency. We disagree. They are neither. Retreating from nature at the water's edge is not a rational way to adapt to climate change or to accomplish climate resilience. Nature is changing in ways which preclude giving up and backing away and expecting nature to create solutions on its own for absorbing more tidal flow and dissipating more wind and tidal energy. Nature on its own will not provide solutions which protect people and businesses and public access to the waterways. Banning and prohibiting buildings will not provide solutions, it only bans and prohibits the new money needed to pay for solutions. It also irrationally invites nature to keep coming further and further inland where more and more bans and prohibitions ever**

**onward will be need to be imposed if this “managed retreat” approach is taken rather than standards based in building codes, engineering and technology.**

**The Wetlands Protection Act and Regulations are already among the most protective in the nation, with detailed, extensive protections for salt marsh, coastal bank, coastal beach, coastal dune and buffer zones to same. It is not as though nature will have no protections unless today’s MassDEP adds more bans and prohibitions, added to those of the WPA currently and those of FEMA and the Building Code. We also note that all images of damaged buildings– every single image—used by MassDEP in its public sessions in January and on its website are of old and poorly maintained structures. Not a single one is of modern engineering and design.**

**These proposed regulatory changes should be revised to include the use of modern technology, engineering, and design to protect people from nature as well as nature from people. It can be done, as it has been all over the world and for eons, in inhospitable climates from the arctic to the dessert to right here, such as with the permitted and even Commonwealth-prioritized construction of wind turbines in high velocity zones out in the ocean. We have the technology. Let us use it.**

4. We note that MassDEP states that the performance standards for Land Subject to Coastal Storm Flowage do not apply to Water-Dependent Industrial Uses in Designated Port Areas (310 CMR10.36(4)(d)).

**MMTA supports this exemption. We also seek exemption for all Water Dependent Uses, and particularly marine industrial uses such as vessel servicing, for substantive and rationality reasons. It is illogical and irrational to not apply a new performance standard just in Designated Port Areas. All Water Dependent Uses need to adapt to the sea whether or not the state 40 years ago made a DPA designation decision on criteria unrelated to the Wetlands Protection Act. The DPA’s were originally designated to achieve eligibility geographically for federal marine infrastructure grants, The DPA’s were not calibrated or linked in any way to the Wetlands Protection Act. In addition, the prohibition against having any uses other than marine industrial ones in DPA’s was a much later regulatory choice by the Commonwealth, to preserve land/water area for marine industrial uses only, again unrelated to WPA matters. Please exempt all Water Dependent Uses for the new performance standard for Land Subject to Coastal Storm Flowage. This action alone would save the disastrous impact of the current proposed regulatory changes on the business of recreational boating.**

5. MassDEP tells us Public and commercial boat launching facilities, open rack elevated boat storage, navigational aids, piers, docks, wharves, and dolphins are proposed to be allowed in the V-zone and MoWA zones (310 CMR 10.36(6)(c)). The construction of new buildings in the V-zone is not allowed; reconstruction or redevelopment of buildings in the V-zone is governed by Redevelopment provisions (310 CMR 10.36(8)).

Here is where the regulatory proposals are devastating immediately upon passage for water dependent uses. The term used in the actual proposed regulation is not “allowed” it is “may” be

approved, which also means may not be approved, with no standards specified as to what does or does not result in approval. No lender will finance now on the basis of something “may” be approved later, including existing facilities in need of money to pay for climate adaptations now.

**This prohibition of new buildings in the V-zone prohibits even the water dependent buildings needed to operate a marina or a boatyard, such as the vessel servicing buildings and the indoor marina facilities.**

**This prohibition then ties into being approved for a renewed Chapter 91 license, because the Chapter 91 license can only be issued **after** the Wetlands Protection Act approval has been issued. The Chapter 91 license application even for a renewal isn’t considered “complete” without it. So, the prohibition on new buildings in the velocity zone under the wetlands regulations is profoundly problematic, devastating to water dependent uses, even with the exemption for docks and piers and racked boat storage (which is often indoors in a building so the vessels can be worked on off-season). Will even reconfigurations in the zones already approved by Chapter 91 Waterways be denied by the Conservation Commissions?**

**There is also a lack of clarity on the applicability of the new proposed standards to sites which have both developed and undeveloped areas on the same site.**

6. The new proposal is to prohibit reconstruction or redevelopment, unless on the exact same footprint and elevated. Many of our members work on or own property with mixed areas of previous construction and open areas used for boat storage or work zones. There is no rational purpose under the Wetlands Protection Act to limiting reconstruction to the exact same footprint. Substantively, redesign to adapt to climate change is the ostensible purpose of the regulations – it is not rational to prevent whatever new adaptation is viable rather than artificially restricting the reconstruction to the exact same footprint. And of course, there is the problem of what pays for the reconstruction if the result is exactly the same but elevated?

7. We note MassDEP says maintenance and repair of existing coastal engineering structures is allowed in the V-zone and MoWA zones (310 CMR 10.36(6)(d)).

**This is good because repair and maintenance are essential, nature is not going to respect and take care of structures. People have to respect and take care of the impact of nature on existing structures. Technology and design are available and are documented to work in these zones. These proposed regulations should be changed to allow for modifications of the existing engineering structures to make them higher and use different materials to improve the structural integrity in planning for projected sea level rise. And, per the comment above, please make the language explicit that such work is allowed, without the risk of absence of approval, so long as engineering and building code and existing WPA standards have been met regarding resource areas already heavily regulated.**

8. We note MassDEP says for Land Subject to Coastal Storm Flowage and all other coastal resource areas, a new limited project has been proposed for relocation or reconfiguration of water-dependent uses where necessary to avoid flooding or coastal storm damage (310 CMR 10.24(7)(c)9).

**This seems to be something between an encouragement and a mandate to relocate, when many if not most property owners do not have anywhere to relocate to much less the funds. This is not really an exemption. It is an unclear and important issue overlapping with both who owns what property and what new standard would apply. Does a limited project mean if one is relocating floats, or docks to make them more secure? Buildings? In or out of velocity zones? It is unclear. Does a limited project mean if one is relocating floats, or docks to make them more secure or a building to make it more secure qualifies as a limited project which shall be approved or is it again a discretionary decision in the hands of hundreds of different volunteer Conservation Commissions?**

8. MassDEP writes that [f] or Land Subject to Coastal Storm Flowage and all other coastal resource areas, the new limited project also allows the construction, reconstruction, or reconfiguration of water-dependent use projects determined to “e "functionally dependent" (see reference in the proposed provision) which applies to certain docking and port facilities. This provision was included specifically to provide consistency with FEMA and building code requirements that also have a special provision for these facilities (310 CMR 10.24(7)(c)9).

**This is a very promising limited project. We look forward to more clarity with examples including for water dependent buildings as well as docks and piers. Thank you very much.**

To summarize, our primary concerns are:

1. the absence of expert non-governmental voices in the drafting process, particularly technical advisors working every day in the geographic areas which are the subject of the revised regulations. **Please invite and listen to expert marine engineers and architects and contractors and water dependent businesses and users.**
2. Do not ban and prohibit. Instead require building code and technology certification from licensed engineers for adaptive, sustainable building.
3. Allow reconstruction and adaptation on altered footprints, not the exact same ones.
4. Make explicit the allowed water dependent uses and do not leave to the undefined discretion of hundreds of volunteer Conservation Commissions whether existing buildings, piers and docks and floats can be renewed, reconfigured or expanded or newly installed, no matter how adaptive and sound the proposal. We seek “water dependent facilities are allowed in LSCSF” and remain subject to the other performance standards for other resource areas.
5. Please make it express that pre-existing water dependent facilities shall receive Chapter 91 license renewals absent persuasive evidence of inadequate consideration of sea level rise and climate change. And allow for rolling investment in the capital projects needed, not making them all required at the same time as license renewal.
6. Make the exemption for marine industrial uses in Designated Port Areas an exemption for all Water Dependent Uses. This change alone would make these proposed regulatory changes not deadly to the business of providing boating of the waterways in the Commonwealth.

## **Questions:**

- What type of submission is anticipated for a complete application under the proposed Waterways requirement to “adequately consider” sea level rise and climate change, and what data can be relied upon?
- What would be the standard to apply for a Waterways license to be granted or renewed if these proposed regulations are enacted?
- What would the standard be for Conservation Commissions to apply in debating whether docks, piers and floats “may” be approved in Land Subject to Coastal Storm Flowage?
- How would the new proposed standards for Land Subject to Coastal Storm Flowage be imposed on sites which have both developed and undeveloped areas on the same site?
- What exactly is the newly proposed limited project exception for relocating Water Dependent Uses and what is the standard of review?

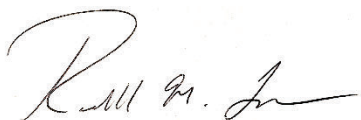
## **Stormwater / Water Quality Certification**

We have not heard enough yet from our membership to comment on all the technical details of these two aspects of the proposed regulatory package. For now, we note two things:

*1) Massachusetts is one of the two most costly places by far to attempt to permit a water dependent facility. The other is California. The primary reason is the extraordinary overlap of multiple regulatory programs and imposition of requirements not imposed anywhere else in New England or beyond.*

*2) Massachusetts is the only state in the nation which requires treatment of stormwater runoff to below drinking water standards. It is well beyond problematic and deep into unproductive inequity that water's edge businesses are forced to take on storm water runoff from all over the watershed area and then pay for monitoring, treatment and removal from storm water runoff to standards below drinking water quality. These regulations should not be promulgated until they stop imposing everyone's runoff concerns onto water's edge facilities.*

MMTA respects the hard work of those who worked for ten years discussing and considering climate change and sea level rise. On behalf of the Massachusetts Marine Trades Association, the 20,000 marine trades workers and with respect to the over 140,000 boaters in Massachusetts, we thank you for your time and consideration of our comments. Both I and MMTA's Government Relations and Legal Representative, Jamy Buchanan Madeja from Buchanan and Associates are available to discuss this and any other matters related to the business of boating. Please feel free to contact either of us. My contact information is below and you can reach Jamy at 617-256-9491 or [jmadeja@buchananassociates.com](mailto:jmadeja@buchananassociates.com). Thank you in advance for your consideration,



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MassDEP – BWR Wetlands Program

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4-30-24

To whom it may concern:

This narrative is being written in response to the Proposed Stormwater Updates to the Massachusetts Wetlands and 401 Regulations in order to provide feedback, whether positive or negative, from the standpoint of a small engineering company that largely works in rural areas.

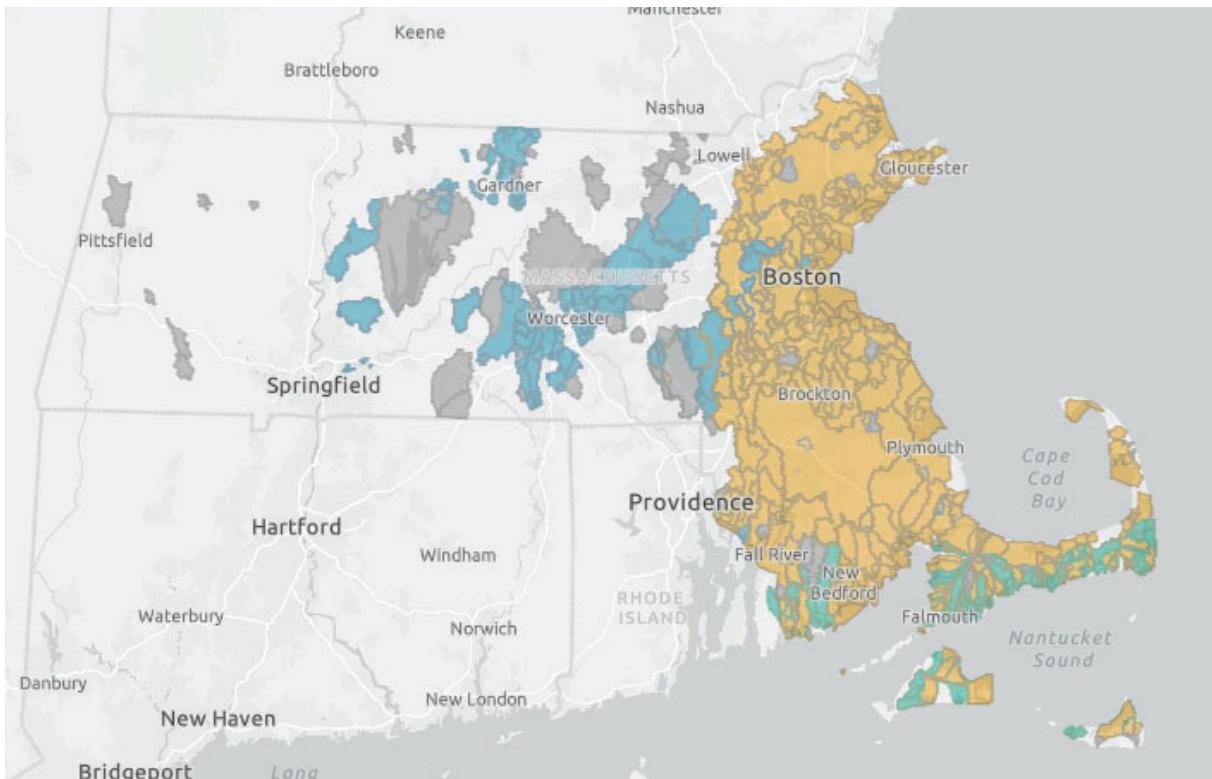
The first time these Proposed Stormwater Updates were brought to the attention of this office was the week of January 22<sup>nd</sup>. Because this change is the first major change since 2008, the Department should have done a much better job notifying engineering companies that regularly submit applications, whether they be notice of intent filings or full stormwater reports. If it wasn't for a Conservation Agent bringing it to our attention, we still likely would not have known these changes existed.

The presentation that was put forth by the Department was helpful in illustrating the changes to the 10 (and addition of an 11<sup>th</sup>) standards. The majority of these changes would not impact day to day operations and design of stormwater systems to a crippling capacity.

- The increase in severity of the storm events through the NOAA Plus would be a small impact due to the pre-construction and post-construction both being subject to this storm.
- Groundwater recharge requirements to 0.8-1.0 inches would be a larger impact, however with careful implementation of ESSD credits, the impact could be minimized. In the past, recharge requirements were typically easily met through treating for 80% TSS, and I believe the thought behind raising it to 1 inch was to capture the 90% TSS and 60% TP. The problem with this is through the EPA curves, 90% TSS and 60% TP is typically achieved much earlier than the 1.0 inch sizing.



- Requiring all redevelopment projects to meet 80% TSS/50% TP is problematic. Through the public information sessions, it appears that the goal of this new standard is to reduce the TMDL of various substances in various rivers/watersheds, as the rates were not dropping after the implementation of the 2008 standards. If this is the case, these new standards should solely be for redevelopment projects that discharge water to a watershed/river that have issues with the TMDL of various substances. Furthermore, if the substance for which a watershed/river has a TMDL for isn't one that typically discharges due to impervious areas, those should be exempt as well. Figure 1 below shows a map of the areas with TMDLs in Massachusetts. One thing to be noted is that a large portion of the western half of the state has no issues with TMDLs, however there are an abundance of abandoned buildings in this area begging for repurposing. If these regulations were to come into play, a large quantity of potential repurposing projects will never come to fruition due to the lack of ability to recharge due to previous site disturbance. Allowing these areas to be repurposed with a reduction in impervious area (assuming no discharging into areas with TMDLs) will allow for these eyesores to get the makeover they desperately need to provide housing, office space, etc, all while making the space greener in the process.



The above, in addition to the brief overview of ESSD credits, was all that was presented as changes to the stormwater manual. Most of it makes sense with an ever changing environment, and would not be detrimental from a design standpoint. **However**, as I was going through the 860 page manual, visualizing how it would be utilized in the future, I noticed some deeply concerning issues.

1. In Table 2-8, under 'General' there is an item entitled 'Any component of Stormwater Management System', which requires a vertical offset from seasonal high groundwater of 2'. This would include any pipe, catch basin, drainage manhole, detention basin not providing recharge, and I would assume Construction/Gravel Wetlands, which is directly contradictory in the same table.
2. In Table 2-8, requiring virtually all stormwater components to be outside of the 50' buffer of a wetland is absolutely unattainable. Currently, the only structures that have a buffer to surface waters are infiltration basins/trenches and porous pavement. This would require any roadway to be constructed to maintain a 50' buffer from wetlands if it is serviced by structural drainage. This seems extremely anti-development and would effectively deem countless properties as undevelopable.
3. The elimination of any stormwater development within the Zone-A of Public Water Supplies was previously solely for infiltration/porous pavement. Evidence to why this is being changed should be provided.
4. Although the requirement of 100' setback from a well to a recharge practice was within the stormwater manual, it seems strange that surface water recharge has the same setback as septic systems. In Table 2-8, requiring dry detention basins to have an increased setback from 50' to 100' from wells seems antithetical to the whole purpose of this regulation in the first place. If detention basins are not recharging water, there shouldn't be a setback to wells. The effect on detention basins will just increase the amount of disturbance necessary for residential development. For example, if a low-density residential development has less than 15% impervious area, it could be applicable for ESSD 1. However, the development still needs to detain water to reduce the peak flow runoff, but now that well offset limits where you can put the detention basin to capture the most amount of water. This setback should be eliminated (or left as is) for dry detention basins and reduced for recharge practices to at least 50', as waivers are given all the time for septic systems to be 50' away from wells. Therefore, this current regulation, and its proposed change should be backed with scientific studies & reasoning.

5. In Table 2-8, the requirement of a 100' setback from certified vernal pools has come out of nowhere. I find it confusing why a certified vernal pool setback would be different than a surface water of the Commonwealth, and would like some clarification on why the setback is different.
6. Current regulations limits recharge practices and dry detention basins to outside of the 50' buffer of a leach field (25' from a tank in some cases). The new regulation would deem all stormwater management components be outside of the 50' buffer of any component of a septic system. This overregulation seems unnecessary. Perhaps this regulation should read that recharge practices upgradient of septic systems should be 50' away from leaching facilities and detention/recharge features downgradient should be outside of required title V grading or 50', whichever is less. Stormwater features, especially non-recharge stormwater features, shouldn't have any impact on the septic, nor should the septic have any impact on stormwater features that are 'side-gradient'. Scientific approaches on why these regulations are being changed should be provided.
7. Table 2-8 is requiring a 10' offset from any stormwater feature to foundations. This seems appropriate for recharge features, but for catch basins and drainage pipes, this seems unnecessary. There are many instances when it is necessary for piping, swales, etc. to be closer than 10' to a foundation (i.e. French drains for a roof).
8. In Table 2-8, requiring certain stormwater features to be 10' off a property line seems unnecessary. If a feature can fit on a lot (including being able to access said feature), there shouldn't be any regulation from DEP to preclude it from being there. This also doesn't take into consideration drainage easements that may run along property lines, which should exempt this requirement. Furthermore, conveyance SCMs cross property lines all the time, which isn't exempt from this requirement.
9. In Table 2-8, requiring a 12' maintenance access around the perimeter of certain features in some cases may be reasonable. In the case of small residential basins, where most of the work with these small basins could be done by hand, it is a drastic overreach. A small excavator could be as narrow as 3-4' wide. Requiring 12' across the board with no exemptions is going to result in **massive** amounts of excess clearing of trees to construct these basins. The maintenance access width should be some function of the square footage, depth, or volume (or all three). Furthermore, some basins that are constructed are berms on one side, and gently sloping grade on another. In these cases, excavators could enter directly into an infiltration/dry detention basin without traversing over the berm in the first place.

10. In Table 2-8, requiring (effectively) any infiltration practice from being within 20' downslope from a building seems extremely unnecessary. This especially goes for subsurface infiltrators. Scientific reasoning for this regulation should be provided.
11. In Table 2-8, requiring infiltration basins to be 100' upslope from buildings seems excessive, especially if the basins are small in size. Scientific reasoning for this should also be provided.
12. In Table 2-8, the requirement of infiltration trenches to be 150' downslope from wetlands is **extremely** excessive, and scientific reasoning for this should also be provided.
13. In Table 2-8, the offsets from slopes of 5% are absolutely too extreme. As reported in testimony, a 5% slope is that of a handicap accessible ramp. Furthermore, the offsets to slopes of 15% seems unreasonable as well. Distance of slopes greater than 20% seem to have no purpose, as infiltration trenches are already covered under 5%. Scientific reasoning for these regulations is necessary, as this regulation alone would make some communities with hilly terrain undevelopable with traditional methods of infiltration. Many ESSDs already wouldn't apply due to the 5% average slope of discharge areas in some of the credits.
14. In Table 2-8, under general groundwater, it specifies that all stormwater features must be above seasonal high water table besides Stormwater Wetlands, Wet Basins, and Wet Water Quality Swales. **BUT**, it doesn't stop there, the following item is a 2' vertical offset from SCMs to seasonal high groundwater, which 'Any Component of Stormwater Management System' is applicable. Catch basins, drainage pipes, etc are installed within the seasonal high groundwater **all the time**. In many communities, if a road is constructed at grade, it would require 4' cover over the pipe, the pipe itself (1' in this example), a 4' sump for a catch basin, and a 2' offset from the bottom of the sump. That would require a minimum seasonal high groundwater of 10' to construct a roadway at ground level! If a road requires a cut to avoid steep slopes, it's nearly impossible to work with this regulation. Subdrains are utilized all the time to lower the groundwater underneath roadways, they have never been seen as contrary to recharge, and are largely necessary for the longevity of a roadway. This regulation would result in there being absolutely no difference in an infiltration basin from a detention basin in terms of design. Therefore, if you implement ESSDs to eliminate the need for recharge and treatment, you **still** need to build the massive basin out of the groundwater. If you could make a detention basin with an impervious liner, you could utilize area better and minimize disturbance. A 2' offset for recharge makes

sense, as you can't recharge when the groundwater is at basin level, as for everything else, this change is not based in reality in any way.

15. Below is an excerpt from the manual:

How are Setbacks and Separation Distances Measured? As indicated by Table 2-8, there are two types of setback types: horizontal and vertical. Measure setbacks based on the below criteria. • Horizontal Setbacks. Measure all distances along a horizontal plane from the appropriate boundary, edge of SCM, edge of building, structure, or other object. Do not measure distances by following the topography or slope of the land. Measurements must be the shortest distance between the two objects. For example: for an infiltration basin with an earthen berm around the perimeter, the setback from the Resource Area is measured from the outside toe (i.e., bottom) of the infiltration berm wall. When an infiltration practice is entirely subsurface such as a trench, setbacks are to be measured from the side wall.

Requiring the setbacks to be measured from the outside toe of an infiltration berm wall is extremely excessive and should be reconsidered.

I was happy to see credits that are attainable for projects to remove the recharge/treatment requirement. There were a few things I would like to note about a few of these ESSDs.

1. ESSD Credit 1 allows for the removal of traditional recharge/treatment for lots that are designed to have less than 15% impervious area. **This is great!** Central and Western Massachusetts largely consists of rural development, where impervious percentages are much lower than around larger cities, and natural recharge is much more likely to occur. In the old handbook, there were no measures in place to recognize the difference in impervious area on a lot in Boston versus a lot in the Berkshires. The fact that A-N-R residential developments that consist of 4-7 lots of 6-10 acres each would have to meet the same standards as the same development of 4-7 lots where the lots are 10,000 S.F. each (and a greater rate of impervious cover) was always problematic in our view. However, one issue that I have with this credit is although it requires you to exclude wetlands, bank, etc, it requires a criterion that the site does not contain soils with seasonal high groundwater within 2' of land surface. Wetlands fall into that category, therefore if there are wetlands on site, you can't use this credit anyway. I urge the department to remove the 2' to groundwater requirement, as it would eliminate many sites that otherwise would be eligible for this credit. As an alternative to receiving this credit, many developers may decide to bring in several truckloads of fill to raise the site to achieve recharge through structural means, rather than building to suit the site. This will result in extreme excess clearing and land alteration that otherwise would not have to be. It's a great

credit that rural communities could use and would eliminate a lot of maintenance individual homeowners would need to perform on their structural BMPs if treatment/recharge is necessary for every driveway in an A-N-R development. Additional credits would be more than welcome in regards to rural development, which was overlooked in the old handbook.

2. ESSD Credit 2 – Our firm has seen the effects of solar arrays and how much actual runoff they produce. Hydrology models don't take into account how much compaction occurs on these sites, and how little natural recharge occurs if care isn't taken in regards to that. Regulations regarding the compaction of these sites should be taken into consideration with any credit these sites are given.
3. ESSD Credit 3 & 4 – These credits are great as well, however there are some things that could be improved. Requiring the QPA to be an average slope of 5% or less is a little limiting. If this was increased even to 8% it would help a lot of sites comply with this credit. Furthermore, if there was a gradation of as the slope of the QPA increases, the required area (or flow length) of the QPA would increase as well. There could be variations of this with different HSGs as well. Requiring this area to maintain buffers to septic tanks and piping seems unnecessary as well, although leaching facilities make sense due to this being a 'Recharge ESSD'.
4. ESSD Credit 7 – This buffer area credit could be extremely useful with a few minor alterations. As with #3 above, the 5% average slope would incentivize developers to clear the buffer zone and regrade to attain 5% under ESSD 3 & 4. I would highly recommend the department increase this average slope, or implement a gradation of length of buffer vs. average slope. This will encourage developers to utilize this credit and protect wetland buffer zones, which is in the best interest of the department.
5. ESSD – Natural Drainage Systems – The department has pushed the utilization of country drainage since the 2008 handbook. One thought that may go into this ESSD is the allowance of properly designed (<4 fps in a 10 year storm) grassed swales with check dams to count as a pretreatment method as it's clear that TSS would be removed from stormwater flow through check dams.

One high-level concern I have with the implementation of the new stormwater handbook is that several communities have implemented stormwater bylaws, which call for 90% TSS removal and 60% TP removal. To my knowledge, these bylaws don't allow for the use of ESSDs to achieve these rates. Is there a way the handbook can be written in order to alleviate this issue?



Although I appreciate the opportunity to address these concerns in written/oral format, I firmly believe additional measures need to be implemented. The 'setback table' changes will fundamentally change the way stormwater management is designed within the entire state, and their importance is paramount. Scientific reasoning (if there is any) that necessitates these changes should be provided to inform the public of why these changes are necessary. Otherwise, the increased setbacks are solely a disincentive to develop perfectly fine plots of land with adequate stormwater management features, or increase the cost and the amount of disturbance required to do so.

In reviewing all the written correspondence the Department receives, perhaps a comprehensive list of changes that were not presented can be developed and available to the public for review. This would help engineers/developers understand exactly what has changed in case someone misses something while reviewing the 860 page document.

After the department takes written/oral testimony into consideration and (hopefully) updates the draft manual, a description of **exactly** what has changed from the draft manual to the updated manual should be provided so we know what the Department has taken into consideration, and what they have not.

In closing, I hope the Department takes these recommendations seriously and understands how the items listed herein are problematic. As engineers, we understand that standards need to be updated to address the changes we are seeing in extreme storm events, however a lot of what's changed in the manual has nothing to do with increase intensity of extreme storms. We also understand the push toward environmentally sensitive design, and the credits provided are a great incentive to do so. We look forward to seeing the changes to the manual the Department puts forth.

Thank you for your time and consideration.

Trevor Fletcher, P.E.

GRAZ Engineering, LLC





April 14, 2024

Lisa Rhodes  
Wetlands Program Chief  
Massachusetts Department of Environmental Protection HQ  
100 Cambridge Street  
Boston, MA 02114

Re: Homebuilders & Remodelers Association of Massachusetts (HBRAMA) Comments on Proposed Changes for Massachusetts Stormwater Handbook and Massachusetts Stormwater Regulations

Dear Ms. Rhodes:

The Homebuilders & Remodelers Association of Massachusetts (HBRAMA) expresses our gratitude for allowing Guy Webb and myself to represent our association on the Stormwater Advisory Committee (SAC) and to offer comments and questions. We recognize that this has been a long and somewhat arduous process for the SAC. I imagine even more so by Massachusetts Department of Environmental Protection (MassDEP) staff. On behalf of the SAC and the general public I want to thank all members of MassDEP staff that were part of this process and for allowing us users the opportunity for comment, whether through information sessions, through the office hours via Zoom, the public hearings, and/or in receipt of the official comments.

This letter serves as the official comments of the HBRAMA but should not be considered as necessarily complete and thorough. Over the next several years those of us in the development community will be using the Stormwater Handbook daily in our development designs and I think we all can envision additional issues/problems that will assuredly arise as we work through the details of the use of the Stormwater Handbook (Handbook). It is especially hoped by the development community that the comments received to date and through the official comment process will be used by MassDEP to flush out as many of the problems and issues presented and address them through a revision process prior to releasing the Handbook as official. I also recommend that MassDEP errs on the side of caution as each of the various issues are considered, especially those that can have dramatic impacts (eg Table 2-8).

Many of the comments below were raised in Office Hour #3 held via Zoom on April 3, 2024 and others were detailed in my letter to you on April 25, 2021, almost 3 years ago toward the conclusion of the SAC meetings. I thank you for reviewing the list I provided shortly before Office Hour #3 even though I admittedly did not give a lot of advance time in submitting these specific comments prior.

I also want to express our appreciation that the exemptions for up to 4 single family lots and maximum feasible compliance from 5-9 lots was retained. This is critically important for our members that construct small projects, often on infill properties with restricted opportunities for full stormwater control measures (SCM).

**1. Table 2-8, Summary of applicable horizontal setbacks and vertical separation distances by SCM:**

The entirety of Table 2-8 and the expected impacts may be considered my most important comment. I appreciate that MassDEP has already received “many” comments related to this table and is entertaining a thorough review with significant revisions expected. This is welcome. I cannot stress enough, as I have heard from others as well, that the setback provisions in this table have the potential for massive negative development impacts. MassDEP has already admitted that it has received many comments related to these setbacks including some which express how certain desirable affordable projects would not meet some of these setbacks to the point where the project(s) would be entirely eliminated or would be so diminished as to render the resultant project uneconomic or otherwise not buildable. This is reality.

My expressed comments in the past have inquired as to how these actual distances were derived and it is repeated herewith. I know that the answers did mention that some of these setbacks are already in the Handbook, and perhaps they are but that is not necessarily a valid answer. As you know, significant portions of Table 2-8 of the Stormwater Handbook is to be included in the actual regulations in 301 CMR 10.05(6)(q). These setbacks as well as many other requirements within the regulatory language will be focused on by Conservation Commissions and will become absolute, regardless of site conditions. Therefore, particular attention should be given to 301 CMR 10.05(6)q to ensure that the distances are based on science and the language is appropriate.

For an example of this language concern, I suspect that the 50 foot setback to a septic absorption system is the actual intent of this item but the language in the table includes “and any component of septic system”. This description could be construed as to include the septic system piping, which does not really need to be that far away and which is typically sealed PVC. It is noted that septic piping can be placed as close as 10 feet from an actual domestic drinking water line pursuant to Title 5 of the State Sanitary Code implying that 50 feet is massively excessive.

Equally important in the specific language is the actual dimensions proposed and the genesis for these figures. Are they based on science, literature review, studies? Are these studies available for the public to view? Were these distances, as propose, provided an opportunity of peer review? Even existing setbacks should be re-reviewed in this way and not just listed because they are codified already.

It should be noted, as MassDEP is well aware, that some municipalities reference the entire Stormwater Handbook into their zoning, subdivision, or stormwater regulations for all projects under their review via a general reference, regardless of whether the wetlands regulations are applicable. Thus, these setbacks become extremely important outside of protecting wetland resource areas and may get near impossible to attain on small sites or re-developed sites that do not have the “maximum extent practicable” language.

In summary, relative to Table 2-8 and the related section of the regulations, it is my sincere hope that MassDEP spends the effort to examine the science in existing literature, compare these setbacks with other states, and eventually present a final table that is protective of the environment but reasonable to attain for all site conditions, perhaps even including reductions of up to 50% if certain specified conditions are met. This particular issue is vital.

The following are specific comments that I have relative to Table 2-8. I know there are other issues with this table and some will not become obvious until site design is attempted for actual sites. I trust that other reviewers will be commenting on other specific problem setback distances, to which I will assume that I would concur.

Table 2-8:

- a. Septic –the septic setback should be only for leaching areas. See Title 5 for definition.
- b. Building foundation and property line > 10' should be eliminated as many urban areas rely on recharge systems which cannot meet these setbacks.
- c. The 12' maintenance access seems far way too much. Also, access may not be required on all sides for proper maintenance especially for small SCM's (eg pocket wetlands which can easily be reached with a backhoe or excavator). This setback is too general to just place a generic width. Also, by requiring such an extensive berm then the regulations may be forcing the designer to use less desirable SCM's such as underground systems requiring more extensive monitoring and maintenance when another surface SCM is generally more preferable.
- d. Why is the slope measured at 50' from the outside edge of an SCM slope. The common definition of a BMP or now an SCM is the top of the berm. This is penal. As an aside, it is noted that the example in Scenario 1 does not appear not to meet this requirement which proves my point that designers do not think that the back, outside toe of slope is part of the SCM.
- e. The slope requirements in several of the setbacks as outlined in Footnote 7 including those that require distance from the 5%, 15%, or 20% do not make any sense and all should be removed. **This is an exceptionally important comment.** These slopes are not going to cause breakout issues (eg 20% = 4:1) and why are the distances associated with them so large (eg. why bioretention 100'?) Also, for example of how this can wreak havoc, Scenario 1 definitely seems to have 15% slope below which would render this design not in compliance.
- f. Note, "bedrock" is spelled wrong

## 2. ESSD Credit 1: (Note: ESSD is an acronym for Environmentally Sensitive Site Design)

This is obviously a very important credit for cluster development and I suspect that MassDEP hopes that many projects are purposefully designed to obtain this credit. However, as it currently stands, ESSD Credit 1 is severely flawed as follows:

The base criteria is a major problem. The current language states that the entire base lot (which can be dozens or even hundreds of acres) cannot have ANY Estimated Seasonal High Water Table of less than 2 feet. (ESHW  $< 2'$  REQUIRED). Since a water table that is less than 2 feet is the pure definition of "wetland", this means that if a project site has ANY wetlands on it then this important credit is completely unavailable. This seems ludicrous. This criteria of a water table of greater than 2 feet over the entire property must be entirely deleted. Further, why is this a threshold criteria anyway?

Next, I strongly suggest changing the impervious threshold to 30%. Where did the 15% maximum impervious come from? A hard threshold of 15% maximum impervious area is far too low to be used regularly. ESSD 1 is an important potential credit and my concern is that this threshold alone will severely limit its use to only the most rural areas and not for the geographic areas within the Commonwealth most in need.

Also, as I noted at Office Hour #3, the example diagram that is presented in the handbook for a described 2.5 acre lot, as shown, is graphically in error. The graphic shows an area over the limit of 15%. It measures out at about 21% (and that does not include any impervious area of the road as indicated). Also, the statistics listed do not even come close to matching the graphic

presented. Importantly, extrapolating this graphical error offers a clear presentation of why the 15% is not an appropriate threshold.

### 3. ESSD 7 – the example is flawed and the hypothetical facts should be revised.

The example computes the impervious area ratio to be 1.1 : 1 which is required to round up to 2 : 1 and then the example refers the user to go to Table Buffer 1. At this point, the example is mistaken by continuing on and conveniently skipping over the fact that the table states “N.C”. for 2:1 ratio which means **No Credit is available**. Since no credit is available, the example should end there but the example skips over that vital point and does, in fact, show a credit with a removal of 90% TSS and 60% TP from 15,000 sf of impervious area. But, due to the mistake the credit should not be available. As I mentioned in Office Hour #3, since the example is just a hypothetical it should be simple for MassDEP or their consultant to change the parameters and correct the error (ie maybe 13,000 SF of impervious area should be proposed which would change the ratio to under 1 : 1).

### 4. Comments on all ESSD Credits

The concept of the ESSD Credits are clearly provided to serve designers the ability to provide alternative, more environmentally friendly designs. This is commendable but the actual real-life benefits in the current version of the Stormwater Manual are probably more limited than they appear, especially when applying them to actual projects or potential designs.

First, my overall comment is that the entire ESSD Credit section should be re-evaluated and enhanced to meet the goals and objectives. Further, touting the ESSD Credits as the mitigation for the massive increase in costs associated with the proposed Stormwater Manual, especially to new housing as documented in the Scenario Analysis A<sup>1</sup>, is misleading at best. In fact, the listing below is a brief summary of my take on these credits:

ESSD 1 is extremely limited in availability unless corrected as suggested above. This is an important credit for single family housing and should be revised to accommodate a reasonable use as noted.

ESSD 2 is only for solar arrays.

ESSD 3 is not new.

ESSD 4 is not new.

ESSD 5 Tree Canopy is really ridiculous. Even the example only provides a 3% credit. This will take a massive amount of design work with massive construction costs in soil amendment and all for a tiny benefit. As written I expect this credit to be rarely employed.

ESSD 6 is only for redevelopment when significant impervious is REMOVED, which is rare.

ESSD 7 – Enhance buffer is of questionable benefit – even the provided example did not get the benefit as it was a mistake (see above). This credit is admirable and should be adjusted for better use.

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<sup>1</sup> See MassDEP Stormwater Handbook Updates, Scenario Analysis Project Report, dated 11-30-2020, by Comprehensive Environmental, Inc. and updated in a follow up Memo dated 11-9-2021.

I recall MassDEP's consultant referring to other ESSD concepts in the Stormwater Manual, such as Preserve and Use Natural Drainage Systems (e.g. use of country drainage), no disturbance to wetland resource area, or use of small scale controls. I followed the advice and looked these up but they all clearly state "there is no numerical credit for implementation of the MassDEP recognized ESSD/LID technique." So, since it was implied that these were additional ESSD techniques that could be used and since there are no listed benefits or credits I remain confused as to how these ESSD are incentivized to be utilized. If I am missing something, as a SAC member, I am requesting that someone reach out to me for clarification as I am truly curious as to why this is included but without any credit, in reality, it is not included.

## 5. Soils

In general, I suggest that the soils section starting on page 6-76 needs to be revisited. First, I am familiar with other commenters who are more experienced than myself in groundwater flow and other details and would encourage MassDEP and their consultants to fully review these comments including the use of Modflow and Hantush methods.

As I mentioned at Office Hour #3, I am concerned that removing the Licensed Soil Evaluator as an expert for determining the existing soil parameters is a significant mistake. Soil Evaluators are trained, with the support of MassDEP, in determining the Estimated High Seasonal Groundwater using redoximorphic features, determining the soil texture, the soil structure and consistence, and other related soil parameters. In fact, MassDEP has developed the actual forms to use and has been involved in training the 1364 soil evaluators presently existing throughout the state and provides an updated online contact list of all of them.

I remain concerned that the state of Massachusetts does not presently have enough qualified soil experts, as listed in footnote 93, to perform the complicated Field Methods for Determining Hydraulic Conductivity in the Vadose Zone with the various field test methods listed in Section 6.3.1 including the Guelph permeameter, the Double ring permeameter, the Amoozemeter, the Mini-Disk Infiltrometer, or any of the other instruments listed. I recognize that some MassDEP staff are of the opinion that there are plenty of Registered Professional Engineers in civil or environmental engineering but I believe that the experience with these field methods of testing soils is extremely limited. These tests will require specialized soil consultants for every site and for which I suspect will cause a bottle-neck, in essence a supply chain of experts problem.

Additionally, as I mentioned in Office Hour #3 the listed soil testing protocol is far too aggressive and could (or better term is "will") cause complete destruction of the receiving layers of the SCM with the quantity of tests listed. The requirement of 3 tests, minimum, and every 5000 SF within the SCM is simply massive overkill. I would ask what problems has MassDEP noticed in how the design community is assessing receiving soils presently?

The requirement of 4 minimum tests on any size lot, whether it be 10,000 SF or 200 acres is not thought out. The requirement for soil testing one test pit for every acre of the base lot is absurd (think about a 200 acre lot or lots with intended open space areas). This should be amended, possibly a percentage of the lot.

In summary, as stated, Section 6.3, Soil Evaluation Procedures seems to require significant revisions which I know will be commented on by many others and MassDEP should not simply log the comments but should really address this section with substantial revisions.

## 6. Other comments

- a. P. 6-83: why is porous pavement impervious for sizing?



- b. P 6-82: this seems wrong. It states that offsite impervious areas are required to be dealt with on the subject site for standards 3 and 4. (this is not an issue for standard 2). This must be a typo. Why should applicant have to address existing impervious areas from his upstream abutter(s). This could be massive. At the Office Hour #3 this comment appeared to be accepted by one of MassDEP staff as an issue that was flagged for correcting.
- c. P 2-7: What if part of site is Soil Group D (ie not the entire site). The requirement is the entire site (again, some sites are very large and will have many different soil types). What if the low lying area and/or other parts at a significant higher elevation are better soils? I don't think MassDEP intends that pumping stormwater is inherent in the solution? This should be better written and/or clarified to relate to sites with multiple soil types and also related to certain critical elevations.
- d. P 2-8: Maximum Extent Practicable is not the same as "acceptable" or "good practice". It is well recognized that it is not a good idea to infiltrate stormwater into soils that contain hazardous materials or sites with high pollutant loads hence the phrase MEP is not used properly. It may be "practical" (ie soils can accept the flow) but not a good "practice". This concept should be clarified (this occurs in several sections, not only P 2-8).
- e. P 2-12: middle of paragraph states restricting use of sand and salt on paved surfaces. Reading this implies that this is required everywhere ("included, but not limited to...") but I presume this is not meant that way. The language should be cleaned up for clarity.
- f. P 2-7: toward the end of "Definition of Stormwater Recharge". The mounding analysis should put a small diminimus value as "elevate the water surface of any resource area over a 72 hour period" as someone could argue that increased volume will have an infinitesimal increase and would therefore not comply. This is a minor comment but could be important.
- g. P 2-8: Footnote 10 – Why can't bioretention areas and tree box filters be designed to be a filtering practice AND an infiltration device?
- h. P 2-17: Second Bullet – this is good. Thank you. I appreciate the specificity of allowing a weighted average when sub-catchments drain to the same wetland.
- i. P 2-35: paragraph above green box. This is somewhat misleading and I suggest clarification is needed when using the word "project" for portions of a project that are redevelopment. They could be phases or separate sections, etc.
- j. P 2-36: Item 1 & 3 – I am not sure if we ever discussed this in the SAC or elsewhere but more and more projects are single family detached dwellings in a condominium type project and the definition uses both "detached single family dwellings" and "four or fewer **lots** and "on five to nine **lots**" (emphasis added). I am not sure if this has been previously defined as just "lots" and not simply "single family detached dwellings". If the latter than it probably should be stated "lots or units...".
- k. P 2-39, should the acronym for "Construction Period Pollution Prevention Plan" be CPPPPP? It is listed as CPPP.
- l. P 2-39: the issuing authority for purposes of wetland protection act related work is the Conservation Commission or MassDEP but some towns regulate the NPDES process with coverage under the CGP and the related SWPPP to be by others such as the Planning Board or municipal staff. Why is this here as it may cause municipal confusion and I don't think this required submission of the SWPPP has to be to the Conservation Commission.
- m. P 2-43: The legal instrument requirement seems new to me and may end up causing a lot of issues. I am not an attorney but I can see pushback on this once implemented. This could

become very costly and, although I approve of the concept, I am not so sure that this paragraph and the requirements as noted are the right solution.

- n. P 4-3: Section 4.2, Bullet 1: The actual ESSD definition (in the definition) does not use “or practices” after the word techniques.
- o. P 4-3: the commas between distributed decentralized micro-scale controls are not in the stated definition and appear wrong in bullet #2.

## 7. Comments submitted as part of the SAC

Since this is the formal comment for HBRAMA, I think it is required that I resubmit my comments that I originally sent to the Stormwater Advisory Committee (SAC) on April 26, 2021 so I am reprinting the applicable comments below and for your convenience I am printing them in blue so that it is clear MassDEP has seen these comments during the SAC process.

- a. We concur with MassDEP in the concept of updating the precipitation rates to NOAA Atlas 14 but we do not agree with the unscientific future projections of using the Monte Carlo method, 90% confidence level of the higher value what has been termed NOAA Atlas 14 PLUS.
- b. We join NAIOP, DCR, and MassDOT in our belief that the proposed changes do not align with EPA MS4 (MS4). This is one of the few stated goals for the changes proposed and remains unmet. We do not agree with the changes proposed to Standard 3: Recharge especially eliminating the differing rates for differing soil classifications. This change will have the effect of eliminating Standard 4: Water Quality Treatment. We note that NAIOP, DCR, and MassDOT had similar comments on recharge and water quality. We also have concerns on other issues related to this re-alignment including maintenance, off-site mitigation, and TMDL.
- c. Costs: We oppose the entire concept of substantially increasing the size of stormwater management facilities to accommodate NOAA Atlas 14 PLUS and the corresponding massive costs projected by the consultant to MassDEP through only one similar hypothetical example. Housing costs in the Commonwealth are already just about the highest in the nation and adding \$18,500 to the cost of a single home due to these regulatory changes is absolutely ridiculous and is certainly not in the interests of solving the housing problem as often expressed by the Governor, the Lt. Governor, most of the legislators and virtually everyone involved in maintaining a thriving state economy.

The following discussion provides more detail on the summary comments above.

### d. Precipitation Projections:

- 1) It is understandable that MassDEP is joining others in re-assessing the precipitation rates used in the design of stormwater systems since the rates utilized are over 60 years old. As we know, any changes in the precipitation rates will directly and proportionately impact the runoff rates. As suggested by some MassDEP staff, I have done my own research and read and/or perused several studies including these below:
  - i. NOAA Atlas 14 Precipitation-Frequency Atlas of the United States Volume 10 Version 3.0: Northeastern States Connecticut, Maine, Massachusetts, New Hampshire, New York, Rhode Island, Vermont Sanja Perica, Sandra Pavlovic, Michael St. Laurent, Carl Trypaluk, Dale Unruh, Deborah Martin, Orlan Wilhite, U.S. Department of Commerce National Oceanic and Atmospheric Administration National Weather Service Silver Spring Maryland 2015 revised 2019



- ii. Changes in precipitation with climate change Kevin E. Trenberth\* National Center for Atmospheric Research, Box 3000, Boulder, Colorado 80307, USA, published March 31, 2011
- iii. Easterling, D.R., K.E. Kunkel, J.R. Arnold, T. Knutson, A.N. LeGrande, L.R. Leung, R.S. Vose, D.E. Waliser, and M.F. Wehner, 2017: Precipitation change in the United States. In: Climate Science Special Report: Fourth National Climate Assessment, Volume I [Wuebbles, D.J., D.W. Fahey, K.A. Hibbard, D.J. Dokken, B.C. Stewart, and T.K. Maycock (eds.)]. U.S. Global Change Research Program, Washington, DC, USA, pp. 207-230, doi: 10.7930/J0H993CC.
- iv. Changes in Extreme Precipitation in the Northeast United States: 1979–2014 MACY E. HOWARTH, CHRISTOPHER D. THORNCROFT, AND LANCE F. BOSART Department of Atmospheric and Environmental Sciences, University at Albany, State University of New York, Albany, New York (Manuscript received 25 July 2018, in final form 7 January 2019), published April, 2019, p.673.
- v. National Weather Service, NOAA Atlas 14 Precipitation Frequency Atlas of the United States Power Point Presentation, Presenter: Michael St. Laurent (date?)

The bottom line is that I concur that the precipitation rates need to be updated and should be based on the tremendous research done by the U.S. Department of Commerce, National Weather Service by the National Oceanic Atmospheric Administration in their NOAA Atlas 14 Precipitation-Frequency Atlas of the United States Volume 10 Version 3.0: Northeastern States Connecticut, Maine, Massachusetts, New Hampshire, New York, Rhode Island, Vermont (NOAA Atlas 14). As you are presumably aware, NOAA 14 updates began in 2004 with the approach developed in the 1990's and will eventually include all of the US states (50) and Puerto Rico once the last 5 states are completed in Volume 12. Massachusetts is in Volume 10 completed in 2015.

NOAA Atlas 14, Volume 10 for the northeastern US (New England & New York) was scientifically developed by the Hydrometeorological Design Studies Center within the Office of Water Prediction of the National Oceanic and Atmospheric Administration's National Weather Service using 7,629 stations with analysis performed over no less than 70 years of data. Conversely, NOAA Atlas 14 PLUS is completely unscientific and the concept is “pulled out of the air” using the Monte–Carlo statistical method. If MassDEP does continue to propose NOAA Atlas 14 PLUS then a proper peer review should be performed with results presented to the Stormwater Advisory Committee prior to regulatory changes. We also suggest changes to the regulations that will limit or minimize any unwarranted and undesirable potential side effects of increasing stormwater conveyancing systems caused by the use NOAA Atlas 14 PLUS (this issue of conveyances will be discussed again below).

NOAA Atlas 14 recognizes that errors may be inclusive in their results from i) record length, ii) missing data, iii) quality control of the data, and iv) spatial coverage of the data. Further, uncertainty is inherent in the results due to i) distribution fitting, ii) optimization & consistency checks, iii) regionalization, and iv) interpolation. So, in the near future NOAA intends to expand from the Stationary Atlas 14 method and replace it with non-stationary approach that can “efficiently translate future climate scenarios”<sup>2</sup>. Further, the upgrades and updates to NOAA 14 are proposed to be updated on a regular cycle (10 plus years) with more stations and with longer records using modern methods, as well as other improvements. In this way, future changes are “baked” in to NOAA Atlas 14. Thus, this is one major

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<sup>2</sup> National Weather Service, NOAA Atlas 14 Precipitation Frequency Atlas of the United States Power Point Presentation, Presenter: Michael St. Laurent (date?)

reason that NOAA Atlas 14 PLUS is not needed (see below), it is intended and expected to change and adapt to future conditions.

- 2) HBRAMA accepts NOAA Atlas 14 for updated precipitation rates to be used in the Commonwealth. However, HBRAMA does not support NOAA Atlas 14 PLUS.
- 3) My initial comments on the precipitation change to the NOAA Atlas 14 PLUS was outlined, in detail, in my email of November 18, 2020, which is presently available for review on the SAC website. In particular, I questioned the trend line plotted by Tom Maguire by i) analyzing the Nantucket Station and accounting for the gaps in data and ii) using something like the 85th percentile to eliminate the outliers which produces a substantially different trend line.
- 4) The mean standard deviation of the provided data on the provided Massachusetts precipitation over Time Chart with 13 stations equates to 7.68 - which is over 33% - suggesting that establishing a trend line for use in creating specific regulatory policies for projections into the future is not scientifically accurate. This requires peer review.
- 5) MassDEP's concern regarding the future changes in precipitation due to the effect of climate changes are indeed being considered and addressed by NOAA. In fact, the current Atlas 14 approach, developed in 1990s is based on assumptions that extreme precipitation characteristics do not change in time. NOAA is already planning future changes to the NOAA Atlas 14 method which will be replaced with a non-stationary approach that can efficiently translate future climate scenarios into a product useful for NOAA Atlas 14, amongst other changes. In essence, there is clearly no need for the PLUS since NOAA is already addressing future changes.
- 6) Effect of larger peak flow rates: The change in precipitation, whether it be NOAA Atlas 14 or NOAA Atlas 14 PLUS will impact hydrology and hydraulics of proposed stormwater systems. It is important that we understand the impacts that these changes will cause so as to properly consider the impacts, environmentally and fiscally.
  - 1) In brief, there are 3 significantly differing types of effects that larger peak flows will cause.
    - a. Culvert flow – culvert flow is most often impacted by inlet or outlet controls. Inlet control backs up the runoff and has the potential to cause major roadway erosion and cave-ins if the culvert is undersized and flow is forced to overtop the roadway and cause scouring. This was the concern mentioned by Vandana Rao of the Office of the Environmental Secretary and also stated by MassDEP as the main reason to review the peak flow rates. I concur that these storm related failures are of serious concern. The increases in peak flow rates will help to properly size culverts. However, with the “stream crossing standards” currently utilized, most new culverts are already being oversized to accommodate wildlife. The hundreds of thousands of existing culverts in Massachusetts will certainly be taxed by larger flows but this is primarily an existing problem in-the-field and will not be significantly altered by increasing theoretical design rates of flow. So, in summary, higher peak rates caused by NOAA Atlas 14 or NOAA Atlas 14 PLUS will generally not be an issue for new culvert designs.
    - b. Stormwater Management Facilities: Stormwater management facilities are designed to pass various storm frequencies. Orifices, weirs, or other devices are used at differing elevations to allow outflow at prescribed modeled conditions. Larger peak flows can readily be accommodated in the design. Since both pre and post development rates of runoff will be proportionately increased, there will be changes but they should be proportional or if impacted, then slight modifications are to be expected most of the time. So, for controlling the peak flows the changes

provided by NOAA Atlas 14 and NOAA Atlas 14 PLUS are expected to be minimal.

However, recharge requirements will have an impact on the sizing of these facilities that are designed to recharge and these may be very significant. This was shown true on the hypothetical scenarios in the report prepared by CEI (see later comments). Since I presume that MassDEP is seeking comments and also possible solutions, let me present a solution to the infiltration problems caused by increasing precipitation rates so much. I think that MassDEP should consider increasing the 72 hour drawdown requirement used for sizing these basins or eliminating it as a requirement altogether. This 72 hour drawdown issue is based on the possibility of successive storms and eliminating any crossover impact but I don't believe this is based on science either; it appears to be just a quick analysis of the annual storm patterns in this area. It is my supposition that eliminating the 72 hour drawdown will have a large impact in not oversizing various SCM's.

- c. Conveyancing systems: Conversely to above, catch basin inlets and stormwater piping systems will be impacted greatly with significant increases in peak flow rates. This is a significant concern as was brought up at the meetings by SAC member Sandy Brock, Rob Rosseen, and myself.
  - i. First, catch basins in roadways along the grade (not at the low points) can only capture what is intercepted. In Massachusetts, we usually use 24" wide grates, so we can only capture the first 2 feet of the flow along the curb line in the road at straight grades. At large storms with large contributory area, the flow path down the road or in the parking lot is often wider than 2' so there is constant by-pass. This is oftentimes (in my discussions with others, almost always) not accounted for and the full flow is somehow expected to find its way into the catch basin. With larger design flow rates, more by-passing should be modeled. Ultimately all of this is captured at the low point, where inlet capacity is properly analyzed. I am suggesting that designers will need to start modeling catch basin inlets along the street and flow path to reduce pipe sizes in the streets and parking facilities. This is not typically done presently and there is no easy way for this to be done using HydroCAD or other similar programs. It will be a somewhat manual process with forced secondary flows. If not done, then pipe sizes will be artificially increased causing various problems with other utilities (see ii below) and needlessly increasing costs.
  - ii. Increasing conveyancing pipe sizes in roadways and on sites within an established vertical cross section is not a simple matter. Consider that the underground electric and other utilities are at 30" cover, gas is at about 30" at the opposite side of street (usually), next is the storm drain for which cover is usually 36"-48". If this was a 12" – 15" pipe then the bottom would be near 5 feet. This works good for water mains which are "set" at 5' cover for both the main and the laterals to the houses, then sewer starting at around 6-7' deep. If the drain pipe were to be increased to 24" or larger then there would be water/drain conflicts throughout the roadway. To solve this, water mains would then need to be deeper, lowering the sewer too. This can have environmental impacts such as lowering water tables in the area, which by the way, is directly contrary to one of the main objectives of these changes. Further, most water departments want the water lines to be 5' minimum and 5.5' maximum. They do not want to go looking for the water pipes if there are leaks or breaks. This is just one issue of increasing conveyance pipe sizes.

Larger drain pipes are not a good solution. I highly doubt that there are any significant extra flooding or other impacts that any new (within last 20 years) storm drain pipe has had anywhere in the Commonwealth. (if so, I would like more information). This is different than the roadway erosion of an undersized, existing cross culvert mentioned by Ms. Rao. Yet, this one change could directly impact hundreds or thousands of projects. Plus, there are the added cost of the larger materials (oil, concrete, or steel), transport (carbon), stone, fill, etc. all of which are negative to the environment.

My guess is that the regulators proposing this massive change to the rate of runoff are not considering all of the side effects that this will cause to the conveyancing systems. But we should be considering this from a constructability, cost, and environmental impact. I spoke to several of my peers when considering this comment and we are all in agreement that by-pass catch basin flow is not presently being accounted for and that larger conveyances will have virtually no benefit and are seemingly not the cause of any drainage problems currently. In reviewing the notes of SAC Meeting 3, in response to Sandra Brock's question (and my follow up comment) as to conveyancing systems, MassDEP and EEA acknowledged that the proposed changes will generate larger pipe sizes and also implied that this is a side effect and not necessarily the goal, specifically stating "the goal of the proposed standards, however, is to increase retention of increasing precipitation on site through increased attenuation of peak runoff and through recharge, thus minimizing impacts to off-site conveyances". I remain concerned that the larger pipe sizes required as a side effect will provide absolutely no benefit while adding significant costs and potentially huge constructability problems. This issue should be addressed in the regulations especially since many municipalities rely heavily on the Stormwater Manual. An idea, that I have not vetted, may simply be that MassDEP specifically states a recommendation that pipe conveyances be sized to handle the 10 year storm frequency only (not the 25 or 100 year events). I am curious as to MassDEP's thoughts on this concept and will be available for further discussion.

In summary, HBRAMA supports NOAA Atlas 14 but strongly objects to NOAA Atlas 14 PLUS. If MassDEP wants to pursue NOAA Atlas 14 PLUS then a formal peer review should be employed. The standard deviation and other errors should be reviewed and documented in any issued regulatory change with availability of public comment. Something must be done to avoid artificial increases in pipe conveyancing sizes for no positive gain and no benefit whatsoever. Finally, changes or limitations to the details of the regulatory requirements should be made (such as increasing the time to drain) to ensure reasonably sized stormwater facilities.

e. Alignment with MS4 Permit:

1. HBRAMA concurs with comments received from NAIOP, Mass DCR, and MassDOT all of which commented that the proposed changes do not fully align with MS4. In some cases the proposed changes are more stringent and in others they do not align at all with different sets of definitions, different options, and different design requirements. This will simply cause confusion. All four comment letters from the SAC process commented that these changes do not meet MassDEP's goal of alignment with MS4.

2. HBRAMA also concurs with various commenters request for outside peer review to assess the impacts of these changes on stormwater system siting and design. Although MassDEP did study some simplistic hypothetical examples, these were based on the proposed precipitation changes and not on the MS4 alignment.

f. Standard 3: Recharge:

1. HBRAMA does not agree with the proposed changes to the recharge requirement of 1 inch across all soil types and suggests MassDEP not to make any changes to the present use of different depths for differing soils.
2. The recharge requirements of full draw down of the 1 inch volume within 72 hours in certain soils, especially C and D soils, will require much larger storage devices, whether above or below ground, which will impact the overall area of treatment and costs. The impact has not been evaluated by MassDEP, especially the cost to benefit (ratio).
3. The proposed standard for recharge does not align with MS4 as MassDEP does not allow retainment, only recharge. MassDEP's proposed regulation does not allow for the benefits of evaporation, transpiration, or water reuse.
4. HBRAMA concurs with NAIOP and MassDOT comments that Standard 3 should be reconfigured to provide the desired recharge volume on an annual basis and not by a set formula driven volume to meet MassDEP's stated goal of an annualized recharge volume.
5. MassDEP should maintain the "maximum extent practicable" standard for both C and D soils.
6. HBRAMA concurs with others that the proffered figure of 70% annual precipitation is unsupported and is ripe for some sort of peer review. The supporting data and/or research for this vital statistic and assumptions made for this important standard should be presented and peer reviewed.

g. Standard 4: Water Quality Treatment:

1. For new sites, it is unclear if Standard 4 is even required anymore if the changes to Standard 3 are proposed, as is. This standard would be applicable for very specific conditions, such as D soils, ledge, hazardous waste sites, and others in instances where the standard would be met to the maximum extent practicable.
2. The result of the changes to Standard 3 and Standard 4 leaves doubt to the development of projects where recharge is not feasible, is not allowed, or causes negative impacts to abutting properties (e.g. break-out, slopes). This may involve a significant amount of presently developable properties, both new and re-development. The impacts of 'land takings' should be considered by MassDEP with consultation of the Office of Attorney General.

h. Maintenance and Improvement Projects:

1. HBRAMA concurs with comments received from NAIOP, DCR, and MassDOT during the SAC process, all of which commented that more clarification is needed on maintenance or roadway / walkway improvement projects that should continue to follow the Stormwater Standards to the maximum extent practicable.

i. Supporting TMDL

1. HBRAMA concurs with comments received from NAIOP, DCR, and MassDOT during the SAC process, all of which commented that MassDEP has not provided any specifics yet, as admitted, but



any changes should follow Appendices F and H of the MS4 Permit with a watershed approach to meet the goals of consistency.

j. Costs:

HBRAMA is not opposed to updating regulations where deemed appropriate but we are vehemently against massive increases in costs of regulatory compliance without corresponding environmental benefits. Much of the proposed changes by MassDEP, through the discussion above, will ultimately affect every project with increasing costs. This concept is objectionable but understandable. Some changes require some increases in cost. However, some of these changes proposed by MassDEP will have an enormous and spectacular increase in cost without even the tiniest of environmental benefit. That situation is objectionable and unacceptable.

MassDEP should be commended for reaching outside their normal domain and engaging Comprehensive Environmental, Inc. of Bolton, MA to develop three hypothetical scenarios to test out the effect of these changes. Certainly, one can endlessly debate the scope and particulars of the scenarios studied, but given the limitations of what was studied, it is even more instructive to recognize that of the three scenarios presented: a linear roadway project, a 26 lot open space residential housing subdivision, and a tight, urban lot development, only one had any significant cost increase: the residential housing subdivision project.

Table 1 below outlines the cost conclusions of the 3 scenarios studied. It is amazingly obvious that the roadway project and the urban, small lot project are essentially unaffected yet the residential subdivision project increases stormwater expenses by over 50% to a staggering \$18,500 per lot although we also recognize that ESSD credits could possibly offset some of these costs as outlined in the follow up Memo on the Scenarios referenced above.

Scenario		Cost Increase from TP40 to NOAA Atlas 14	Cost Increase from TP40 to NOAA Atlas 14 PLUS
1	26 Residential Lot Open Space Subdivision – per lot	\$12,912	\$18,500
2	Roadway Widening with sidewalk, bike path, shoulder - 1500 ft. – total project	\$4	\$4
3	Redevelop Manufacturing Bldg to 300 Unit residential on Urban, Small Lot – total project	\$137	\$710

Table 1: CEI (MassDEP Consultant) Hypothetical Scenario Cost Results

This table speaks for itself. It is absolutely unacceptable and ridiculous to propose cost increases of this magnitude to housing in the Commonwealth of Massachusetts. We are all educated enough to know that housing costs in this state are amongst the highest in the country and virtually everyone wants housing costs to decrease, including Governor after Governor. An increase of \$18,500 or even \$2831 per house with the updated analysis is simply unimaginable and I'm sure that the politicians, including the Governor, would oppose this sort of regulatory cost.

HBRAMA again thanks you for allowing us to participate and I thank you for allowing these comments to be received, reviewed, and engaged. I remain available for discussion or clarification.

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In conclusion, there is no doubt that the proposed revisions to the Stormwater Handbook is a massive undertaking and Mass DEP should be commended for attempting this task in such a thorough fashion. I am not sure, but I would venture to guess, that the Stormwater Handbook is the most complete and impactful stormwater manual in the entire country, and probably the world. Congratulations are presented to all those involved. But, before the Manual becomes official the comments and suggestions above should be addressed with applicable changes, re-drafts, and edits made based on my comments and the many others that I know will be filtering in, recognizing also that going through these comments and making the various edits and revisions, however painful, is an important part of this process. As such, if you plan on re-convening the SAC for purposes of exploring these edits please know that I will be happy to attend and provide feedback, as I have always done in the past.

Thank you for allowing us the opportunity to be part of these important and vital changes in helping to make the Commonwealth of Massachusetts a better place to work and to live.

Sincerely,

A handwritten signature in blue ink that reads "Jeffrey A. Brem". The signature is written in a cursive, flowing style.

Jeffrey A. Brem, PE  
Representing Home Builders and Remodelers of Massachusetts (HBRAMA)



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February 8, 2024

MassDEP - BWR Wetlands Program  
Attn: Wetlands-401 Resilience Comments  
100 Cambridge Street, Suite 900  
Boston, MA 02114  
Bonnie Heiple, Commissioner

Executive Office of Housing and Livable Communities  
100 Cambridge Street,  
Boston, MA 02114  
Edward M. Augustus, Housing Secretary

Subject: Wetlands-401 Resilience Comments

Dear Commissioner Heiple and Secretary Augustus:

Thank you for the opportunity to comment on the recently proposed Wetlands Protection Act regulations (310 CMR 10.0). As professional engineers with extensive statewide experience we are concerned that the proposed regulations would needlessly reduce the potential for new housing development at a time when housing supply is among the most critical issues facing the Commonwealth. Those concerns are laid out in more detail below.

Hancock Associates' twenty-five civil engineers, including thirteen Profession Engineers in the Commonwealth of Massachusetts have performed an initial review of the Wetlands Protection Act Regulation revisions currently proposed.

For the past forty-five years Hancock has provided engineering design services to the private development community. We have developed expertise in the design, permitting and construction of medium to high density multi-family residential. Our clients range from multi-national apartment community developers to small not for profit affordable housing providers across the Commonwealth.

We fully understand the need to address climate change and to align stormwater regulations with the Federal EPA's Municipal Separate Storm Sewer System (MS4) requirements. We do not however understand the need for the sweeping changes to the approach to the design of stormwater management systems and hope to alert the MassDEP, EOHLC and all housing stakeholders in the Commonwealth to the unintended consequences these changes will have on the production of much needed housing in the state.

In our review, we have looked at the impact to previously permitted projects to understand the impact of these changes. We have requested permission from the project developers to use their projects in the crafting of this letter. We would like to thank these housing developers for their willingness to share.

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We have separated our comments by categories of topics found within the proposed regulations and revised stormwater handbook. These categories include:

1. **Environmental Sensitive Site Design** - Green Site Design, which uses natural solutions – like trees and buffer zones – to manage stormwater, instead of more expensive detention basins and other traditional infrastructure.
2. **Mounding Analysis** – A mathematical analysis of the impact of concentrating the discharge of stormwater into the ground through an infiltration basin, subsurface infiltration system or other stormwater system.
3. **Redevelopment Standard** – Redevelopment as defined by the regulations as the replacement, rehabilitation or expansion of existing structures.
4. **Setbacks** – Are the distance of a structure, impervious surface or other developed feature from a wetland resource area or other feature.

## Environmental Sensitive Site Design (ESSD) Mandate

The proposed language of 310 CMR 10.05(6)(k) mandates Environmental Sensitive Site Design and Low Impact Development techniques to attenuate pollutants unless Impracticable.

The new definition of Impracticable in 310 CMR 10.04 for use in 310 CMR 10.05 (6)(k)(q) for purposes of stormwater management means *impossible on practice to do or carry out solely based on physical constraints*.

This definition poses a challenge to engineers. I often use the example of the Hoover Dam. Many people thought such an engineering feat to be impossible due to physical constraints. Did engineers do the impossible? No, but they had neither budgetary nor time constraints to get the job done.

Such a draconian definition fails to appreciate the non-technical considerations of engineering design such as cost, logistics, available technology, and the project's overall goal. The problem with this approach is in the actual implementation of ESSD and LID techniques per the revised stormwater handbook. In Section 4 of the revised Stormwater Handbook, ESSD Credit 1 requires the total impervious cover to be less than 15% of the base lot area. The base lot area is defined as non-wetland areas on site.

We have not been involved in a high-density residential development that does not exceed 15% impervious cover under this definition. The narrowness of the definition of impracticable, is it always possible to do less development, but this does not appreciate the cost of land in Massachusetts and the need to make project's financial feasible.

This is only one example of the functional problem with the proposed ESSD and LID mandated approach in the revised regulations. We need more time to fully understand MassDEP's approach to assess the full impact of this mandate.

Hancock has been designing conventional stormwater management systems for decades and are not aware of any failures of these systems to function as designed, protect the environment and adjoining property owners. We do not see this as a change addressing climate change,

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resiliency or aligning with EPA's MS4 requirements as purported by MassDEP to be the goal of the revisions.

## Mounding Analysis

The revision to 310 CMR 10.05(6)(k)3 requires a mounding analysis to demonstrate that the seasonal high groundwater does not elevate the water surface of any Resource Area over a 72-hour period in reaction to a proposed stormwater infiltration system. Stormwater discharged to the ground in stormwater management systems travels through the soil vertically and horizontally. The water table rises in the center of these systems during rain events. This mound dissipates as travels horizontally away from the system. Engineers and hydrogeologist study this mounding effect to make sure there are no detrimental impacts to neighboring properties and sensitive resource areas.

This proposed revised requirement to have no elevation of the surface water at the Resource Area wetland edge fails to recognize that mounding analysis methods employed by engineers and hydrogeologists mathematically never reach zero. Thus, the request to have no temporary elevation rise of the water surface is mathematically unachievable. The degraded mound away from the system is usually as small as 0.1 to 0.2 feet but can be maintained to that rise 300 to 400 feet away.

This would eliminate a developer from utilizing larger subsurface infiltration systems on projects. Subsurface infiltration systems are the most common stormwater system in use today on medium and high-density residential projects as developers can dually use land area for stormwater with parking over.

MassDEP should offer a solid rationale for this requirement or revise the requirement to acknowledge that a certain small amount of theoretical elevation gain is acceptable.

## Redevelopment Standard

The revision to the redevelopment standards per 310 CMR 10.05(6)(k)5 will now require treatment of stormwater on redevelopment sites to meet at least 80% Total Suspended Solids (TSS) removal and 50% of Total Phosphorus (TP) load.

Phosphorus is most efficiently treated using infiltration practices. Infiltration systems need to be located above seasonal high groundwater. Hancock has experienced high seasonal groundwater at many redevelopment sites precluding the use of infiltration. Many of these sites are also subject to the performance standards of Bordering Land Subject to Flooding (BLSF) or floodplain precluding designs from raising sites to allow installation of infiltration systems. These sites will have to then implement expensive proprietary filtration devices to treat phosphorus.

A 2011 study performed by Horsely Whitten Group estimated the cost of phosphorus treatment at \$118,000 per acre (\$174,000 in today's dollars). The study looked at a range of treatment including on site infiltration basins. On sites precluded from using infiltration, proprietary filter treatment devices would need to be employed on these redevelopment sites. We estimate the cost to be significantly more on these sites with both high seasonal groundwater and floodplain constraints.

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Redevelopment of existing highly impervious sites has been extremely beneficial in addressing the state's housing crisis. The use of the Maximum Extent Practicable approach has made vast improvements to the stormwater quality on these sites. We do not understand why redevelopment should be hampered by this change.

## Setbacks

The proposed addition of 310 CMR 10.05(6)(q) mandates setbacks from any Stormwater Management System. The proposed regulation establishes almost 200 setbacks with the full force of regulation. Local Conservation Commissions will not have the authority to waive these setbacks. Many of these setbacks were taken from the pages of the original MassDEP Stormwater Handbook (1996). It is important to note that the handbook was created as a guidance document. Information presented was amassed from various sources across the country without necessarily vetting every recommendation. Have all of these setbacks been fully vetted with scientific backup to justify their elevation to regulation?

The engineering community has designed projects for the past 30 years implementing the recommended setbacks from the handbook. We have had the flexibility to provide creative designs that may not meet the recommended setbacks but meet the intent of these setbacks. We have successfully justified to Conservation Commissions and third-party peer review engineers where setbacks can be relaxed. Does MassDEP have examples of where nonadherence to setbacks has resulted in failure of systems to function and protect the environment?

The impacts on the creation of medium and high-density residential development from the imposition of these setbacks cannot be understated. Hancock has reviewed several projects and the impact ranges from a 30-35% reduction in unit yield to wiping out entire projects.

MassDEP must be required to first justify the need for elevating these setbacks to absolute requirements. We also strongly suggest that MassDEP perform a comprehensive analysis to study the actual impact on medium to high density residential development in the Commonwealth. We understand the Department engaged a private engineering firm to study the cost impact of the regulation change on residential development. While helpful to the development community, that study falls short of answering the true impact.

## **Real Word Examples of Housing Projects**

Hancock has reviewed four projects that have recently been permitted through M.G.L. Chapter 40B and the Massachusetts Wetlands Protection Regulations to review the impacts to the number of residential units realized.

1. Princeton at North Wilmington Station, Wilmington – Princeton Development
2. The Devon at Weiss Farm Stoneham – JM Corcoran
3. Fountain Hill Square Roxbury – Oxbow partners
4. Bobcat Hollow Southhampton

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## Princeton at North Wilmington Station

This is a 108-unit residential apartment development located in Wilmington less than 100 feet from the North Wilmington MBTA Commuter Rail Station. The site is located along Lubbers Brook. The project received a Comprehensive Permit from the Wilmington ZBA and an Order of Conditions from the Conservation Commission. The Order of Conditions was appealed by a group of ten citizens and subsequently received a Superseding Order and upon resolution of an adjudicatory appeal a Final Order of Conditions from MassDEP. The project also was part of a Mass Works Grant that replaced an aging culvert under Middlesex Road and provided a municipal sewer pump station to the area. The grants totaled \$2.89M with all work completed by the town. We have received permission from Princeton Properties to use this project in the crafting of this letter.

While the project did implement the use of porous pavement, the project would not meet the following required ESSD credit requirements under the new regulations:

1. 15% impervious area exceeded. Credit 1 not possible.
2. The site contains urban fill. Credit 1 not possible.
3. Porous pavement is not setback from wetland resource area 100 feet. Credit 4 not possible.
4. Offset to groundwater is less than 2 feet. Credit 4 not possible.

The project features a portion of the site not considered redevelopment. The development in this area fails to meet the following proposed stormwater setbacks:

1. 100-feet from slopes exceeding 20% (vertical retaining wall) to a subsurface infiltration system for Building B wipes out all but a very small area in front of building insufficient to address stormwater. No alternative possible.
2. Set back to porous pavement for Building A no alternative given grades and seasonal high groundwater.
3. Setback infiltration systems to Resource Areas
4. Mounding analysis fails to demonstrate no temporary elevation rise at Resource Area for both Building A porous pavement and Building B infiltration system.

**The net result of the new regulations would be a loss of all 108 units.**

## The Devon at Weiss Farm

This is a 259-unit residential apartment development located at 168 Franklin Street in Stoneham. The project was permitted through M.G.L. Chapter 40B and the Massachusetts Wetlands Protection Regulations. The Stoneham Zoning Board issued a Comprehensive Permit and a Superseding Order of Conditions from MassDEP after an appeal of the Conservation Commission's local decision. We have received permission from J.M. Corcoran to use this project in the crafting of this letter.

While the project did implement the use of some porous surfaces, the project would not meet the following required ESSD credit requirements under the new regulations:

1. 15% impervious area exceeded. Credit 1 not possible

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2. Soils on site have groundwater within 2-feet of the land surface. Credit 1 not possible.

The development in this area fails to meet the following proposed stormwater setbacks:

1. 100-feet from slopes exceeding 20% (vertical retaining wall) to a subsurface infiltration system requiring relocation of all subsurface infiltration areas to center of site impacting one 64-unit building and three townhomes.
2. Setback infiltration systems to Resource Areas. Same result as above.
3. Mounding analysis fails to demonstrate no temporary elevation in groundwater at the Resource Area. The mounding analysis for this exercise was not revisited. This could push subsurface infiltration systems greater than 100 feet away from the Resource Area having a large impact to unit yield.

**The net result of the regulations would be a loss of at least 67 units from the 259-unit project.**

## Fountain Hill Square Roxbury

This is a 40-unit affordable housing development located on Fountain Hill Street in Roxbury with excellent access to public transportation. The project was subject to the City of Boston's permitting process through the Boston Planning and Development Agency (BPDA) and required Boston Water and Sewer Commission (BWSC) approval for proposed site utilities and site stormwater management system. The BWSC and BPDA require proposed development projects to provide on-site stormwater infiltration, with the BWSC providing review and approval of the stormwater design for compliance with City requirements.

This important affordable housing project would not meet the following ESSD credit requirements under the new regulations:

1. 15% impervious area is exceeded. Credit 1 not possible.
2. Portions of the site, as with many of the sites in the City of Boston, contain urban fill.

In addition, this project would not meet the following stormwater setback under the new regulations:

1. 100-feet from slopes exceeding 20% (vertical retaining wall) to a subsurface infiltration system. Boston Water and Sewer Commission (BWSC) requires on site recharge. Without a suitable area the project would not be possible at the current configuration and unit count.

**The net result could be the loss of enough units to make the project infeasible.**

## Bobcat Hollow

This is a 33-lot subdivision in Southampton, MA. The deep-sump, hooded catch basins and most of the stormwater pipes are within the seasonal high groundwater (SHGW) which would not be allowed under the proposed regulations. The Infiltration basins as well as the road and other infrastructure would need to be raised by at least 2 feet or more in most cases. The road



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length is approximately 3,500 linear feet. This increase in fill to be brought in would have many impacts through this site and would have reduced the allowable housing lots.

The impacts would require more fill to be brought in for the road and infrastructure, which has an impact on the number of vehicle trips to the site during construction as well as more material excavated from other sources, limiting its availability elsewhere that could be used closer to the source. This issue on a larger scale would cause most rural and suburban housing projects to have a domino effect by causing developers to chase and seek out more selective soil sites (glacial outwash vs. glacial till) that are more rural and/or wooded and undeveloped in upland areas.

The new setbacks and regulatory changes will contribute more to new urban sprawl as opposed to smart growth and urban renewal and infill projects or transit-oriented developments and redevelopment. In this particular example, there would be more environmental impact and less housing available.

The above scenario forced by the stricter regulations seems contradictory to the mission of protecting the environment and sound environmental stewardship. We should be focusing on resiliency and sustainability of the infrastructure and environment with the space and tools that we have available, not by limiting housing through stricter regulations.

**The net result of the new regulations on this site would be a loss of approximately 1/3 of the units or about 11 lots.**

Hancock strongly believes the promulgation of the stormwater revisions to 310 CMR 10.00 be delayed affording a further investigation into the justifications for many of the changes. We also suggest the following changes be considered:

1. Remove the setback table from the regulations and return them back to Appendix A individual BMP sections as recommendations. If MassDEP could provide solid evidence of the need for certain setbacks to resource area or areas of critical concern, those setbacks could be elevated to regulation.
2. Reconsider the Environmentally Sensitive Site Design (EESD) mandate or at least revise the definition of Impractical to mirror the Practicable and Substantially Equivalent Economic Alternatives analysis per 310 CMR 10.57 in use since 1996. This definition allows the use of consideration of costs, existing technology, proposed use, and logistics, in light of overall project purposes.
3. Allow the use of the Hantush Method for completing mounding analysis and add a consideration to the no elevation rise provision in consideration of the nuisance of the method with regard to ever reaching zero mound.
4. Revisit the call for mandated Total Suspended Solids (TSS) and Total Phosphorus (TP) for redevelopment projects. The Maximum Extent Practicable approach has resulted in the successful redevelopment of many aging, blighted and underutilized sites in the Commonwealth with dramatic improvement in stormwater quality. The Department might consider better defining Maximum Extent Practicable similar to the Substantially Equivalent Economic Alternatives analysis mentioned above.



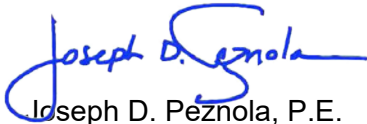
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5. Remove the requirement that drainage piping and the sumps of deep sump hooded catch basins be elevated above seasonal high groundwater. Deep sumps are required to be four feet deep. This puts an undue burden on site development dealing with existing site constraints. There are times stormwater BMPs need to be placed below seasonal high groundwater. In these instances, the structures can be sealed against groundwater intrusion. This is also a common practice in the design of sewer systems where the impact of either flow into or out of the sewer system is of a much higher concern to the environment but can be effectively handled through making structures and pipes watertight.

These are not the only suggestions we may offer as our review of the regulation and handbook revisions continue ahead of the current March 1, 2024 deadline for public comment. We hope we will be given more time for review as the impact to residential housing production is in serious risk from these changes.

Sincerely,  
Hancock Associates



Joseph D. Peznola, P.E.  
Director of Engineering

**From:** [Keith Lincoln](#)  
**To:** [DEP Wetlands \(DEP\)](#)  
**Subject:** Wetlands-401 Resilience Comments  
**Date:** Saturday, February 10, 2024 9:26:56 AM

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Good Morning,

I would like to express two concerns I have within the current regulatory framework:

1. Consideration of credits or relief from Stormwater Standards for projects which reduce vehicle trips and emissions. Specifically I am referring to sidewalks and bike paths added to an existing roadway. I understand that these projects are relieved to MEP however even the requirement to improve existing conditions and subjective interpretation of MEP has forced compromises on projects I have worked on over the years particularly in cases where no right of way exists to realistically propose an effective SCM. On a project such a Safe Routes to School project where we simply want to add sidewalks to a roadway so that children can safely walk to school instead of having to be driven it is a shame to inhibit the obvious improvement. It would seem as though the reduction of vehicle trips is a very clear improvement to the environment for both air and water quality and should be exempted or given credit where the emissions saved can be quantified. Projects which result in people of all ages and abilities to walk or bike should not be compromised.
2. A clear definition of pervious and impervious. I sincerely apologize if this has been defined in the standards however I cannot find it. I have anecdotal evidence that crushed stone is an effective surface treatment to provide infiltration and I am often steered away from this as a potential solution without a clear definition or explanation as to why this cannot be considered. I think it would be helpful if this were clarified in the standards.

Thank you very much for this opportunity!

Keith

Keith Lincoln, PE  
Chappell Engineering Associates, LLC  
Chief Civil Engineer  
201 Boston Post Road West, Suite 101  
Marlboro, MA 01752  
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(508)481-7400 (office)

**From:** [Michael Toohill](#)  
**To:** [DEP Wetlands \(DEP\)](#)  
**Subject:** Wetlands-401 Resilience Comments  
**Date:** Thursday, February 15, 2024 2:18:43 PM

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Under the current WPA regulations there are only three types of projects that do not require preparation of a stormwater report: 1) single family home 2) emergency road repair 3) small residential subdivision. There are many other types of projects that could be considered “de minimus” and should be exempt from preparing a stormwater report. Has the Department considered adding this category and defining a de minimus project type?

Under the current regulations stormwater the term “discharges” include pipes and other appurtenances as opposed to actual discharges. Stormwater “discharges” are prohibited within Zone As and other sensitive areas. Would it not be more protective of those areas to allow the collection of stormwater and require the actual discharge to be pre-treated (and potentially located outside of the Zone A for example)? Sheet flow and country drainage are allowed in a Zone A leading to untreated actual discharges.

Michael Toohill, PWS, CE, CERP  
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April 30, 2024

Massachusetts Department of Environmental Protection (MassDEP)  
Bureau of Water Resources Wetlands Program & Waterways Program  
100 Cambridge St, Suite 900  
Boston, MA 02114

Subject: Wetlands-401 and Waterways Resilience Comments

Dear Commissioner Heiple, Wetlands Program Chief Rhodes, and Waterways Program Chief Padien,

The North and South Rivers Watershed Association (NSRWA) would like to offer comments and recommendations regarding the environmental impacts of the proposed changes to the Wetlands (310 CMR 10.00), 401 Water Quality Certification (314 CMR 9.00), and Waterways (310 CMR 9.00 aka Chapter 91 or Tidelands) regulations. We are a 54 year old nonprofit based on the South Shore of Massachusetts. Our membership consists of approximately 1,500 households on the South Shore and our watershed spans across 12 towns. The NSRWA's comments are focused on the need to streamline permitting for wetlands restoration projects, to improve data used to inform decision-making.

We commend MassDEP for the years of work that has been put in to prepare these draft regulations, and for helping to make Massachusetts more resilient to climate change. These are necessary steps towards ecological restoration, public safety, and preparing our communities for the impacts of climate change.

However, these draft regulations do not go far enough in achieving the goals of "Resilience 1.0," and after swift promulgation of most of these regulations, we strongly encourage MassDEP to begin the "Resilience 2.0" process to strengthen some of the provisions found in 1.0.

### **Streamline Permitting for Wetlands Restoration**

Massachusetts has long been a leader in environmental protection. It was the first state to adopt a wetlands protection law and it is a leader in restoring wetlands. In order to continue this leadership, the new regulations must address the following:

1. Strengthen the proposed inclusion of nature-based projects by requiring applicants to demonstrate that nature-based solutions were considered as part of the alternative analyses.
2. As written, the regulations define salt marsh hay as "fill," and treat it with the same long permitting pathway as fill used in development, even though hay is part of ecological restoration. Instead, the definition of "fill" should exclude salt marsh hay, and those projects should be exempt from getting a

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Chapter 91 license.

3. Streamline permitting for restoration projects must be included in forthcoming “Resilience 2.0” package, and must require interagency coordination so these projects (dam removals, salt marsh restoration, culvert upgrades) can happen as quickly as possible to achieve our goals around carbon sequestration, water quality, and biodiversity goals. There must be a (simpler) replacement for the Combined Application/Combined Permit process between Chapter 91 and the Wetlands Protection Act.
4. NSRWA would like to see special conditions given to dam removal projects under 310 CMR 9.00. The proposed regulations already provide for culvert replacements to be exempted from a Chapter 91 license, recognizing that those projects do not impede navigation and instead increase the resilience of the site. MassDEP’s public summary of the proposed changes state that these projects are exempt “when such projects do not reduce the space available for navigation, facilitating the implementation of certain measures designed to address climate vulnerability related to increased precipitation.”
5. The Wetlands Protection Act regulations provide an expedited permitting process for dam removals, categorizing them as an Ecological Restoration Limited Project; Chapter 91 should do the same by exempting them from obtaining a permit. There are 3,000 dams across the Commonwealth, 300 of which are considered “high hazard” by the Office of Dam Safety.

### **Improve Data Used to Inform Decision-Making**

We are fierce advocates for the use of science and data to inform decision-making and we applaud the proposed requirement for sea level rise data to be considered for new development and redevelopment. This is an important step but we do have a few concerns:

1. The updated data (NOAA14+) that MassDEP is proposing be tied to the Wetland Protection Act regulations will be outdated soon. That data needs to instead address precipitation intensities of future storm events in order to provide true climate resilience.
2. MassDEP’s proposal will rely on FEMA maps to delineate Land Subject to Coastal Storm Flowage, rather than sea level rise, which would provide dynamic, forward-looking projections for precipitation that will protect our community for decades to come.
3. Nothing in the draft regulations points to forecasting precipitation.

### **Stormwater Handbook**

1. Standard 3 Incentivize developers to go beyond minimum under the Maximum Extent Practicable standard for redevelopment.



Thank you for your consideration of these comments. We are grateful for the considerable amount of time and resources MassDEP has invested to create these draft regulations. We look forward to continuing to work together to protect Massachusetts' rivers, ecosystems, and communities from the impacts of climate change.

Very truly yours,

Samantha Woods  
Executive Director



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29 April 2024

Massachusetts Department of Environmental Protection  
100 Cambridge St., Suite 900  
Boston, MA 02114  
United States of America

**RE: Wetlands-401 Resilience Comments**

To Whom It May Concern,

As a Massachusetts based company, Opti is a passionate team of water experts and technologists driven to protect our communities, infrastructure, and the environment from the impacts of stormwater runoff. In reviewing the proposed Draft Massachusetts Stormwater Management Handbook, we were excited to see a cutting-edge, state-of-the-art document dedicated to providing comprehensive guidance on erosion and stormwater control measures. We were equally as pleased to find that the Massachusetts Department of Environmental Protection (MassDEP) is receptive to comments and collaboration on the incorporation of innovative technologies to help communities achieve economic savings, resilience, and peace of mind.

Opti's recommendations pertain to the incorporation of Continuous Monitoring and Adaptive Control (CMAC) technology, which has been adopted by state regulatory authorities across the U.S. To support our recommendation, we have enclosed:

- Attachment A - Overview of CMAC
- Attachment B - Incorporating CMAC into the Massachusetts Stormwater Management Handbook
- Attachment C - CMAC Documentation & Guidance
- Attachment D - References

We express our gratitude to all those who contributed to the revised Handbook and their commitment to preparing the Commonwealth's communities, infrastructure, and environment for tomorrow's storms. Opti would welcome a follow-up discussion to review recommendations and support MassDEP with additional requests.

Sincerely,

A handwritten signature in cursive script that reads "Kathy Gee".

Kathy DeBusk Gee, P.E., Ph.D.  
Director of Regulatory Affairs



## Attachment A - Overview of CMAC

Continuous Monitoring and Adaptive Control (CMAC) integrates information directly from field deployed sensors with real-time weather forecast data to directly monitor performance and make automated and predictive control decisions to actively manage stormwater storage and flows across the watershed. The logic is highly configurable to meet site specific conditions and compliance requirements. As an example, a common behavior can be described as targeting the lowest possible release rate that will prevent overflow while meeting maximum retention time requirements. Most importantly, CMAC can be incorporated as an add-on to new structural practices and to existing facilities to improve quantity and quality management, often without major structural modifications. The approach is non-proprietary, commercially deployed throughout the county for other stormwater management applications, and the outcomes have been verified by separate independent research efforts.

### Benefits of CMAC

The Maryland Department of the Environment's Director of the Water and Science Administration, Dr. Lee Currey, stated that "CMAC...is an important tool for managing the impacts of stormwater runoff in the face of climate change". Through empirical research, modeling, and widespread field deployments, CMAC solutions have been shown to result in significant increases in the performance of a range of existing stormwater SCMs while reducing operational and outcome risk:

- EPA and the Water Environment Research Foundation (WERF) published a report "Transforming our Cities: High Performance Green Infrastructure", which was a pilot-level study at eight locations around the country<sup>1</sup>. The study concluded that distributed real-time control of green infrastructure can: significantly reduce contributions to combined sewers and mitigate post-storm combined sewer overflows, reduce stormwater runoff, conserve water, with particular benefits in drought-inclined areas, and maximize reuse for irrigation. No other SCM can simultaneously accomplish these goals.
- Center for Research in Water Resources at the University of Texas at Austin and Geosyntec (2015) showed that a passive dry pond conversion to a CMAC wet pond resulted in a facility that achieved a 73% reduction in Nitrate+Nitrite and a six fold reduction (from an average of 0.66 mg/L to 0.11 mg/L) in Nitrate+Nitrite over the pre-retrofit dry basin<sup>2</sup>.
- Muchalla et al. (2014) found that retaining water using CMAC resulted in a 48 to 60% increase in removal of small particles from captured stormwater. "The removal efficiency for suspended solids could be significantly increased by all control strategies and the hydraulic peaks were reduced by at least 50%... [CMAC solutions] provide significantly higher removal efficiency for suspended solids and a possible flexible adaptation to future demands".<sup>3</sup>
- Increasing retention time without increasing storage volume, such as with a dry pond to wet pond retrofit, has been shown to increase total suspended solids removal from 39 to 90% and ammonia-nitrogen removal from 10 to 84%<sup>4,5</sup>.
- An analysis of the performance of the addition of CMAC on the rainwater harvesting systems installed at USEPA headquarters in Washington DC greatly improved the system's ability to mitigate stormwater volumes and flow rates and improve water quality. Total mass reductions estimated from this system during a one year monitoring period indicate removals based on residence time of 89% (TSS), 14% (TP) and 77% (TN)<sup>6</sup>.

### CMAC Applications

CMAC can be beneficial as a component of a new SCM design or as a retrofit to an existing SCM. Examples of how CMAC can be incorporated into the design of a new SCM to enhance function include, but are not limited to:

- In combination with an ESSD/LID practice to provide peak flow attenuation via detention
- To detain water within an infiltrating/exfiltrating SCM to maximize infiltration of stormwater (and subsequent groundwater recharge), while simultaneously ensuring space is available for the next storm event
- As part of a treatment train to control the release of detained water to a downstream SCM to maximize water quality benefits
- In combination with a rainwater harvesting system to retain the maximum volume of stormwater available for beneficial reuse and achieving stormwater mitigation requirements
- To meet stormwater management requirements for locations where site constraints and/or setbacks prohibit the use of traditional SCM designs
- To achieve multiple benefits with a single practice (i.e. maximizing residence time of captured stormwater while also maximizing the volume of stormwater captured from subsequent precipitation events)
- To ensure that a practice can be modified to adapt to changes in performance objectives, regulatory requirements, precipitation patterns, and/or contributing watershed characteristics without requiring physical modifications

In some cases the application of CMAC can allow for the reduction in size (or complete elimination) of other SCMs, thereby reducing construction costs and physical footprint. An example of this is a project located in Boston, MA that utilizes subsurface detention to achieve peak flow reduction compliance. Including CMAC allowed for the detention volume to be reduced by 8.4% while still meeting pre-development peak flow rates. The integration of CMAC in a treatment train can also increase the hydrologic and water quality benefits of an existing SCM. For example, in Albany, NY the incorporation of CMAC reduced wet weather flows from a constructed wetland by 73%. When combined with two other CMAC-equipped SCMs within the watershed - a lake and an underground detention facility - wet weather flow was reduced by 77%, or 53.9 million gallons per year. In Watertown, MA, the inclusion of CMAC as part of a rainwater harvesting system eliminated the need for an additional on-site stormwater storage facility - a savings of approximately \$900,000.

As acknowledged in the Draft Manual, stormwater mitigation for new development will not be enough to achieve compliance with state water quality standards - retrofitting existing facilities is necessary to attain our water quality goals. As a retrofit option, CMAC is well suited for existing stormwater practices that were built in compliance with previous standards, but do not meet present-day needs due to changing precipitation patterns, updated regulatory requirements, and/or evolving hydrologic performance objectives. As highlighted in the Draft Massachusetts Stormwater Management Handbook, many older developments utilized dry detention basins for peak flow mitigation of large storm events; however, we have since learned that smaller storms can be the most detrimental to water quality and streambank erosion. Retrofitting them with a technology like CMAC allows the

performance of these existing facilities to be improved *without* having to modify the structural components of the practice.

Section 5.1 of the Draft Manual effectively describes and promotes the use of retrofits for improving the performance of existing practices. In the “Dry Detention Basin Retrofits” section, a retrofit option is included for modifying the “outfall structure to create a two-stage release to better control small storms while not significantly compromising the flood control detention for large storms”. CMAC does exactly this, but more effectively, due to the use of rainfall forecasting to actively manage a stormwater practice and maximize both water quantity control (by releasing stored water ahead of a storm to maximize available storage space) and water quality performance (by maximizing detention time of stored water post-storm). The benefits of CMAC apply to any storage SCM that provides storage and treatment can be improved via the addition of CMAC as well.

The technology used to deploy the CMAC collects performance data continuously, allowing for accurate and precise quantification of a SCM’s actual (not theoretical) performance. Direct continuous monitoring of facility performance is the gold-standard for quantifying and verifying load reduction credits and verifying implementation plan results. This direct documentation is available when using CMAC solutions and can be a required deliverable for receiving treatment credit. Beyond the requirements for designing and building inherently safe facilities, CMAC systems are able to alert to conditions of potential concern as well as targeted maintenance needs.

#### Regulatory Approvals

Given the documented hydrologic and water quality benefits of CMAC, numerous municipalities and organizations have recognized and approved CMAC as a credit-bearing stormwater technology. Below are a few examples:

- The Washington State Department of Ecology has defined Opti’s CMAC as “a control approach for stormwater facilities that can be designed to conform to various design criteria” and approved its use as a functional equivalent to a standard outlet control structure for wet ponds, retention ponds, and detention ponds.<sup>7</sup>
- The Maryland Department of the Environment has approved CMAC as a retrofit application for both wet and dry ponds to meet NPDES MS4 Phase I Permit Requirements. For wet pond applications, practices incorporating CMAC are eligible for pollutant removal efficiencies equivalent to that awarded for stormwater treatment (“ST”) practices.<sup>8</sup> Dry and dry extended ponds retrofitted with CMAC are eligible for 75% of the pollutant load reduction credit available for stormwater treatment (“ST”) practices (dry ponds without the CMAC retrofit are not eligible for pollutant load removal credit).<sup>9</sup>
- The Chesapeake Bay Program has approved the use of CMAC retrofits for the enhancement of existing BMPs and the conversion of existing BMPs.<sup>10</sup>
- As part of an effort to reduce annual combined sewer overflow (CSO) occurrences and reduce downstream flooding, the North Hudson Sewerage Authority (NHSA) implemented new stormwater design requirements that include a minimum detention sizing to detain stormwater discharge during peak flows as well as automated flow controls. CMAC is NHSA’s primary “automated control” solution for developers.<sup>11</sup>

## Attachment B - Incorporating CMAC into the Massachusetts Stormwater Management Handbook

Throughout the process of revising 310 CMR 10.00 and the Massachusetts Stormwater Management Handbook, MassDEP has articulated the importance of incorporating adaptability and resilience in our approach to stormwater management. A rapidly changing climate produces significant challenges when developing regulations due to evolving precipitation patterns and events and the resulting adjustment of performance criteria. Traditional stormwater practices are static - they are designed to meet synthetic design storms and present-day objectives and regulations. However, retrofitting these practices to adapt to changing precipitation patterns and performance standards is extremely costly and requires modification of the practice's physical structure. CMAC enables existing practices to adapt to these changing conditions while minimizing structural modifications, thereby ensuring resilience in a rapidly changing environment. For example, the software design configuration of a CMAC system can be repeatedly revised to account for changes in the design storm depth or intensity, targeted detention time, or targeted outflow release rate. **Currently, CMAC is the *only* option available to adjust the operation of a stormwater practice without physical revision.** For this reason, Opti feels it is imperative that CMAC be included and promoted in the revised Massachusetts Stormwater Management Handbook.

We understand that CMAC is unique in that it does not fit neatly into a traditional SCM category; nevertheless, we feel that it can still be effectively incorporated into the revised Handbook. In practical terms, Opti recommends the following:

- Allow the use of EPA SWMM 5 for flow calculations. Within Section 2.3.2, WinTR-20 / Win-TR55 methods are required for projects subject to jurisdiction under the Wetlands Protection Act. These methods are largely hydrologic modeling tools that have limited capabilities to calculate hydraulic routing performance. CMAC implementations can provide significant peak discharge reduction by monitoring real-time observations and adaptively managing the outlet control structure without modifying watershed physical conditions such as land use types or impervious cover. These behaviors, and hence the associated benefits, can not be accurately reflected in WinTR-20/Win-TR55. To better represent new approaches in stormwater management that can be adaptive and resilient, Opti recommends allowing flow calculations for SCMs to be simulated in EPA SWMM 5, which is a combined hydrologic and hydraulic model. EPA SWMM 5 can both incorporate hydrographs based on WinTR-20/Win-TR55 methods, as well as accurately represent the hydraulic routing performance achieved by CMAC implementations.
- Classify CMAC as a stormwater retrofit practice and introduce the concept in Section 5.1: Retrofitting Existing Stormwater Management Measures as an additional subsection entitled "Continuous Monitoring and Adaptive Control (CMAC) Retrofits". As a retrofit, the implementation of CMAC would be required to comply with Standards 2, 3, 4, and 11, but must "improve existing conditions for at least peak runoff rate, recharge, or water quality treatment". Suggested text for the subsection:

- *CMAC is a generic, non-proprietary application that integrates information directly from field-deployed sensors with real-time weather forecast data to directly monitor performance and make automated and predictive control decisions to actively manage stormwater storage and flows. CMAC can be applied as a retrofit to existing SCMs to reduce the volume of stormwater released during a precipitation event, decrease peak flow rates released by the SCM, and/or increase pollutant removal performance. More specifically, CMAC retrofits can improve environmental outcomes by:*

- *Using a facility's storage volume to detain flow across all storm sizes.*
- *Dramatically improving water quality from facilities by increasing residence time and/or improving unit process effectiveness (e.g., settling, denitrification).*
- *Restoring pre-development hydrology and base flows by actively modulating release rates based on forecast information.*
- *Increasing the volume retained on site.*
- *Reduce the frequency of flooding events.*
- *Enabling durable and adaptable designs that are less dependent on site specific conditions.*
- *Being adaptable to future climatic conditions or changes in site characteristics without new infrastructure and with only operation changes.*

*and reduce technical, regulatory, and compliance risk by:*

- *Providing auditable performance and supporting data without additional cost.*
- *Increasing uptime of facilities through alerting of operational or maintenance issues.*
- *Providing direct verification of facility performance.*

- Acknowledge CMAC as a “Structural Stormwater Control Measure” in Section 4.4 of the Revised Handbook as part of the “Other SCMs” category. CMAC can be integrated into the design of a structural SCM - especially ESSD/LID practices - to enable the practice to meet peak rate attenuation (Standard 3) and/or stormwater recharge (Standard 4) requirements. CMAC is not a standalone practice, as it must be combined with another practice to provide stormwater mitigation benefits. However, it can be combined with practices that fall into each of the other 3 categories of SCMs (structural treatment, structural conveyance, and infiltration) to provide/enhance hydrologic and/or water benefits. Given the numerous potential applications and configurations of CMAC systems, CMAC is highly adaptable and can be used in many different capacities to meet a variety of objectives, which can be reflected in Table 2-7. Specific suggestions include:

- Modify text in the “Other SCMs” section within Section 4.4.1 of the revised Handbook to read:
  - Some structural SCMs do not fit into any of the categories set forth above. These SCMs include the following: **Continuous Monitoring and Adaptive Control (CMAC)**, Dry Detention Basins, Green Roofs, and Rain Barrels and Cisterns.



- Add a row to Table 2-7 under “Structural Other” heading for “**Continuous Monitoring and Adaptive Control (CMAC)**” with the following entries:
  - Pretret. Required?: **YES**
  - ESSD/LID?: **NO**
  - Standard 2: Does SCM Attenuate Peak Flows?: **YES**
  - Standard 3: Does SCM Provide Recharge?: **YES**
  - Standard 4: Does SCM Remove TSS or TP?: **YES**
  - Standard 5: Is SCM Suitable for LUHHPLs?: **Varies**
  - Standard 6: Is SCM Suitable for CAs? **YES**
  - Standard 7: Is SCM Suitable for Redev? **YES**
  - Standard 11: Does SCM Remove TMDL Pollutants? **Varies**
- Fully realizing the benefits of a CMAC application and ensuring safe operation requires that the practice be appropriately sited, consistently designed and configured, and maintained over the total asset life. This necessitates the inclusion of detailed guidance relating to the design, operation, and maintenance of CMAC practices within the Handbook, which would naturally fit within Appendix A. Given the current format of the Handbook and as discussed above, CMAC would best fit within the “Other SCMs” category. Suggested content for a specification section can be found in Attachment C.
  - The suggested content includes details regarding the TP and TSS removal credit that can be applied for systems incorporating CMAC. We would like to note that other states have approved CMAC to receive higher credit than what is proposed here. For example, Maryland allows dry detention basins equipped with CMAC to receive 75% of the total pollutant removal credit awarded to wet basins. Thus, we feel that what is proposed represents the minimum credit that should be considered. We welcome the opportunity to participate in discussions regarding alternative crediting approaches.

## Attachment C - CMAC Documentation & Guidance

### Continuous Monitoring and Adaptive Control (CMAC)

#### Ability to meet specific standards

Standard	Description
2 - Peak Flow	If properly designed, can provide peak flow attenuation.
3 - Recharge	Can provide groundwater recharge when combined with “infiltration SCMs” and “exfiltrating” SCMs.
4 - TSS/TP Removal	<p>Provides TSS/TP removal credit when designed in conjunction with SCMs that provide treatment. Removal credit is equivalent to that of the associated practice.</p> <p>When applied as a retrofit, the way in which the retrofitted practice functions and the total treatment volume determines the applicable assigned pollutant removal credit. See “Design Considerations” Section of this Appendix for more information.</p>
5 - High Pollutant Loading	May be used with SCMs that are approved for land uses with higher potential pollutant loads.
6 - Discharges near or to Critical Areas	Suitable for discharges near or to critical areas with adequate pretreatment.
7 - Redevelopment	May be used as a retrofit to enhance performance of existing SCMs. For example, a CMAC retrofit may allow existing dry detention basins to function as extended dry detention basins or wet basins, or for extended dry detention basins to function as wet basins. It can also be used to increase the treatment volume of SCMs, thereby increasing pollutant removal credit. See “Design Considerations” Section of this Appendix for more information.
8 - Construction Phase Pollution Controls	Can be used with sediment basins during construction phase.
9 - O&M Plan	An O&M plan is required; see design and maintenance specifications.
11 - Total Maximum Daily Loads	Suitability to treat TMDLs is equivalent to that of the associated SCM. Must be properly designed, sized, and maintained.
ESSD/LID?	No, this practice is not a MassDEP recognized ESSD/LID technique, but can be combined with other ESSD/LID practices to enhance function and performance.



## Description

CMAC is a generic, non-proprietary application that integrates information directly from field-deployed sensors with real-time weather forecast data to directly monitor performance and make automated and predictive control decisions to actively manage stormwater storage and flows. CMAC can be integrated into the design of structural SCMs or applied as a retrofit to reduce the volume of stormwater released during a precipitation event, decrease peak flow rates released by the SCM, and/or increase pollutant removal performance.

## Advantages/Benefits

- Provides peak flow attenuation for existing and new SCMs
- Reduces wet weather stormwater volumes released from an SCM
- Increases stormwater infiltration and groundwater recharge
- Improves water quality benefits by increasing residence time and/or improving unit process effectiveness (e.g., settling, denitrification, infiltration)
- Reduces the SCM size required to achieve management objectives
- Allows the reuse of detained stormwater without sacrificing stormwater mitigation
- Allows adjustment of SCM configuration/performance without physical modifications
- Provides resiliency by enabling stormwater managers to adapt to changes in management objectives, contributing watershed characteristics, and/or precipitation patterns due to climate change without physically modifying the SCM structure
- Provides direct verification of facility performance via continuous monitoring
- Can provide real-time alerts regarding system performance and maintenance needs

## Disadvantages/Limitations

- CMAC should only be utilized on “low hazard” basins
- Requires additional hardware components that require maintenance
- May need to be winterized depending on location and design
- Ongoing software subscription and support are required

## Suitability to Treat TMDL Pollutants

Suitability to treat TMDLs is equivalent to that of the associated SCM. CMAC must be properly designed, configured, and maintained.

## Unit Treatment Processes

Determined by SCM used in conjunction with CMAC.

## Special Features

- The use of software to control function allows unlimited configuration possibilities to customize performance based on management objectives.
- Allows adjustment and optimization of software configuration in response to observed monitoring data.
- Monitoring data is inherently collected and can be used to document performance and benefits.

### ESSD/LID Alternatives

This practice is not a MassDEP recognized ESSD/LID technique. ESSD and LID techniques must be used unless demonstrated to be impracticable based on a written alternatives analysis. Other SCMs shall only be used to meet those portions of Standard 3 (i.e., Required Recharge Volume) and Standard 4 (i.e., TSS / TP removal) that cannot be fully met by ESSD and LID techniques. See **Section 4.2** of the Stormwater Handbook for a list of MassDEP recognized ESSD / LID techniques. Most recognized ESSD / LID techniques also have an associated ESSD Credit (see **Table A-1**) of this Appendix.

### Applicability

CMAC can be integrated into the design of new structural SCMs or applied as a retrofit to reduce the volume of stormwater released during a precipitation event, decrease peak flow rates released by the SCM, and/or increase pollutant removal performance. It can also be implemented as part of a treatment train to control flow releases to/from other SCMs.

### Planning Considerations

SCMs utilizing CMAC will need access to power and adequate cellular signal. Power can either be in-line power or provided via solar panels, which need sufficient sunlight.

If retrofitting an existing SCM, the practice should be evaluated to ensure it adheres to the original design plans and functions as intended. Design considerations should also include additional work that may be needed to bring the SCM into compliance with current regulations. Care should be taken to ensure all applicable regulations and requirements are met before and after CMAC is implemented. Examples include but are not limited to: dam safety requirements, water quality crediting (process and requirements), receiving stream use (temperature and flow requirements), and underground conveyance regulations (e.g. freeboard, flow rates, etc.).

### Setback Requirements

Stormwater Control Measures (SCMs) and other components of the Stormwater Management System must be setback from wetlands, building foundations, and other features in accordance with 310 CMR 10.05(6)(q). SCMs must also include vertical separation between certain features, such as the depth to seasonally high groundwater. Refer to Section 2.5 of the Stormwater Handbook for horizontal setback and vertical separation distance requirements. Horizontal setbacks also include maintenance access requirements around the perimeter of certain SCMs.

### Design Considerations

CMAC integrates information directly from field deployed sensors with real-time weather forecast data to directly monitor performance and make automated and predictive control decisions to actively manage stormwater storage and flows across the watershed. The physical infrastructure that enables CMAC to function are:

- Water level sensor
- Control Panel
- Power source
- Outflow Control Device such as an actuated valve, slide gate or pump

The design process will include specification of the following aspects of the system:

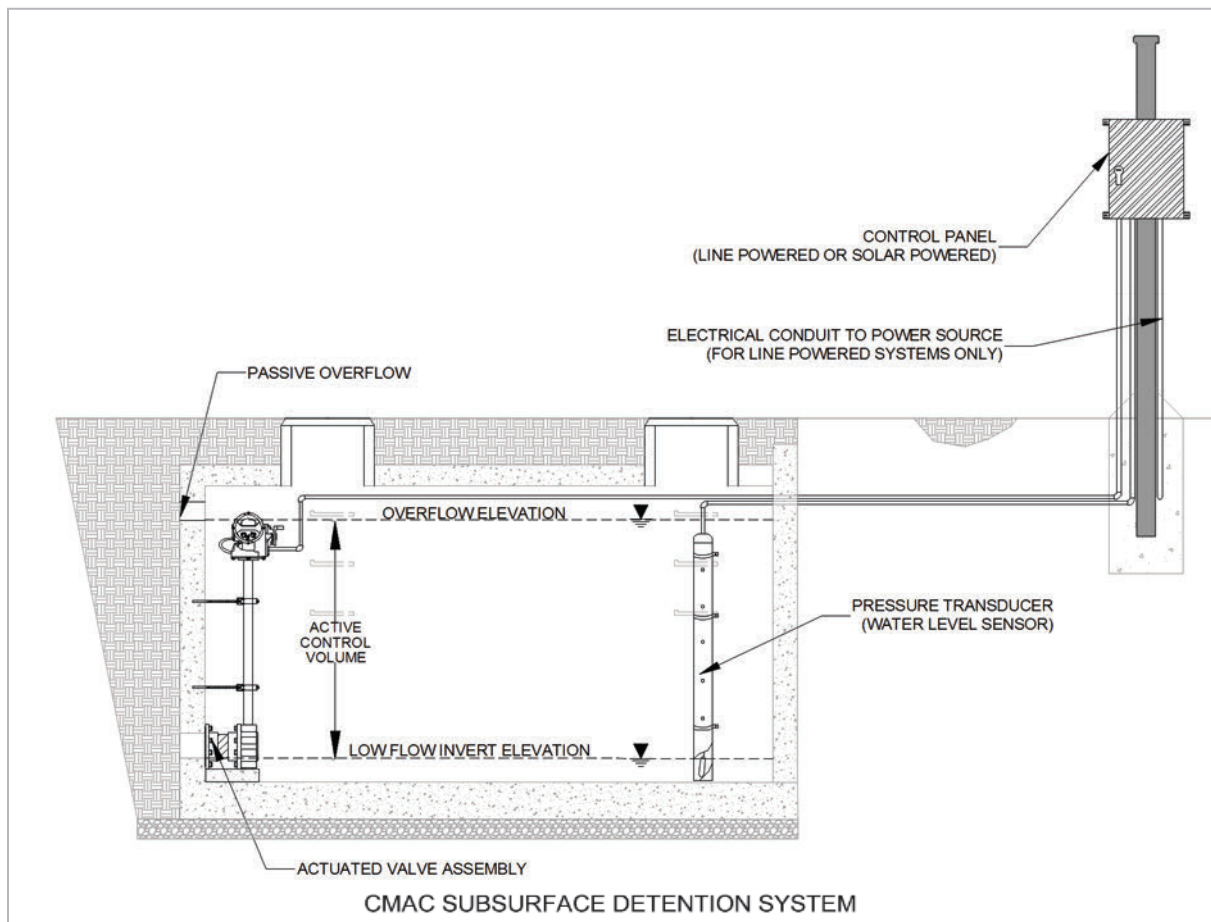
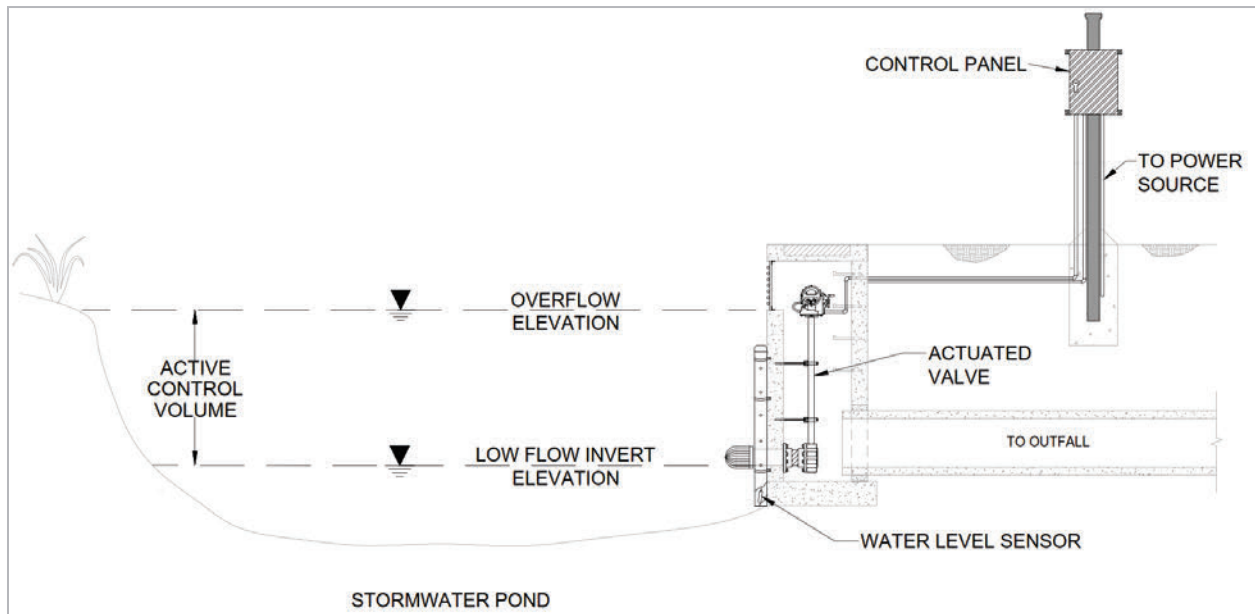
1. Hydrology & Hydraulics
2. Hardware Placement & Specification

Design Phase	Design Elements
Feasibility Assessment	<ul style="list-style-type: none"> <li>Define the performance and control objectives for the site</li> <li>Provide as-built drawings and hydrology reports</li> <li>Identify regulatory requirements or performance objectives to inform design with CMAC</li> <li>Determine stage storage and critical elevation points for design</li> </ul>
Solution Design	<ul style="list-style-type: none"> <li>Design the infrastructure and prepare detailed planset with specified locations for hardware (valve, level sensor and control panel)</li> <li>Draft design details and specification package</li> <li>Develop hydrology &amp; hydraulics model to simulate CMAC behavior</li> </ul>
Final Design & Specification	<ul style="list-style-type: none"> <li>Provide final construction planset; stormwater management report; and specification package</li> <li>Review software configuration</li> </ul>

#### Hydrology & Hydraulics

CMAC stormwater systems can be designed using common hydrologic and hydraulic modeling tools such as HydroCAD or EPA SWMM 5, or incorporated in spreadsheet calculations. CMAC behavior can be represented with other modeling software, although these approximations may not represent the full functionality of the CMAC system.

The “active control volume” in a CMAC system is the volume in a storage unit that can be actively controlled by CMAC technology. In the diagrams below, the active control volume is in between the flow control point (invert of the actuated valve) and the passive overflow weir.



A permanent pool can be maintained using the software settings, therefore it is preferable to put the controlled outlet as low as possible in the water column to allow for greater flexibility in the controllable volume. The performance objectives of the facility will inform this aspect of the design.

As with any stormwater infrastructure design process, there are several possible known parameters prior to design and unknown parameters that the Engineer of Record will iteratively design:

Knowns:

- Contributing drainage area to infrastructure and percent impervious area
- Required design storms for routing
- Regulatory compliance metrics
- Performance objectives
- Stage-storage curve
- Existing outlet structure design (identify size and elevation of all passive openings)

CMAC Design:

- Active control volume available
- Design and permitting requirements
- CMAC valve or gate size and placement
- Outlet structure design or retrofit as needed

Software Notes

The outlet control device (i.e. actuated valve) changes positions based on the outflow rate dictated by the software. All CMAC systems should have a failsafe position for power outages, loss of cellular connection, or failed hardware.

Common Configurations:

- Modulate throughout storm events to avoid overflow and allow release of water at smaller rates during wet weather conditions. This configuration helps to minimize larger overflows and to maximize captured wet weather runoff.
- Fully open the control valve for large storms that are forecast to overtop the passive overflow, which will allow the system to resemble a passive system during the hydrograph peak.
- Baseflow target set for wet or dry weather that does not change based on storm size.
- Intermediate elevations in the water column used as targets for wet or dry weather, not related to passive overflow elevations.

Outlet Structure Design

- Establish a storage volume that fits minimum design storm runoff criteria from the site with an outlet control point.
- A typical design actively controls a low flow orifice in an outlet structure or weir wall at the bottom of the water column (to maximize controllable volume). The volume between the low flow orifice with actuated-valve and the next passive outflow point (mid-stage weir or orifice) is considered the controllable volume.

- For retrofits, an outlet structure or weir wall can be specified upstream of larger outlet points where control may otherwise be difficult (e.g. large diameter or odd shaped culverts).
- The minimum height of the overflow should be sized to capture the design storm dictating basin size.

### Maximize Control Volume

The overflow or weir wall height is increased to attain a larger control volume while meeting local jurisdiction requirements such as discharge rate or water surface elevations. When routing larger storm events, the actuated-valve can throttle to increase the orifice size.

Hydraulic modeling guidelines for Maximum Control Volume:

- Model the weir wall with and without an underdrain orifice to represent a clogged valve scenario.
- The clogged valve scenario is used for safety purposes and represents a total mechanical and electrical failure of a system, coinciding with a large storm event.

For retrofit/enhancement of existing storage units, the actuated-valve may be installed on the existing low flow orifice at the outlet control structure. Clogged valve modeling should still be performed, specifically for larger storm events (10-, and 100-year) to ensure adequate routing.

### Valve Sizing

Valve sizing is an iterative process linked to control volume as discussed in the previous section. For installations on existing systems, the valve size is typically equivalent to the existing low flow orifice diameter/dimensions. For example, it is likely that if an outlet control structure has an existing 6" low flow orifice, the specified actuated-valve used to control the outflow will also be 6".

Valve Sizing Guidelines:

- Determine a passive valve size required to discharge the full control volume in 6 to 24 hours. For existing systems, It is recommended to reference as-builts and/or existing hydrology reports.
- Model any jurisdiction-specific design storms with an equivalent actuated valve size to meet discharge rates.

The system control logic can be adjusted to limit the valve opening for any specified storm event (e.g. 2yr, 10yr, 25yr etc.). For example, if a 12" valve is required to meet discharge and water surface elevation requirements for a 100-year storm, the same valve size can mimic a smaller diameter valve (i.e. partially closed) to meet flow rate requirements for a 1- or 2-year rainfall event.

### Hardware Placement & Specification

Hardware placement and specification is imperative to consider during design and is specific to each site. The level sensor, control panel, and outflow control device must be clearly identified within the proposed plan layout of the site and section views.



#### Level Sensor Placement:

- Place the water level sensor in a location where the full water column in the facility can be measured.
- Install in a stilling well upstream of the outlet control device as far away from the orifice as possible. Typically, a pressure transducer is the instrument of choice; however, other level sensors may be considered.
- For confined space installation, place stilling well near an access point (e.g. manhole, inspection port).

#### Control Panel:

- The control panel can run on 120VAC line power or as a 24VDC solar installation. An internal battery backup should be provided for all actuated valves running on 120VAC.
- Locate the control panel on a pole or building wall (outdoors), or mounted to an interior wall (indoors).
- For indoor installations, a minimum clearance of 10 feet shall be maintained between the control panel and any electrical box with voltage less than 240V. The control panel shall be installed in a separate room from any electrical box with voltage greater than 240V.
- If a backup generator will be permanently installed onsite, it is recommended that the control panel be incorporated in the powered circuit.
- Place solar panels:
  - in an unobstructed location facing South to ensure maximum sunlight
  - a minimum of 4 feet above high flood level.
  - as close to the control point as possible to minimize cable and conduit runs
- If theft is a concern, the hardware may be placed within fencing or on a higher pole. For solar powered sites, the batteries may be secured in a heavy-duty job box.

#### Outflow Control Device:

- An actuated valve is typically mounted to the internal wall or weir wall in the stormwater facility's outlet structure, on the downstream side.
- The orifice on which the valve is mounted will typically match the valve size.
- Additional support below the actuated valve shall be specified by the Engineer of Record to support a minimum of 600 lbs (or the final weight of the actuated valve, whichever is greater).
- The Engineer of Record or contractor is responsible for any trash rack specifications.

#### Conduit Connections:

- A project-specific wiring diagram shall be included in the project's electrical plans.
- Buried conduit is required from the actuated-valve and level sensor to the control panel. These components shall be clearly identified on the site plan.



- The electrical diagram requires a junction box in between the control panel and valve/level sensor for conduit runs greater than 100 feet. The junction box can be installed above grade, or mounted inside the outlet structure.
- Plan sets with multiple onsite sensors and control panels will also include call outs in the Piping and Instrumentation Diagram (P&ID) and mechanical sheets.

As with all stormwater installations, the CMAC retrofits should be fully vetted by the responsible governmental entity(ies) and comply with all state and local requirements, including dam safety requirements, for the proposed facility(ies). The design, installation, and operation of CMAC facilities must account for potential failure of the physical and control systems. Specifically, CMAC-enabled facilities must be designed to explicitly address loss of communication or power, lack of maintenance, intentional vandalism, and other potential failure modes. CMAC systems should be held to the same standards as existing controls.

#### SCMs Retrofitted with CMAC

CMAC can be applied to existing structural SCMs to modify and improve hydrologic and water quality performance. Adding a CMAC system to a basin can alter the way in which it functions, which may result in the basin being classified as a different type of SCM (e.g. dry detention basin converted to an extended dry detention basin). The way in which the retrofitted practice functions determines the applicable design, operation, and maintenance requirements. For example, for a retrofitted practice to be considered equivalent to a wet basin, it must maintain a permanent pool and meet the design criteria associated with a wet basin (see Appendix A: Wet Basin).

A retrofitted practice meeting all applicable design criteria will be awarded the corresponding pollutant removal credit. In addition to the overall function of a practice, the treatment volume for a retrofitted practice will also determine the applicable pollutant removal credit. For example, if CMAC is applied to a gravel wetland to increase the treatment volume (i.e. storage capacity expressed as depth of runoff treated from impervious area) from 1" to 1.5", then the TP load reduction would increase from 61.0% to 65.0% per the EPA performance curve. Or, if a dry detention basin with a 1" treatment volume is converted to an extended dry detention basin with a 1" treatment volume, the TSS load reduction would increase from 0% (dry detention basins do not receive water quality credit) to 46.0% per the EPA performance curves for extended dry detention basins.

## Maintenance

Component	Activity	Frequency
Control Panel	Winterize and dewinterize if needed. Cycle power and replace components if needed.	Annually
Battery	Replace.	Annually
Solar Power Kit (if applicable)	Clean solar panels with a soft cloth. Check battery charge. Both batteries should have the same charge.	Biannually
Water Level Sensor	Winterize and dewinterize if needed. Visually inspect for obstructions and fouling. Calibrate any time the sensor moves. Check calibration during every site visit. Inspect junction boxes for water damage.	Biannually and during every site visit
Rain Gage	Inspect for debris, obstructions, and corrosion.	Biannually and during every site visit
Actuator	Clean as needed. Confirm valve calibration. Test battery backup failsafe position.	Biannually and as needed based on alerts
Valve	Inspect for debris and obstructions. Clean as needed.	Biannually and as needed based on alerts
Gate	Inspect gate and stem for misalignment or damage. Check lubrication, apply lubrication if necessary. Clean stem using brush with stainless steel or brass bristles. Do not use steel bristles or hand grinders. Check for bronze dust or shavings. Replace lift nuts if dust or shavings are found.	Biannually or more depending on use frequency and as needed based on alerts
Trash Rack and Stilling Well	Inspect for debris and obstructions. Clean as needed. Draw down pond if trash rack is submerged.	Biannually and during every site visit

Whenever maintenance is required, the control panel and components must first be de-energized.

The battery back-up failsafe position needs to be confirmed during routine site visits. To test this, de-energize the control panel and record the position of the valve (usually either fully closed or fully open).

Water level sensors may need to be calibrated after: installation, dewinterization, re-location of sensors, or when data shown on the dashboard does not match observed values.

Winterization may be necessary if a site encounters freezing temperatures during winter months. Winterization is done to avoid damage to sensors caused by expansion of freezing water. Sites may not need winterization if sensors are installed deep enough where water does not freeze.

By providing real-time data online indicators of maintenance needs can often be observed remotely. Examples of this include a clogged valve, a sensor failure, or loss of connection with data sensors.

## Attachment D - References

### Cited References:

- 1) Water Environment Research Foundation (WERF). (2014). Transforming our Cities: High-Performance Green Infrastructure. WERF and IWA Publishing.
- 2) Klenzendorf, Brandon, Michael Barrett, Marty Christman, Marcus Quigley. (2015). Water Quality and Conservation Benefits Achieved via Real-Time Control Retrofits of Stormwater Management Facilities near Austin, Texas.
- 3) Muschalla, Dirk, Bertrand Vallet, Francois Anctil, Paul Lessard, Genevieve Pelletier, Peter A. Vanrolleghem. (2014). Ecohydraulics-driven real-time control of stormwater basins. Journal of Hydrology. 511, 82-91.
- 4) Carpenter, Jason Faber, Bertrand Vallet, Genevieve Pelletier, Paul Lessard, and Peter A. Vanrolleghem. (2014). Pollutant removal efficiency of a retrofitted stormwater detention pond. Water Quality Research Journal of Canada. 49.2.
- 5) Gaborit, Etienne, D. Muschalla, B. Vallet, P.A. Vanrolleghem, and F. Anctil. (2013). Improving the performance of stormwater detention basins by real-time control using rainfall forecasts. Urban Water Journal, Vol. 10 No. 4, 230-246.
- 6) DeBusk, Kathy. (2015). Unpublished White Paper. Achieving Stormwater Management with OptiRTC: A Case Study at United States Environmental Protection Agency Headquarters in Washington, D.C.
- 7) State of Washington Department of Ecology. (2018) "[CMAC Approval - Washington TAPE Program](#)" OptiRTC, Inc.
- 8) Maryland Department of the Environment. (2016). "[MDE CMAC Approval for Wet Ponds.](#)" OptiRTC, Inc.
- 9) Maryland Department of the Environment. (2022). "[MDE CMAC Approval for Dry Ponds.](#)" OptiRTC, Inc.
- 10) "[Summary of Chesapeake Bay Program Approval of CMAC for the Enhancement and Conversion of Existing Best Management Practices.](#)" (2017). OptiRTC, Inc.
- 11) "[Summary of Stormwater Requirements for Development using Continuous Monitoring and Adaptive Control \(CMAC\): Case study from North Hudson Sewer Authority.](#)" (2018). OptiRTC, Inc.

### General References:

- 12) Kerkez, B., et al. (2016). "[Smarter Stormwater Systems](#)". Environmental Science & Technology. 50:7267-7273.
- 13) Metropolitan Washington Council of Governments and National Fish and Wildlife Foundation. (2017, December). "[Smart, Integrated Stormwater Management Systems Anacostia River Watershed Water Quality Study.](#)"

- 14) OptiRTC, Inc. (2024). "[Opti Design Overview](#)."
- 15) OptiRTC, Inc. (2024). "[Opti Site Evaluation Overview](#)."
- 16) Quigley, M. and C. Brown. (2014). "[Transforming Our Cities: High-Performance Green Infrastructure](#)." Water Environment Research Foundation (WERF).
- 17) Watershed Consulting and Hirschman Water and Environment. (2017). "[Green Infrastructure for Stormwater Management: Guidance for Municipal Officials in New York's Lake Champlain Basin](#)." (pp 44-45).

**From:** [R Boyle](#)  
**To:** [DEP Wetlands \(DEP\)](#)  
**Subject:** Wetlands-401 Resilience  
**Date:** Tuesday, April 30, 2024 3:01:55 PM

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I just heard about this, and I am a coastal resident. The proposed regulations would be catastrophic if implemented as I understand them.

Water dependent uses need reliable, explicit right to continue and to be newly built at water's edge and docks and piers in water, using technology and design safety, not "nature based" retreat unproven to succeed anywhere. Do not prohibit water dependent facilities based on geography of a high wind and wave zone – do require sound, safe engineering and design in any wind and wave zone.

Failure to make changes to proposed regulations will cause the coastal economy to collapse fast. No financing, no ordinary property transactions, no new money to invest in upgrading and adapting existing facilities. We need all of these! We need private sector money to pay for real climate change adaptation.

We know how to design and adapt to storms. Let us do so.

**From:** [Waterways, DEP \(DEP\)](#)  
**To:** [Chris Huntress](#)  
**Cc:** [DEP Wetlands \(DEP\)](#)  
**Subject:** Re: MA Stormwater Updates - Turf as Impervious  
**Date:** Friday, February 2, 2024 8:27:22 AM  
**Attachments:** [image001.png](#)

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Good morning,

There are separate point of contact for comments on the different regulations (Chapter 91 Waterways vs. Wetlands Protection Act/401 WQC).

We are forwarding your comments to the Wetlands programmatic email who is copied on this email. Please see the link and information below regarding updates to the Wetlands Protection Act and where to submit any additional comments that you may have.

<https://www.mass.gov/regulations/310-CMR-1000-wetlands-protection-act-regulations#proposed-amendments-public-comment>

Written comments will be accepted until 5:00 PM on March 1, 2024. The Department encourages electronic submission by email to [dep.wetlands@mass.gov](mailto:dep.wetlands@mass.gov); and must include "Wetlands-401 Resilience Comments" in the subject line. In lieu of electronic submittal, paper comments may be mailed to:

MassDEP - BWR Wetlands Program  
Attn: *Wetlands-401 Resilience Comments*  
100 Cambridge Street, Suite 900  
Boston, MA 02114

Chapter 91 Waterways Program

Massachusetts Department of Environmental Protection 100 Cambridge Street, 9<sup>th</sup> Floor | Boston, MA 02114 • 617-292-5929  
| Email - [DEP.Waterways@mass.gov](mailto:DEP.Waterways@mass.gov)

Visit Chapter 91/MassDEP on the Web and Apply Online: <https://www.mass.gov/guides/chapter-91-the-massachusetts-public-waterfront-act>

Review Current Applications: [Search EEA Projects \(state.ma.us\)](https://search.eea.state.ma.us)

---

**From:** Chris Huntress <[chris@huntressassociates.com](mailto:chris@huntressassociates.com)>  
**Sent:** Thursday, February 1, 2024 4:27 PM  
**To:** Waterways, DEP (DEP) <[dep.waterways@mass.gov](mailto:dep.waterways@mass.gov)>  
**Subject:** MA Stormwater Updates - Turf as Impervious

**CAUTION: This email originated from a sender outside of the Commonwealth of Massachusetts mail system. Do not click on links or open attachments unless you recognize the sender and know the content is safe.**

MA DEP Waterways. Please accept the following comments regarding the Updated DRAFT MA Stormwater regs.

We are landscape architects and engineers who specialize in the design and planning of sports and recreation facilities. In the scope of our work, we design both natural grass and synthetic turf fields. I have reviewed the draft stormwater regulations and would encourage MA DEP to reconsider defining "Artificial Turf" as impervious, or at least as impervious as you would consider a natural grass field. One of the benefits of Synthetic turf systems is their ability to infiltrate stormwater at over 20" per hour. The stone base below the fields can be designed to store/detain stormwater and either release it through a controlled outlet, or hold it and allow for infiltration into the native soils below.

Currently, the MS4 General Permit, copied below, specifically identifies "areas created using non-porous material" and provides several examples, including artificial turf. In certain situations, such as being installed above a landfill, an artificial turf field

would be installed with a clay liner. The liner would eliminate the possibility of stormwater entering the landfill and leaching known contaminants into the groundwater. In this condition, the artificial turf field would be considered impervious, but it is the liner that provides the **non-porous material** and not the artificial turf itself.

**MA MS4 General Permit:**

**Impervious Surface** - Any surface that prevents or significantly impedes the infiltration of water into the underlying soil. This can include but is not limited to roads, driveways, parking areas and other areas created using non-porous material, buildings, rooftops, structures, artificial turf and compacted gravel or soil.

Thank you for your consideration and please let me know if we can be of any help in your continued review.

Chris

Christian C. Huntress, RLA  
President

HUNTRESS *Sports*

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### ***How are Impervious Areas Defined?***

For purposes of stormwater management, Impervious Surfaces are defined by 310 CMR 10.04 to include any surface that prevents or significantly impedes the infiltration of water into the underlying soil, including, but not limited to:

- Artificial turf and compacted gravel or soil.
- Roads, building rooftops, solar arrays, parking lots, shared use paths, bicycle paths, and sidewalks paved with concrete or asphalt, or similar materials; and
- Buildings or structures created using non-porous material.

Compacted gravel or soil means gravel roads, gravel parking lots, dirt roads, dirt parking lots, and un-vegetated areas that have historically provided or have been designed to provide a compacted surface for use by vehicles, pedestrians, and bicycles. Compacted surfaces do not include lawns, roadway median strips, landscaped areas and natural turf athletic fields. This presumption that a soil is compacted can be overcome by showing that the soil strength is less than 10 bars of pressure (approximately 145 pounds per square inch or  $10^6$  pascals).

Porous pavement is considered to be an impervious surface for sizing purposes. Similarly, a green roof is considered to be an impervious surface for purposes of sizing the growing media that treats the *Required Water Quality Volume* and determining the total *Required Recharge Volume* for the site. A green roof is a treatment device and does not recharge the groundwater.



**From:** [Sarah Butler](#)  
**To:** [DEP Wetlands \(DEP\)](#)  
**Subject:** Wetlands 401 resilience Comments  
**Date:** Tuesday, January 23, 2024 3:14:01 PM

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Here is my wetlands 401 resilience participation Question/Comment:

Those utility gravel roads are being expanded on a large scale. I agree with this as an important issue but it is essential that we do NOT install a great deal of pipes and other hard infrastructure in these areas, as that would threaten amphibians and other small animals that get trapped in closed drainage systems. If stormwater management must be done for those gravel roads, please emphasize use of open drainage swales, etc. The Forests as Climate Solutions report calls out utility corridors as important habitat, let's make sure the stormwater regs align with that other state initiative.

I think the addition of gravel and dirt roads as “compacted” is a good thing especially with the run off effects- I am presuming the compliance of stormwater Management will be for ALL roads ?

Sincerely, SarahMarie Butler



**From:** [Scott Gorneau](#)  
**To:** [DEP Wetlands \(DEP\)](#)  
**Subject:** Written comments  
**Date:** Monday, January 15, 2024 10:21:57 AM  
**Attachments:** [image001.png](#)  
[image002.png](#)

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To whom it may concern:

I would like to submit comments on the Draft revisions to the MADEP Stormwater Handbook and want to make sure they end up in the write hands.

Could you please reply to this email and tell me who is responsible for recording and entering comments into public record?

I have a couple of general comments as it relates to Section 5.3 of Chapter 5 and Appendix A, page A-100 of the draft MADEP Stormwater Handbook.

Section 5.3 is well written and greatly aides the Conservation Commission, MADEP and Consulting Engineers much more so than previous version of the handbook.

Section 5.3 and Appendix A – Proprietary Media Filters have some contradictions, mainly section 5.3 talks about how proprietary media filters can meet 90% TSS/60% TP and lays out the criteria for performance data and talks about how filters are used for stand-alone treatment on new development projects. However, the TSS and TP removal rates in the Appendix A table are misleading and confusion when they say TSS – MassDEP variable credit, up to 60%, TP – MassDEP variable up to 30%. Recommend this read up to 90% TSS and up to 60% TP?

**Ability to meet specific standards**

Standard	Description
2 - Peak Flow	N/A
3 - Recharge	N/A
4 - TSS/TP Removal	No EPA Curve. TSS: MassDEP variable credit, up to 60% TP: MassDEP variable credit, up to 30%. Pollutant removal credit must be determined on a case-by-case basis in accordance with procedures described in <b>Section 5.3</b> of the Stormwater Handbook

Why does the Proprietary Media filter section in Appendix A show a picture of a public domain media filter from CALTRANS? This does not belong here and that CALTRANS filter has no information about it to make it easy for someone to look it up and design with it. This should be removed all together or the very least moved to the Organic or Sand filter sections?

Section 5.3.2 has two waivers for proprietary manufactured SCMs and one of them is for

manufactured Biofilters. In all my 20 years this is the first time I have heard manufactured biofilters have been characterized as organic filters since 1997. This is a dangerous precedence to set because these should really be treated the same as Proprietary Media filters, otherwise someone could invent something – call it a manufactured biofilter and do zero testing and claim they are exempt from proprietary technology criteria as they are an “organic filter”.

Recommend you create a separate Appendix sheet for Manufactured Biofilters, remove the waiver and require them to follow the standard of care that applies proprietary SCMs.

Defining biofilters to separate them from proprietary media filters would be helpful. If you are looking for a good reference, NJDEP has a list of certified green SCMs or MTDS which are all manufactured biofilters except for one that uses vegetation in a gravel bed.

Manufactured Biofilters should treat stormwater through filtration by a soil that supports plant life. This leads into defining what a soil is by MADEP but it needs to contain sands, silts or clay (inorganic particles in the soil textural triangle) and organic matter. Other materials like perlite, 100% GAC, 100% drain rock/gravel, activated alumina, etc., that are not intended to support plants and are designed in a subsurface vault with subsurface pipe in-flow, with no chance to support plant life, are considered proprietary media filters.

Lastly on EPA curves – the EPA now has a review protocol in place for evaluating proprietary technologies and assigning them credit. The first proprietary SCM (which happens to be a manufactured biofilter) was completed recently and was assigned an EPA curve for TSS and TP removal. Reach out to Newton Tedder ([Tedder.Newton@epa.gov](mailto:Tedder.Newton@epa.gov)) for more information on this.

Kindest Regards,

**W. Scott Gorneau, P.E. (ME, NH)**

Vice President of Innovation

M: [207.831.2795](tel:207.831.2795)

O: [800.711.5428](tel:800.711.5428)



**From:** [Walker Cox](#)  
**To:** [DEP Wetlands \(DEP\)](#)  
**Subject:** Wetlands-401 Resilience Comment  
**Date:** Tuesday, January 23, 2024 5:42:15 PM

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Hello,

I am a junior at the Buckingham Browne and Nichols School in Cambridge and I have just finished a presentation (see attached) as an internship project for Jamy Buchanan Madeja, Esq. to use in her Land Use Law and Environmental Law classes. I thought it might be appropriate to submit as it covers climate resilience infrastructure from Boston and around the world.

Sincerely,  
Walker Cox



[Watefront Climate Change Solutions.pptx](#)



# Waterfront Climate Resiliency Solutions

from Boston to Rotterdam





# St. Regis Flood Barriers

- St. Regis luxury residences in Seaport area
- Seaport one of the lowest Boston neighborhoods, will experience the worst flooding
- Sea level in Boston to raise 40 in. by 2070
- Designed in 2014 and built in 2022 with flexible flood barrier (rising 22.5 ft. above sea level) stored in perimeter trench
- Facades built with extra space so the floor can be raised 30 in.
- 5 ft. berm system integrated with Boston harbor walk, protecting Seaport and South Boston
- New, private developments will have to design their own systems to work with neighborhood flood protection





# Clippership Wharf living Shore

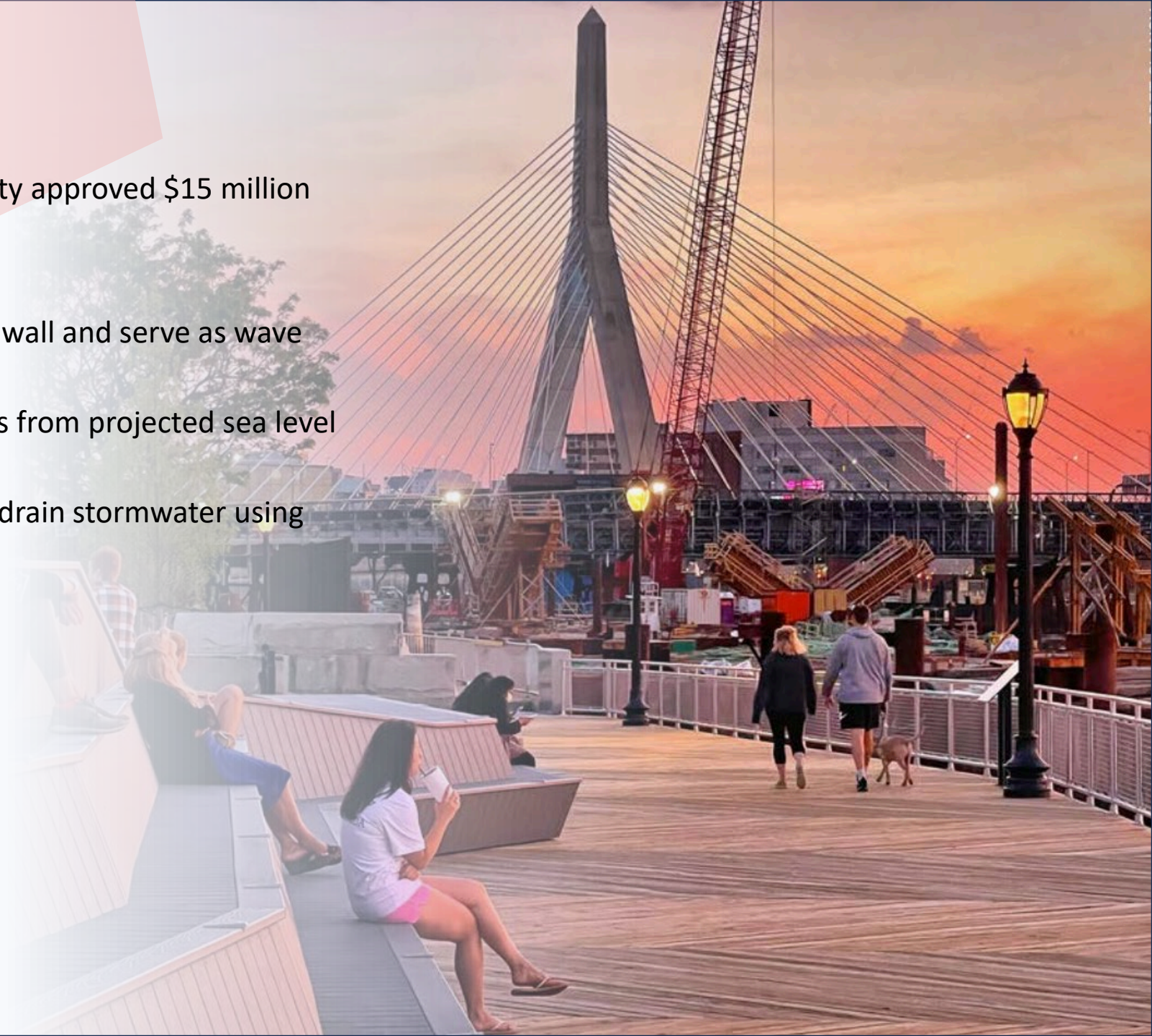
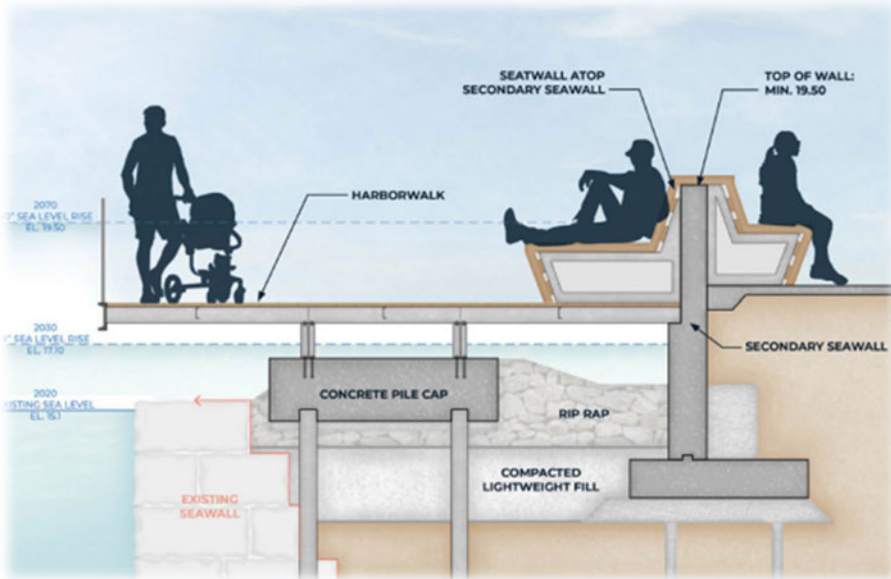
- Built by Clippership Wharf residences, it protects the surrounding East Boston neighborhood
- Salt marshes bolstered by rock (repurposed from old sea wall) terraces
- Fully submerged during high tide and dry during low
- Environmentally friendly for mussels, barnacles, crustaceans, birds
- Absorbs impact from storm surges and king tides
- Joins Boston harbor walk as a bulwark and ecological attraction





# Langone Park

- After Langone Park hit by 2018 Nor'easter, City approved \$15 million resiliency project
- Completed in 2021, it has been raised 7 ft.
- Micro piles support harbor walk over old sea wall and serve as wave energy dampeners
- New, secondary sea wall constructed protects from projected sea level rise of 40 in. 2070
- Basketball court acts as floodplain to quickly drain stormwater using subterranean retention chambers



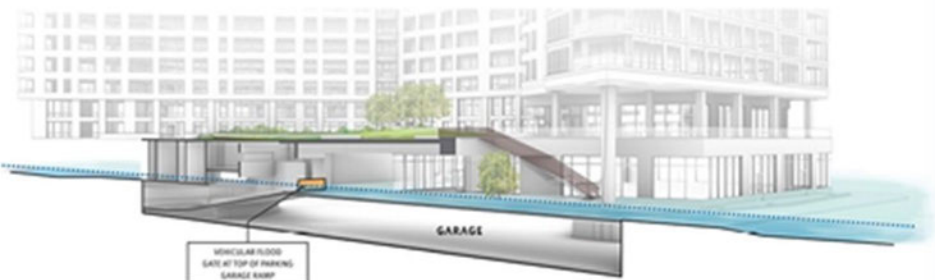


# Ora Seaport

- Private, Residential, hotel, restaurant, and retail development in Seaport area
- First use in Boston of passive flood barrier, a 4ft aluminum barrier that releases under hydrostatic pressure to float to a vertical position
- Flood-resistant aluminum doors and storefronts constructed to Federal Emergency Management standards
- Instead of manually deployed barriers requiring personnel and storage, gradual slopes, planters, and walls that double as seating areas integrate seamlessly and provide protection



STORM SURGE SCENARIO: 100-YEAR FLOOD



STORM SURGE SCENARIO: 40" SEA LEVEL RISE





# Stuyvesant Park and Asser Levy

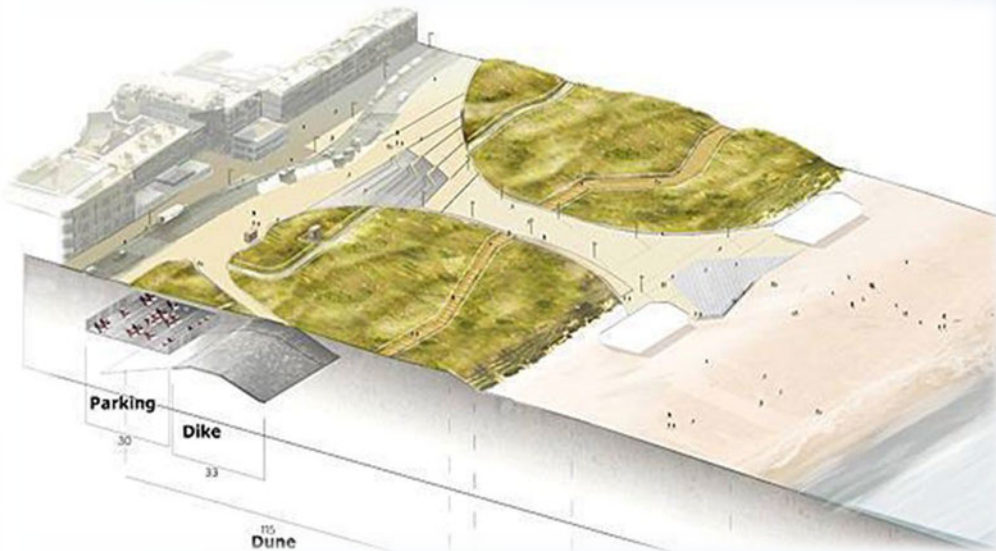
- Located in low-elevation Lower East Side of Manhattan, designed after hurricane Sandy inundate the city
- 1,340 ft. floodwall interrupted by 42 and 77 ft. sliding flood gates completed in 2023
- Elevated bike paths and walkways increase inland grade
- Terraces stepped with salt-tolerant plant species
- Part of \$1.45 East Side Coastal Resiliency billion project to protect 2.4 miles of waterfront
- And NYC's BIG U project adapted from the Dutch strategy of living with water





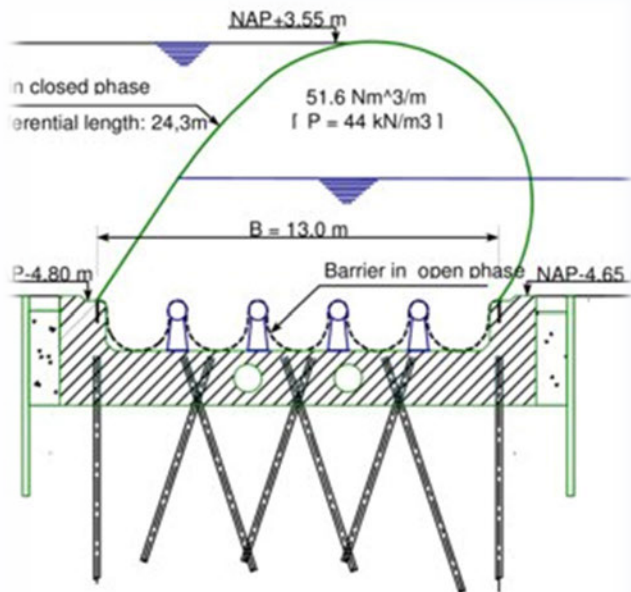
# Katwijk Dune Garage

- Built in 2015 by Dutch Ministry of Infrastructure and Water Management to replace above ground parking lot and sea walls that flooded in storms
- 120 m. wide dune land covers dike reinforced by stones and a subterranean parking garage of 550 spaces
- Dike raised to 7.5 m. while dunes raise overall height to 11 – 12.5 m. to meet 10,000-year floods
- Beach widened by 80 to 100 m, seaward, creating more land
- Maintained easy beach access for resort town of Katwijk
- Provided space for wildlife and attractive architecture



# Ramspol Inflatable Barrier

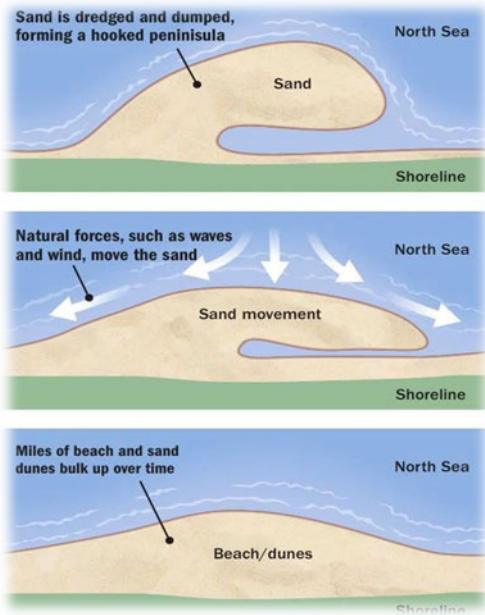
- “Bladder dam” built in 2001 by Dutch gov., it lies at mouth of river IJssel in The Netherlands
- Three 80 m. long, 13 m. wide rubber tubes filled 50/50 with water and air
- Fully inflated in one hour
- Creates barrier 10 m. high
- Dam lies deflated at the bottom of the river, allowing ship traffic through





# Sandmotor

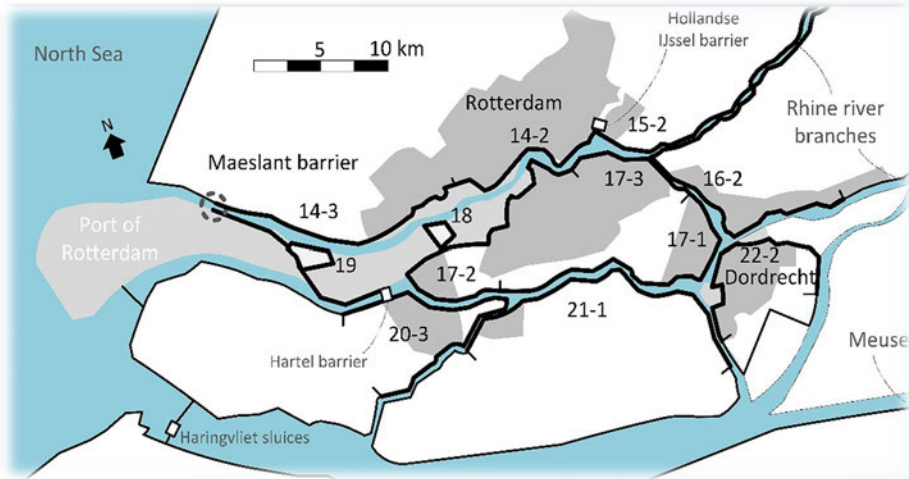
- “Sand engine” built by Dutch gov. in 2011 off the coast near The Hague
- 21 million cubic m. of sand covers 316 acres, acting as a natural breakwater
- Sand was deposited into water rather than directly on the beach, allowing currents and tides to reinforce the coast naturally
- Started 2.5 km. long, now more than 5 km.
- Provides ecosystem for wildlife and recreation area for kite/windsurfing





# Maeslant Storm Barrier

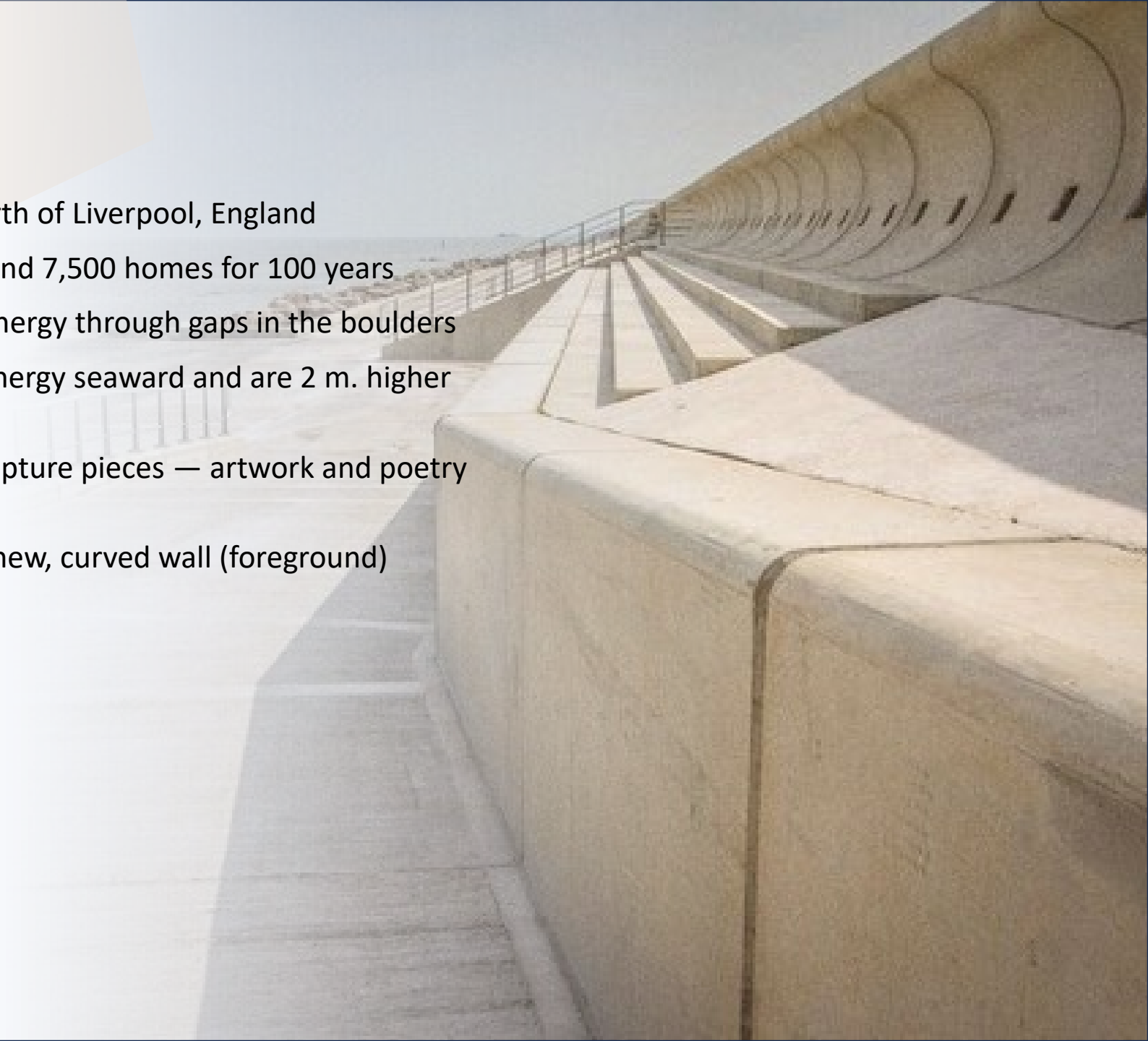
- Part of Netherlands' Delta Works, completed in 1997, it is the largest moveable object in the world
- Protects important port city of Rotterdam
- Built to withstand 5 m. storm surge
- Two 210 m. wide, 22 m. high, and 15 m. deep gates
- Designed to close automatically when surge is projected to reach 3 m.
- Has only closed twice (2007 and 2023)
- Estimated to close once every 10 years, though rising sea levels will likely increase the rate





# Rossall Sea Wall

- Completed 2018 by municipality of Wyre, North of Liverpool, England
- £63 million project to protect 2 km. of coast and 7,500 homes for 100 years
- 327,000 tons of rock armor dissipates wave energy through gaps in the boulders
- Steps and a concave wave wall reflect wave energy seaward and are 2 m. higher than previous sea wall
- Sloped promenade adds height and hosts sculpture pieces — artwork and poetry inscribed in concrete
- Picture below demonstrates effectiveness of new, curved wall (foreground) compared to the old sea wall (background)



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**From:** [William Schreefer](#)  
**To:** [DEP Wetlands \(DEP\)](#)  
**Subject:** Wetlands-401 Resilience Comments  
**Date:** Sunday, January 21, 2024 2:23:19 PM

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**CAUTION:** This email originated from a sender outside of the Commonwealth of Massachusetts mail system. Do not click on links or open attachments unless you recognize the sender and know the content is safe.

Sending in some questions prior to attending next week's meeting. Some of these are coming from a draft version of the full revisions I've reviewed, so it's possible some are being written out in the final version - sorry if there are any of those.

1. Are there requirements to qualify as a Qualifying Pervious Area? ie slope, linear distance before discharge to a waterbody
2. There's reference made to linear SCMs for Highway Specific Considerations that can be used for recharge. Is MassDEP updating guidance on whether water quality swales or drainage channels can be given credit for recharge? Or does this specifically refer to sheet flow to QPAs?
3. Re: sheet flow to QPAs - if a conveyance system and point discharge is necessary to get an appreciable amount of runoff to a QPA, is there a mechanism to convert back to sheet flow to a QPA? IE a shallow depression, with a large level spreader designed to let any overflow discharge over 50, 100, 200 linear feet?
4. Is there going to be guidance on how to calculate the temperature of discharge from an SCM (or untreated outfall) to a coldwater fishery? Seeing a temperature requirement in what's available, but no guidance on how to calculate.
5. Detention basins are losing all TSS removal credit?
6. Will there be direct guidance on pea gravel diaphragms and grass/gravel combinations in the new overall standards? Believe the old references were to Virginia standards/documents that don't currently exist.
7. For the Watershed Accounting Method for highway projects - do the mitigating projects need to be completed, or just permitted, within the 3-year window?
8. I don't think it's actually stated as a requirement, but are the new standards on Land Subject to Coastal Storm Flowage basically hinting at compensatory storage being preferred in tidal floodplains?
9. There is a note (e) of the 'Alter' definition that discusses 'increasing of the volume of untreated stormwater runoff directed to a wetland resource area'. My question basically is - would there be a different consideration if the increase in volume to one area meant a decrease in volume to another?
10. There's an added note under Standard 2 referring to the peak discharge requirement being met at each point of discharge. Does this mean design point, or points of discharge (ie flared end sections, outfalls, culverts, etc) specifically? Unclear how or why this is different from the prior standard.
11. Are any of the spreadsheets that will be included as appendices (especially the continuous simulation method) available for review?
12. Would we be expected to gather and estimate 70% precipitation limits from the 3 closest NOAA stations on our own? Or is that something the spreadsheet does on its own?

Thank you,

Will Schreefer





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April 30, 2024

Commissioner Bonnie Heiple  
Massachusetts Department of Environmental Protection  
100 Cambridge Street, Boston MA, 02108

Dear Commissioner Heiple,

On behalf of A Better City's (ABC's) nearly 130-member businesses and institutions, thank you for the opportunity to provide comments on the Department of Environmental Protection's (MassDEP's) development of climate resilience regulations (310 CMR 9.00), known as Resilience 1.0. We look forward to continuing to work with you as the Resilience 1.0 regulations are finalized and Resilience 2.0 regulations get underway.

The biggest areas of concern and frustration for members and colleague organizations alike are the slow speed and unpredictability of permitting climate resilient projects. Our waterways and wetlands regulations were designed for a bygone era—now is the time to ensure that needed development and resilient infrastructure projects can move forward. **A Better City strongly supports the effort to integrate climate resilience regulations into Chapter 91, and also urges MassDEP to commit to the expedited development of the second phase of resiliency regulations, or Resiliency 2.0, to further streamline the permitting process and to support the development of innovative climate resilience projects.**

Our comments regarding the proposed Resilience 1.0 language include recommendations on: definitions; activities subject to jurisdiction; simplified procedures for small structures accessory to residences; and conservation capacity for water-dependent use.

Beyond the proposed regulatory changes, we also offer additional comments for your consideration within Resilience 1.0 and 2.0 regarding: the establishment of a resilient permitting working group or commission; providing predictability alongside flexibility for innovative solutions; ensuring that the proposed regulations do not hinder transportation and other critical infrastructure projects; enhancing alignment and coordination with parallel policy processes; clarifying potentially conflicting obligations for waterfront climate resilience and public accommodations; ensuring regular review of and updates to Chapter 91 regulations to incorporate best-available climate science and resilience intervention best practices; and environmental justice considerations. A Better City's staff and members would be happy to meet with you and your team to answer any questions that you may have, and to learn how we can support the implementation and success of Resilience 1.0 and 2.0.

Thank you for your ongoing leadership. Please reach out to Isabella Gambill ([igambill@abettercity.org](mailto:igambill@abettercity.org)) and Yve Torrie ([ytorrie@abettercity.org](mailto:ytorrie@abettercity.org)) with any comments or questions.

Thank you,

*Y. L. Torrie*

Yve Torrie  
Director of Climate, Energy & Resilience  
A Better City

Enclosures: 2

Cc: Chief Melissa Hoffer, Secretary Rebecca Tepper, Undersecretary Katherine Antos, Assistant Secretary Mia Mansfield, Chief Lisa Rhodes, Deputy Commissioner John Beling

## Appendix A: A Better City's Recommendations on Proposed Resilience 1.0 Regulations

### Definitions

- **Land Subject to Coastal Storm Flowage (LSCSF):** A Better City appreciates the inclusion of a definition for LSCSF, or a 100-year, 1% storm event, and **suggests clarifying that this definition is in alignment with parallel wetlands regulations, as well as with the 2023 ResilientMass Plan's 1% storm event.**
- **Velocity Zone (V-Zone):** A Better City supports the inclusion of a definition that speaks to areas subject to high velocity wave action from storms or seismic sources. Given that high velocity wind is listed as a key climate threat in the ResilientMass Plan, **A Better City recommends clarifying this definition as a Wave Velocity Zone (WV-Zone).**
- **5-Year Definition Review & Updates to Incorporate the Latest Climate Science:** To ensure that the definitions contained within Resilience 1.0 and subsequent waterways regulations reflect the most up-to-date climate science, **A Better City recommends including 5-year review of and, when necessary, updates to, definitions within Chapter 91, as is consistent with ResilientMass and other policy processes.**
- **Ensuring a Holistic Regulatory Update to Integrate Future Climate Projections:** A Better City recommends pursuing a holistic update to Resilience 1.0 definitions and regulations to better integrate future climate projections. **A Better City recommends incorporating ResilientMass data, the Massachusetts Coast Flood Risk Model (available for the entire Massachusetts coastline), and the best available climate science for future climate projections in Massachusetts into updated regulations** to more accurately incorporate both sea level rise and coastal storm surge.

### Activities Subject to Jurisdiction

- **Section 9.05 (g):** A Better City appreciates and supports the consideration of fill, and the proposed allowance of similar fill or other structures under placement in a non-tidal river or stream subject to Chapter 91 jurisdictions. In addition to fill being necessary for climate resilient projects when no other alternatives are available, fill can also enable the intervention and use of nature-based solutions as opposed to grey infrastructure that can be limited by space constraints. **A Better City recommends the State include language in the regulations that allows the use of fill for flood protection purposes and nature-based solutions for climate resilience, but not for other uses.**

### Simplified Procedures for Small Structures Accessory to Residences

**A Better City strongly supports enhanced coordination, collaboration, and partnership between the MassDEP and municipal conservation commissions, including the Boston Conservation Commission, as indicated in Section 9.10 (c) of Resilience 1.0.**

### Licensing Terms

A Better City members have expressed concern that the length of licensing terms does not match the lifespan of built assets, thereby resulting in some uncertainty regarding what happens when a license expires. When possible, **A Better City recommends matching the length of licensing terms to the reasonable lifespan of built assets, or the lifespan of their financing. In cases of license expiration before the end of an asset's lifespan, A Better City urges the licensing renewal process to be as streamlined and accelerated as possible. Additionally, A Better City recommends considering how maintenance and operational issues and other minor modifications to resilient infrastructure projects should be addressed in licenses. Finally, A Better City recommends considering license fees as a revenue source to fund the implementation of additional resiliency measures.**

### **Conservation Capacity for Water-Dependent Use**

A Better City appreciates and supports the effort to exempt mechanical elements and required enclosures from height requirements for the purposes of licensing, if a building's re-location of mechanical equipment adds height. **A Better City recommends clarifying that setbacks, as well as roof enclosures for mechanical equipment, are both exempt for the purposes of licensing.**



## **Appendix B: Additional Recommendations for Resilience 1.0 and 2.0**

### **Establishment of a Resilient Permitting Working Group or Commission**

Innovative permitting strategies will be needed to build the coastal resilience projects required to protect and enhance our commercial districts and employment hubs. To realize visions like the Wharf District Council resiliency plan, the Commonwealth and the private sector must work together to cut red tape and fast-track needed infrastructure investments that provide multiple co-benefits to our economy and our communities alike. **A Better City recommends forming a Resilient Permitting Commission or Working Group, similar and parallel to the Commission on Clean Energy Permitting and Siting, to explore how to accelerate and improve permitting for resilient infrastructure projects and development projects in Massachusetts, and to engage with developers early in the regulatory process to help identify solutions.** Such a Commission would benefit from the participation of A Better City members and staff, as reflected in our role on the ResilientCoasts Task Force, as well as our members' role in the Wharf District Council, the Green Ribbon Commission's Coastal Resilience Working Group, and other groups. If possible, **A Better City could co-chair this Commission with a peer environmental organization, and membership of the Working Group could include peer environmental, conservation, and transportation organizations and state agencies, including the Massachusetts Bay Transportation Authority (MBTA), regional transportation authorities, municipal planning organizations, and transportation management agencies.**

### **Providing Predictability Alongside Flexibility for Innovative Solutions**

While it will be important to provide sufficient predictability within Resilience 1.0 regulations to allow developers to plan accordingly, the regulatory language must also be flexible enough to enable the advancement of creative and innovative climate resilient solutions. A Better City recognizes the challenge of striking an effective balance between predictability and flexibility and suggests considering multiple compliance pathways for permitting. Boston has provided flexibility with predictability in the design and implementation of BERDO 2.0 regulations (including options for individual compliance plans, building portfolios, and hardship compliance plans, for example), and Resilience 1.0 regulations could similarly benefit from multiple compliance pathways within Chapter 91 permitting. **A Better City recommends considering multiple compliance pathways for permitting within Chapter 91 regulations for waterways, with consideration for fast-tracking of innovative climate resilient projects** that would protect both built environment assets along the waterfront, as well as the surrounding district or neighborhood, from climate change impacts.

### **Ensuring that the Proposed Regulations Do Not Hinder Transportation and Other Critical Infrastructure Projects**

A Better City has heard some concern that the proposed regulations within Resilience 1.0 may hinder the implementation and maintenance of transportation infrastructure and other critical infrastructure, like telecommunications and utilities. Within the context of the MBTA, existing assets that are located within wetlands areas like significant portions of the commuter rail system and some critical maintenance facilities will require significant investment to comply with the proposed regulations as written. A Better City is concerned that the proposed regulations, without a funding mechanism for critical infrastructure upgrades like those needed for the MBTA, may have material impacts on the MBTA's ability to provide critical transportation services to the region. **A Better City recommends establishing a separate compliance pathway for public transit and other critical infrastructure facilities, which would be implemented no earlier than 1 year after the effective date of Resilience 1.0.** The aforementioned Resilient Permitting Working Group may consider recommendations specific to critical infrastructure facilities. In cases where compliance with proposed regulations threatens the provision of critical infrastructure and related services, **A Better City recommends MassDEP consider pathways for exemption, hardship, and/or individual compliance plans as appropriate.**

## Enhancing Alignment and Coordination with Parallel Policy Processes

A Better City strongly supports alignment and coordination of Resilience 1.0 regulations with parallel policy processes. Our members continue to voice concern and confusion regarding how different agencies plan to address climate resilient solutions that may have to extend land or sea walls into the watersheet. **A Better City recommends providing a coordinating function for MassDEP among local, state, and federal regulatory agencies with jurisdiction in land that is also subject to Chapter 91. A Better City also encourages MassDEP to include regulatory updates that better consider regional approaches and planning for resilience, going beyond parcel-by-parcel permitting, to encourage alignment with the emerging ResilientCoasts Initiative.**

## Clarifying Potentially Conflicting Obligations for Waterfront Climate Resilience and Public Accommodations

We have heard from members that sites within filled tidelands that contain any non-water dependent uses are required to: reserve ground-floor spaces for facilities of public accommodation, to provide ground-level usable open space, and to preserve access and/or sight lines to the water. Such requirements for public accommodation may conflict with implementing flood resilience measures, including raising first occupiable floors and elevating seawalls as needed. Additionally, such facilities for public accommodation are intended to be required in perpetuity, presenting challenges for properties in low-lying areas in the path of sea level rise and coastal flooding impacts. **A Better City recommends clarifying how properties within Chapter 91 jurisdiction can comply with enhanced resilience regulations while also upholding obligations for public accommodation, and, when necessary, considering exemptions as appropriate.** Within such clarification, it would be helpful for Resilience 2.0 regulations to provide guidance on how properties subject to Chapter 91, especially those alongside waterfront areas like Boston's Harborwalk, can remain accessible to the public even under future scenarios for sea level rise—that require planning for regular tidal inundation resulting from sea level rise and coastal storm surge. Such clarification would help to ensure that property owners and developers are thinking about enhancing the long-term performance of climate resilient interventions in the face of sea level rise and future climate impacts.

## Ensuring Regular Review of and Updates to Chapter 91 Regulations to Incorporate Best Available Climate Science and Resilience Intervention Best Practices

While regulatory processes have not historically been quick to incorporate changes as needed, the best available climate science for Massachusetts' climate impacts and best practices for climate resilient solutions, are rapidly evolving at a pace that is far quicker than regulatory and building code upgrades. Similar to efforts to update and review climate science underpinning ResilientMass and other climate resilience commitments in the Commonwealth annually, **A Better City recommends establishing a process within MassDEP charged with annual regulatory review of waterways regulations, which would also consider and recommend periodic regulatory updates as needed to incorporate the best available climate science and best practices for climate resilient solutions.** Resilience 1.0 and subsequent waterways regulations would benefit from a more regular review, with mechanisms for incorporating review recommendations into regulatory updates more expeditiously than larger regulatory updates.

## Environmental Justice Considerations

Given that environmental justice (EJ) communities in Massachusetts are hit worst and first by the impacts of climate change, it will be important for MassDEP to ensure that climate resilient projects that will benefit EJ communities are given special consideration in the expedited granting of permits. Additionally, MassDEP should consider how to minimize barriers to applications for EJ communities and EJ-centered projects, including the provision of fee waivers for EJ community projects. **A Better City recommends providing an expedited permitting pathway that allows EJ communities to have faster access to permitting than existing pathways for expedited permitting within Chapter 91. A Better City also recommends MassDEP establish a fee waiver for projects put forward by EJ communities,** to minimize barriers to entry and implementation. Finally, as national studies have suggested disproportionately lower and slower granting of

permits within EJ neighborhoods, **A Better City recommends MassDEP pursue a study in partnership with the Office of Environmental Justice & Equity that investigates the regional distribution of Chapter 91 projects permitted by neighborhood, and that highlights barriers to permitting in EJ neighborhoods specifically.** Such a study should involve extensive stakeholder engagement with EJ neighborhoods and provide recommendations for proposed amendments to waterways regulations, which would help alleviate barriers to EJ neighborhood permitting within Resilience 2.0 and subsequent regulatory updates.

## Wetlands-401 Resilience Comments

The following paragraph is from 314 CMR section 9.02. It is the proposed language that was shown in red font, in the revisions made available for public review.

Saturated Hydraulic Conductivity Test. A field test to determine the rate at which water percolates through saturated soils to transmit a volume of water per unit time in the vertical direction in a defined area as determined by one of the following methods: constant head Guelph permeameter - ASTM D5126-16e1 Method; Falling head permeameter – ASTM D5126-16e1 Method; Double ring permeameter or infiltrometer - ASTM D3385-18, D509315e1, D5126-16e1 Methods; or constant head Amoozemeter or Amoozegar permeameter. A Title 5 percolation test as defined at 314 CMR 15.002,, is not an acceptable Saturated Hydraulic Conductivity Test for purposes of stormwater management (314 CMR 9.06(6)(a)(g)).

### *Comments:*

I suggest adding the Modified Philip Dunne Infiltrometer test to the list of acceptable tests for saturated hydraulic conductivity. ASTM D8152 describes the test procedure and calculations.

Over 10,000 of these tests have been performed throughout the United States, Canada, and Europe since the publication of ASTM D8152 in 2018. The test has also been validated by multiple university studies, some of which are referenced in ASTM D8152.

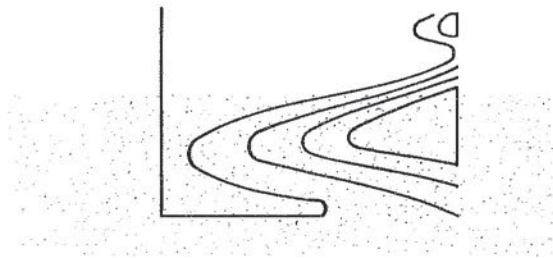
These comments were submitted by:

A.J. Schwidder

Upstream Technologies Inc.

[aj.schwidder@upstreamtechnologies.us](mailto:aj.schwidder@upstreamtechnologies.us)

651-237-5123



A.M. Wilson Associates Inc.

Comments on proposed changes to 310 CMR

- 310 CMR 10.04 (definitions) Combined Application  
Interesting that regs are being used to delete this entire process. There needs to be some guidance as to how existing combined permits will be treated when renewals/extensions are needed.
- 310 CMR 10.04 (definitions) Dredge  
Add at end "or dunes"
- 310 CMR 10.04 (definitions) Estimated Habitat Map  
Why delete this definition? Aren't the maps still required to be used? If not, what is the substitute?
- 310 CMR 10.4 (definitions) Near  
This is worse than having no definition.  
It allows Conservation Commissions to take jurisdiction hundreds of feet from nearest resource because they THINK a discharge might have an impact.
- 310 CMR 10.4 (definitions) Pond (inland)  
Add to list of exemptions: Farm ponds  
Drainage basins  
Golf course water hazards
- 310 CMR 10.05 (4) (definitions) NOI  
Conservation Commissions frequently require NOIs for projects as simple as elevated decks. Requiring an erosion, sediment and pollution plan seems a little excessive for such minimal projects. Please add language like "...commensurate with the scope and scale of the project" after "Activity".  
  
In 2<sup>nd</sup> sentence after "landowner" add "...except if the applicant is an easement holder and the project is intended to facilitate the terms of the easement."



- 310 CMR 10.10  
(definitions)

#### Effective Date (15)

This is very confusing. First it says so long as an application is filed before the effective date, it should be processed under the old regs. Then it says an NOI “submitted to the Department” during the first 6 months of the new regs gets processed under the old regs. Is this intended to cover appeals? If so, it is grossly unfair as it is common for large and/more complicated projects to take more than 6 months of review at the local Conservation Commission, even without a MEPA review. Any application submitted to the local Conservation Commission prior to the promulgation date and subsequently submitted to the Department due to an appeal or other permitting requirement should be processed under the old regs.

- 310 CMR 10.36

#### LSCSF

- (1) – Mass FEMA maps are problematic because the graphic intended to separate the MoWA and MinWA doesn’t do that. Rather, apparently at the request of MCZM, those are mapped together and only the LimWA is shown.
- (1) para 5 – The wording of the prohibition on new buildings in VE zones is problematic. It seems to say that existing non-compliant buildings cannot be elevated unless there are less than 50% of other improvements that may be necessary to meet Code? Maybe you need a definition for “new building”.
- (2) Definitions
  - Historic Structures – This definition will cause problems within small Historic Districts or even the Old Kings Highway Regional Historic District by requiring non-contributing buildings to be elevated, impacting the overall aesthetic of the district. This is especially true where open pile

foundations cannot be screened. Further, some local districts do not list individual buildings at all, so the entire district would be impacted.

— MiWA – See comment at (1) above.

— Open Piles – This definition would prohibit lattice work or other screening including screening vegetation. I don't think you want to do this. Lattice work and screening vegetation should be specifically allowed.

- 310 CMR 10.36 (4)(a)

Performance Standards

- What is “adjacent”? There are AO Zones that abut VE Zones but extend for hundreds of feet away from that boundary. Will screening and vegetation be prohibited in that entire area? (see problem with Open Pile definition noted above).
- (6)(e) - So there can be no new mounded SAS in areas where high groundwater will likely require elevation for replacement/repair. Since Title V all but excludes tight tanks, this means many owners of failed systems in VE Zones will need to seek variances for separation to groundwater resulting in reduced ground and surface water quality. Perhaps the Department should seek a change to Title V allowing tight tanks in these areas preferentially over groundwater separation variances.
- (6)(f) – Are these NEW buildings or only alterations of Existing Buildings? Clarification is needed.



- 310 CMR 10.36 (8)(c)

- Many historic and pre-1960 buildings do not have Occupancy Permits as they were not required when they were built and maintenance activities that may have required a Building Permit do not result in an Occupancy Permit. Change “and” to “or” in line 6 to solve this problem, or change this language to delete “and received an occupancy permit”.
- Further this will create a problem for buildings which are under construction when the regs are adopted if you don’t change the language to “...if the building was constructed or is being constructed subject to a Wetlands Permit issued prior to the effective date of the regulations”. Otherwise, buildings that have a valid Order of Conditions but needed final architectural design subsequently, may need to start design and permitting all over again after a year or more in process.
- The last sentence of this section is also problematic. If the intent is to allow the addition of stories or partial stores, then change the language to “No reconstructed buildings may have a footprint, including decks but excluding access/egress, larger than the building it replaces.”

- 310 CMR 10.36 (8)(g)

- What constitutes “support from the municipality”; a vote of the selectmen, a vote of Town Meeting; a letter from the head of the DPW or the Harbormaster; or just approval from The Conservation Commission? This term needs substantial clarification.

Respectfully submitted,

A.M. WILSON ASSOCIATES, INC.

A handwritten signature in black ink, appearing to read 'Arlene M. Wilson', with a stylized, elongated flourish extending to the right.

Arlene M. Wilson, PWS  
Principal Environmental Planner

delivered via email  
[dep.wetlands@mass.gov](mailto:dep.wetlands@mass.gov)

30 April 2024

**MassDEP – BWR Wetlands Program**

Attn: Wetlands – 401 Resilience Comments  
100 Cambridge, Street, Suite 900  
Boston, MA 02114

**Re:** Wetlands-401 Resilience Comments

Dear **MassDEP:**

Thank you for all of your work on the updates to the Wetlands Regulations. This was an incredible undertaking and your commitment to updating these regulations does not go unnoticed. Thank you all for your time and work on this document.

I am a civil engineer focusing on outdoor athletic design and have been for the last 20+ years. I have designed, permitted, seen constructed, and seen the lifetime of hundreds of athletics fields both natural and synthetic in the Commonwealth and beyond. I am appreciative of the desire to better define the parameters of athletic fields within the documents, but am concerned with the manner in which they are being defined.

The profile of natural grass athletic fields can vary greatly from native topsoil fields that require lateral drainage to high end sand-based fields that drain vertically. The construction of these profiles varies greatly, but neither should be considered impervious and as noted in the definition of "Compacted Gravel or Soil" these profiles are not considered compacted gravel or soil which I am in full agreement with. However, infilled synthetic turf (aka artificial turf) profiles which are also porous, vertically draining profiles are listed under the definition of "Impervious Surface" with which I take serious issue. Generally speaking, synthetic turf fields are not designed to be installed over an impervious subgrade. In fact, the ability of synthetic turf fields to drain vertically allows the stormwater runoff to be in contact with the subgrade and improves the opportunity for infiltration over that subgrade. Requiring synthetic turf to be considered impervious is an overly conservative approach to stormwater design, which affects factors related to Stormwater Standards 2 (peak rate mitigation), 3 (recharge), and 4 (treatment). The following outlines my reasoning for having not considered synthetic turf to be impervious in design for the last 20+ years.

Neither a curve number nor a runoff coefficient for synthetic turf formally exists. This means that an engineer must use their best judgment in completing calculations based on previous experience, existing site conditions, and the known profile of the synthetic turf system. In our opinion and experience, a turf field should not be considered a large catch basin, but rather an area of surfacing with good drainage characteristics like a well-maintained natural grass athletic field with

good drainage characteristics. The difference between natural grass and synthetic turf is that the top surface can withstand high volumes of use without degrading the surface, whereas the natural grass counterpart needs to be rested in order to maintain the uniform grass growth and therefore maintain its low volume of runoff associated with a “good” grass with >75% grass cover.

Synthetic turf drains vertically and therefore there is no actual surface runoff, which means it would have a very low CN. However, that runoff is now flowing subsurface laterally through the stone profile and over the subsurface soils resulting in infiltration of some of that runoff based on the existing soil type. We typically will use a curve number that is similar to good grass over whatever soil type the soils maps and/or a test pit show. Curve Numbers account for saturation of the ground surface soils prior to creation of runoff. To avoid accounting for this action by the soil material twice, we do not account for infiltration over the entire field.

We have been using this curve number in our modeling precedent for the last 20 years without any reports of flooding conditions or unusable field conditions. With the opportunity to work with repeat clients overtime, we have had the opportunity to evaluate our existing designs over time. We have not had reports that a synthetic field has caused downstream flooding with this modeling approach. In fact, there have been projects where we have received feedback that neighboring properties have actually seen less volume of runoff flowing towards them in comparison to the previous overly used and compacted natural grass fields, implying the design approach is in fact conservative. We understand that other engineers may model a synthetic turf system differently. We contend that there is not one correct way to model this system, but we are very comfortable that the modeling is appropriately conservative and realistic to actual conditions at the site and propose system.

In addition to the curve number concerns, calling synthetic turf impervious has major implications for recharge requirements and treatment. While I think recharge can likely be handled within the confines of the turf field profile, treatment is more of a concern – the main question is what are you treating for? When treating an impervious roadway, we are treating for TSS, phosphorous, etc. However, synthetic turf fields do not generate these items so calling for treatment of the area of turf does not makes sense. As such the blanket statement of saying synthetic turf is impervious is impractical.

If I could suggest a change for consideration, I would recommend removing “artificial turf” from the definition of “Impervious Surface” and providing a definition for artificial turf such as,

“Artificial turf for the purposes of stormwater management will vary based on the design engineer’s approach. If the design intent is to allow for stormwater to drain vertically through the surface into an open-void stone profile and to be able to come in contact (likely over a pervious geotextile fabric) with the subgrade soils, then the curve number for the artificial turf surface can be considered equivalent to a good grass surface over the

hydrologic soil group of that site and as verified per the Stormwater Standards requirements. If the design intent is to not allow for contact with the underlying subgrade (e.g. installation of an impervious liner), then the curve number should be considered equivalent to an impervious surface. For the purposes of recharge, the determined curve number will dictate the requirements for volume of recharge. For the purposes of treatment, no additional treatment of stormwater through the synthetic turf profile is required."

I am hopeful this information will allow for additional consideration of how artificial turf is defined in the updated document. If you have any questions, please do not hesitate to contact me directly at (781) 375-8663 or by email at [meb@activitas.com](mailto:meb@activitas.com).

Respectfully:

ACTIVITAS



**Megan Buczynski, PE**  
Principal Civil Engineer

**From:** [REDACTED]  
**To:** [DEP Wetlands \(DEP\); Waterways, DEP \(DEP\)](#)  
**Cc:** [Patrick O'Connor; patrick.kearney@mahouse.gov](#)  
**Subject:** Wetlands-401 Resilience Comments  
**Date:** Monday, April 29, 2024 7:50:27 PM

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CAUTION: This email originated from a sender outside of the Commonwealth of Massachusetts mail system. Do not click on links or open attachments unless you recognize the sender and know the content is safe.

I believe the proposed "Land Subject to Coastal Storm Flowage" standards is too stringent and should not be approved.

As a home owner in coastal community this proposal will undoubtedly be a financial burden if I have to replace my house, therefore I am against it.

Thank you,

Al Martignette

Humarock, MA





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April 30, 2024

Bonnie Heiple, Commissioner  
Massachusetts Department of Environmental Protection  
**MassDEP - BWR Wetlands Program**  
**Attn: Proposed 401 Water Quality Certification Regulations – Resilience 1.0**

Dear Commissioner Heiple:

The American Council of Engineering Companies of Massachusetts (ACEC/MA) applauds MassDEP's (DEP) efforts to update environmental regulations to promote nature-based project designs, prepare for climate change, and improve water quality in the Commonwealth.

ACEC/MA is the business association of engineering, land surveying and A/E firms in the Commonwealth, with over 120 member firms employing over 7000 people, many of which are engineers, environmental scientists, planners, land surveyors, architects, licensed site professionals and other design professionals. We are in support of DEP's goals, but ACEC/MA has grave concerns about the disconnect between the goals and the practical implications of these proposed regulatory changes.

**Below are our comments on the proposed Water Quality Certification Regulations/Stormwater regulations, provided in addition to separate comments we submitted in our letter on :**

The definition of impervious area now includes artificial turf and solar arrays. Artificial turf with a stone reservoir is commonly used as a Best Management Practice for providing peak attenuation and groundwater recharge and should not be considered an impervious surface. Similarly, for solar arrays, the footings associated with the solar array are considered as impervious surface, but solar panel was not considered an impervious surface because precipitation sheet flows off the panel onto the ground. Solar arrays are commonly placed on landfills and at treatment plants. If they are considered to be an impervious surface, compliance with the stormwater standards may be difficult due to lack of available space for stormwater control measures. Solar farms are a renewable energy and help Massachusetts move away from fossil fuels. Requiring stormwater control measures may act as a disincentive for entities to install solar farms.

The proposed regulations require the use of either Massachusetts NRCS NOAA Type C or D rainfall distributions. This data will soon be outdated as NOAA is currently developing Atlas 15, which will present updated rainfall frequency estimates for the entire United States and will include guidance for accounting for climate change (see [NOAA Atlas 15 Flyer.pdf \(weather.gov\)](#)) Work on Atlas 15 commenced in 2022, and publication is planned for 2026.

In addition, the draft regulations manual notes that the Type C and D rainfall distributions are currently not available in WinTR20, WinTR-55 and proprietary versions of these software and require the user to import these distributions into the software. Depending on the software package used, it can be challenging to import rainfall distributions and opens the potential for users to do it incorrectly. Before the effective date of the regulations, MassDEP should work with software providers to have the most current distributions added into their products so that stormwater control measures are designed correctly. For example, the computer program HydroCAD, which is commonly used in Massachusetts, should be updated as it provides rainfall distributions specific to certain states.

The draft regulations require the first inch of runoff to be fully infiltrated for Hydrologic Soil Groups A, B, and C, and infiltrated to the maximum extent practicable for Hydrologic Soil Group D within 72 hours. As the soils become less permeable, the required footprint for the stormwater control measure will grow larger. The current regulations adjust the infiltration requirement based on the soil type, more appropriately matching existing natural infiltration rates of the soils. In addition, if the static method is being used or if exfiltration is being incorporated into peak rate reduction calculations, extremely conservative infiltration rates must be used (Table 6-4 below), which also leads to a larger footprint for the stormwater control measure. The result is that, depending on soil conditions, it may be impossible to meet the infiltration requirement on a site, unless proposed site features are reduced.

**Table 6-4.** Design saturated hydrologic conductivity based on Hydrologic Soil Group for the “Static” Method

HSG	Design $K_{sat}$ (in/hr)
A	1.42
B	0.57
C	0.10
D	0.02

Notes:

1. Table adapted from Table 7-1 of the NRCS 2009 Part 630 National Engineering Handbook.
2. Design  $K_{sat}$  values assume that the depth to any impermeable layer (e.g., bedrock) or the water table is greater than 2 feet.
3. Values in this table must be used when sizing infiltration SCMs based on the *Static Method* or when incorporating exfiltration into peak rate reduction calculations for applicable infiltration SCMs as described in **Section 6.2.2**.
4. The selected HSG must correspond to a field evaluation conducted in the actual location and soil layer where stormwater infiltration is proposed as described in the procedures above.

The proposed regulations require a setback of 100 ft from any slope greater than 5% to an infiltration basin (surface exposed or subsurface) or infiltration bioretention area. The intent is to mitigate groundwater breakout; however, 100 ft is excessive and, coupled with the 1 inch infiltration requirement, it may be impossible to meet the infiltration requirement at a site.

**Will there be any provision for grandfathering in projects?** Some projects have a long design period and an extensive permitting process. **What approach will be taken when a project’s design and permitting period extends before and after these regulations go into effect?**

Many communities have developed their own stormwater regulations, some stricter than the current MassDEP stormwater standards. How does MassDEP intend to work with communities through this transition period when local regulations may be in conflict with the state regulations?

In addition, we also would like to express concern about the proposed revisions related to temperature (Section 314 CMR 9.06(6)(a)6). This section relates to the control of stormwater to reduce temperature in certain areas including Critical Areas. In Critical Areas where a cold-water fishery exists and infiltration or ESSD practices are not used they are requiring a stormwater discharge temperature of 68F. Some of our members expressed concern that trying to maintain a discharge temperature of 68F will be difficult in the summer. This may not come into play often but having a specific discharge temperature in the regulations could be problematic. This needs additional discussion and review.

Proposed language currently:

- Unless a discharge to a Cold-water Fishery is infiltrated or an ESSD practice is used, the temperature of the stormwater shall not exceed 68 degrees F at the discharge point to ensure that there will be no thermal impact to the existing ambient temperature of the receiving water.

Suggested revision

- Unless a discharge to a Cold-water Fishery is infiltrated or an ESSD practice is used, the temperature of the stormwater discharge should be controlled to minimize thermal impact to the existing ambient temperature of the receiving water.

Thank you for the opportunity to submit our comments and questions on these proposed regulations.

Please feel free to contact me if you have any questions about our comments.

Sincerely,

American Council of Engineering Companies of Massachusetts



Abbie R. Goodman  
ACEC/MA Executive Director  
agoodman@engineers.org  
617-305-4112



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April 30, 2024

Bonnie Heiple, Commissioner  
Massachusetts Department of Environmental Protection  
MassDEP - BWR Wetlands Program  
Attn: ***Wetlands-401 Resilience Comments***  
100 Cambridge Street, Suite 900  
Boston, MA 02114

Dear Commissioner Heiple:

The American Council of Engineering Companies of Massachusetts (ACEC/MA) applauds MassDEP's (DEP) efforts to update environmental regulations to promote nature-based project designs, prepare for climate change, and improve water quality in the Commonwealth.

ACEC/MA is the business association of engineering, land surveying and A/E firms in the Commonwealth, with over 120 member firms employing over 7000 people, many of which are engineers, environmental scientists, planners, land surveyors, architects, licensed site professionals and other design professionals. We are in support of DEP's goals, but ACEC/MA has grave concerns about the disconnect between the goals and the practical implications of these proposed regulatory changes.

We urge MassDEP to form a **technical review committee** that includes design professionals as well as key leaders from other state agencies to work through the changes to carefully consider the proposed changes and their impact on other public policy decisions. The way in which the proposed regulations are written will substantially increase project costs and environmental process, delay or cancel important public and private projects, and negatively impact communities across the Commonwealth, including:

- Economic Impacts (increased capital and maintenance costs, breaking up projects (ex. Safety improvements for widening, then resilience improvements for raising))
- Equity Impacts (Who is most impacted by these changes? Costs get relayed to tax-payers)
- Environmental Impacts (incentivize investment in undeveloped areas, increased carbon from larger construction footprints, impacted soil transport costs, loss of quality habitat)

The ACEC/MA comment letter includes five case studies, in **Attachment A**, to demonstrate potential impacts of the regulations on specific projects. These case studies compare projects that were permitted under the existing regulations to the requirements proposed under the new regulations. While these examples do not capture all of ACEC/MA comments, they demonstrate some of the potential impacts to projects, communities, and abutters that may occur.

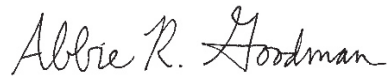
The proposed regulatory changes, including revisions to the Wetlands Protection Act, Section 401, Chapter 91, and DEP's Stormwater Handbook, are far reaching and deserve specific review by wetland and engineering practitioners to fully understand the impact of these proposed changes. ACEC/MA has provided compiled technical comments in **Attachment B**.

**ACEC/MA requests that proposed revisions to the Wetlands Protection Act, Stormwater Standards, and Stormwater Handbook be put on hold to allow DEP to convene a technical review committee comprised of engineering consultants and design practitioners to determine the actual effect of the proposed regulations and to recommend changes based on real-life, site-specific project examples permitted under the existing regulations compared with the requirements of the proposed regulations.**

ACEC/MA appreciates MassDEP's undertaking of the much-needed revisions to the Wetland Protection Act Regulations and the Stormwater Standards. **Our members are eager to join a technical review committee to work alongside MassDEP to protect the Commonwealth's coastal and inland resource areas.**

Please feel free to contact me if you have any questions about our comments.

Sincerely,  
American Council of Engineering Companies of Massachusetts

A handwritten signature in cursive script that reads "Abbie R. Goodman".

Abbie R. Goodman  
ACEC/MA Executive Director  
agoodman@engineers.org  
617-305-4112

## **Attachment A – Case Studies**

1. Roadway Redevelopment Project Stormwater Compliance
2. Open Space Flood Resilience Projects
3. Land Subject to Coastal Storm Flowage
4. Solar Array
5. Utilities and Stormwater Compliance

### **Case Study 1: Roadway Redevelopment Project Stormwater Compliance**

#### **Project Description**

Geometric and traffic control improvements on a minor arterial roadway, approximately 4 miles long, to increase vehicular capacity to accommodate regional development, provide continuous pedestrian and bicycle accessibility, improve driveway access control, and reduce vehicular conflicts and accident frequency. Approximately 240 residential and commercial properties directly abut the project, and all are impacted in some way due to their proximity (e.g., roadway widening, sidewalk, utility poles, stormwater basins). A portion of the project area passes directly through an environmental justice community and the entire project length is within 2 miles of the environmental justice community.

#### **Stormwater Compliance Comparison**

The total post-construction impervious area is 55 acres, which is an increase of 9 acres over the existing impervious area. The project area is constrained by existing housing, businesses, wetlands, and high groundwater. Under the existing regulations, the project needed 4 infiltration basins at 5,500 cubic feet each. Under the proposed regulations, the project would require 25 infiltration basins of the same volume.

Given the constraints of this project an exhaustive onsite and offsite evaluation of potential treatment locations was completed. All possible locations within the project limits and site locus were used for infiltration just to meet the current standards. One of the 4 infiltration basins was constructed offsite due to the site limitations. The additional 21 infiltration basins would result in the taking of private property or the inability of the project to meet the stormwater standards.

#### **Conclusion**

Not only do the proposed revisions require exponentially more stormwater treatment, but the revisions also make it much more difficult to provide stormwater treatment by requiring larger setbacks from wetlands and assigning strict design criteria that does not fit the physical constraints of most roadway settings. The revisions to the setbacks will make the achievement of adequate stormwater treatment for a roadway redevelopment project adjacent to wetlands, arguably where it is most needed, infeasible, which will result in untreated runoff discharging to the wetland and will require offsite mitigation that may or may not be possible. The revisions will increase the amount of taking of private property (e.g., homes and businesses) to provide the larger treatment volumes, which will result in a disproportionate impact to urban and environmental justice communities due to the density of parcels in those locations.

### **Case Study 2: Open Space Flood Resilience Projects**

A vegetated berm is proposed within a public park (located in zone AE) as part of a larger regional effort for flood protection. The location of the berm is at least 500 ft. inland of the existing MHHW line. The park is predominately pervious (grass surface) with paved walking paths and



several structures. Improvements to walking paths, passive recreation features, and storm water management systems are proposed on the coastal side of the berm.

**The placement of fill for both the construction of the flood barrier and improvements to the park would not be allowed given the way the regulations are currently written.**

The existing park has paved walking paths and small structures, so proposed improvements will need to meet the standards for Redevelopment with Previously Developed LSCSF (10.36(8)).

- 10.36(8)(d): The point of the barrier to prevent the flow of coastal waters from reaching the neighborhood, and therefore prevent return flow of coastal waters. The mitigation required is not defined and unclear what that will mean for the park and programming.
- 10.36(8)(f): The park is within the MiWA zone, but impervious surfaces have not predominately replaced the natural coastal floodplain (it's a park, not a parking lot).

Even if the park was predominately impervious surfaces, fill in MiWA zones also has to meet 310 CMR 10.36(7) – new development.

- 10.36(7)(a): The berm will not allow flood waters to spread inland and laterally. The area of the park on the coastal side is graded to direct water to stormwater features, so this could be considered channelization. (Channelization is not defined).
- 10.36(7)(d): Construction will disrupt soils and vegetation at the site; it's unclear what the maximum extent practicable for this standard could be. Would it apply to just the coastal side that could still receive flood waters? Would a CLOMR need to be submitted first to demonstrate the inland portion of the park is no longer a regulated resource area?
- 10.36(7)(e): The park will increase impervious surfaces to allow for improved pedestrian and bike pathways. Porous pavement is defined as impervious surface. If the pathways are only behind the berm, rather than on the coastal side, would that be allowed? Would a CLOMR need to be submitted first to demonstrate the inland portion of the park is no longer a regulated resource area?

### **Case Study 3: Land Subject to Coastal Storm Flowage**

The project is located on a property within a V-Zone and an A-Zone on multiple fronts. The existing and proposed buildings are outside the Land Subject to Coastal Storm Flowage, however, part of the development, including driveways, retaining walls, walkways, and landscaping, are within these zones. Per 10.36(7) any applicant proposing development in the MiWA Zone shall minimize adverse effects on the LSCSF by allowing flood waters to spread inland and laterally by avoiding fill, structures, or topographic alterations, preserve soil and vegetation, and by reducing impervious surfaces. This project's purpose was to provide more housing for disadvantaged youths. To provide that benefit to the community, the existing campus needed to grow, which included new buildings for housing and staff. Along with the new building comes improved site features, including additional parking, walkways, and recreational areas. The site is surrounded by natural features, including the Harbor. There is not a lot of area for the project to grow within the confines of the property. This project provides a much needed service to the community, and with the proposed DEP regulations, the developable area would be reduced, and the project would need to be downsized to fit within these new buildable areas.

**Figure 1: Land Subject to Coastal Storm Flowage Projects**



### **Case Study 4: Solar Array**

Ground mounted solar arrays are increasingly common these days, in part due to the Massachusetts Department of Energy Resources (DOER) Solar Massachusetts Renewable Target (SMART) program. This program's goal was to create a long-term sustainable solar incentive program that promotes cost-effective solar development in the state. Many of the ground mounted solar arrays are being installed on undeveloped private land. Landowners are finding ways to develop their properties, and one such way is to lease the property to a utility company for a specified number of years to provide green energy back to the power grid. Many of these properties are currently undeveloped due to natural features, including resource areas. These properties have been identified as prime real estate for developers to provide clean energy, where other uses of the property may not be feasible, including housing.

The proposed amended Wetlands Protection Act Regulations include new definitions, among other changes, which would have a significant impact on solar development. In the proposed regulations, impervious surface is defined as “for purposes of stormwater management (310 CMR 10.05(6)(k)-(q)), any surface that prevents or significantly impedes the infiltration of water into the underlying soil, including, but not limited to [...] Compacted Gravel or Soil, [...] solar arrays, [...] or other similar materials.” Further, compacted gravel is defined as “for purposes of stormwater management (310 CMR 10.05(6)(k)-(q)), gravel roads, gravel parking lots, dirt roads, [...]”

One example project that has been approved under the current regulations has an existing site runoff curve number of 39. The existing site is currently 40 acres of mostly wooded land, which provides a low curve number. The proposed site would include a 10 acre ground mounted solar array, as well as a gravel access drive. The proposed runoff curve number would be 44. The rain fall is based on TP-40 (6.4 inches, 100-yr) The increase in curve number is due to the change from woodland to meadow within the array. Currently, the solar array is not considered impervious. To mitigate the increase in runoff due to the increased curve number, four surface infiltration basins have been proposed. These basins provide a storage volume of approximately 80,000 cubic feet. These basins will reduce the peak flow and volume for the 2, 10, and 100-year storm events. Because there is no impervious area on site, water quality and recharge are not required to be met.

With the addition of compacted gravel and solar arrays being considered impervious (CN now 67), as well as the NOAA 14 PLUS rainfall amounts (10.35 inches, 100-yr), the volume required to meet the preconditions would be 200,000 cubic feet, 2.5 times the approved values, for the 100-year storm event. This would be an increase in approximately 55,000 additional square feet of stormwater basin area needed. As the site is currently proposed, there is no additional room for 55,000 additional square feet of stormwater basin. This area would need to be taken from the solar arrays, which is directly proportional to the output it can provide. Site earthwork costs would also increase. This in turn would potentially result in this project no longer being viable for development for clean energy in the form of solar.

Further, the stormwater basins infiltration capacities were designed with the static method and used on site soil testing. As such, the infiltration rates were based on Rawls Rates, and the current proposed regulations do not allow the use of Rawls to determine the saturated hydraulic conductivity. Table 6.4 (in the draft stormwater handbook) dictates the saturated hydraulic conductivity for use in the static method and provides values much lower than the current regulations. Therefore, using the new number, the size of the proposed surface infiltration basins would increase even more.

Although all the proposed changes contribute to the requirement of larger stormwater facilities, the largest impact is due to the change in definition of a solar array to be considered impervious. As shown above, this change will have extreme implications on the required volume of storage required to mitigate the increase in impervious area from solar arrays. This volume would either be provided by clear cutting more woodland for stormwater facilities, which is counterintuitive, or would result in the reduction in solar array size, which could result in a landowner's ability to develop the property for use by clean energy.

## **Case Study 5: Utility Project – Stormwater Compliance**

A linear utility project in a cross-country transmission line Right-of-Way (ROW) often includes the construction of gravel access roads and work pads for line rebuild or maintenance projects. The projects typically involve rebuilding the transmission line with new, large steel utility structures across miles of ROW. Gravel access roads are required for construction equipment (e.g., cranes, bucket trucks, concrete mixers) to safely access structure locations for construction. In addition, gravel work pads will need to be constructed at many of the structures to provide a safe, level workspace to perform the work.

The proposed changes to the Stormwater Standards under 310 CMR 10.05 and 314 CMR 9.00 include added definitions for “impervious surface” and “compacted gravel” as well as specify that non-point source discharges, like roadway runoff, are jurisdictional. Based on these changes, it will be challenging to justify that construction of gravel access roads and work pads do not require compliance with the Stormwater Standards during permitting. The addition of compacted gravel as impervious surface will also increase the volume that would require recharge under Standard 3 and treatment under Standard 4.

Further, work in utility corridors could be considered Redevelopment and therefore, the stormwater management system could be designed to comply with the standards to the Maximum Extent Practicable. However, according to the WPA definition (b), Redevelopment is defined as:

*“(b) development, rehabilitation, expansion and phased projects on previously developed sites provided the Redevelopment results in no net increase in impervious areas...”*

Therefore, given the updated definition of impervious surface includes gravel and the definition of Redevelopment cannot include a net increase in impervious area, utility projects where gravel access roads and work pads are proposed will be required to meet the proposed updated regulations and the Stormwater Standards to the full extent. They do not appear to be able to qualify for Maximum Extent Practicable as a Redevelopment Project.

Preliminary engineering calculations based on typical conditions along a utility ROW indicate that the increase in peak discharge rates from pre- to post-construction of gravel access roads and work pads along a utility ROW would be very low compared to a typical commercial or industrial development where significant impervious pavement and rooftops are proposed. The increase in peak discharge for a cross-country utility ROW project involving construction of gravel access is approximately the same or less as the increases typical of single-family residential developments of up to four lots, which are exempt from compliance with the Stormwater Standards. Depending on the size of the watershed, steepness of the topography, and hydrologic soil group (HSG) type of the soils in the watershed, the increases anticipated based on preliminary calculations are up to approximately 1-2 cubic feet per second (cfs) of peak rate discharge, and in many cases less than 1 cfs. Single-family residential developments of up to four lots, depending on the size of the lots, driveways, yards, and structures, would be expected to range from approximately 1 to 4 cfs peak discharge rates. Increases from commercial or industrial developments, depending on the size of the development, would likely be orders of magnitude higher (10s or 100s of cfs) than the increases expected from the construction of gravel access improvements along the utility ROW.

Additionally, a significant portion of the utility ROWs run through remote areas surrounded by forested land, and most of the constructed gravel access will runoff or be discharged to these adjacent forested areas, which will serve as a substantial vegetated buffer and provide the recharge to groundwater and pollutant removal that the Stormwater Standards aim to provide. Rarely would locations along the ROWs discharge to municipal stormwater systems, but these locations could be addressed on a case-by-case basis. Therefore, the relatively low increase in peak discharge rates associated with construction of gravel access improvements is even less likely to have an impact on water resources.

However, despite the relatively low increase in peak discharge rates and low likelihood of impacts to water resources, the effort and cost to comply with the stormwater standards would be significant, requiring Stormwater Control Measures (SCMs) like infiltration basins to be



constructed frequently along the utility corridors. Some utility corridor projects being 50 or more miles long in the Commonwealth, could require hundreds or thousands of basins along the lines to meet the Stormwater Standards. At least one test pit to evaluate soils and seasonal high groundwater is required at each proposed infiltration SCM. The majority of these cross-country utility ROWs are difficult to access. The field testing, hydrologic calculations, and design associated with the projects would be extremely time-consuming and costly.

Many utility ROWs are located in areas where construction is extremely challenging due to steep slopes and rugged terrain as well as the presence of many wetland resource areas. Some of the utility ROWs are also narrow and space constrained. Adding the construction of SCMs to comply with the Stormwater Standards will be extremely challenging and, in many cases, not feasible due to space constraints, extreme terrain, and prevalence of wetland resource areas. Where ROWs are narrow with limited space, construction of SCMs may be required on private property, outside the utility ROW, adding complications with private landowners. Many utility ROWs also run through preserved forested and natural areas within the Commonwealth.

The construction of SCMs and resulting conversion of additional scrub shrub vegetation along the utility corridors will also result in the additional loss of valuable wildlife habitat. Various species of animals, birds, and insects, including pollinators, thrive within the utility corridors. Construction of hundreds of SCMs that are likely to consist of rip-rap/stone results in additional adverse impact.

Therefore, based on the low impact to the hydrology along the ROWs, the loss of valuable wildlife habitat that would result from the additional construction of SCMs, and additional complications from coordination with private landowners to extreme terrain, proximity to wetlands, and infeasibility of construction, the excessive effort and additional impacts seem to outweigh the benefits of complying with the Stormwater Standards.

### **Summary:**

- The proposed changes (impervious surface, compacted gravel, and Redevelopment definitions) make it difficult to argue against the applicability of and comprehensive compliance with the Stormwater Standards for utility projects proposing gravel access roads and work pads. Utility Projects with new gravel roads and work pads would not qualify as a Redevelopment project, so would not have the opportunity to meet the standards to the Maximum Extent Practicable.
- The proposed changes are geared towards large-scale commercial development and do not consider the immense cost and effort for cross-country utility projects.
- Cross-country ROW projects don't typically impact MS4 systems, have a low risk of water quality pollutants other than erosion due to low vehicle traffic, have low hydrological impact as peak flows are similar to or less than single-family residential development (for which up to four lots is exempt from meeting the Stormwater Standards) in each watershed along the ROW.
- The requirement to have long, linear projects meet Standards 2 – 4 would result in significant field investigation, calculations, design, and ultimately the construction of many SCMs (i.e., infiltration basins) along miles of ROW.
- The construction of SCMs for overall low benefit could result in a loss of additional quality habitat for birds, animals, pollinators, etc. along the ROW. The required SCMs would also require constraints to land that may not be owned by the utility.
- Transmission and distribution lines along these utility ROWs are an essential part of the electrical grid in New England, need to be maintained for resiliency, and require access by

construction vehicles to implement maintenance and construction projects safely. The utility ROWs vary in widths, can be space constrained, and often traverse steep and challenging terrain with bedrock and boulders prevalent, making it difficult to design and construct SCMs without requiring extreme construction measures and grading.



## Attachment B – Comments on the Regulations

# Redline 310 CMR 10 WETLANDS - DRAFT RESILIENCE 12-1-23.pdf Markup Summary

36

Page Label: 36



The definition of compacted gravel or soil will essentially make dirt roads “impervious” and therefor any “improvements” to the roads will be subject to the 80% TSS and 50% TP requirements. This, along with the setbacks and requirements specifically for Cold Water Fisheries (CWF) resources (100-foot setbacks & cooling water to 68 degrees) are going to pose significant challenges for western MA communities to comply and additionally fund. Probably 80% of the dirt roads in western mass cross a CWF at least once, and its often where the most problems are. The major problem facing dirt roads is washouts/erosion/mud/dust – which is all TSS – and taking into account how one would successfully use LID/ESSD (or SCM), have a 100-ft setback and lower the water temperature to 68 degrees prior to any discharges to a CFR is basically impossible. Suggest using the BMPs in the The Massachusetts Unpaved Road Best Management Practice Manual be accepted to meet the stormwater requirements to provide country drainage for dirt roads.

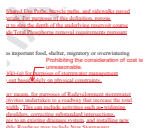
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Further, this definition will significantly constrain linear utility projects that need to build miles of access roads and gravel work pads to safely perform work (or emergency work) in linear ROWs. The costs of the required analyses to just ensure the TSS/TP standards are met would be significant. ROWs are rarely driven on and the main “pollutant” would be sedimentation which can be overcome with long-term BMPs such as swales, plunge pools, and water bars. Suggest conforming to the BMPs in The Massachusetts Unpaved Road Best Management Practice Manual (or similar) be accepted as SCMs and will comply with the stormwater requirements without the test pits, hydrologic modeling, soil testing, etc. having to be completed.

41

Page Label: 41



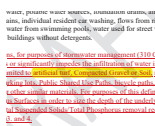
Prohibiting the consideration of cost is unreasonable.

Page Label: 41



Impossible is highly restrictive. Suggest practicable.

Page Label: 41



artificial turf, Compacted Gravel or Soil

surface that prevents  
including, but not lin  
ops, solar arrays, par  
concrete, asphalt, or  
ments are Imperviou

Page Label: 41

solar arrays



Page Label: 41

groundwater recharge and water quality will not be  
required for this "impervious surface"?



Page Label: 41

Including gravel and dirt road as impervious based  
on compaction measurement of 145 PSI is difficult  
to measure (and for Conservation Commission to  
confirm). Could a range of materials be defined  
for use, a certain size of gravel, or containing a  
certain percentage of fines be defined as  
impervious instead?

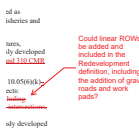
43



Page Label: 43

Since municipal and utility ROW roads have similar  
constraints as MassDOT roads/highways, could a  
Macro-Approach (or similar) be applied to  
municipal and utility ROW road projects?

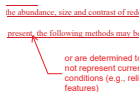
48



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Could linear ROWs be added and included in the  
Redevelopment definition, including the addition of  
gravel roads and work pads?

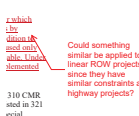
49



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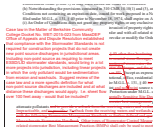
or are determined to not represent current  
conditions (e.g., relic features)

55



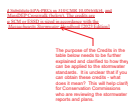
Page Label: 55

Could something similar be applied to linear ROW  
projects since they have similar constraints as  
highway projects?



## Page Label: 61

Case law in the Matter of Berkshire Community College Docket No. WET-2015-023 from MassDEP Office of Appeals and Dispute Resolution established that compliance with the Stormwater Standards is not required for construction projects that do not create new point source discharges in jurisdictional areas. Including non-point source as requiring to meet ESSD/LID stormwater standards, would bring in a lot more projects into jurisdiction, including linear projects in which the only pollutant would be sedimentation from erosion and washouts. Suggest review of the case law and a more specific definition for what non-point source discharges are included and at what distance these discharges would apply. I.e. sheet flow over 100 feet away - would that be included?



## Page Label: 66

The purpose of the Credits in the table below needs to be further explained and clarified to how they can be applied to the stormwater standards. It is unclear that if you can obtain these credits - what does it mean? This will help clarify for Conservation Commissions who are reviewing the stormwater reports and plans.



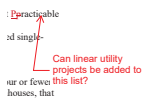
## Page Label: 71

This is not reasonable, in particular on large highway projects in which existing or proposed controls need to be used due to site constraints.



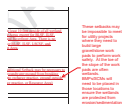
## Page Label: 71

This may push many redevelopment projects to provide their Stormwater management off-site. This could result in encumbering areas that are already socially constrained (i.e. EJ areas) and not meet the equity goals for the state of MA.



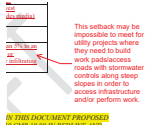
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Can linear utility projects be added to this list?

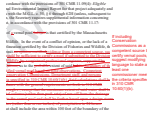


## Page Label: 74

These setbacks may be impossible to meet for utility projects where they need to build large gravel/stone work pads to perform work safely. At the toe of the slope of the work pads are often wetlands. BMPs/SCMs will need to be placed in those locations to ensure the wetlands are protected from erosion/sedimentation.

**Page Label: 75**

This setback may be impossible to meet for utility projects where they need to build work pads/access roads with stormwater controls along steep slopes in order to access infrastructure and/or perform work.

**Page Label: 130**

If including Conservation Commissions as a competent source to certify vernal pools, suggest modifying language to state at least one commissioner meets the criteria specified in 310 CMR 10.60(1)(b).

**From:** [Amy Green](#)  
**To:** [DEP Wetlands \(DEP\)](#)  
**Cc:** [Amy Green](#)  
**Subject:** Wetlands-401 Resilience Comments Resilience 1.0  
**Date:** Thursday, April 18, 2024 12:09:28 PM

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**CAUTION:** This email originated from a sender outside of the Commonwealth of Massachusetts mail system. Do not click on links or open attachments unless you recognize the sender and know the content is safe.

I am writing to support MSMCP's comments on the proposed draft regulations. I have not reviewed any of the Coastal related revisions or comments.

I am the Conservation Agent in Littleton and on the Conservation Commission in Acton. Prior to becoming an agent I was a Wetlands Consultant. All together I have over 40 years of experience in the MA regulations and permitting process.

In particular:

I whole heartedly agree with their comment at 10.05(4)(a) that regulations should not require a full-blown SWPPP for every NOI, in particular as it applies to unpaved footpaths (10.50(6)(m) (6)) as well as boardwalks

10.02(2)(b) Minor exemptions – increasing the considered width of unpaved trails on ANY public trail systems to 4 feet makes sense

10.02(2)(b) Minor exemptions – pools; I agree that in ground pools can be very impactful, but above ground pools can have the same issues when they have large gravel “foundations” and associated deck, fencing, pool house and discharge of chlorinated water

New Minor Activity for hazard trees – this would also ease the Commission burden, especially with provision such as documentation by an expert (not associated with firm taking down the tree)

Definitions – vernal pool. I agree that impacts to vernal pool habitats are often uncontrolled and regulating the 100 foot area, even if outside of other resources areas, would provide more protection, even though the amphibian species who use the pool go well beyond the 100 feet

10.53: Limited Projects – Large scale invasive species work in wetlands. MSMCP suggests a limited project here but I don't agree. Some of these projects can easily exceed an acre and, while clearly beneficial, should be fully regulated.

10.05 Procedures: Clarification of which projects are subject to full stormwater review, and the necessity of at least getting a PE to stamp the forms, would be very beneficial to projects such as unpaved foot paths and boardwalks

10.57 LSF: I believe that Wildlife Habitat should be an ILSF function/value and it should be up to the applicant to prove that it has no value.

## FORMS

I most specifically agree that application forms should mirror permit forms and especially that the permit forms should reflect performance standards

Negative Determinations for small scale or low impact projects such as hand pulling invasive species would go a long way to getting people to tackle their invasive species

## GUIDANCE DOCUMENTS

BMPs to allow simplified review for removal of hazard trees would be very beneficial (also reiterated under their MISCELLANEOUS comments); any guidance document for invasive species should give heavy consideration to disposal methods and the possibility, for example, of taking invasive species to an incinerator with an easier pathway

As I said, I agree with all the other MSMCP comments, but the ones above I would especially support.

Thank you for all your time in this effort

Amy Green  
Conservation Agent  
Littleton Conservation Commission  
37 Shattuck Street  
PO Box 1305/Room B100  
Littleton, MA 01460  
978-540-2428  
Hours – M-Th 9:00 – 1:00

---



**From:** [Amy Green](#)  
**To:** [DEP Wetlands \(DEP\)](#)  
**Subject:** Wetlands-401 Resilience Comments Resilience 2.0  
**Date:** Thursday, April 18, 2024 11:39:15 AM

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**CAUTION:** This email originated from a sender outside of the Commonwealth of Massachusetts mail system. Do not click on links or open attachments unless you recognize the sender and know the content is safe.

I am writing to support MSMCP's comments on their urging DEP to simplify wetland permitting for trail work and habitat restoration on public open spaces. I believe you are referring to this as Resilience 2.0

I am the Conservation Agent in Littleton and on the Conservation Commission in Acton. Prior to becoming an agent I was a Wetlands Consultant. All together I have over 40 years of experience in the MA regulations and permitting process.

Working in a very wet town, where trail use is increasing and existing wetland crossings are becoming at least seasonally wetter, it would be huge benefit to be able to ease the permitting of these boardwalks to protect the wetlands from trampling, compression, and widening of the trails as people try to avoid mud.

With regard to invasive species removal, the permitting often stymies local land owners from trying to control invasives in or near wetlands, so making that a bit easier to navigate would have huge ecological benefits.

Thank you so much for considering these changes, which I think will benefit wetlands overall.

Amy Green  
Conservation Agent  
Littleton Conservation Commission  
37 Shattuck Street  
PO Box 1305/Room B100  
Littleton, MA 01460  
978-540-2428  
Hours – M-Th 9:00 – 1:00



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#### LAND MANAGER:

David Dargie

To: Massachusetts Department of Environmental Protection  
(MassDEP) [dep.wetlands@mass.gov](mailto:dep.wetlands@mass.gov)  
Re: Wetlands-401 Resilience Comments  
April 28, 2024

Dear MassDEP Wetlands staff:

Thank you for considering suggestions for updating the [Wetlands Protection Act](#) (310 CMR 10.00) to better support the needs of conservation organizations and the more than sixty community land trusts in Massachusetts. Our organization, the all-volunteer land trust known as the Andover Village Improvement Society ([AVIS](#)) protects 1250 acres of conserved land on 35 reservations in Andover and maintains trails for public enjoyment. The extensive fragmentation of open space in town combines with a heavy deer population to create conditions that favor invasive plants. Andover is bordered by the Merrimack River, and includes the Shawsheen River, the Skug River, and extensive wetlands, streams and ponds. Many AVIS properties are adjacent to or encompass such landscapes.

AVIS has a thriving community of volunteers committed to removing invasive species using hand tools and thereby encouraging native species for restoration of wildlife communities on AVIS properties. Andover also has an eager cadre of aspiring Eagle scouts who contribute boardwalks on wet sections of our trails. To comply with the current regulations of the Wetland Protection Act, onerous permitting activities are required. We work closely with our Conservation Commission, hire professionals to apply chemicals if needed and follow best practices. **Submitting permit requests for each property we manage (35) is truly onerous for us and for the Commission.**

It is critical that we engage the public to support native species under difficult circumstances created by climate change and unbalanced pressures from deer browsing and suburban development. For the "Resilience 2.0" planning process, regulatory changes would benefit from early and close coordination with local and regional land trusts, conservation staff, and trail organizations. Following are some specific 2.0 suggestions that relate to important climate resilience work needed in the Commonwealth's open spaces:

**A. Trail Maintenance and Construction** should not be discouraged by time-consuming, costly, or complex wetland permitting. Narrow unpaved pedestrian walkways in publicly accessible open space often traverse

wetlands. When trails in wetlands are properly constructed with best trail management practices (BTMPs), they help protect wetland resources by creating stable trail surfaces that limit improper widening of the footbed and trampling of vegetation by hikers seeking to avoid wet areas. Well-used trails help build a culture of appreciation and stewardship for these vital wetland resources.

1. All trails on public open space should be regulated the same. Currently unpaved pedestrian walkways (i.e., trails) located within a buffer zone or Riverfront Area and less than 3' wide for public access on "Conservation Property" are exempt from wetland permitting (10.02(2)(b)2.a.).

Given concerns about tick exposure on narrow trails, few trails are less than 3" wide; most land trusts are maintaining trails wide enough for two people and with an additional setback so hikers do not brush against vegetation. We ask that this wording be modified so that the exemption more accurately reflects current recreational trail conditions.

Many trails traverse general municipal land, land trust properties, and private property with conservation restrictions. **We ask MassDEP to add a definition to 10.04: "Conservation Property" to include all these types of natural land onto which the public is invited in the "trails" exemption.**

2. Trail Maintenance. Boardwalks, puncheons, waterbars, and other basic trail infrastructure need to be routinely replaced, expanded, and/or created. **We ask that MassDEP create an exemption for recreational trail maintenance similar to the exemptions afforded to existing structures associated with many other public services in 10.02(2)(a)(2).**

3. Trail Construction. Most boardwalks and puncheons are elevated only 4-12" above the ground for safety reasons. Unfortunately, the regulations currently consider these common wooden structures to impair the wetland because they shade out vegetation, resulting in a "loss" of wetlands, even when they do not impede water flow. Therefore, such projects require wetland replication which requires wetland professionals, groundwater assessments, and detailed plans and execution. Wetland replication generally involves cutting down trees and shrubs and excavating soils in buffer zones. AVIS doesn't have the necessary expertise, funding or space to undertake such a complex permitting or replication process. **We ask that MassDEP simplify permitting of trail construction projects by:**

- a. Adding a limited project provision similar to 10.53(3)j to allow: "The construction of public footpaths and associated boardwalks/puncheons, that are close to the ground provided, however, that such structures are constructed on pilings, sills, or posts so as to permit the reasonably unobstructed flowage of water".

**B. Habitat Restoration by means of Invasive Species Management.** As mentioned above, invasive plant control work on AVIS properties requires the same time-consuming, costly, and complex wetland permitting devised for construction projects. Hand-removal of

invasive plants by our volunteers can minimize the dramatic negative effects of these plants and allow for the recovery of native species diversity and native wildlife habitat, a recognized wetland value. **We ask that MassDEP simplify the permitting process for certain habitat restoration projects involving invasive species management.** This could be accomplished by the following changes:

1. Create a new minor activity in 310 CMR 10.02(2)(b)2 which allows for the removal of turf lawn and/or non-native invasive herbs, vines, and shrubs, in compliance with 10.02(2)(b)1.
2. Revise the definition for "Alter" in 310 CMR 10.04(c) from "the destruction of vegetation" to "the removal or destruction of native vegetation". This would simplify many things, since most volunteer work parties simply use hand tools to remove invasive plants in order to tip the balance back to native plants.
3. Add a limited project provision in 10.53(3) which specifically allows small-, medium- and large-scale invasive species removal projects with distinct regulatory review standards. Alternatively, include small-medium- and large-scale invasive species removal projects in Ecological Restoration Limited Project in 10.53(4)(e).

Thank you for your careful consideration of these recommended regulatory changes. We look forward to working with you on simplifying the wetland permitting processes for these needed climate resilient strategies for managing our AVIS properties for public enjoyment of our native landscapes.

Sincerely,

A handwritten signature in black ink that reads "Annie W Gilbert". The signature is written in a cursive, flowing style.

Annie Gilbert  
Vice President, AVIS

# Comments on the Redline 310 CMR 10 WETLANDS- DRAFT RESILIENCE 12-1-23

Submitted by Andrew Koenigsberg, PG



## 1. Section 10.04 General Provisions - Definition of Saturated Hydraulic Conductivity Test

The text states the following:

*“Saturated Hydraulic Conductivity Test means a field test to determine the rate at which water percolates through saturated soils to transmit a volume of water per unit time in the vertical direction . . .”*

This definition confuses Infiltration Rate with Saturated Hydraulic Conductivity ( $K_{sat}$ ). Although both Infiltration Rate and Hydraulic Conductivity use units of L/T, they are not the same thing.

$K_{sat}$  is a measure of the ability of water to flow through porous media (Fetter, 2001) and is defined by Darcy’s Law. It is an intrinsic property of the soil.

Infiltration Rate cannot be determined through field testing. It is a calculated value based on the volume of water to be applied over a specified time to a specified area .

Infiltration rate is determined in an entirely different manner using this formula:

$$R = \frac{\left(\frac{V}{T}\right)}{A}$$

where:

R = infiltration rate (L/T)

V = recharge volume ( $L^3$ )

T = recharge time

A = SCM bottom area ( $L^2$ )

Furthermore, the remainder of the definition should be struck.

Means and methods should be defined in the Stormwater Handbook, which is a guidance document.

Limiting the tests only to permeameters precludes the use of other testing methods which are acceptable to DEP Bureaus, such as the Groundwater Discharge Permit program and used routinely by engineers who submit hydrogeologic reports to DEP.

First off, permeameter tests are limited to determining  $K_v$ , whereas  $K_h$  is required for other analyses specified in the Stormwater Handbook, such as mounding analyses. Slug tests and estimates based on

grain-size analyses are also legitimate. Both of these widely accepted methods can provide a reasonable estimate of  $K_h$  as long as they are performed correctly.

Slug tests are performed directly in the aquifer, if saturated conditions exist beneath the proposed SCM. They require the installation of a monitoring well. Commercial programs are available to analyze the data. Expertise is required to perform and analyze slug tests as would also be the case for permeameters, but slug testing is an acceptable and widely-used process for obtaining these data.

Estimates of  $K_h$  can be made using grain-size analysis. A variety of methods are available, but their applicability is based on the specific engineering properties of the soil. A method applicable to a sand may not be applicable to a sandy loam. A publicly available Excel-based program called HydroGeoSieveXL (Devlin, 2015) is a very useful tool which can evaluate grain-size distribution and determine which methods are applicable. I have used it to provide estimates of  $K_h$  when obtaining  $K_{sat}$  by in situ methods either failed or were not available. However, bulk density of soils must be considered when using grain size methods (NRCS, 2019). Furthermore, grain-size analysis must include the clay fraction, which requires the analysis to include the hydrometer component.

The regulations do not have to specify or detail these additional tests and neither does the Stormwater Handbook. All either document has to do is state that  $K_{sat}$  can be estimated using any scientifically acceptable and defensible methodology.

In light of the above, the text needs to be modified as follows:

*“Saturated Hydraulic Conductivity Test means a field test to **estimate saturated hydraulic conductivity of the soil using any scientifically acceptable and defensible methodology. The documentation of each test result shall be included as an appendix to the Stormwater Report.**”*

## 2. Section 10.04 General Provisions - Definition of Seasonal High Groundwater Elevation

Item b.1. needs to be modified as follows:

1. *“observation of actual water table **via piezometers or monitoring wells installed within the footprint of the proposed infiltration system(s) during times of annual high water table (typically March or April) compared to long- term USGS observation wells located within the same major river basin and which are in the same type of geologic formation. Multiple measurements over this period are required.**”*

## 3. Section 10.05 Procedures – 5.(6)(k)3. Paragraph 2 – 0.01 inch per hour requirement.

The text states: *This Standard is met when underlying soils have a saturated hydraulic conductivity rate of at least 0.01 inch/hour.*

First and foremost, as discussed above, there is no such thing as “saturated hydraulic conductivity rate” in groundwater hydrology.  $K_{sat}$  is a measure of the ability of water to flow through porous media (Fetter,



2001) and is defined by Darcy's Law. It is an intrinsic property of the soil, even though it uses units of Length/Time. This concept is explained in detail in any groundwater hydrology or hydrogeology textbook (See Fetter, 2001 for example).

Second, neither hydraulic conductivity nor infiltration rate are useful standards for compliance. The metric for compliance should be performance based, thus the other two standards, drainage time and infiltration volume are appropriate. **Infiltration rate is not appropriate and needs to be struck from the Standards.**

Third, nowhere in the regulations or the draft Stormwater Handbook can I find a meaningful explanation of how 0.01 inch per hour value was determined. Footnote 12 on Page 2-9 of the draft Stormwater Handbook states the following:

*"The required minimum infiltration rate is 0.01 inches per hour. To determine the infiltration rate, Applicants must perform a soil evaluation using the methodologies set forth in Section 6.3.13 EPA Region 1 Performance Removal Curves via EPA BATT (version 2.1): <https://www.epa.gov/npdes-permits/stormwater-tools-new-england#swbmp>."*

I reviewed the instruction manual for the referenced tool available from the EPA Region 1 website. Nowhere in that document does it reference a minimum infiltration rate of 0.01 inch/hour or how it can be derived.

The derivation of this minimum infiltration rate needs to be explained, supported by appropriate literature citations, and independently peer reviewed before it is added to the regulations or Stormwater Handbook.

#### 4. Section 10.05 Procedures – 5.(6)(k)3. Paragraph 2 – 72 Hour Infiltration requirement.

The following standard is vague:

*"... the recharge practice is designed to infiltrate the runoff into the ground fully within 72 hours"*.

The standard does not specify when the clock starts. Is it from the beginning of the 24-hour storm or the end of the storm? This difference is significant a more specific definition is required.

See Comment 8 for recommended text changes.

#### 5. Section 10.05 Procedures – 5.(6)(k)3. Paragraph 3 – Mounding Analysis – Vertical Separation Distance

The text states: *"Mounding analysis is required when the vertical separation from the bottom of an exfiltration system to Seasonal High Groundwater Elevation is less than four feet"*

The standard that a mounding analysis is required only when the vertical separation is less than four feet does not take into account that the saturated thickness of the underlying aquifer may not be thick

enough to allow the system to drain within the 72-hour requirement. It assumes that there is no bottom to the underlying aquifer or that the character of the soils do not change with depth.

For instance, bedrock could be two feet below the ESHGW and the system design would still meet the standard.

Using the computer application HANTUSH (Smith, 2024) I ran a series of mounding analyses where I varied only Saturated Thickness (H). The results shown on Figure 1 demonstrate that as H is decreased, the infiltration SCM fails to drain within the required 72 hour period.

## 6. Section 10.05 Procedures – 5.(6)(k)3. Paragraph 3 – Mounding Analysis – Seasonal High Groundwater and Infiltration Practice

The text states: *“The mounding analysis must demonstrate that the seasonal high groundwater does not elevate into the infiltration practice, rise above the ground surface . . .”*

This requirement is not needed. The consequence of this requirement will be infiltration systems will have to be much larger than necessary, resulting in unneeded expense in design and installation.

As shown in Figure 1, modeled increase of groundwater elevation into the SCM based can occur, especially when the starting point is Seasonal High Groundwater (SHGW). This event does not mean that the infiltration practice has failed. As long as the infiltration practice drains within 72 hours post-storm, then the system is functioning as expected.

I recommend that this requirement be removed.

## 7. Section 10.05 Procedures – 5.(6)(k)3. Paragraph 3 – Mounding Analysis – Resource Area Water Surface Elevation.

The text states: *“The mounding analysis must demonstrate that seasonal high groundwater does not . . . elevate the water surface of any Resource Area over a 72-hour period”*

This requirement is unneeded based on fundamental surface and groundwater basic groundwater hydrology principles.

Storm events are transient in nature. Discharge to groundwater into an infiltration system specifically designed to replace natural infiltration from a storm event will not and cannot raise the water table in a resource area in any significant manner. Insisting on such a standard means that infiltration systems may have to be substantially increased in size unnecessarily, or moved farther away from resource areas for no scientifically valid reason.

The requirement also ignores the fact that among the interests of M.G.L. c. 131, § 40 are flood control and storm damage prevention. In other words, it is expected that wetlands will naturally see increases in water levels during and after storm events which will naturally decline after the storm event is over which is an observable and well documented fact. In fact, groundwater discharge is one of the primary ways wetlands stay wet or rivers, ponds and lakes gain water.

All water that infiltrates into the ground will discharge to a resource area as shown conceptually in Figure 2, which is a fundamental concept that can be found in any hydrogeology textbook. With few exceptions, wetlands, streams, ponds and lakes are all surface expressions of the water table, so recharge from all infiltration SCMs will discharge into resource areas eventually.

Storm events will rapidly change the surface water level in a resource area, as shown in Figure 3. The information used to create this chart was obtained from publicly available databases of measurements recorded at the Harvard Forest Field Station (Harvard, 2023). Figure 3 shows that wetland water levels at the station can change several tenths of a foot within 24 hours during a storm event. These natural fluctuations in response to precipitation events of any size or duration will overwhelm any increase in surface water level elevations which could be caused by groundwater discharge to a resource area from an infiltration SCM.

A mounding analysis can show the increase in hydraulic head in the aquifer caused by a significant infiltration event. This increase does not directly correspond to an equivalent increase in surface water elevation. When accounting for displacement of water in a porous medium, the equivalent increase in surface water elevation is a fraction of the increase in hydraulic head, as demonstrated in Figure 4.

Figure 4 shows that even a one foot rise in aquifer hydraulic head beneath a wetland would correspond to a temporary 0.3 foot increase in surface water elevation, assuming an effective porosity of 0.30. This increase is equivalent to the variation in wetland water levels that may occur during a storm event as surface water discharges into a wetland. In fact, basic evapotranspiration can cause water levels beneath a wetland to vary as much as 0.10 foot over the course of a single day as shown on Figure 5. Again, the mound is due to a transient event and will decline, resulting in no long term impacts to a resource area.

Based on the above discussion, the conclusion is that groundwater discharge into a resource area due to an infiltration SCM will be overwhelmed by natural processes which occur far more rapidly than any possible transient impacts from an infiltration SCM.

As the new regulations do not explain why this requirement was added, I can only surmise that the concern is that stormwater discharge from the underlying aquifer will lead to flooding and erosion of the resource area. I can understand the concern, but it is not an actual issue. Groundwater discharge into a resource area cannot cause flooding.

Surface stormwater flows are measured in ft/second. According to the Minnesota Stormwater Manual (MPCA, 2008), surface water flow rates in even poorly vegetated soils composed of sand, silt, sandy loam, or silty loam can be as much as 1.5 ft/second without causing erosion. When these soils are well vegetated, velocities can be as high as 3 ft/second without causing erosion.

Once water infiltrates into the ground, groundwater flow rates are thousands of times slower. Flow rate through a saturated medium is called seepage velocity (Fetter, 2001) and is defined as:

$$v_s = (K_h \times (dh/dl)) / \eta_e$$

Where:

$v_s$  = seepage velocity

$K_h$  = horizontal hydraulic conductivity

$dh/dl$  = horizontal hydraulic gradient

$\eta_e$  = effective porosity

Assuming:

$Kh = 100 \text{ ft/day}$  (a reasonable  $K$  for a sand)

$dh/dl = 0.01$  or 1 foot drop in 100 horizontal feet

$\eta_e = 0.25$  (typical value for a sand sand)

$$v_s = (100 \times 0.01)/0.25 = 4 \text{ ft/day or } 4.6 \times 10^{-5} \text{ ft/second}$$

This velocity does not account for dispersion which would further slow flow rate (Fetter, 2001).

Seepage of groundwater into a wetland or other resource area simply cannot cause erosion or flooding because it flows far too slowly to cause damage, thus this requirement is not needed and should be deleted from the proposed regulations.

See Comment 8 for recommended text changes.

## 8. Section 10.05 Procedures – 5.(6)(k)3. Paragraph 3 – Mounding Analysis – Recommended Revised Text

Given the above discussion, I recommend that the relevant text in Section 10.05 Procedures – 5.(6)(k)3. Paragraph 3 be revised as follows:

*Mounding analysis is required when the vertical separation from the bottom of an exfiltration system to Seasonal High Groundwater Elevation is less than four feet or the separation is less than 6 feet and the saturated thickness of the underlying aquifer is less than 5 feet for Hydrologic Soil Group A and B soils, or the saturated thickness of the underlying aquifer is less than 10 feet for Hydrologic Soil Group C soils when the recharge system is proposed to attenuate the peak discharge from a 10-year or higher 24-hour storm (e.g., 10-year, 25-year, 50-year, or 100-year 24-hour storm). The mounding analysis must demonstrate that the exfiltration system will drain within 72 hours after the end of the 24-hour storm.*

## Appendix A: References

Devlin, J.F. 2015, HydrogeoSieveXL: an Excel-based tool to estimate hydraulic conductivity from grain size analysis. Hydrogeology Journal, DOI 10.1007/s10040-015-1255-0

WEB: <https://kuscholarworks.ku.edu/handle/1808/21763>

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<https://directives.sc.egov.usda.gov/OpenNonWebContent.aspx?content=46752.wba>.

Smith, S.W., P.E, P.HGW, 2024, HANTUSH – Hantush Time and Distance Mounding Analysis Package Version 3, GeoHydroCycle, Inc. Newton, MA.

## Appendix B: Figures

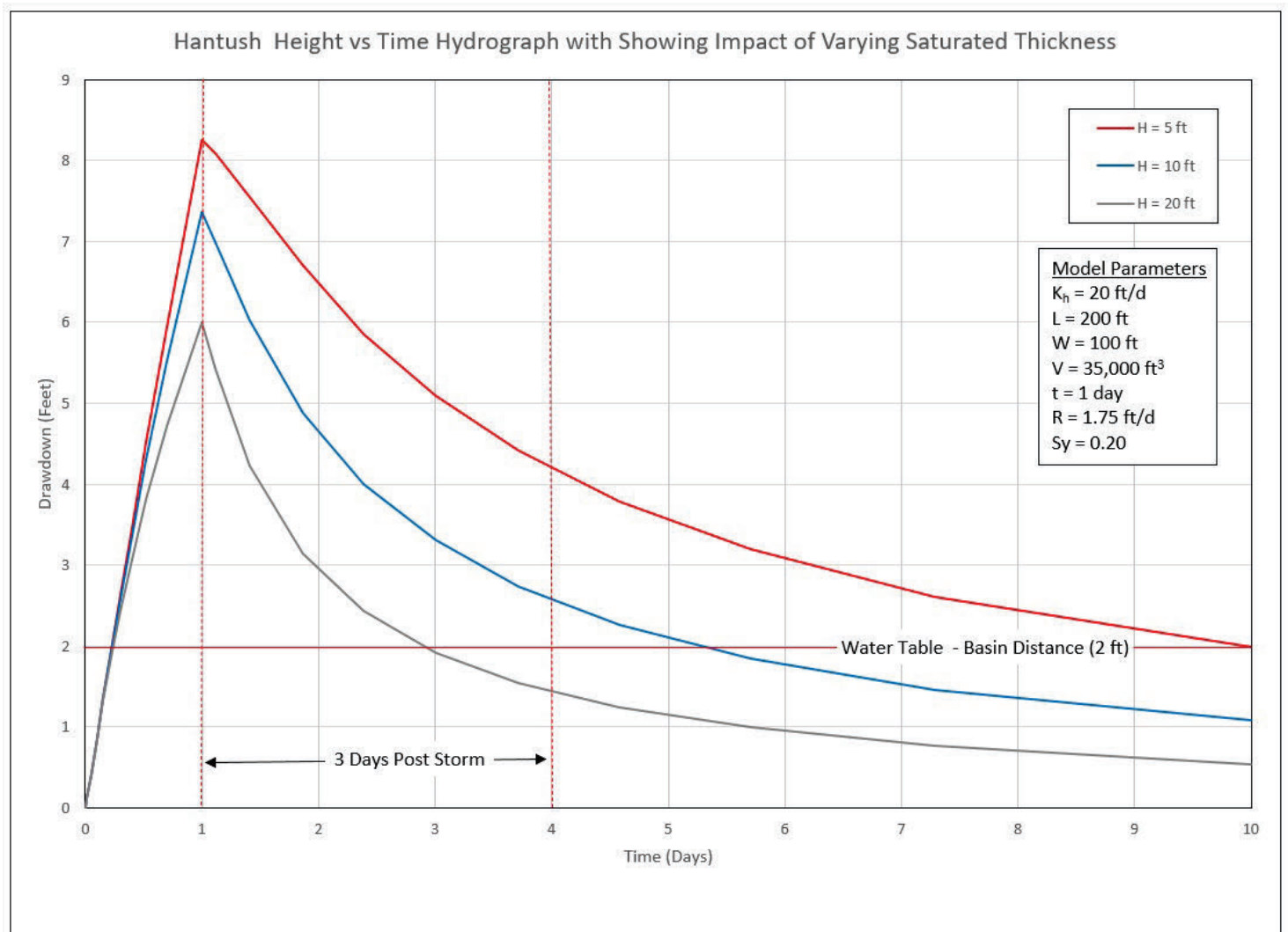


Figure 1 – Mounding analyses demonstrating the impact of varying saturated thickness.



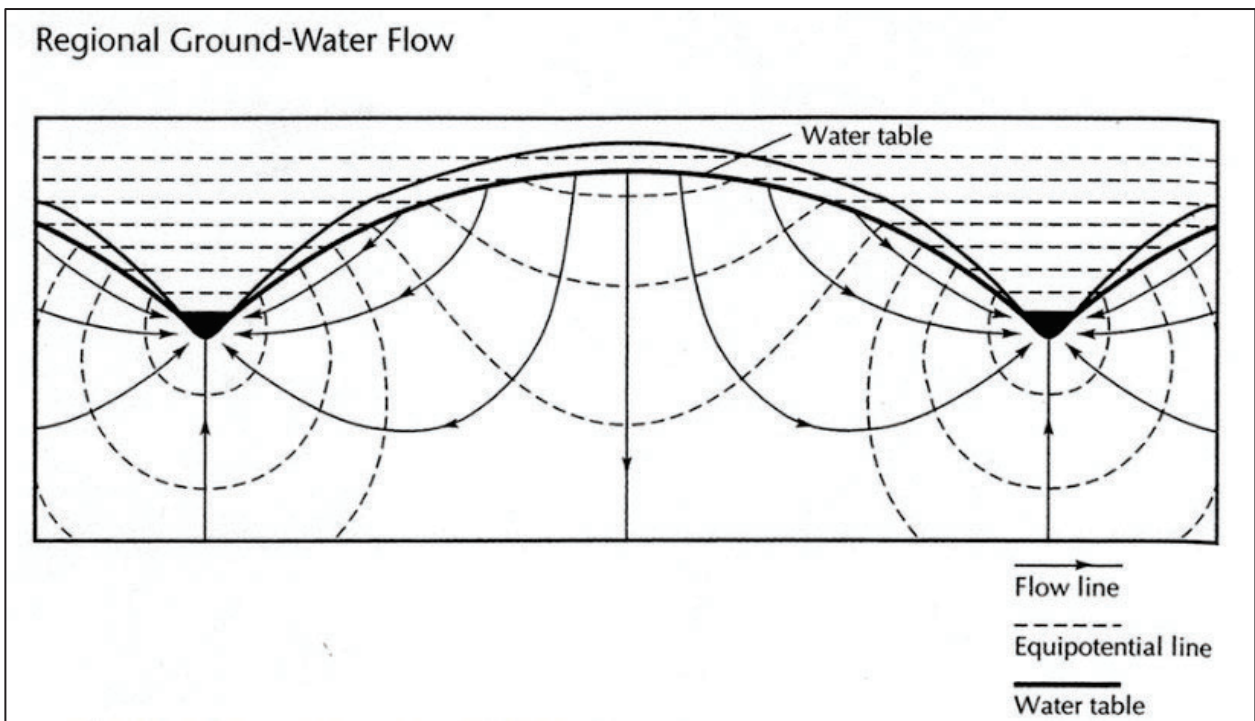


Figure 2 - Regional Groundwater Flow Net (Fetter, 2001)

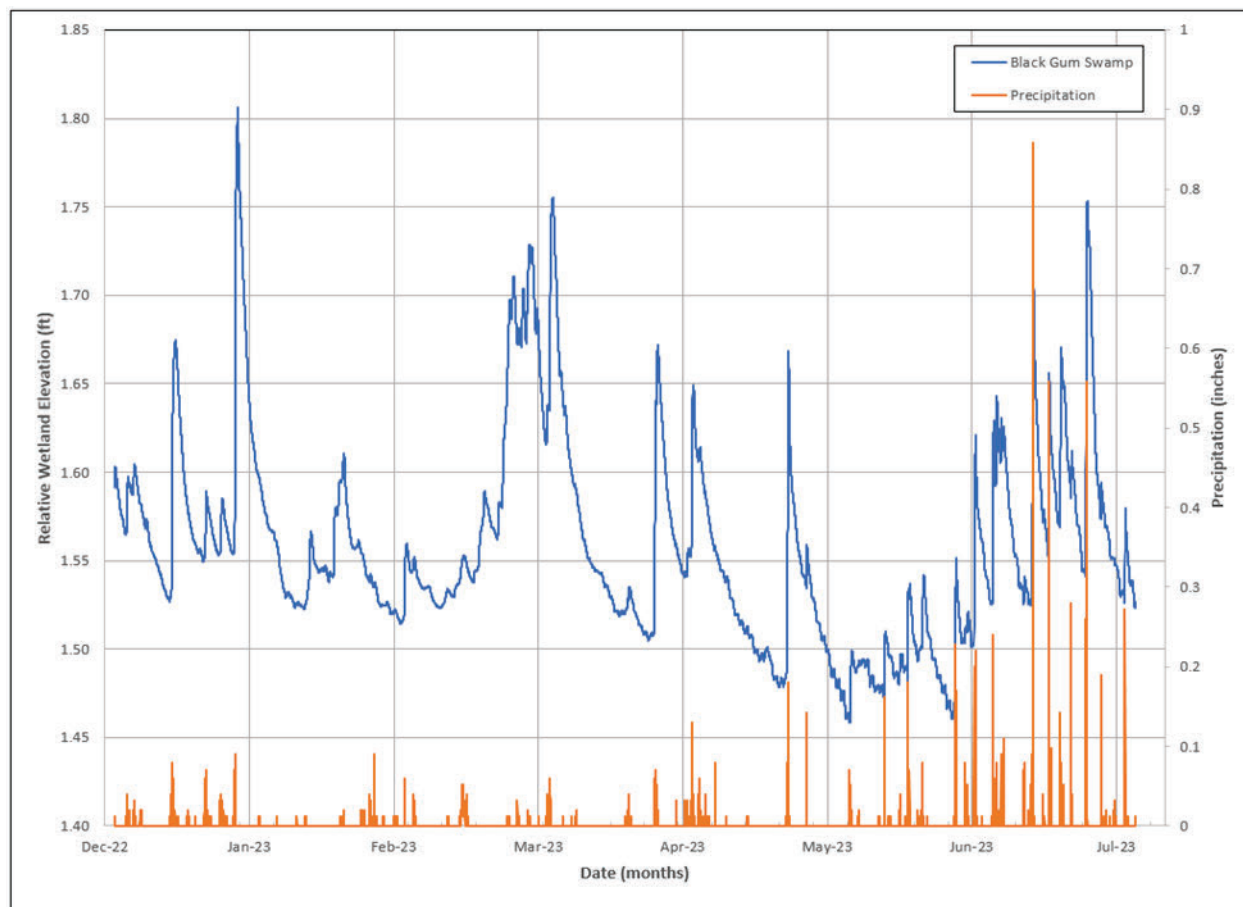


Figure 3 - Harvard Forest Black Gum Swamp Relative Water Level Elevation & Harvard Forest Meteorological Station Precipitation 01/01/2023 to 08/01/2023 (Harvard, 2023)

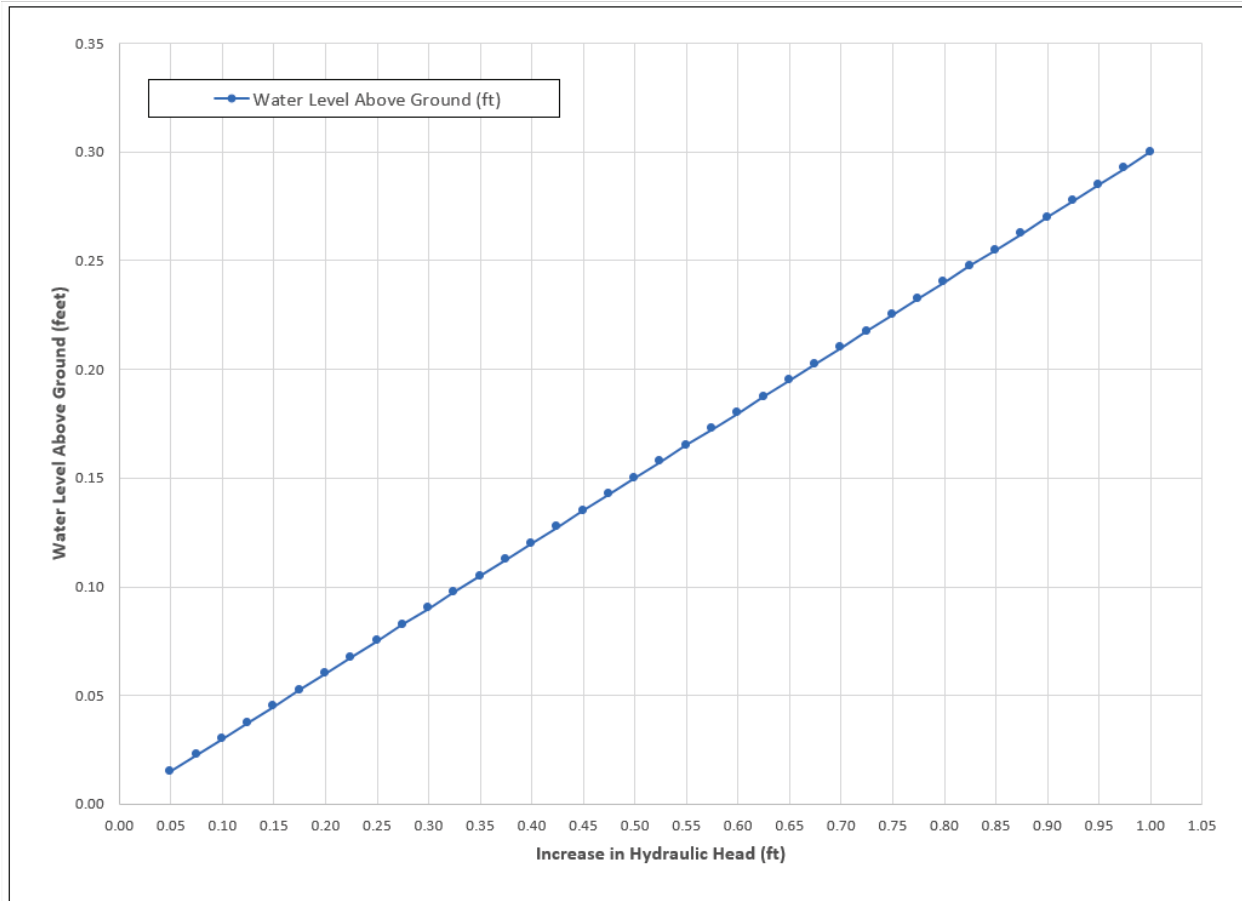


Figure 4 - Water Level Above Ground vs Increase in Aquifer Hydraulic Head Assuming an Effective Porosity of 0.30 (Andrew Koenigsberg)

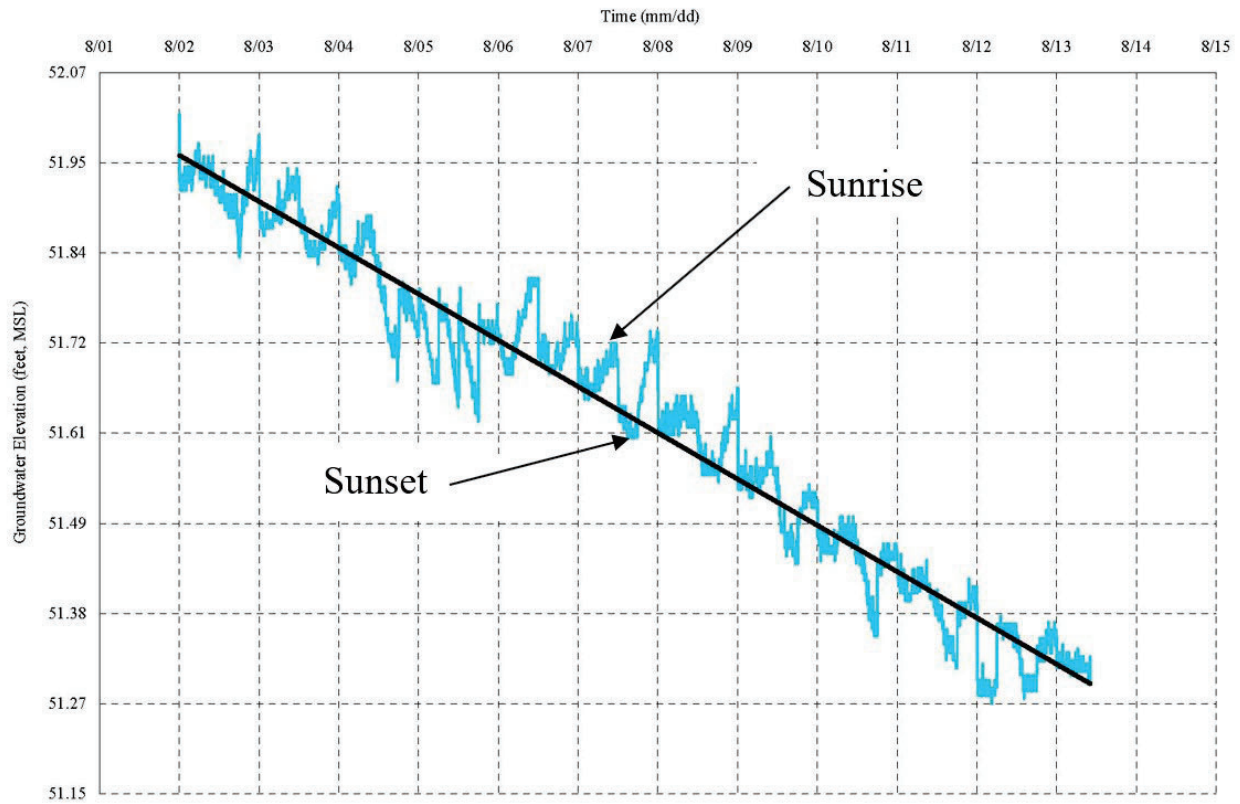


Figure 5 – Variation in groundwater Levels beneath a wetland at Turner Hill, Ipswich, MA (courtesy Stephen W. Smith, PE, PHGW)

**From:** [Anna Wilkins](#)  
**To:** [DEP Wetlands \(DEP\)](#)  
**Cc:** [grzendam@lincolntown.org](mailto:grzendam@lincolntown.org); [Emily Merlino](#)  
**Subject:** Wetlands-401 Resilience Comments  
**Date:** Friday, April 5, 2024 5:50:27 PM  
**Attachments:** [image001.png](#)

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Dear Mass DEP staff,

As a member of my town's Conservation Commission, Open Space Committee, former municipal Conservation Land Manager, and trail maintenance volunteer, I have seen MassDEP wetland regulations in action from all sides. We are grateful to MassDEP for the being on the front lines of enforcing the regulations that protect our precious water resources and commend you for crafting regulations that help make Massachusetts ecosystems more resilient to climate change. We eagerly await the "Resilience 2.0" regulations, however, these draft regulations do not go far enough and we strongly encourage MassDEP to begin to engage stakeholders in the "Resilience 2.0" planning process. Regulatory changes would benefit from early and close coordination with local and regional land trusts, conservation staff, and trail organizations. Following are two areas that relate to important climate resilient work needed in the Commonwealth's open spaces that we feel would benefit from modification.

Trail building and maintenance may not be top of mind when as a climate resilience issue, but for land conservation organizations and municipal departments, we understand that our trail systems are vitally important infrastructure in our communities. Well-used trails help build a culture of appreciation and stewardship for these vital wetland resources. When trails in wetlands are properly constructed with best trail management practices (BTMPs), they help protect wetland resources by creating stable trail surfaces that limit improper widening of the footbed and trampling of vegetation by hikers seeking to avoid wet areas. Encouraging BTMPs is ever more important as climate change intensifies storms and flooding therefor, trail Maintenance and Construction for public trails should not be discouraged by time-consuming, costly, or complex wetland permitting.

Habitat Restoration can also be impaired by MassDEP. We need to simplify the permitting process for certain habitat restoration projects involving invasive species management. Non-native invasive plants pose a major threat to the health and survival of our native ecosystems and are on the rise with climate change. Currently, invasive

plant control work can require the same time-consuming, costly, and complex wetland permitting devised for construction projects.

Improving the DEP regulations in this area by considering the solutions suggested by the *MA Society of Municipal Conservation Professionals* would be a significant positive change for the work we are doing in our communities as conservation land stewards, volunteer trail groups, and commission members.

Thank you for your careful consideration of these recommended regulatory changes. We look forward to working with you on simplifying the wetland permitting processes for these needed climate resilient strategies for managing our open space.

Sincerely,

*Anna Wilkins (she/her)*  
Executive Director

P.S. Your [Annual Fund Gift](#) Keeps Us Working! THANK YOU!

**North County Land Trust**  
325 Lindell Avenue  
Leominster, MA 01453  
[www.northcountylandtrust.org](http://www.northcountylandtrust.org)  
Office: (978) 466-3900  
Cell: (978) 821-0574



*Connecting Communities through Conservation*



Dear MassDEP,

I am pleased to see that by proposing 310 CMR 10.05(12), MassDEP is considering regulation changes that will explicitly recognize the importance of scientific research. However, I would like to comment on the proposed changes.

Section 4 for states “the project shall be limited in duration to no longer than one year”. I think this is far too short a time. We know that there are large interannual changes in precipitation, storms, sea level, and sea level amplitude. We also know the responses of many marsh grasses to a disturbance, or nutrient addition, often take more than a year to show up. The data collected in a single year will often be insufficient to make any conclusions on how the marsh is responding to the experiment.

Currently, there are many crucial observations and experiments being carried out on marshes that have been carried out for decades. As just one example, sediment accretion is commonly measured using a “Sediment Elevation Table”. This consists of a deeply set pipe in the marsh with a removable arm. Measurements are made once or twice a year to calculate accretion rates, but it commonly takes 5-10 years to get a reliable rate. In addition to the small pipe most investigators install small supports around the pipe for the investigator to put a ladder across for them to stand on to make the measurements without walking on the area being measured. These are not removed every year and in fact putting them in and out would compromise the measurement area. I could give many other examples, but the critical point is one year is not long enough for most research projects and for monitoring. Instead, it makes sense for the Conservation Commission to request an annual report with pictures (or do a site inspection if warranted). This seems sufficient for the Commission to decide whether or not to continue the permit. Requiring everything to be removed every year and a renewal of the permit will compromise both the site and the science.

Sincerely,

*Anne Giblin*

Anne Giblin  
Lead PI of the Plum Island Ecosystems Long-Term Ecological Research site  
Director, The Ecosystems Center

**From:** [ANNE HERBST](#)  
**To:** [DEP Wetlands \(DEP\)](#)  
**Subject:** Wetlands-401 Resilience Comments  
**Date:** Tuesday, April 30, 2024 11:40:27 AM

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**CAUTION:** This email originated from a sender outside of the Commonwealth of Massachusetts mail system. Do not click on links or open attachments unless you recognize the sender and know the content is safe.

To the MassDEP Wetlands program:

I strongly support DEP's efforts to address the changing conditions we are experiencing due to our warming climate. New regulatory strategies are critically important to protect our natural resources, and people and property as well. As a long-time Conservation Administrator in a coastal community and a current Commissioner in another coastal community I am relieved that long delayed regulations for Land Subject to Coastal Storm Flowage have been proposed. I have seen repeated and extensive damage in VE zones and strongly support the proposed restrictions for these areas. The proposed regulations for all of LSCSF will improve our management of coastal locations. I also support the increased requirements for stormwater infiltration in recognition of our changing precipitation patterns.

I am concerned that both the proposed stormwater and LSCSF regulations address only current conditions. Regulations should be crafted to address conditions projected to occur during the life of a project. I understand that DEP intends to develop a "2.0 version" of these regulations. I urge DEP to use that version, or some other mechanism, to ensure that we are not permitting projects destined to be in harm's way and harmful to future wetland resources. I also support regulatory updates that will encourage wetlands restoration projects.

Thank you for the opportunity to comment on the draft Wetlands Protection Act regulations. I appreciate the time and effort that staff and volunteers have devoted to improving the wetlands regulations.

Sincerely,  
Anne Herbst

**PROPOSED REVISIONS TO THE MASSACHUSETTS WETLANDS,  
TIDELANDS, AND WATER QUALITY REGULATIONS**

**Arcadis Comments**

April 29, 2024

**1. Background**

MassDEP is proposing regulation updates that promote environmental protection and public safety as the Commonwealth adapts to climate change. Revisions are proposed to the Wetlands Protection Act (WPA) regulations (310 CMR 10.00), Water Quality Certification (WQC) regulations (314 CMR 9.00), and the waterways Regulations (310 CMR 9.00).

The comments included herein are made by Arcadis as climate practitioners who have been working globally, nationally, and locally on climate resilience.

**2. Comments Relevant to Proposed Regulatory Changes Across Each Regulation**

**2.1. Definitions**

- 2.1.1. Land Subject to Coastal Storm Flowage (LSCSF), Velocity Zone, Moderate/Minimum Wave Action
- The definition of LSCSF has not changed in any of the revised regulations: “land subject to any inundation caused by coastal storms up to and including that caused by the “100-year storm,” “surge of record” or “storm of record,” whichever is greater.” Additionally, the resource still divided into zones related to wave energy within flood waters shown on the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRMs). The boundaries of the V-Zone, MoWA Zone, and MiWA Zone within LSCSF are still determined by reference to FIRMs. The new language allows proponents to “show flood zones are more landward or expansive, [using] credible evidence from a competent source, such as the methods and calculations in the most recent FEMA Guidelines and Specifications for Flood Risk Analysis and Mapping...information from the U.S. Geologic Survey Flood Event Viewer...[or] the best available information.”

*Comments:*

- *The current definition limits this resource area to a "static" zone. Delineations created using historic data within the FEMA FIRM are inadequate in to regulate the long-term coastal floodplain under climate change conditions, as evidenced by viewing the Massachusetts Coastal Flood Risk Model (MC-FRM). FIRMs only consider the 100-yr storm, the NE Region maps do not include dynamic modeling (present conditions). The MA Municipal Vulnerability Preparedness program expects municipalities to utilize the MC-FRM within their planning and implementation projects. Therefore, there will be continued inconsistencies between local routine work, and funded climate resilience projects if the regulations do not reference the MC-FRM to delineate the coastal floodplain, and the LSCSF resource area. Further, Design Flood Elevations should be based upon the MC-FRM rather than historic FIRMs.*
- *The Minimum & Moderate Wave Action zones are likely to “shift” based upon Sea Level Rise (SLR) and storm surge conditions and therefore should not have as much emphasis within the updated regulations.*

**3. Wetlands Regulations (310 CMR 10)**

### 3.1. Definitions (310 CMR 10.04)

#### *Comments:*

- *It's recommended that the Definition section of the regulations be moved to the beginning, perhaps after Introduction (310 CMR 10.01), as some terms are introduced in section 10.02-3 that readers may not understand without having the benefit of reading definitions first.*
- *The term "living shoreline" is not included within the revision. However, living shorelines are often what communities refer to when they wish to create resilience via nature-based solutions. A definition of a living shoreline, and ecological values/performance standards should be included, per the MA CZM Living Shoreline guide.*

### 3.2. Processes (310 CMR 10.05)

- Definition of "Maximum Extent Practicable" (MEP) is not included in the Definitions section, rather the section regarding stormwater best management practices (310 CMR 10.05(6)(o)). The regulations state: [proponents must] demonstrate that:
  - They have made all reasonable efforts to meet each of the Stormwater Standards
  - They have evaluated all possible stormwater management measures including ESSD and LID
- Including a provision for undertaking a "Scientific Test Project" is greatly appreciated due to the past difficulties to be innovative and try a technique that may not have been used in MA but has been proven elsewhere.

#### *Comments:*

- *MEP should be more clearly defined in section 10.04 and broadened so it is not limited to stormwater management, particularly because this phrase is used to allow work within the LSCSF resource area, as discussed below.*
- *It is recommended that a clear definition – that has been vetted by the academic community – is included within the definitions (310 CMR 10.04).*

### 3.3. Activities Subject to Regulation - Stormwater Management (310 CMR 10.02(2)(d))

The "Activities Outside the Areas Subject to Protection under M.G.L. c. 131, § 40 and the Buffer Zone." Further, this section states that work is subject to regulation if the activity "actually alters an Area Subject to Protection under M.G.L. c. 131, § 40."

#### *Comments:*

- *The regulations still do not include a consideration of improving stormwater drainage systems for climate resilience. While we commend the Commonwealth for including updated precipitation data and making some standards more stringent, climate resilience should be incorporated into redevelopment and drainage improvement projects.*
- *The phrase: "actually alters an Area Subject to Protection under M.G.L. c. 131, § 40" should be explained. From an environmental advocate's perspective, this could mean heavy volumes of discharge that begins to erode a stream or riverbank, as well as introduce high volumes of freshwater drainage – whether treated or not – into a salt water wetland that begins to degrade due to salinity changes (and pollutants if not treated).*

### 3.4. Land Subject to Coastal Storm Flowage (310 CMR 10.36)

#### 3.4.1. Definitions (310 CMR 10.36(2))

*Comment: Please see comments regarding definitions in Section 2.2.*

## Waterways Regulations (310 CMR 9)

### 3.5. Engineering and Construction Standards (310 CMR 9.37)

- The updated standard states that All fill and structures shall be designed and constructed in a manner that: “incorporates the impacts of projected sea level rise throughout the design life of the building, structure, fill, open space or publicly accessible area or facility. An applicant shall consult the Resilient.mass.gov website for the most current mapping and other available information related to shoreline change and sea level rise or other similarly reliable sources, as deemed appropriate by the Department.”
- Projects within a Velocity Zone (310 CMR 9.02a Velocity Zone) cannot include “new or expanded buildings for residential use shall not be located seaward of the high watermark.”

*Comment: We applaud these additional provisions and recommend that similar statements are considered for the WPA revisions, particularly with respect to V-Zone construction.*

## 4. Stormwater Management Standards

### 4.1. Rainfall Data

We support the state’s consideration of up-to-date data regarding precipitation particularly the use of 90% of the upper end of the range of historical precipitation from actual storm events, i.e., “NOAA 14 PLUS.”

### 4.2. Street & Parking Lot Cleaning (Section 4.3.1, pages 4-8)

- "The TSS and TP pollutant removal credit is dependent on the type of street cleaner, the frequency of the cleaning (e.g., once per week, once per month, etc.) and the longevity of the cleaning (3-months, 6-months, 9-months, year-round, etc.). " Street cleaning pollutant removal credits are 3% to 16% for TSS and 2% to 7% for TP.

### 4.3. Proprietary Manufactured Stormwater Control Measures (Section 5.3)

- It’s stated that written documentation must be submitted with a Notice of Intent substantiating the removal percentages being claimed, and that DEP will have the discretion to approve or deny the use of the proposed stormwater control measures to meet or partially meet the TSS and TP pollutant requirements.

#### *Comments:*

- *To ensure that extreme “flash flood” events (the remaining 20% from the stated 80% storms addressed by NOAA 14 Plus) we strongly recommend that the Commonwealth consider undertaking a pilot study within a selected watershed basin to develop metrics and an appropriate model to understand the extent of inland floodplain areas, with the assistance of USGS. While the Massachusetts coastline benefits from the MC-FRM, there has not been similar work conducted within inland communities, who struggle to understand the extent of flooding based upon future riverine conditions, which are exacerbated by higher volumes of stormwater drainage – to-date.*
- *Additionally, consideration of the MA Stream Crossing Standards should not just be limited to Ecological Restoration Projects, as wider culverts will not merely ensure aquatic passage, but will create resilience within inland riverine systems.*
- *We recommend consideration of higher credits for more frequent street sweeping, catch basin cleaning, and leaf litter collection.*



## Town of Ashland, *Office of Conservation*

DATE:4/30/2024

Massachusetts Department of Environmental Protection  
Bureau of Water Resources -Wetlands Program  
Attention: Wetlands-401 Resilience Comments  
100 Cambridge Street, Suite 900  
Boston, MA 02114

### **Subject: Wetlands Protection Act Climate Resiliency 1.0**

Dear MassDEP Wetlands Program:

The Ashland Conservation Commission thanks you for the opportunity to comment on the draft Wetlands Protection Act regulations as part of MassDEP's "Climate Resilience 1.0" package. These are positive steps toward protecting wetlands resources and infrastructure, and making Massachusetts more climate resilient. We appreciate MassDEP's considerable time and effort to prepare these proposed regulations.

The Ashland Conservation Commission is 7-member body with two staff implementing the Wetlands Protection Act in Ashland, MA, and consequently deals with the both the Wetlands Protection Act Regulations and the Stormwater Standards on a regular basis.

Specifically, we support the following:

1. Updating precipitation calculations for stormwater designs
2. Requirement of nature-based solutions including ESSD and LID
3. Improved consistency with MS4 permitting
4. Revision of language to reflect current use terms and managing authorities
5. Additional of Total Phosphorous removal into Stormwater Standards

We urge MassDEP to consider the below comments where the regulations should be refined:

1. 310 CMR 10.02(2)(b)- Minor Exemptions
  - a. 10.02(2)(b)(2)(r). We agree that maintenance of shared use paths should be allowed without the need for permitting, so this new minor activity is appropriate, but it has too many details about means and methods and creates too narrow a management opportunity. The language as proposed creates implementation challenges since the means and methods are site-specific. We are concerned that the allowance of cutting shrubs and branches, and chipping and spreading this material in place may result in the unintended localized spread of invasive species. We





## Town of Ashland, *Office of Conservation*

recognize that the proposed language mirrors existing language in 10.02(2)(b)(2)n. (vegetation cutting for road safety maintenance). **We recommend deleting the language under 10.02(2)(b)4.iv. between “To prevent the possible export (...) disposed” and creating a guidance document or policy instead. We recommend that this type of specificity be removed from existing language under 10.02(2)(b)(2)n for similar reasons.**

### 2. 310 CMR 10.04- Definitions

- a. Best Management Practices (BMPs) and Stormwater Control Measures (SCM). More concise, less confusing definitions would be helpful. Some information would be better placed within sections on performance standards. The distinction between BMP and SCM is not clear.
- b. Highway Specific Considerations
  - i. This gives one agency (MassDOT) special rights. Municipal Department of Public Works (DPWs) often have control of roadways of similar size and undertake projects of similar scales, and so should be afforded similar allowances. The regulations should not be based on the governing agency but should be based on the size of the roadway, the scale of the proposed project, the intended public benefits, and the potential environmental impacts.
- c. Impervious Surface. The definition of impervious area includes solar arrays as impervious. However, the solar array guidance mentions using the CN value of material below the arrays. What part of the solar array is considered impervious? The footprint? The land below the panel? The entire array field? MACC recommends revising the definition of solar arrays to indicate they may be considered impervious or pervious based on the surface cover below the array if stormwater will be able to flow off and drain to that surface.
- d. Impracticable and practicable have different qualifications in their definitions. The added definition for “Impracticable” is based on physical constraints while the definition of “practicable” factors in costs, technology, proposed use, logistics, and adverse consequences. We believe this will lead to confusion. These definitions should be updated so that the criteria are consistent, such as updating the definition of “impracticable” to include all of the factors listed in the definition of “practicable”.
- e. Near (as also related to 10.05(6)(k)7). This new definition seems a bit problematic and vague. Does it refer to volume or rate? The terms “strong likelihood” and “significant impact” can be interpreted differently by consultants and commissioners alike. This definition lends itself to inconsistent application. Does this refer to “in addition to” proposed setbacks?



## Town of Ashland, *Office of Conservation*

- f. Public Shared Use Paths. This new definition is restrictive and to apply only to paths on public property or with an easement providing public access. This restricts land trust organizations and other types of permanently protected public or private land with public access that may not have easements from applying under this definition. MassDEP should afford all owners of publicly accessible land with Public Shared Use Paths the same allowances and requirements under the regulations.

### 3. 310 CMR 10.05

#### 10.05(4)(a) Notices of Intent.

- a. The regulations should not require such a high level of stormwater management detail for every NOI filing.
- b. The difference between a long-term pollution prevention plan and an operation and maintenance plan is unclear. Are these terms defined?

10.05(6)(m)(6): Requiring unpaved footpaths in natural areas to comply with the Stormwater Management Standards seems unreasonable and may result in further disturbance than the footpath itself. Trails generally rely on country drainage and so do not “fit” the intentions of the Standards. We ask MassDEP to include unpaved footpaths in natural areas as exempt activity under the Stormwater Management **Standards**

#### 10.05(12): Scientific Research Projects:

- a. The Ashland Conservation Commission generally supports the allowance of Scientific Research Projects to gather information or test hypotheses on the ability of resources area to respond to the effects of climate change or sea level rise; however, it should not be restricted strictly to coastal resource areas. Inland wetland resource areas also serve an important purpose in mitigating climate change, and affecting flooding in watersheds that ultimately empty to coastal resource areas. We ask MassDEP to revise Scientific Research Projects to also be allowed within inland wetlands resource areas
- b. This provision is too narrowly crafted and should be broadened to allow experimentation with coastal and inland wetlands restoration techniques that are not currently utilized in Massachusetts. Appropriate limits on the scale and siting of such projects should be set, and successful projects should be allowed to remain in place.

10.53(3)(u): Construction of Public Shared Use path on an abandoned rail bed. This provision allows the construction of paths on pre-existing rail beds as a limited project. While the Ashland Conservation Commission supports this, it urged MassDEP to consider adding dikes and other pre-existing raised structures that may cross Resource Areas under this definition,



## Town of Ashland, *Office of Conservation*

recognizing that creating trails on such structures are less impactful than new trails placed within the same areas.

#### 4. Stormwater Specific Comments

- a. Precipitation values and calculations should stay in Stormwater Handbook rather than in the regulations to allow for future changes & considerations.
- b. Regulations vs. Guidance. MACC suggests moving much of the detailed stormwater information from the regulations to the Handbook to allow for updates.
- c. The Setback Table in the regulations differs from the detailed setback table in the Stormwater Handbook. We recommend providing the setback table only in the Stormwater Handbook to allow for periodic and/or minor changes without changing regulations. This change would also increase clarity and prevent having references in multiple locations.
- d. Stormwater and Conservation Commission Jurisdiction. Do Conservation Commissions have jurisdiction for the entire site for all stormwater management, even if the stormwater management system is not in a wetland resource area? If the upland site drains to a municipal system, and the discharge is to a wetland or jurisdictional area, how can the Conservation Commission have jurisdiction.
- e. Gravel. The definition of gravel is problematic. Gravel roads might be more impervious than non-paved roads, but many gravel roads are not impervious, just a lower permeability than some others. There should be more leeway/flexibility on this issue.

We urge MassDEP to begin work on “Climate Resiliency 2.0” to continue improving the Wetland Protection Act regulations.

Sincerely,

Ashland Conservation Commission  
101 Main Street  
Ashland, MA 01721



April 30, 2024

MassDEP - BWR Wetlands Program  
Attention: Wetlands-401 Resilience Comments  
100 Cambridge Street, Suite 900  
Boston, MA 02114

Via: [dep.wetlands@mass.gov](mailto:dep.wetlands@mass.gov)

Reference: Comments on:  
310 CMR 10.00 Proposed Revisions

The Association of Massachusetts Wetland Scientists (AMWS) is writing to provide input on the proposed revisions to the MA Wetlands Protection Act implementing Regulations at 310 CMR 10.00. AMWS is a professional non-profit organization providing opportunities for learning, networking and scientific input associated with wetland protection. Our membership includes wetland specialists, Conservation Commissioners and Agents, and state and federal environmental staff, among others.

We have been actively engaged in reviewing the draft regulations as part of an MACC/MSMCP/AMWS working groups. We also participated in the public information session on January 18, 2024, both public hearings on January 31, 2024, and the three office hours on February 26, March 14, and April 3, 2024. Thank you for holding these sessions, and particularly the office hours, which we found to be very beneficial.

### **Overarching Themes**

While we are excited about the advancement of these regulations, some of which have been discussed for decades, we are concerned that some of the proposed changes will be very challenging to implement and/or could lead to unintended detrimental consequences, such as limiting typically beneficial redevelopment on challenging sites, and so should be refined prior to promulgation. Many of our detailed comments can be summarized under several overarching concerns, which we echo from MSMCP's comment letter and have summarized below:

- The presentations, public information sessions, and office hours were greatly appreciated but MassDEP should provide additional in-depth engagement with wetland scientists, civil engineers, permitting consultants, conservation agents, conservation commissioners, and other non-profit staff – the people responsible for day-to-day interpretation and consistent implementation of these regulations. MassDEP should work with these practitioners to review case studies or use previously approved projects as examples to determine what types of activities would be prohibited or encumbered by the revised regulations.

- The revised regulations provide some excellent detail but must strike a reasonable balance between scientific precision and overly complex or burdensome requirements that render them too difficult for most volunteer conservation commissions and too costly for some applicants to implement, with uncertain improvements in environmental protection.
- The regulations should provide performance standards that protect wetland functions and values and not specific means and methods of achieving those performance standards. Prescriptive and one-size-fits-all approaches and prohibitions will not only curtail innovation, but also likely result in unintended consequences. The regulations should also consider a process similar to a variance when stormwater standards cannot be met but proponents can demonstrate public benefit.
- In the face of climate change, the revised regulations should acknowledge and reflect the difference between wetland “alterations” resulting from new development vs. “alterations” resulting from ecological restoration. Ecological restoration projects should be considered beneficial and afforded streamlined permitting to help achieve the Commonwealth’s resiliency goals by:
  - Reversing historic damage to wetlands,
  - Addressing invasive species,
  - Allowing for salt marsh migration,
  - Promoting carbon sequestration, improved water quality, and increased biodiversity, and
  - Facilitating living shorelines and other nature-based solutions.
- Regulatory updates should strive to create greater consistency of thresholds, exemptions/allowances, and requirements based on existing wetland functions and values and the potential impacts (or benefits) on those wetland functions and values of proposed projects, not on the user groups conducting the activity.

We hope that MassDEP will consider the above, as well as the more specific comments that follow, which we think will serve to: 1) facilitate implementability; and 2) enhance resource area protection while allowing for appropriate development.

1. Shared Use Paths:

310 CMR 10.02(2), Minor Exemptions

We agree that maintenance of shared use paths should be allowed without the need for permitting, and that basic Shared Use Maintenance should be exempted from WPA permitting requirements. The exemption is too prescriptive regarding means and methods and creates too narrow a management opportunity, with exclusions if work on a stormwater management component is included in the maintenance, for example.

#### 310 CMR 10.53 and 10.24, Limited Project Provisions

We recommend that MassDEP delete “abandoned railbed” in the first line of 10.24 (7)(c)(8). “Public Shared Use Path” is already defined in 10.04.

Further, and more importantly, MassDEP should consider more broadly defining a Public Shared Use Path in the limited project provisions. Municipal, land trust, or privately held but publicly accessible paths should be afforded the same limited project status, for example.

2. Trails: Trail construction and maintenance should not be discouraged by time-consuming, costly, or complex wetland permitting and design. We urge MassDEP to consider ways to simplify approval and requirements for these trail maintenance and construction projects.

Additionally, trail work exemptions are too narrow in the regulations. Currently unpaved pedestrian walkways (trails) less than 3’ wide for public access on “Conservation Property” are exempt from the regulations (310 CMR 10.02(2)(b)(2)(a)). However, many trails traverse general municipal land, land trust properties, and private property with conservation restrictions. Conservation Property should be defined to include all types of natural land, including privately held land, onto which the public is invited.

Wetland trail construction should be subject to review under the WPA, but that review should be simplified. Narrow unpaved pedestrian walkways in publicly accessible open space often traverse wetlands. When wetland trails are properly constructed, they preserve wetland functions and values and help build a culture of appreciation and stewardship for these vital resources.

3. Habitat Restoration

Ecological Restoration: We urge MassDEP to consider ecological restoration projects as supporting “public health and safety”, as mosquito control projects are considered, and continue evaluating and incorporating ways to facilitate and streamline such projects, while maintaining appropriate regulatory oversight. For example, the definition of “ecological restoration project” is limiting in that it does not allow conversion between resource area types. This results in many significantly beneficial natural resource projects taking more time and cost, particularly given the intersection with MEPA. We recommend that the Ecological Restoration definition be expanded to facilitate more restoration projects.



**Invasive Species Management:** Non-native invasive plants pose a major threat to the health and survival of native ecosystems. Currently, invasive plant control work requires time-consuming, costly, and complex wetland permitting. Quick identification and removal of invasive plants minimizes the dramatic negative effects of these plants and allows for the recovery of native species diversity and native wildlife habitat, a recognized wetland value. We ask that MassDEP consider simplifying the permitting process for invasive species management, particularly for hand pulling methods in an additional effort to support resiliency goals.

**Research Projects:** The new provision for Scientific Research Projects allowing research into the response of coastal wetlands to climate change is appropriate but may be too narrowly crafted. We recommend expanding this provision to allow experimentation with coastal and inland wetlands restoration techniques that are not currently utilized in Massachusetts. Appropriate limits on the scale and siting of such projects could be set, and successful projects could be allowed to remain in place.

#### 4. 310 CMR 10.04, Definitions

- **Highway Specific Considerations:** Municipal DPWs often have control of roadways of similar size and undertake projects of similar scales as MassDOT, and so should be afforded similar allowances. We suggest that municipalities be afforded similar allowances for similar types and scale of activities.
- **Impracticable and practicable** have different qualifications in their definitions. The added definition for “Impracticable” is based on physical constraints while the definition of “practicable” factors in costs, technology, proposed use, logistics, and adverse consequences. We recommend updating these definitions so that the criteria is consistent, by updating the definition of “impracticable” to include all of the factors listed in the definition of “practicable”.
- A definition for Zone A has been added. For clarity, since Conservation Commissions are not tasked with establishing Zone A limits, we request that the Zone A definition be removed, and that regulatory citation to Zone A reference the relevant Drinking Water standards at 310 CMR 22.00, since this term is already defined therein.
- **New Terms or Definitions:** Many new terms or definitions have been introduced and incorporated throughout the redline version (e.g., the multiple new definitions introduced in 10.36(2)). All terms should have an entry in 10.04 with either a standalone definition or a reference to the section where the term is defined and used.

5. The Need to Accelerate Wetlands Restoration: We echo MassAudubon's and others' comments regarding the need to accelerate wetlands restoration. The WPA and regulations were not contemplated in the context of restoration, and resultingly, the time and cost associated with restoration projects is often driven by processes and requirements that do nothing to enhance the ultimate outcome.

As an example, former cranberry bogs offer tremendous opportunities to restore systems that have been historically altered. Yet the extent of information and analysis required to address the state's various permit requirements is excessive in relation to what is required for sound design and beneficial outcomes.

6. Additional Miscellaneous Suggestions
  - a. Provide headers at the top of every page of the new regulations with the complete section and subsection reference to facilitate navigation through the numerous lengthy sections that comprise many pages.
  - b. Format the regulations such that the Table of Contents will have internal hyperlinks allowing users to "jump" to specific sections.

Thank you for considering our comments, and please do not hesitate to reach out if you have any questions on our input. We recognize and respect the hard work that went into these draft regulations and look forward to promulgation of sound standards that will further the Commonwealth's goals in a clear and achievable way.

Sincerely,

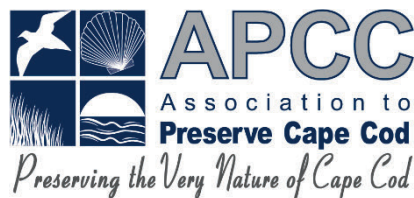
THE ASSOCIATION OF MASSACHUSETTS WETLANDS SCIENTISTS

President: Stacy Minihane

Vice President: Diana Walden

Immediate Past President: Richard Kirby

SHM/dw/rk/AMWS WPA Comments



April 29, 2024

Andrew Gottlieb  
Executive Director

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Bonnie Heiple, Commissioner  
Massachusetts Department of Environmental Protection  
Bureau of Water Resources Wetlands Program  
Attention: Wetlands-401 Resilience Comments  
100 Cambridge Street, Suite 900  
Boston, MA 02114

**RE: Draft Wetlands Protection Act Regulations**

Dear Commissioner Heiple:

The Association to Preserve Cape Cod (APCC) submits the following comments regarding MassDEP's draft changes to the Wetlands Protection Act regulations.

Founded in 1968, APCC is the Cape region's leading nonprofit environmental advocacy and education organization, working for the adoption of laws, policies and programs that protect, preserve and restore Cape Cod's natural resources. APCC focuses our efforts on the protection of groundwater, surface water, and wetland resources, preservation of open space, the promotion of responsible, planned growth and the achievement of an environmental ethic.

APCC congratulates MassDEP on its extensive efforts to update and draft regulations to address climate resilience and to better facilitate ecological restoration. We greatly appreciate and support many of the proposed amendments. Our comment letter is divided into two parts: 1) proposed amendments that we support, and 2) recommendations for changes in the proposed amendments.

**1) APCC supports the following proposed amendments and encourages MassDEP to promulgate these new regulations:**

310 CMR 10.24 (1)(b): APCC strongly supports this new provision requiring nature-based solutions and improvements to be incorporated into coastal projects. Utilizing nature-based improvements will increase climate adaptation and resiliency while allowing the natural function of coastal ecosystems to continue. However, APCC recommends that the requirement for project applicants to merely "consider" nature-based resilience measures should be strengthened. APCC recommends that language to "consider" be changed to a requirement to utilize nature-based resilience measures unless the project applicant can demonstrate that utilization of such measures is infeasible due to physical limitations of the project site.

310 CMR 10.36 (6): This provision adopts a new standard prohibiting new construction in the Velocity Zone. See additional comments below.

310 CMR 10.36 (9): This provision facilitates salt marsh and coastal dune migration inland in response to sea level rise and the changing dynamics of the coastal region.

310 CMR 10.04: This provision expands the definition of Impervious Surface to include artificial turf, which will add to the Commonwealth's ability to address runoff issues and improve water quality.

310 CRM 10.04 and corresponding 314 CRM 9.02 Definitions: The addition of definitions for stormwater management projects, including Best Management Practices, Environmental Protection Agency Performance Removal Curve, and Stormwater Control Measure, are very clear, are in line with our current use and application of definitions and stormwater management projects, and we support as proposed.

310 CRM 10.04 and corresponding 314 CRM 9.02 "Compacted Gravel and Soil" and "Impervious Surface" Definitions: APCC supports the definitions of compacted gravel and soil as well as impervious surface proposed for the purposes of stormwater management, in particular the inclusion of unpaved surfaces "including, but not limited to artificial turf, compacted gravel or soil..." in the definition of impervious surfaces, as these can effectively function as impervious.

APCC supports the provision that provides an increased one-inch recharge requirement for all new soil types in new development under the Stormwater Handbook Standard 3.

APCC supports the provision that expands Low Impact Design/Environmentally Sensitive Site Design credits under the Stormwater Handbook Standard 4.

APCC supports the provision aligning the Wetland Protection Act's conditions to coordinate with the Municipal Small Sewer System permit, making compliance less burdensome for municipalities.

## **2) APCC recommends revisions to the following proposed amendments:**

310 CMR 10.04 Definitions: Seasonal High Groundwater: The proposed definition of Seasonal High Groundwater should also be applied to Isolated Vegetated Wetlands, Isolated Land Subject to Flooding (ILSF), Vernal Pools, and Bordering Land Subject to Flooding, particularly in areas where other nearby wetlands or water bodies are groundwater-fed (i.e., where shallow unconfined aquifers exist). On Cape Cod such wetlands are often groundwater-fed.

310 CRM 10.04 and corresponding 314 CRM 9.02 "Time of Year Restriction" Definition: APCC strongly supports the inclusion of the definition of Time of Year Restrictions and recommends that additional text be included for the definition so it reads, "Time of Year Restriction means the date ranges established by the Massachusetts Department of Fish and Game, Division of



Fisheries and Wildlife and Division of Marine Fisheries, to provide protection to resources including inland streams, rare species habitat and marine resources in Massachusetts during times when there is a higher risk of known or anticipated significant lethal, sublethal, or behavioral impacts on the living resources, i.e., fish, shellfish, rare species and wildlife in these habitats and resource areas.”

310 CRM 10.04 and corresponding 314 CRM 9.02 “Total Phosphorus (TP)” Definition: The definition currently reads “Total Phosphorus (TP) means the total phosphate content in stormwater including all particulate and dissolved phosphorus, in both organic and inorganic forms.” The definition should read, “...means the total phosphorus content in stormwater including all particulate and dissolved phosphorus...”

310 CRM 10.05 and corresponding 314 CRM 9.07: APCC supports the language for stormwater management systems for new development and redevelopment, including the proposed change for higher standards of pollutant removal, but we want to ensure that the standards for retrofits maintain that these projects meet the Stormwater Management Standard to the “Maximum Extent Practicable” to allow for the necessary flexibility in design and treatment. Requiring stricter standards for retrofits, which by definition are projects designed to improve water quality, reduce peak discharge rates, and increase recharge, would unintentionally limit or prohibit stormwater management in some locations due to site specific conditions. Examples include, but are not limited to, high groundwater level that limits the type of SCM that can be used and the TSS, TP and other nutrients that can be removed. APCC is currently targeting management of stormwater in many areas of direct discharge adjacent to priority and impaired water bodies currently with little no treatment of stormwater. We encourage MassDEP to continue with the proposed language to allow for retrofit projects to continue to address as much pollution at these sites of direct discharges as practicable and feasible, while requiring stricter standards for new development and redevelopment.

310 CMR 10.05(12). Scientific Research Projects: The definition of Scientific Research projects is too narrow to be beneficial both in terms of duration and scale. APCC recommends a duration of three years, including one year of implementation and three years of monitoring, to measure the impact and test the hypotheses. The area proposed as “no more than 1,000 square feet of salt marsh, 100 linear feet of coastal bank and 1,000 square feet of any other resource area” is too small and the requirement for a Notice of Intent filing as opposed to a Request for Determination seems more complex, timely and costly than should be warranted for a small research project. APCC recommends MassDEP consider doubling or tripling the scale of the allowable projects to allow for replication and controls to ensure the scope and size of the project is able to adequately address the answers of the proposed scientific inquiry.

310 CMR 10.24(b) Allowing conversion of one coastal Resource Area to other Resource Areas: In 310 CMR 10.24(b), in the context of shoreline protection, MassDEP proposes that, “Notwithstanding the provisions of 310 CMR 10.24(2), the Issuing Authority may allow the conversion of one Resource Area to other Resource Areas to achieve greater shoreline resiliency, but there shall be no loss of Salt Marsh, no alteration of Primary Frontal Dune, and no cumulative net loss of or adverse effects on Resource Areas.”

This proposed amendment raises considerable concerns and questions, as conversion of one Resource Area to another could result in impacts on land containing shellfish, fisheries, wildlife habitat, and other interests, as well as potential impacts on public access and properties beyond the lot undergoing permitting. Furthermore, the proposed amendment seems to prioritize providing shoreline protection options for coastal property owners rather than protection of wetland interests. Questions and comments include the following:

- Although the proposed conversion would require "no cumulative net loss of or adverse effects on Resource Areas," how would these performance measures be evaluated or confirmed?
- If conversion of a Resource Area(s) results in cumulative net loss of, or adverse effects on, Resource Areas, what is the recourse, and what are the performance standards for addressing net loss or adverse effects?
- Would all coastal property owners be allowed to apply for Resource Area conversion, or can preference be given to public projects that serve an overriding public need and purpose (e.g., public road, public infrastructure, flood control, restoration project, etc.)?
- Would the presence of nearby shellfish aquaculture projects or public access to a town-owned beach be taken into consideration?
- Although the proposed amendment calls for confirming "that the project will not cause an increase in flood velocity, volume, or elevation on other properties resulting in storm damage," it does not recognize that there may be additional impacts on other properties that extend beyond preventing storm damage and flooding, e.g., coastal access, viewshed, change in property values, etc.
- How would regional or neighborhood impacts of a Resource Area conversion be addressed?

APCC urges MassDEP to consider this proposed amendment in more depth, with a greater focus on protecting wetland interests and preventing cumulative impacts on a larger scale than the individual lot undergoing permitting to allow projects, for example, that promote resource restoration such as salt marsh migration.

310 CMR 10.24 (7)(c)(9): This provision for Limited Projects allows relocation of roads and railroads in response to sea level rise, but does not include specific direction on how such projects should be considered in relation to how the project could impact ecosystem function, habitats or even other existing infrastructure. APCC believes promulgation of this proposed provision is premature, since the Healey administration only recently launched a ResilientCoasts Initiative that is tasked with developing "a holistic strategy for addressing the impacts of climate change along the coastline of Massachusetts." Once completed, the findings of the ResilientCoasts Initiative should better inform policies related to relocation of coastal roads and railroads and the potential impacts of such actions.

310 CMR 10.36. Land Subject to Coastal Storm Flowage (LSCSF): APCC commends MassDEP for proposing new regulations concerning Land Subject to Coastal Storm Flowage (LSCSF). Such regulations have long been sought by the conservation community. LSCSF serves important





roles in coastal processes and coastal habitat and at the same time is subject to great pressure from coastal development. Our comments are intended to bolster and strengthen the ability of these regulations to provide long-term coastal resilience and habitat protection while allowing existing developed properties to be protected from storm damage, flooding, and sea level rise.

- LSCSF Recommendation 1: LSCSF interests should be expanded. The proposed interests of LSCSF in MassDEP's current draft include only two interests: prevention of storm damage and flood control. We strongly recommend that the LSCSF regulations should address additional interests: protection of groundwater, prevention of pollution, protection of public and private water supplies (where such water supplies are located within LSCSF), and protection of wildlife habitat. Reasons for including these additional interests are given as follows:
  - LSCSF experiences flooding and floodwaters will either infiltrate into the ground and/or recede to nearby water bodies and wetlands. Floodwaters that infiltrate into the ground may carry contaminants that could pollute groundwater. Floodwaters that recede into nearby water bodies and wetlands may carry contaminants or debris that could pollute water bodies and wetlands. Therefore, LSCSF should be significant to prevention of pollution and protection of groundwater.
  - On Cape Cod, 15 percent of drinking water is supplied by private wells or privately-owned small volume wells, mainly located in Truro, Wellfleet, and East Sandwich (<https://www.capecodcommission.org/our-work/drinkingwater/>). State guidelines for placement of private wells are provided at <https://www.mass.gov/doc/private-well-guidelines/download>; these state in the section on "Relation to Surface Water and Wetlands" that where possible, private systems should be located above the 100-year floodplain, but go on to say that if a well must be located in an area subject to flooding, special precautions must be taken. Because there may be drinking water wells located in LSCSF, protection of public and private drinking water supply should be added as a protected interest.
  - In undeveloped LSCSF, wildlife habitat will likely exist. Even in already-developed areas of LSCSF, wildlife habitat may exist, particularly if there are other Resource Areas or Buffer Zone to Resource Areas adjacent to LSCSF. For this reason, protection of wildlife habitat should be added as a protected interest.
- LSCSF Recommendation 2: Strengthen LSCSF regulations to prohibit new development in MoWA and MiWA zones where sea level rise is predicted to occur. The proposed LSCSF regulations concerning development prohibit any new development in V-zones defined by areas with wave heights of 3 feet or greater. The prohibition on new development in V-zones is welcome and highly justifiable given current risks due to storm surges and flooding. APCC strongly supports this proposed measure.

However, in the Moderate Wave Action (MoWA) Zone where wave heights are between 1.5 feet and 3 feet, new development would be allowed, provided buildings are on pilings. Additionally, in the Minimal Wave Action (MiWA) Zone where wave heights are



less than 1.5 feet and variable, new development would also be allowed, with buildings on pilings or open foundations. Allowing new development in MoWA and MiWA Zones, even if buildings will be elevated on pilings, does not serve long-term coastal resilience when predicted sea level rise in Cape Cod communities within the current century will be on the order of several feet, according to state-sponsored Municipal Vulnerability Preparedness (MVP) studies. In towns as diverse as Falmouth, Bourne, Barnstable, and Wellfleet and Truro, MVP studies predict sea level rise by the 2090s to range from 4-10 feet (Falmouth: <https://www.falmouthma.gov/DocumentCenter/View/7066/Municipal-Vulnerability-Assessment-Presentation->; Bourne: <https://www.mass.gov/doc/bourne-report/download>; Barnstable: <https://www.mass.gov/doc/barnstable-report/download>; and Wellfleet-Truro: <https://www.mass.gov/doc/wellfleet-truro-report/download>). This means that within 66 years from now, sea level rise in these communities could be 4 feet at minimum, or potentially higher up to 10 feet. Even with the lower estimate of sea level rise of 4 feet by 2090, areas that are now MoWA or MiWA could well be V-zones by 2090. Allowing new development in areas where sea level rise will overlap with current MiWA and MoWA zones does not make sense and will endanger future development that is allowed to be placed in such areas. Furthermore, the additional interests recommended by APCC would not be served by allowing new development in MoWA and MiWA Zones.

APCC strongly encourages MassDEP to strengthen LSCSF regulations to prohibit new development and expanded redevelopment in MoWA and MiWA zones.

- LSCSF Recommendation 3. Strengthen Provisions for Migration of Salt Marsh and Coastal Dunes into LSCSF. The proposed LSCSF regulations include “a provision which would allow owners of Land Subject to Coastal Storm Flowage, particularly when adjacent to these other Resource Areas (Salt Marsh or Coastal Dune), to prepare or set aside land for landward migration...” Given the importance of Salt Marsh and Coastal Dunes for WPA interests and for coastal resilience, APCC recommends that MassDEP strengthen these provisions to encourage migration of these Resource Areas into LSCSF. APCC suggests that proposed development projects in LSCSF adjacent to Salt Marsh or Coastal Dunes include an assessment of suitability of the LSCSF area for salt marsh or coastal dune migration. Such an assessment can be evaluated by a qualified consultant working for the Conservation Commission (WPA regulations already allow for the Conservation Commission to hire a consultant to evaluate projects). The requirement for such an assessment could be overcome by a factual finding by the Conservation Commission or MassDEP that the LSCSF area would not be suitable for migration.

#### Appendix A SCM Specifications for MA Stormwater Handbook Stormwater management:

Although APCC is pleased to see that MassDEP is proposing to replace its current references to precipitation projection in its Stormwater Handbook Standard 2 regulations, the proposed NOAA14+ precipitation frequency data source is likely to become outdated in the foreseeable future due to changing climate conditions. APCC recommends that the regulations reflect the reality of changing trends and the need for periodic adjustments in the reference data by



including language such as, “NOAA14+ or its most current revision.”

Combined Application: In proposing to eliminate the “Combined Application” option for the Wetlands Protection Act, Waterways, and Section 401 Water Quality Certifications, MassDEP has not proposed a new procedure that would help expedite the permitting process for beneficial restoration projects. APCC recommends that a streamlined process be included to reduce the time and expense in permitting restoration projects that enhance ecosystem function and promote climate resiliency.

“Maximum Extent Practicable” Standard for Recharge: APCC is concerned that allowing the “Maximum Extent Practicable” recharge standard for all soil types in redevelopment will be too easy for applicants to circumvent, resulting in insufficient recharge in many sites. We recommend that MassDEP hold recharge to a more stringent standard than MEP in order to achieve the climate resilience intentions of these proposed regulations.

Appendix A SCM Specifications for MA Stormwater Handbook A-18: The “Tree Canopy Implementation” table for street trees that is recommended by MassDOT and DCR currently includes a combination of native and non-native street trees. APCC recommends the table be more strictly limited to trees either native to Massachusetts or to the ecoregion, thereby removing species such as Chinese elm, Japanese zelkova and Callery pear, which are non-native and/or known nuisance species.

Appendix A SCM Specifications for MA Stormwater Handbook A-129 through A-141 Bioretention Planting Lists: APCC recommends these lists be limited to species native to Massachusetts or to the ecoregion and any known invasive or nuisance species be removed.

Appendix A SCM Specifications for MA Stormwater Handbook A-120: Bioretention Design Considerations references the MassDEP crosswalk curves and indicates Redevelopment, Stormwater Standard 7 would require 80 percent TSS removal and 50 percent TP removal. Design consideration for other SCMs either do not include this reference to pollutant removal standards or they have been stricken from the handbook. APCC recommends this section of bioretention design considerations be removed and/or revised to be consistent with other sections of the Handbook and regulatory changes.

## **Conclusion**

APCC greatly appreciates the effort by MassDEP to update its existing regulations in order to improve climate resiliency in Massachusetts. Overall, the proposed revisions are a welcome and positive step forward and should be promulgated as quickly as possible, along with the recommended changes identified above.

After their promulgation, APCC urges MassDEP to move forward immediately in drafting and releasing Resilience 2.0 to further strengthen the Commonwealth’s regulations and policies that will provide critical protections to wetlands in response to the challenges created by a rapidly changing climate.



Thank you for this opportunity to provide comments.

Sincerely,

A handwritten signature in blue ink, consisting of a stylized 'A' followed by a long horizontal stroke.

Andrew Gottlieb  
Executive Director



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**From:** [barbie burr](#)  
**To:** [DEP Wetlands \(DEP\)](#)  
**Subject:** Wetlands and Waterways Resilience Regulations  
**Date:** Friday, April 26, 2024 8:50:56 AM

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CAUTION: This email originated from a sender outside of the Commonwealth of Massachusetts mail system. Do not click on links or open attachments unless you recognize the sender and know the content is safe.

To DEP,

Rumors abound about the meaning of a DEP Proposal regarding 'Resilience Regulations.' Yesterday, I searched a redline copy, and saw the ACEC was expanded to include land subject to a one hundred year storm event. Now, that link goes to a draft dated November 2023.

I do not believe a meaningful public hearing has occurred because I cannot find a copy of your proposal.

Please publish your proposal and hold hearings which can be attended at times and locations convenient to the public. I too am interested in hearing public comment, so the email option is not satisfying the requirement for a public hearing, unless you publish all emailed comment.

Thank you,

Barbara Burr  
Marion, MA



April 29, 2024

MassDEP - BWR Wetlands Program  
Attention: Wetlands-401 Resilience Comments  
100 Cambridge Street, Suite 900  
Boston, MA 02114

Via: [dep.wetlands@mass.gov](mailto:dep.wetlands@mass.gov)

Reference: Comments on:  
310 CMR 10.00 Proposed Revisions  
[Land Subject to Coastal Storm Flowage](#)  
B+T Project No. Corp

Dear MassDEP BWR Wetlands Program:

Beals and Thomas, Inc. (B+T) offers the following commentary regarding the proposed updates to the **Land Subject to Coastal Storm Flowage (LSCSF) at 310 CMR 10.00**. We appreciate the effort that went into creating the draft "Resiliency 1.0" regulatory update, both during their drafting and during the comment period. We agree that reducing adverse impacts to coastal floodplains and ensuring that activities affecting LSCSF contribute to the public interests of flood control and storm damage prevention is imperative.

B+T is a multidisciplinary consulting firm with significant land use entitlement, natural resources, and inland and coastal wetlands experience. We have been actively engaged in reviewing the draft regulations on our own and with NAIOP and MACC/MSMCP/AMWS as part of their working groups/committees. We recognize that different stakeholders will have varying views as to the draft regulations and how best to achieve the Commonwealth's important goals regarding both natural resource protection and resiliency, as well as the need for housing production in our state. Our role includes both private development projects as well as natural resource protection and enhancement projects. **Therefore, our review of the proposed updates to LSCSF focuses on potential unintended consequences of the regulations, and implementability.**

We participated in the public information session on January 18, 2024, both public hearings on January 31, 2024, and the three office hours on February 26, March 14, and April 3, 2024. Thank you for holding these sessions, and particularly the office hours, which we found to be very beneficial.

We hope that MassDEP will consider the following comments, which we think will serve to: 1) facilitate implementability; and, 2) further the Commonwealth's resiliency goals in a meaningful way without unintentionally hindering development.

**Corporate Office**

144 Turnpike Road  
Southborough, MA 01772

[bealsandthomas.com](http://bealsandthomas.com) T 508.366.0560 F 508.366.4391

**Regional Office**

32 Court Street  
Plymouth, MA 02360



1. 310 CMR 10.10(15) reads, *"The amendments to 310 CMR 10.00 concerning Land Subject to Coastal Storm Flowage [LSCSF] shall apply to Requests for Determinations of Applicability, Abbreviated Notices of Resource Area Delineation, and Notices of Intent filed on or after [the effective date of these regulations], except when a draft environmental impact report [DEIR] was submitted pursuant to M.G.L. c. 30, §62B, on or before [one year prior to date of promulgation], and the project received a certificate on the final environmental impact report [FEIR] or a building permit was issued on or before [six months prior to promulgation]."*

We recommend clarifying that this exemption also pertains to projects that completed MEPA Environmental Notification Forms, as well as to phased master planned projects that completed MEPA review, including those which may subsequently file individual Orders of Conditions for development phases, as well as Notice(s) of Project Change with MEPA if the change is insignificant in relation to LSCSF.

2. The regulations should focus primarily on identifying performance standards for the protection of the functions the Act and Regulations are meant to address, rather than providing means and methods for achieving these standards. A one-size-fits-all approach to the regulations will not serve the Commonwealth's resiliency and development goals.

For example: the draft regulations will hinder rather than improve Conservation Commissions' ability to permit climate resilience measures. Despite the goal to "promote coastal resiliency against worsening impacts of storms, flooding, and sea level rise," the proposed regulations effectively prevent doing so. Specifically, as written, these regulations preclude projects that eliminate floodplain, as eliminating floodplain necessarily impacts the capacity of that floodplain to serve the interests of the Act.

In fact, filling in LSCSF appears to only be explicitly allowed in the MiWA where impervious surfaces have predominantly replaced the natural coastal floodplain (310 CMR 10.36(8)(f)). This provision limits redevelopment activities to urban settings such as downtown Boston and the Seaport.

The interests of the Act can be served in more appropriate ways than precluding any fill within LSCSF. Often, placing fill within the coastal floodplain, or implementing berms, (i.e. eliminating/reducing the extent of LSCSF) are appropriate paths to protecting the shoreline and adjacent upland areas. It is important for the regulations to recognize that LSCSF is an atypical resource area, where the interests it protects can at times be better served through other resiliency measures that may eliminate/reduce the resource area. MassDEP should ensure that the protected interests (storm damage prevention and flood control) are the driving force behind the regulations, and not prescribe performance standards that do not consider the latest in resiliency approaches. Climate adaptation efforts designed to protect public and private property, and human health and safety, must be permissible.

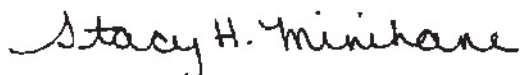
3. The draft regulations acknowledge that LSCSF functions differently in previously altered vs. unaltered areas. We echo NAIOP's comments suggesting ways to clarify which sections of the regulations are relevant to new development and redevelopment activities, as well as their comments relating to unclear or conflicting terminology related to developed areas (including "Previously Developed," "developed," and "currently developed,") and development (including "Redevelopment," "new development," "new building," "new construction," "newly reconstructed building" and "reconstruction"). These and other definitions should be consistent across all the related regulations. The refinement of these terms should be carefully considered.
4. We also echo NAIOP's and others' comments relating to the requirement at 10.36(5)(a) that projects have no impact on velocity or elevation of flood waters and that they do not cause any reflection or refraction. This is both an impossible standard to meet and not necessary or appropriate to achieve resiliency goals. It seems that all structures in the flood plain, even those on piles, will have some effect on flood waters. This standard could preclude placing any structures within LSCSF.
5. 310 CMR 10.36(7)(a) through (g) are written in such a way that projects must use **all** of the listed measures, with no flexibility for waivers or alternative methods. At a minimum, we recommend revising Subsection (g) to read "*Managing stormwater as required by 310 CMR 10.05(6)(k) through (q); and or*" and adding a new subsection (h) that reads "*or other acceptable methods to the Commission*".
6. 310 CMR 10.36(8)(a) through (g) are written in such a way that projects must use **all** of the listed measures, with no flexibility for waivers or alternative methods. At a minimum, we recommend revising Subsection (f) to read "*Managing stormwater as required by 310 CMR 10.05(6)(k) through (q); and or*" and adding a new subsection (h) that reads "*or other methods acceptable to the Commission*".

7. 310 CMR 10.36(8) states, "*Activities shall conform to the standards specified in 310 CMR 10.36(4) through (7) when a site was previously developed but is not currently developed.*" For clarity as well as relevance to the functions of LSCSF, we suggest instead using the term "Previously Altered Area" (to replace all instances of "Previously Developed Area") and defining in 310 CMR 10.04 as "an area that is not in a natural, previously undisturbed state as a result of human activity including any change in grade from naturally occurring grade or placement of structures. Previously Altered Areas for the purposes of LSCSF may contain pavement or other impervious surfaces, structures or portions of structures, or construction debris, or may have been filled or excavated. Areas historically disturbed by human activities that have reverted to such a natural state so as to be indistinguishable from undisturbed natural areas are not previously developed."
8. 10.36(8)(f) allows placement of fill in the MiWA Zone for certain redevelopment, "provided that there shall be no redirection of wave energy or of flood water to other properties..." The green text should be added "...there shall be no **significant** redirection of wave energy or of flood water to other properties..." as any change to elevations or structures on-site will result in some change of water flow. Additionally, as noted in our Comment 2; the regulations should not be prescriptive in wholesale prohibitions of fill in LSCSF.

Thank you for considering our comments, and please do not hesitate to reach out if you have any questions on our input. We recognize and respect the hard work that went into these draft regulations and look forward to promulgation of sound standards that will further the Commonwealth's goals in a clear and achievable way.

Sincerely,

BEALS AND THOMAS, INC.



Stacy H. Minihane, PWS  
Principal

ERW/shm/ggp/aak/B+T LSCSF Comment Letter



April 30, 2024

MassDEP - BWR Wetlands Program  
Attention: Wetlands-401 Resilience Comments  
100 Cambridge Street, Suite 900  
Boston, MA 02114

Via: [dep.wetlands@mass.gov](mailto:dep.wetlands@mass.gov)

Reference: Comments on:  
310 CMR 10.00 Proposed Revisions  
**Stormwater Management**  
B+T Project No. Corp

Dear MassDEP BWR Wetlands Program:

Beals and Thomas, Inc. (B+T) offers the following commentary regarding the proposed updates to the Stormwater Management Standards of the Wetlands Protection Act Regulations 310 CMR 10.00 (Regulations) and the Massachusetts Stormwater Management Handbook (Handbook). We appreciate the effort to prepare the draft "Resiliency 1.0" regulatory update, both during the drafting and during the comment period.

We commend MassDEP for its goals to align with the US EPA MS4 General Permit, update Stormwater Standards and Handbook to account for current precipitation extremes, increase baseflows in wetlands and streams, and set up Massachusetts to address sea level rise and future climate conditions.

B+T is a multidisciplinary consulting firm with significant land use entitlement, natural resources, and inland and coastal wetlands experience. We have been actively engaged in reviewing the draft regulations on our own and with NAIOP and MACC/MSMCP/AMWS as part of their working groups/committees. We recognize that different stakeholders will have varying views as to the draft regulations and how best to achieve the Commonwealth's important goals regarding both natural resource protection and resiliency, as well as the need for housing production in our state. Our role includes both private development projects as well as natural resource protection and enhancement projects. Therefore, our review of the proposed updates to the Stormwater Management Standards and Handbook focuses on potential unintended consequences of the Regulations and Handbook and their implementability.

We participated in the public information session on January 18, 2024, both public hearings on January 31, 2024, and the three office hours on February 26, March 14, and April 3, 2024. Thank you for holding these sessions, and particularly the office hours, which we found to be very beneficial.

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We hope that MassDEP will consider the following comments, which we think will serve to: 1) facilitate implementability; and, 2) further the Commonwealth's resiliency goals in a meaningful way without unintentionally hindering development.

1. 10.04 Definitions

Alter: Currently, there are no performance standards in the Wetlands Protection Act Regulations relative to changes in water level or groundwater table, which the proposed regulation references in subsection (b) of the definition. If there are no performance standards relative to these changes, then the presumption will be that any change is an impact and may be construed by Conservation Commissions as unpermittable. Stormwater discharges/recharge are transient/temporary and will not significantly impact the resource area as they typically dissipate over a short period of time. One of the stated goals of the regulation updates is to increase recharge to improve the base flow for rivers, streams and wetlands that have been impacted by the loss of recharge due to development. By not allowing for any change to the water level or water table it will not be possible to meet the goals of enhancing base flow that is critical to these wetland resources. We recommend maintaining the current definition "(b) the lowering of the water level or water table." Alternatively, add the **bold** text: "Alter means to change the condition of any Area Subject to Protection Under M.G.L. c. 131, Section 40. Examples of alterations include, but are not limited to the following... (b) the changing of the water level or water table **(unless due to infiltration or other stormwater management required at 310 CMR 10.05(6)(k)).**"

Compacted Gravel or Soil: The definition of compacted gravel or soil can be overcome if it can be shown that the soil strength is less than 10 bars of pressure. Soil strength and compaction are not necessarily representative of the permeability or impermeability of a soil. We recommend that hydraulic conductivity, not soil strength, be used to determine whether a compacted gravel or soil area is classified as impervious, rather than soil strength. For example, a uniform crushed stone is typically more porous than gravel and may be highly permeable despite soil strength exceeding the threshold in the definition.

Impervious Surface: MassDEP should clarify why artificial turf and solar panels are considered impermeable in the proposed definition. Most artificial turf fields are highly permeable and solar panels are not impervious at the ground surface (ground-mounted solar arrays are set above grade). If the intent is to ensure that runoff is recharged and properly treated, then we recommend revising the definition as follows:

"Impervious Surface means, for purposes of stormwater management (310 CMR 10.05(6)(k)-(q)), any surface that prevents or significantly impedes the infiltration of water into the underlying soil, including, but not limited to ~~artificial turf~~, Compacted Gravel or Soil, roads, building rooftops, ~~solar arrays~~, parking lots, Public Shared Use Paths, bicycle paths, and sidewalks paved with concrete, asphalt, or other similar materials. For purposes of this definition, porous pavements, **artificial turf, and solar arrays** are Impervious Surfaces ~~in order to size the depth of the underlying reservoir course to meet recharge and Total Suspended Solids/Total Phosphorus removal requirements pursuant to 310 CMR 10.05(6)(k)3. and 4."~~

Impracticable for use in 310 CMR 10.05(6)(k)-(q) for purposes of stormwater management: The phrase "impossible" used in the proposed definition is a much higher standard than "impracticable". The definition of "Impracticable" should align with the definition of "Practicable" as defined in 310 CMR 10.04 Definitions. We recommend the following: "Impracticable for use in 310 CMR 10.05(6)(k)-(q) for purposes of stormwater management means incapable of being executed, taking into consideration costs, available technology, proposed use, logistics and potential adverse impacts/consequences."

Near: The current definition of "Near" is broad and open to interpretation that will likely be inconsistent. We recommend providing additional guidance to assist Conservation Commissions, reviewers, and practitioners to interpret the definition consistently. Additionally, we recommend that "increased stormwater discharge" be replaced with "new stormwater discharge" within the current definition of "Near."

Saturated Hydraulic Conductivity Test: We recommend the identification of specific methods and ASTM standards be moved to the Handbook. The definition could be redefined in the following way: "Saturated Hydraulic Conductivity Test means a field test to determine the rate at which water percolates through saturated soils to transmit a volume of water per unit time in the vertical direction in a defined area. A Title 5 percolation test, as defined at 310 CMR 15.002, is not an acceptable Saturated Hydraulic Conductivity Test for purposes of stormwater management (310 CMR 10.05(6)(k)-(q))."

Additionally, we recommend allowing flexibility for additional test methodologies that may be available or developed in the future. The methods could be identified within the Handbook in the following way : "Saturated Hydraulic Conductivity Test shall be determined by one of the following methods: constant head Guelph permeameter - ASTM D5126-16e1 Method; Falling head permeameter - ASTM D5126-16e1 Method; Double ring permeameter or infiltrometer - ASTM D3385-18, D5093-15e1, D5126-16e1 Methods; constant head Amoozemeter or Amoozegar permeameter; or other method approved by the Issuing Authority. A Title 5 percolation test, as defined at 310 CMR 15.002, is not an acceptable Saturated Hydraulic Conductivity Test."



Terminal Treatment Practices: We recommend revising the definition as follows: "Examples of Terminal Treatment Practices include but are not limited to are infiltration basins and constructed stormwater treatment wetlands (structural) and Environmental Sensitive Site Design (nonstructural). Pretreatment Terminal Treatment Practices are not Pretreatment Terminal Treatment Practices."

Tributary as it exists within the definition of Zone A: The definition of tributary in 310 CMR 22.00 requires clarification. Per the existing definition, any channel within the watershed of a drinking water supply could be interpreted as Zone A whether there is a continuous surface connection to the Zone A or not. MassDEP should clarify if this was intended or not. We further recommend modifying the definition of "tributary" as follows: "Tributary means any body of running, or intermittently running, water which moves in a definite channel, naturally or artificially created, in the ground due to a hydraulic gradient, and with a continuous surface connection which ultimately flows into a Class A Surface Water Source, as defined in 314 CMR 4.05(3)(a): Class A."

## 2. 10.05 Procedures

10.05(4) Notices of Intent: MassDEP should clarify if it is necessary to have the long-term pollution prevention plan separate from the operation and maintenance plan, as is currently suggested in the "Notice of Intent" procedure. We suggest that the long-term pollution prevention plan (LTTP) be incorporated into the operation and maintenance (O&M) plan since the O&M plan should address maintenance of site elements beyond the stormwater management system including snow removal, use of deicing agent, fertilizers, pesticides, and herbicides.

## 3. 10.05(6)(k) Comments

10.05(6)(k), Standard 2: The Standard has been changed to require that post-development peak discharge rates do not exceed pre-development peak discharge rates at each discharge point. Under pre-development conditions, there typically is not a discharge point at the location of every post-development discharge point (i.e. pre-development peak discharge at the discharge point would typically be zero). We recommend keeping the current language without this new qualifier.

The Standard has been revised to require that the stormwater management system be designed for the 100-year storm. This will require that the Stormwater Management System, inlets, pipes/conveyances, and detention/retention be sized for the 100-year storm. The current Standard requires Proponents "to evaluate the impact of peak discharges from the 100-year 24-hour storm. If this evaluation shows that increased off-site flooding will result from peak discharges from the 100-year 24-hour storms, BMPs must also be provided to attenuate these discharges...The evaluation may show that retaining the 100-year 24-hour storm event is not needed.

In some cases, retaining stormwater from the 100-year 24-hour storm event onsite may aggravate downstream impacts, because of the project's location within the watershed and the timing of the release of stormwater." We recommend maintaining this current requirement relative to the 100-year storm.

We recommend that the modeling requirements be included in the Handbook instead of in the Regulations to allow for inclusion of new models or methods as they are developed. New applications are available that incorporate SWMM and other models that allow seamless hydrologic and hydraulic analysis for stormwater systems; these models will not be allowed based on these revisions.

10.05(6)(k), Standard 3: We recommend that a more reasonable minimum saturated hydraulic conductivity should be used in lieu of 0.01 in/hr. If one inch of rain fell directly on an infiltration basin with a saturated hydraulic conductivity of 0.01 in/hr it would take more than 100 hours for that volume of water to recharge; well beyond the 72-hour drawdown requirement. We recommend retaining the current minimum saturated hydraulic conductivity 0.17 in/hr.

Guidance for what constitutes an appropriate alternatives analysis should be included in the Handbook so that there will be consistent preparation by practitioners and review by Commissions and their peer reviewers.

Not all soils are capable of recharging one inch of rainfall. The Standard should be updated to reflect the variability of soils. Some sands may be capable of recharging more than one inch while sandy loams or loam will recharge much less. We recommend revising Standard 3 to provide a range in recharge requirements that targets more recharge in soils capable of accepting recharge (Sand) while maintaining Maximum Extent Practicable approach for soils less conducive to recharge (refer to the table below).

HSG	Minimum Recharge Requirement (in)	Soil Textural Classification	Targeted Recharge Requirement (in)
A	1.0	Sand	>1.0
B	0.8	Loamy Sand	0.80
C	MEP	Sandy Loam	0.25
		Loam	MEP
		Silt Loam	MEP
		Sandy Clay Loam	MEP
D	0	Clay Loam	MEP

Clarification is needed regarding the mounding analysis. Stormwater recharge is transient/temporary and typically will not impact the seasonal high groundwater; impact to the groundwater elevation is only temporary and any increase in groundwater elevation will dissipate over a short period of time. The mounding analysis should demonstrate that the infiltration practice dewater within 72 hours after the end of the storm and that the recharge waters do not break out at grade or within a regulated resource area. More detailed guidance regarding mounding analysis procedures should be included in the Handbook.

We further recommend that additional relief from the recharge requirement be provided for sites with C/D soils or bedrock. When you factor in the depth of the invert of the catch basin ( $3\pm$  feet, pipe slope/length of run and depth of storage, the bottom of an infiltration practice will be located 6-10 feet below grade well into the unsuitable soils or the bedrock. It is not practicable to construct functioning infiltration practices in these conditions. We recommend that recharge be required to the maximum extent practicable when unfavorable recharge conditions are demonstrated by the applicant.

MassDEP should clarify how the rate for rapid infiltration is determined in Section (d). We recommend using Rawls Rates and, if used, MassDEP should clarify if the intent is that soils classified as Loamy Sand (2.41 in/hr) and Sand (8.41 in/hr) are considered areas of rapid infiltration. If so, we recommend changing the rapid infiltration definition to "greater than or equal to 2.41 inches/hr." We also recommend changing the Standard to read: "except for rooftop runoff directed to infiltration practices" as roof runoff is considered clean and does not require the same treatment through the soil profile.

10.05(6)(k), Standard 4: Guidance for what constitutes an appropriate alternatives analysis should be included in the Handbook so that there will be consistent preparation by practitioners and review by Commissions and their peer reviewers.

10.05(6)(k)4.e.: We recommend that the detailed guidance for computations be provided Handbook instead of in the Regulations.

10.05(6)(k), Table 1, MassDEP Crosswalk: Credit 6 of the Crosswalk includes credit for total impervious area reduction. There is opportunity to provide additional incentive to further reduce impervious area. We also recommend that "Enhance Bioretention with Internal Storage Reservoir" be added to the Crosswalk, as it is included in the EPA curves. It is not currently included in the Crosswalk table.

10.05(6)(k), Standard 6: MassDEP should clarify why stormwater management systems (inlets, pipes, structures) are restricted from being located in Zone I or Zone A, and ask if this restriction is necessary if the stormwater management system is located within the Zone A but discharges stormwater outside of the Zone I or Zone A. Furthermore, consideration should be given to the type of project. It may be appropriate to allow stormwater management systems and discharges with no/minimal potential pollutant sources to be sited within Zone I and Zone A areas.

10.05(6)(k), Standard 7, Section (b): MassDEP should clarify if there are minimum targets for reducing peak discharge rate and increasing recharge. We further question if the language regarding removing pollutants such as TSS and TP is needed in this section as specific targets are outlined in Paragraph B.

10.05(6)(k), Standard 8: Projects that exceed one acre of disturbance are required to obtain coverage under the NPDES Construction General Permit (CGP) and provide a Stormwater Pollution Prevention Plan (SWPPP) that will govern construction period erosion and sedimentation control. This plan is developed in conjunction with the Owner, General Contractor and Site Contractor. Typically, the General Contractor and Site Contractor are not onboard during the permitting process. Any SWPPP prepared during permitting will be draft only and subject to change pending coordination with the General Contractor and Site Contractor. We recommend that the SWPPP be submitted to the Issuing Authority for record only prior to the start of construction.

We further question if it is necessary to codify the requirement that "No construction period runoff may be directed to the post construction SCMs or other BMPs." If it is, this condition requires further clarification. The location of SCMs and BMPs are typically sited at low points on-site and during construction temporary sedimentation basins or other BMPs may be constructed in the location of the SCMs because runoff is being directed to these locations. Once the site is generally stabilized the construction of the SCMs or BMPs is completed. On smaller project sites or redevelopment sites it may be impossible to comply with this condition as there may be limited locations to install temporary/construction phase BMPs.

10.05(6)(k), Standard 11, Section (d): MassDEP should clarify the requirement for adequate pretreatment, and if it is consistent with the EPA-PRC.

4. 10.05(6)(l) Comments:

There are other project types that do not fit the intent of the stormwater regulations, but are not technically exempt. These include small-scale commercial development that is on par with the impervious area and potential pollutants from a four-lot residential subdivision, summer camps, etc.

Given the residential exemption, it is illogical to require stormwater management for these types of projects. MassDEP should consider exempting, or requiring adherence only to the maximum extent practical (MEP), projects below a certain impact threshold (e.g. acres land cleared, acres impervious area, vehicle trips per day) that is commensurate with the scale of small residential subdivisions. This would have the added benefit of avoiding unnecessary design and peer review costs, and simplify the applications for these small projects, which is beneficial to Commissions reviewing and approving them.

5. 10.05(6)(m) Comments:

6.: Requiring unpaved footpaths in natural areas to comply with the Stormwater Management Standards is unreasonable. Trails generally rely on overland flow or country drainage and therefore do not comport to the prescriptive requirements of the Standards. We recommend that MassDEP include unpaved footpaths in natural areas as an exempt activity under the Stormwater Management Standards 10.05(6)(l).

7.: This new provision requires that Maintenance of an Existing Public Roadway comply with the Stormwater Standards to the maximum extent practicable. However, 10.02(2)(b)(2)(p) appears to exempt the same roadway maintenance from review. We ask MassDEP to reevaluate this new provision as such.

6. 10.05(6)(o) Comments and Questions

Numbers 1, 2, and 3: we recommend providing more direction or a template regarding "reasonable efforts" and the information that is required to be part of the alternatives analysis for consistency of practitioners and as guidance for Commissions and reviewers.

7. 10.05(4)(q) Comments and Questions

Minimum Setbacks Table: Setbacks should not be codified. We recommend that the setbacks only be included in the Handbook as general guidance and the table be removed from the Regulations .

Additionally, rather than providing setback *distances*, we recommend that the Handbook include performance standards (e.g. demonstrate that recharge will not breakout, impact abutting structures, etc.). This flexibility will allow the opportunity for the applicant to demonstrate that specific site conditions and constraints paired with prudent engineering design can yield a design that provides sufficient protection of the resource area.

We also question the rationale for requiring a 10-foot setback from a Zone I (and IWPA). The current Regulations require SCMs to be outside a Zone I.

The offset for ORWs and Special Resource waters conflicts with the setbacks for surface waters. The setback for surface waters and wetland resources also appear to conflict. We request clarity on whether the setback from bordering vegetated wetlands is 10 feet or 50 feet.

The setbacks from soil absorption system components are not consistent with MassDEP Title 5 requirements. A performance standard would be more appropriate here to demonstrate that recharge will not raise groundwater below the soil absorption system. Other components of the septic system such as septic tanks are watertight and setbacks to these components could be less than setbacks to the soil absorption system.

In urban projects, SCMs are often within a building or immediately adjacent. These elements are carefully designed and are a key contributor to how a project achieves compliance with local and/or state stormwater regulations. Requiring them to be outside the building and outside the 10-foot building envelope would be a hardship and is unnecessary, especially in dense/urban areas. We recommend this be struck from the final version of the Regulations and Handbook.

SCM elements such as roof drain header pipes, permeable pavement systems, and bioretention areas are often utilized in areas within 10 feet of a building and can be engineered and designed appropriately for this proximity. We recommend the restrictive 10-foot setback be removed.

The setback table in this section requires SCMs to be located outside IWPAs. In many cases these areas are already developed and contain existing SCMs. Provisions should be added to address existing SCMs and redevelopment within IWPAs. IWPAs are similar to a Zone IIs showing the extent of the draw for a well. These areas can be very large and encompass large areas of previously developed land, including streets, highways, buildings, subdivisions, and parking lots. This provision may render sites entirely within IWPAs as undevelopable as currently drafted.

The 100-foot setback requirement from 5% slopes is impossible to comply with on most sites. (Contextually, a 5% slope is the maximum slope of a sidewalk to meet ADA requirements.) By strict interpretation of the Standard the side slopes of an infiltration basin will need to be no more than 5%. We recommend performance standards (e.g. no breakout onto slopes) be established rather than specific setbacks.



#### 8. 10.10 Effective Date

Some consideration should be provided for master plan projects that have filed for MEPA review. Although there is a 6-month delay in applicability after promulgation, that will not address larger scale projects that have expended significant budget on detailed design and sought financing based on the approved master plan, but that are being permitted/constructed on a phased basis.

Section 10.10 (15) states: *"The amendments to 310 CMR 10.00 concerning Stormwater Management at 310 CMR 10.04; 10.05(6)(k)-(q); and 10.58 shall apply to Notices of Intent filed more than six months after [the effective date of these regulations] ... Any Notice of Intent submitted to the Department prior to six months after [the effective date] shall be considered under the standards and criteria in effect prior to [the effective date]."*

Similar to the approach proposed for Land Subject to Coastal Storm Flowage and the existing approach for Riverfront Area, both of which legacy projects that have completed MEPA review, we request that the updated stormwater regulations not apply to projects that have an approved environmental notification form, or environmental impact report if required, prior to the effective date of the revised regulations. This should include projects which may seek future Notices of Project Change (NPC), where MEPA does not require further review based on the NPC.

#### 9. Handbook General Comment

While we agree that the 2008 Handbook has much room for improvement, the new 860-page handbook is far too complex to: (1) be usable by most conservation agents or Commissions; and (2) facilitate efficient review and permitting. Many of the new details of stormwater management should be removed from the Regulations to facilitate future updates. We agree, additionally, that referencing the NOAA14+ precipitation data is a positive step to include in the Handbook.

#### 10. Handbook Definitions

Competent Soils Professional: We recommend that MassDEP include MassDEP certified soil evaluators as Competent Soils Professionals as they have been trained to evaluate soil textures and seasonal high groundwater. Based on the Standards that require Saturated Hydraulic Conductivity Tests, we anticipate that multiple professionals will be required to perform the various types of testing and therefore the definition of Competent Soils Professional needs to be sufficiently inclusive.

First Flush: We recommend that the definition be changed to 1-inch of runoff as referenced in other sections of the Handbook (reference pages A-39 and A-140). We note that references in the appendix are not capitalized terms; we recommend these terms be updated if the intent is to reference this definition.

Surface Waters: We recommend removing Surface Waters from the Handbook Definitions. Definitions contained in other regulations should not be reiterated in the Handbook.

## 11. Handbook Chapter 2 Comments

Page 2-3: Section 2.3.1 indicates that points of discharge and stormwater management structures, including but not limited to riprap aprons, must not be located in most types of Wetland Resource Areas. The handbook continues to describe what constitutes an Existing Discharge and where they can be located, but the section for New Discharges does not clarify location requirements. We recommend clarifying “most types of Wetland Resource Areas” for New Discharges by indicating that discharges are allowed in Bordering Land Subject to Flooding, Isolated Land Subject to Flooding, Land Subject to Coastal Storm Flowage, and Riverfront Area.

Page 2-7: Section 2.3.3 indicates that in order to meet Standard 3, ESSD or LID must be used unless demonstrated to be impracticable based on a written alternatives analysis to be submitted with the NOI. We recommend providing more direction or a template on the information that is required to be part of the alternatives analysis for consistency of practitioners and as guidance for Commissions and reviewers.

We also recommend that MassDEP allow for subsurface infiltration systems to meet Standard 3 without requiring an alternatives analysis. This Standard will be challenging to meet without subsurface infiltration, particularly in urban environments where space for LID is limited or nonexistent.

Page 2-7: Section 2.3.3 indicates that a mounding analysis is required when the vertical separation from the bottom of an exfiltration system to ESHW is less than four feet and the recharge system is proposed to attenuate the peak discharge from a 10-year or higher 24-hour storm. The mounding analysis must demonstrate that the seasonal high groundwater does not elevate into the infiltration practice, rise above the ground surface, or elevate the water surface of any Resource Areas over a 72-hour period. To ensure consistency by practitioners and enable review by Commissions, we recommend that MassDEP provide detailed guidelines in the Handbook including explanation of inputs, resources for obtaining inputs and requirements for Stormwater Report content such as Height vs Time graph showing that the mound height is below the infiltration system invert 72-hours post storm.

Page 2-9: Site Specific Considerations indicates that infiltrating the required recharge volume on certain sites may be difficult because of soil conditions. For sites comprised solely of HSG D soils and bedrock at or within 2-feet of the land surface, Applicants are required to infiltrate the required recharge volume only to the maximum extent practicable. Soils with HSG D or sites with high bedrock should each be excluded from this requirement; a site should not need both characteristics to be exempt. Additionally, consideration should be given to sites that have previously been developed that have these restrictions. Redevelopment of these sites to improve upon the existing condition should be allowed but may be infeasible if the site is required to meet the recharge requirements.

The draft Regulations and Handbook do not consider sites (undeveloped or previously developed) that have high groundwater. Shallow estimated seasonal high groundwater can make it impractical to provide the required recharge volume. We recommend allowing sites with HSG D soils, bedrock within 2 feet of the surface, or sites with estimated seasonal high groundwater within 2 feet of the surface be required to meet Standard 3 only to the maximum extent practicable.

Page 2-53: Section 2.5 indicates that SCMs other than green roofs, rooftop detention, roof gutters, and down spouts may not be installed inside or under buildings. In urban environments such as Boston that have strict infiltration requirements (Article 32 Zoning, Smart Utilities, and BWSC Requirements) and limited site area, infiltration under the building or location of a storage/stormwater reuse tank(s) within the building may be unavoidable. We recommend allowing for installation of SCMs inside or below buildings as allowed by the Massachusetts Plumbing Code.

Page 2-53: Section 2.5 states that the runoff from open air parking garages is considered wastewater and must meet Massachusetts State Plumbing Code regulations. Plumbing code indicates that runoff from the top level of an open-air parking garage should be treated as stormwater runoff and not sent to the sanitary sewer system. We recommend that the Handbook be revised to match Massachusetts Plumbing Code.

Page 2-54 and 2-55: Table 2-8 provides the vertical and horizontal setback requirements for each SCM. The setback requirements are unreasonably restrictive and will make it impossible to provide SCMs on some sites. We recommend that these setbacks be provided as general guidance where possible and necessitated by site-specific conditions. We recommend that MassDEP provide additional language stating SCM setbacks can be evaluated on a case-by-case basis with the Conservation Commission in relation to the desired outcomes, instead of prescribing setbacks.

Page 2-54: Table 2.8 requires a minimum 10-foot setback from buildings and property lines to SCMs. This setback distance is not always feasible, especially on small sites or sites in urban environments where the lot is entirely comprised with a building. Some municipalities, such as Boston, allow construction of infiltration practices within the public way. We recommend removing this requirement.

Page 2-56: Table 2-8, Note 6 requires a minimum access of 12 feet around SCMs with additional width required if side slopes exceed 15%. While this requirement may make sense for large-scale traditional SCMs, such as surface detention basins, this requirement makes small-scale green infrastructure spread throughout a site impracticable. Not all SCMs require the same access for maintenance, and this discourages the use of small bioretention planters or other SCMs throughout the site. We recommend allowing for flexibility on the type of access required for small-scale SCMs based on site-specific conditions.

Pages 2-55/2-56 and A-48, A-51, A-55, A-72, A-132: Table 2-8 and the referenced Appendix pages prohibit the construction of pipes, SCMs, and drainage structures below Estimated Seasonal High Groundwater. This requirement is prohibitive, especially for sites with high estimated seasonal high groundwater or sites that have been previously developed. This requirement will make some sites not feasible for development. We recommend allowing the construction of pipes, drainage structures, and SCMs at elevations below estimated seasonal high groundwater but requiring these elements be installed with protections to prevent the migration of groundwater along pipe routes like seepage collars, impermeable liners on stormwater systems, and other methods.

## 12. Handbook Chapter 5 Comments

Page 5-10: The documentation required for evaluation of proprietary structures is lengthy and restrictive. MA STEP no longer exists, and previous verifications through STEP are no longer valid. For every project that uses a proprietary structure, third party field studies substantiating the TSS, TP and other removal claims must be included with an NOI Application. Field studies must use TARP Tier II Protocol, and other accepted approvals are not valid. We recommend that MassDEP provide an approved list of proprietary water quality structures and their associated pollutant removal ratings.

### 13. Handbook Chapter 6 Comments

Page 6-19: Step 4, Exfiltration Rate Method indicates that additional storage shall not be assumed to be provided by media, stone, or other subsurface materials while modeling peak rate mitigation in an SCM. Since materials such as stone are considered part of certain SCMs such as subsurface infiltration systems and porous pavement stone reservoirs, we recommend revising the language to clarify that stone or materials that are considered as part of the SCM can be considered when calculating peak rate mitigation.

Page 6-21: Section 6.2.3, Required Recharge Volume incorrectly indicates that the Required Recharge Volume equals 1 inch multiplied by the total post construction area. Standard 3 of Regulations indicate that the Required Recharge Volume equals 1 inch over the *impervious* area onsite.

Page 6-76: Section 6.3.2, Step 3 indicates that a minimum of one test location must be completed per acre with a minimum of 4 test locations per site and one test for every 5,000 SF for noted ESSD credits. Section 6.3.3 Step 1 further requires one test for every 5,000 SF with a minimum of three (3) test locations per infiltration practice; two boring per test locations: one for ESHGW and one for infiltration testing. Though three test locations may make sense for large scale infiltration SCMs, many SCMs are less than 5,000 SF and may not need that many test locations to determine soil profile, ESHGW, and perform infiltration tests.

We also question the need for two borings at each test location; typically, one test pit is used for both ESHGW and infiltration testing (infiltration testing is done on an excavated shelf prior to advancing the deeper test hole). As written, every infiltration SCM will require 6 test pits or borings which would disturb the parent material profile within the SCM. We recommend revising the testing requirements to account for projects and SCMs of varying sizes. We presume the term “boring” is used to indicate borings or test pits as acceptable forms of testing.

Page 6-73: Performing a Soil Textural Analysis indicates that a textural analysis is not acceptable to determine the HSG of soils. This is a departure from typical design practices that have proven to be a reliable way to determine runoff conditions. We recommend that this excessive method for determination of HSG be removed.

Page 6-78: Table 6-4 indicates infiltration rates that must be used when using infiltration to calculate peak runoff rate; the highest provided infiltration rate in the table is 1.42 in/hr. We recommend that the results of site-specific infiltration testing be allowed for to design SCMs to mitigate the peak runoff rate.

#### 14. Handbook Appendix A Comments

Pages A-14 and A-62: ESSD Credit 4 indicates that the maximum impervious area to any one discharge to a Qualifying Pervious Area (QPA) is 1,000 square feet. A Vegetated Filter Strip can be considered a QPA but is able to receive runoff from an area one acre or less. If ESSD Credit 4 is intended to be used for driveways and parking lots, a maximum area of 1,000 square feet is low (approximately equivalent to five parking spaces). We recommend increasing the impervious area limit for the ESSD Credit to match the area allowed to discharge to a Vegetated Filter Strip.

Page A-54: SCM specifications for Proprietary Manufactured Separators indicate that they must be configured off-line to reduce scouring and re-entrainment of previously trapped sediment. Some proprietary separators include grated inlets and are designed to prevent re-suspension of sediment. Requiring all manufactured separators to be installed in this configuration is unnecessary to meet the intent.

Page A-64: SCM specifications for Pea Gravel Diaphragm with Filter Strip indicate that the grass/gravel combination must encircle the entire bioretention area. We recommend revising the design criteria to only require the gravel/grass strip where stormwater runoff will be *entering* the basin.

Page A-70: SCM specifications for Filtering Bioretention indicate that filtering bioretention is not suitable to treat TMDL pollutants Phosphorus and Nitrogen. The EPA MS4 provides pollutant removal curves for Phosphorus and Nitrogen for filtering bioretention. Additionally, Bioretention with Internal Storage Reservoir receives higher Phosphorus and Nitrogen removal rates. Assuming the level of pollutant removal is suitable for the TMDL, filtering bioretention should be considered suitable for TMDL pollutants consistent with the EPA MS4 permit.

Page A-91: SCM specifications for Constructed Stormwater indicate that the lowest portion of the gravel layer of a Gravel Wetland must be at least 2 feet above ESHGW. Per the UNH Stormwater Center Subsurface Gravel Wetland Design Specifications, gravel wetlands do not require separation from groundwater. We recommend removing the separation requirement for Gravel Wetlands to ESHGW consistent with typical design criteria.

Page A-132: SCM specifications for Water Quality Swale indicate that ESHGW should not be within 2-4 feet of the bottom of the dry swale. Other areas of the Handbook indicate that SCMs should be located 2 feet above ESHGW. We recommend revising the language to maintain a minimum of 2 feet of separation between the bottom of the dry swale and ESHGW.



Pages A-136, A-142, and A-148: SCM specifications for Dry Wells, Infiltration Basins and Infiltration Trenches indicate that these SCMs can never be located above existing "manmade" fill. Section 6.3.3 (page 6-79) says that recharge may be provided on fill provided that specific design and testing criteria are met; and SCM specifications for Infiltration Basins further clarify that they can be located in fill when a mounded Infiltration Basin is being created using well-graded sand. We recommend revising the language to be consistent throughout the Handbook allowing recharge in areas of fill provided the design and testing criteria are met.

Page A-155: SCM specifications for Porous Pavement indicates that Porous Pavement provides peak rate attenuation for small storms through a reduced curve number of 80. Although a reduced curve number is helpful, it does not represent the benefit the storage reservoir can provide in reducing peak runoff rates. The reduction provided by the porous pavement systems varies by storm event and can be effective at mitigating runoff including the 100-year event. We recommend that SCM specifications for Porous Pavement be revised to allow for the storage of stormwater runoff in the reservoir of a Porous Pavement section to mitigate the peak runoff rate; allowing the pavement section to be modeled as subsurface infiltration.

Page A-157: SCM specifications for Porous Pavement states that the pavement must not receive stormwater from other drainage areas, especially areas that are not fully stabilized. While we agree that porous pavement should be protected from receiving runoff from areas that are not stabilized, it is standard practice to allow run-on to porous pavement systems. We recommend the SCM specification for Porous Pavement be revised to allow run-on at a 3:1 ratio as is standard practice.

Page A-163: SCM specifications for Subsurface Infiltrators require at least 4 feet of separation to ESHGW. This contradicts other sections of the Handbook that require 2 feet of separation. We recommend revising the specifications to be a consistent minimum of 2 feet of separation between the bottom of recharge systems and ESHGW.

Page A-163: SCM specifications for Subsurface Infiltrators require that if a mounding analysis is required, MODFLOW must be used instead of Hantush. The typical design for Subsurface Infiltrator systems includes a rectangular layout with multiple rows of chambers/pipe surrounded with stone (reference detail on page A-161, Underground Plastic Chamber System), therefore Hantush is an acceptable model. We recommend MassDEP clarify this apparent contradiction.

Page A-163: SCM specifications for Subsurface Infiltrators do not allow chambers in LSCSF. Subsurface systems are utilized to mitigate peak runoff rate from rainfall events whereas the flooding in these areas is typically caused by coastal inundation. Limiting the use of subsurface systems in these areas based on coastal flooding is unnecessarily restrictive. Proper engineering design, along with regular maintenance of these systems both support the longevity of them and allow for inundation. This restriction would make design of sites in urban areas along the coast impracticable as many coastal areas (including downtown Boston) rely on subsurface infiltration systems to recharge groundwater and reduce peak runoff rates prior to discharge to existing drainage infrastructure.

SCM specifications for Subsurface Infiltrators do not allow chambers in BLSF. We understand that in the 100-year storm, these systems will be inundated, and groundwater levels may increase; however, proper engineering design and regular maintenance of these systems support the longevity of them and allow for inundation when necessary. Subsurface Infiltration systems can be critical in helping meet the Stormwater Standards on some sites, particularly on redevelopment sites, small-scale sites, and in urban environments. These systems are very effective at mitigating runoff from the 2- and 10-year storms and are not just used in the 100-year storm. Sites located in BLSF may rely on subsurface infiltration systems to reduce peak runoff rates prior to discharge to existing drainage infrastructure.

We recommend allowing for construction of subsurface infiltration systems in BLSF and LSCSF.

Page A-163: SCM specifications for Subsurface Infiltrators indicates that systems “must *not be sized* using the static method (including the volume to store the peak runoff rate) *and not* simple or dynamic field methods”. This requirement appears to be contradictory and should be corrected.

Page 170: SCM specifications for Green Roofs indicate that Green Roofs are not appropriate for sites with higher pollutant loading. Green Roofs are located on a building roof and do not receive the same pollutant loading as the at-grade conditions of a site. We recommend the updating the SCM specifications to allow for the use of Green Roofs on sites with Higher Pollutant Loading.

## 15. Handbook Appendix D Comments

Page D.3: The Regulations state that NRCS Type III Storm Distribution is not acceptable to meet the computation requirements for Standard 2, however, Standard Method to Convert Water Quality Volume to a Discharge Rate, Figure C-1 Unit Peak Discharge and Time of Concentration includes NRCS Type III Storm Distribution.

MassDEP should clarify if this method will also be updated to reflect NOAA Type C or D storm distribution.

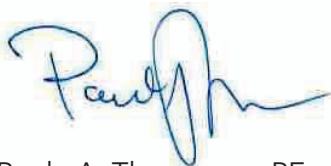
#### 16. Handbook Miscellaneous

Subsequent to incorporation of the various stakeholder comments as appropriate, we request that MassDEP thoroughly review the Stormwater Handbook with an eye toward consistency of terms and format, as well as administrative items (such as page numbering). Given the magnitude of the Handbook, it is imperative that it be made as usable as possible.

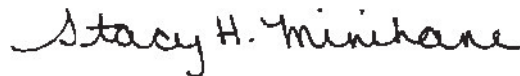
Thank you for considering our comments and recommendations, and please do not hesitate to reach out if you have any questions on our input. We recognize and respect the hard work that went into these draft Regulations, and look forward to promulgation of sound standards and guidance that will further the Commonwealth's goals in a clear and achievable way.

Sincerely,

BEALS AND THOMAS, INC.



Paula A. Thompson, PE  
Associate



Stacy H. Minihane, PWS  
Principal

PAT/erw/ggp/shm/mac/B+T Stormwater Comment Letter.docx



April 30, 2024

MassDEP - BWR Wetlands Program  
Attention: Wetlands-401 Resilience Comments  
100 Cambridge Street, Suite 900  
Boston, MA 02114

Via: [dep.wetlands@mass.gov](mailto:dep.wetlands@mass.gov)

Reference: Comments on:  
314 CMR 9.00 Proposed Revisions  
**401 Water Quality Certification**  
B+T Project No. Corp

Dear MassDEP BWR Wetlands Program:

Beals and Thomas, Inc. (B+T) offers the following commentary regarding the proposed updates to **314 CMR 9.00 401 Water Quality Certification**. Please note that we are providing a separate letter with our input on the proposed stormwater updates.

B+T is a multidisciplinary consulting firm with significant land use entitlement, natural resources, and inland and coastal wetlands experience. We have been actively engaged in reviewing the draft regulations on our own and with NAIOP and MACC/MSMCP/AMWS as part of their working groups/committees. Our role includes both private development projects as well as natural resource protection and enhancement projects.

We participated in the public information session on January 18, 2024, both public hearings on January 31, 2024, and the three office hours on February 26, March 14, and April 3, 2024. Thank you for holding these sessions, and particularly the office hours, which we found to be very beneficial.

We hope that MassDEP will consider the following comments, which we think will serve to: 1) facilitate implementability; and, 2) enhance resource area protection while allowing for appropriate development.

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### **314 CMR 9.02: Definitions**

The definition of Maximum Extent Practicable is broader than that proposed for 310 CMR 10.00; the expanded portion is excerpted here...*For all other purposes, Maximum Extent Practicable means that all reasonable efforts are made to meet each requirement; a complete written evaluation is conducted analyzing alternatives to fully comply with each requirement; and if the analysis demonstrates full compliance with the requirement cannot be achieved, the highest practicable level of compliance is proposed.* [emphasis added] What constitutes a complete written evaluation is subject to interpretation and should be specified.

Special Resource Water: We note that this is an added definition, and it should be clarified to read: *A surface water of the Commonwealth ~~so designated~~ as defined in 314 CMR 4.00: Massachusetts Surface Water Quality Standards.* In general, we urge MassDEP to avoid redundant definitions across regulations. Instead of repeating a definition, the citation should direct the reader to the relevant regulation for definitions.

### **314 CMR 9.06: Criteria for the Evaluation of Applications for Discharge of Dredged or Fill Material**

*(3) Except as otherwise provided in 314 CMR 9.06(3), no discharge of dredged or fill material shall be permitted to Outstanding Resource Waters.* We recommend the MassDEP consider including an appropriate allowance for certain projects/impacts and/or types of ORWs. Small-impact projects, such as crossings or utility poles, do not result in impacts commensurate with requiring a variance. For example, perhaps an exception allowing fill for projects within an ORW associated with a Public Water Supply, where there is no other alternative and the impact is less than 500 square feet, would be appropriate.

### **314 CMR 9.07: Criteria for the Evaluation of Applications for Dredging and Dredged Material Management**

Though no revision is currently proposed to this section, we note that improvement dredging is prohibited in public water supply ORWs, greatly limiting options for pond dredge projects that do not have a documented maintenance history. We recommend that MassDEP consider creating an allowance for these projects.


*(k) Maintenance, repair, replacement, or reconstruction of structures or facilities for water dependent uses. In addition, the enlargement of structures or facilities for water-dependent uses is allowed only in following limited circumstances:*

- 1. in an Outstanding Resource Water that is designated for purposes other than a public water supply; or*
- 2. in an Outstanding Resource Water that is located within an Area of Critical Environmental Concern provided that if there is a resource management plan for the ACEC that has been adopted by the municipality and approved by the Secretary, the Department determines that: the enlargement of structures or facilities is consistent with said plan and the fill or structure associated with the enlargement activity is located entirely within an area of previously filled tidelands*

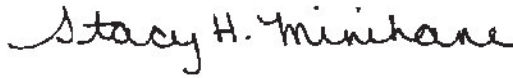
MassDEP - BWR Wetlands Program  
Attention: Wetlands-401 Resilience Comments  
April 30, 2024  
Page 3

Sincerely,

BEALS AND THOMAS, INC.



Sarah W. Stearns, PWS  
Principal



Stacy H. Minihane, PWS  
Principal

SWS/pat/shm/ggp/mac/B+T 401 WQC Comments





April 29, 2024

MassDEP - BWR Wetlands Program  
Attention: Wetlands-401 Resilience Comments  
100 Cambridge Street, Suite 900  
Boston, MA 02114

Via: [dep.wetlands@mass.gov](mailto:dep.wetlands@mass.gov)

Reference: Comments on:  
310 CMR 10.00 Proposed Revisions  
Miscellaneous Comments  
B+T Project No. Corp

Beals and Thomas, Inc. (B+T) offers the following commentary regarding the proposed updates to the **310 CMR 10.00**. Please note that we are submitting separate comment letters providing our input on the proposed revisions to the Stormwater and LSCSF portions of the regulations. This letter is intended to address our input on the other sections that are being revised.

B+T is a multidisciplinary consulting firm with significant land use entitlement, natural resources, and inland and coastal wetlands experience. We have been actively engaged in reviewing the draft regulations on our own and with NAIOP and MACC/MSMCP/AMWS as part of their working groups/committees.

We participated in the public information session on January 18, 2024, both public hearings on January 31, 2024, and the three office hours on February 26, March 14, and April 3, 2024. Thank you for holding these sessions, and particularly the office hours, which we found to be very beneficial.

### Overarching Themes

While we are excited about the advancement of these regulations, some of which have been discussed for decades, we are concerned that some of the proposed changes will be very challenging to implement and/or could lead to unintended detrimental consequences and so should be refined prior to promulgation. Many of our detailed comments can be summarized under several overarching concerns, which we echo from MSMCP's comment letter and have summarized below:

- MassDEP should engage with day-to-day practitioners in their current and future regulatory revision efforts: civil engineers, permitting consultants, conservation agents, conservation commissioners, and other non-profit staff – the people responsible for day-to-day interpretation and consistent implementation of these regulations.

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- The revised regulations provide some excellent detail but must strike a reasonable balance between scientific precision and overly complex or burdensome requirements that render them too difficult for most volunteer conservation commissions and too costly for some applicants to implement, without meaningful improvements in environmental protection.
- The regulations should provide performance standards that protect wetland functions and values and not specific means and methods of achieving those performance standards. Prescriptive and one-size-fits-all approaches and prohibitions will not only curtail innovation, but also likely result in unintended consequences.
- In the face of climate change, the revised regulations should acknowledge and reflect the difference between wetland “alterations” resulting from new development vs. “alterations” resulting from ecological restoration. Ecological restoration projects should be considered beneficial and afforded streamlined permitting to help achieve the Commonwealth’s resiliency goals by:
  - Reversing historic damage to wetlands,
  - Addressing invasive species,
  - Allowing for salt marsh migration,
  - Promoting carbon sequestration, improved water quality, and increased biodiversity, and
  - Facilitating living shorelines and other nature-based solutions.
- Regulatory updates should strive to create greater consistency of thresholds, exemptions/allowances, and requirements based on existing wetland functions and values and the potential impacts (or benefits) on those wetland functions and values of proposed projects, not on the user groups conducting the activity.

We hope that MassDEP will consider the above, as well as the more specific comments that follow, which we think will serve to: 1) facilitate implementability; and 2) enhance resource area protection while allowing for appropriate development.

1. Shared Use Paths:

310 CMR 10.02(2), Minor Exemptions

We agree that maintenance of shared use paths should be allowed without the need for permitting, and that basic Shared Use Maintenance should be exempted from WPA permitting requirements. The exemption is too prescriptive regarding means and methods and creates too narrow a management opportunity, with exclusions if work on a stormwater management component is included in the maintenance, for example.

#### 310 CMR 10.53 and 10.24, Limited Project Provisions

We recommend that MassDEP delete “abandoned railbed” in the first line of 10.24 (7)(c)(8). “Public Shared Use Path” is already defined in 10.04.

Further, and more importantly, MassDEP should consider more broadly defining a Public Shared Use Path in the limited project provisions. Municipal, land trust, or privately held but publicly accessible paths should be afforded the same limited project status, for example.

2. Trails: Trail construction and maintenance should not be discouraged by time-consuming, costly, or complex wetland permitting and design. We urge MassDEP to consider ways to simplify these trail maintenance and construction projects.

Additionally, trail work exemptions are too narrow in the regulations. Currently unpaved pedestrian walkways (trails) less than 3’ wide for public access on “Conservation Property” are exempt from the regulations (310 CMR 10.02(2)(b)(2)(a)). However, many trails traverse general municipal land, land trust properties, and private property with conservation restrictions. Conservation Property should be defined to include all types of natural land, including privately held land, onto which the public is invited.

Wetland trail construction should be subject to review under the WPA, but that review should be simplified. Narrow unpaved pedestrian walkways in publicly accessible open space often traverse wetlands. When wetland trails are properly constructed, they preserve wetland functions and values and help build a culture of appreciation and stewardship for these vital resources.

3. Habitat Restoration

Ecological Restoration: We urge MassDEP to consider ecological restoration projects as supporting “public health and safety”, as mosquito control projects are considered, and continue evaluating and incorporating ways to facilitate and streamline such projects, while maintaining appropriate regulatory oversight. For example, the definition of “ecological restoration project” is limiting in that it does not allow conversion between resource area types. This results in many significantly beneficial natural resource projects taking more time and cost, particularly given the intersection with MEPA. We recommend that the Ecological Restoration definition be expanded to facilitate more restoration projects.

Invasive Species Management: Non-native invasive plants pose a major threat to the health and survival of native ecosystems. Currently, invasive plant control work requires time-consuming, costly, and complex wetland permitting. Quick identification and removal of invasive plants minimizes the dramatic negative effects

of these plants and allows for the recovery of native species diversity and native wildlife habitat, a recognized wetland value. We ask that MassDEP consider simplifying the permitting process for invasive species management, particularly for hand pulling methods.

Research Projects: The new provision for Scientific Research Projects allowing research into the response of coastal wetlands to climate change is appropriate but may be too narrowly crafted. We recommend expanding this provision to allow experimentation with coastal and inland wetlands restoration techniques that are not currently utilized in Massachusetts. Appropriate limits on the scale and siting of such projects could be set, and successful projects could be allowed to remain in place.

#### 4. 310 CMR 10.04, Definitions

- Highway Specific Considerations: The specific considerations given in reference to highways gives one agency (MassDOT) special rights as it is currently written. Municipal DPWs often have control of roadways of similar size and undertake projects of similar scales, and so should be afforded similar allowances. We suggest that the regulations be based not on the governing agency but instead on the size of the roadway, the scale of the proposed project, the intended public benefits, and the potential environmental impacts.
- Impracticable and practicable have different qualifications in their definitions. The added definition for "Impracticable" is based on physical constraints while the definition of "practicable" factors in costs, technology, proposed use, logistics, and adverse consequences. We recommend updating these definitions so that the criteria is consistent, by updating the definition of "impracticable" to include all of the factors listed in the definition of "practicable".
- A definition for Zone A has been added. For clarity, since Conservation Commissions are not tasked with establishing Zone A limits, we request that the Zone A definition be removed, and that regulatory citation to Zone A reference the relevant Drinking Water standards at 310 CMR 22.00, since this term is already defined therein.
- New Terms or Definitions: Many new terms or definitions have been introduced and incorporated throughout the redline version (e.g., the multiple new definitions introduced in 10.36(2)). All terms should have an entry in 10.04 with either a standalone definition or a reference to the section where the term is defined and used.

5. The Need to Accelerate Wetlands Restoration: We echo MassAudubon's and others' comments regarding the need to accelerate wetlands restoration. The WPA and regulations were not contemplated in the context of restoration, and resultingly, the time and cost associated with restoration projects is often driven by processes and requirements that do nothing to enhance the ultimate outcome.

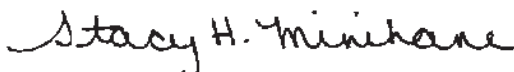
As an example, former cranberry bogs offer tremendous opportunities to restore systems that have historically altered. Yet the extent of information and analysis required to address the state's various permit requirements is excessive in relation to what is required for sound design and beneficial outcomes.

6. Additional Miscellaneous Suggestions
  - a. Provide headers at the top of every page of the new regulations with the complete section and subsection reference to facilitate navigation through the numerous lengthy sections that comprise many pages.
  - b. Format the regulations such that the Table of Contents will have internal hyperlinks allowing users to "jump" to specific sections.

Thank you for considering our comments, and please do not hesitate to reach out if you have any questions on our input. We recognize and respect the hard work that went into these draft regulations and look forward to promulgation of sound standards that will further the Commonwealth's goals in a clear and achievable way.

Sincerely,

BEALS AND THOMAS, INC.



Stacy H. Minihane, PWS  
Principal

ERW/shm/ggp/B+T Misc. WPA Comments

4/30/2024

Letter in support of changes to wetland permitting rules in "Resilience 2.0", as outlined by MA  
Society of Municipal Conservation Professionals

Berkshire Natural Resources Council's (BNRC) Stewardship Team supports the changes proposed to current wetland permitting regulations by the Society of Municipal Conservation Professionals. As an organization, BNRC maintains many miles of hiking trails and thousands of acres of conserved land. Wetlands, bordering vegetative wetlands, and buffer zones are common on these lands, and adjacent to many public recreation opportunities.

As a conservation organization, following wetland permitting guidelines is an important step in building and repairing trails and managing invasive species. Some long-term, multi-phase projects are developed with an understanding of the time and effort wetland permitting require. However, many smaller projects that would help protect fragile wetland environments become a challenge to prioritize due to permitting requirements. For example, repairs to culverts and bridges and installation of step stones or bog bridging are delayed by lengthy permit timelines that are disproportionate to the impact of the actual work being planned. This reduces our capacity to maintain our infrastructure in ways that would benefit wetland resources.

For example, many of our trails are converted from disused logging roads that use undersized and/ or failing ditch and culvert drainage systems. Upgrading these drainages would reduce trail erosion and protect wetland resources, however permitting can add months to a project timeline that would otherwise involve a week of labor.

Climate change has brought more frequent and severe rain events to our region, and we need to accelerate our response to erosion and trail issues to effectively protect resource areas. By *"exempting maintenance of pedestrian trails in and around wetlands, replacing, expanding, and improving boardwalks, causeways, bog bridging, and other trail infrastructure"* our team will be enabled to steward conserved land more effectively and with less damage to natural resources.

Allowing *"The construction of public footpaths and associated boardwalks/puncheons, that are close to the ground provided, however, that such structures are constructed on pilings, sills, or posts so as to permit the reasonably unobstructed flowage of water"* will enable our staff to provide low impact access to our conservation lands without the major hurdles of a lengthy and expensive permitting process, or the need to hire experts to install helical piles, a high-impact process, and find appropriate on or off-site mitigation in a timely fashion.

Changing the current DEP wetland permitting regulations will have a positive effect on BNRC's goals of conservation, climate resilience, and equitable access by allowing for efficient, low impact options to prevent and remediate degradation of resource areas and will simplify our jobs as stewards and managers of outdoor spaces. These tools help us offer access to the outdoors and to conservation and stewardship in our Berkshire community.

Respectfully,

Jenny Hansell, President

Doug Brown, Director of Stewardship

Tyler Fogg, Asst. Director of Stewardship

Josh Hopmans, Property Manager

Jenifer Dickinson, Stewardship Coordinator

Donovan Snyder, Land Steward



Berkshire Natural  
Resources Council

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**Bnrc.org**







April 30, 2024

*Via Electronic Email*

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Attn: Wetlands – 401 Resilience Comments

**Re: Comments on Proposed Wetlands Resilience 1.0 Draft Regulations**

Dear MassDEP Wetlands and Waterways Staff:

Thank you for all the time and energy spent on the revisions to the Wetlands regulations and corresponding revisions to the 401WQC regulations which is so important in improving the Commonwealth's resilience to impacts of climate change. We appreciate the opportunity to comment on Massachusetts Department of Environmental Protection (MassDEP's) Draft Climate Resilience 1.0 Regulations and look forward to implementing them in the many communities we work with in the Commonwealth.

Comments:

1. There should not be an exemption for residential with 4 units or fewer. Disturbance threshold is used in the MS4 permit without an exception for residential development and is a more equitable way to apply the regulations based on the impacts a project will have on stormwater. It is important in communities and for local commission and boards to hold development to a standard based on impact rather than use.
2. We would like to see more guidance on what is expected for the alternatives analysis. A template or example would be helpful.
3. Stormwater Standard #11 for Total Maximum Daily Loads lists SCMs to treat TMDL pollutants. These should be consistent with the technologies listed in Appendix F, Attachment 3 of the MS4 Permit as approved structural controls for meeting nutrient load reductions. MS4 communities will need this consistency for reporting and record keeping, especially for Phosphorus Control Plans where significant funds are being spent on implementing SCMs to meet reduction requirements.
4. Setback criteria for Stormwater Control Measures (SCMs) will be problematic particularly for retrofits where practices may not be allowed based on right-of-way/property lines, building foundations or slope setbacks. This criteria will conflict with the approach taken in the New England Stormwater Retrofit Manual. It will also prohibit installation of storm drain pipe, manholes and catch basins in due to groundwater conditions.

5. The regulations prohibit SCMs within 2 feet of groundwater. Can regulations be clarified to prohibit lowering groundwater to satisfy this setback? Consider prohibiting foundations be proposed within 2 feet of seasonal high groundwater to avoid pumping or dewatering groundwater table.
6. Many post construction stormwater management system issues arise from variable infiltration rates assumed in design. For example, we have seen that dense materials have lower infiltration rates in practice than assumptions based on Rawls Rates which do not take density into consideration. Recommend no relying on Rawls rates and instead require saturated conductivity tests to accurately size SCMs (specially for larger SCMs).
7. Our interpretation of lane width has less to do with impervious area and more to do with the designated use of this area – can this be clarified? Consider updating to clarify travel lane vs road shoulder.
8. The Stormwater Handbook Section 6.4 states, “Contributing drainage areas are to comply with Standard 3”. Clarify what this means, is treatment of off-site contributing stormwater required?
9. The Stormwater Handbook states, “The average contributing overland slope to and across the QPA must be less than or equal to 5%”. The New England Retrofit Manual does not have this requirement. These are unique situations and it would be helpful to get some credit rather than none based on individual site conditions for qualifying pervious areas. Consistency in guidance documents is important.
10. Standard 3 requires a mounding analysis when the seasonal high groundwater elevation is less than four feet below a recharge system. Some guidance on how to perform a mounding analysis is provided on Page 6-40. Can this section be expanded to include an example calculation for a mounding analysis including which values to use for each variable?
11. The Stormwater Handbook Table 2-1 states that required recharge volume need only be infiltrated to the MEP when the Site or an adjacent site has been classified as contaminated. What are the criteria for a site being considered “contaminated” and which authorities are responsible for making this designation?
12. The Stormwater Handbook Section 2.3.4.c.iii makes reference to the “dimensional specifications of the Massachusetts Stormwater Handbook Appendix A [2022 edition].” Is there a reason why the 2022 edition is specified?
13. The Stormwater Handbook Section 2.3.4.d notes that pretreatment is already accounted for in the EPA-PRC credit and thus a separate TSS removal credit should not be provided. Does the EPA-PRC credit account for cases where provided pretreatment is in excess of the 25% or 44% typically required? Can the excess pretreatment be counted towards total TSS removal? How much pretreatment is built into the credit?
14. The Stormwater Handbook Section 2.3.4.d.ii notes that 25% TSS pretreatment is required for all other discharges to structural treatment SCMs, except for rooftop runoff directed to a dry well or roof dripline filters. Does this mean that roof runoff directed to any other SCM requires pretreatment or is it meant that rooftop runoff is exempt from pretreatment requirements?
15. The Stormwater Handbook Section 2.3.7b Redevelopment – requirement is to mitigate peak discharge, this is different than MEP. this is confusing in what is required.

16. Stormwater Handbook Page 2-22 requires a LTPPP to comply with Standard 4 in reference to LUHPPLs and states that “a detailed industrial source control and pollution prevention plan (SWPPP) is crucial for sites with land uses that have higher potential pollutant loads.” Is an industrial SWPPP required for all LUHPPLs, or only those LUHPPLs with industrial uses? It is unclear what types of plans are required for sites in this category.
17. Stormwater Handbook Page 2-38 states that “the portion of a property that is currently undeveloped is not Redevelopment and thus does not fall under Standard 7.” What is the definition of undeveloped? Are lawns and other impervious areas that have been cleared of vegetation considered undeveloped?
18. The new Stormwater Handbook requires field study rather than lab tests for Proprietary devices. Is there a listing for these? Are there any devices that were previously acceptable but are no longer based on change in this requirements?

Thank you for your consideration of these comments made on behalf of our stormwater team here at BETA. We look forward to continuing the important work of improving our communities and protecting the environment here in the Commonwealth.

Very truly yours,  
BETA Group, Inc.



Melissa Recos  
Senior Associate

Cc: Phil Paradis, Stephen Borgatti, Matt Crowley, Laura Krause

**From:** [Bettina Abe](#)  
**To:** [DEP Wetlands \(DEP\)](#)  
**Subject:** Wetlands-401 Resilience Comments  
**Date:** Friday, April 26, 2024 3:39:30 PM

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CAUTION: This email originated from a sender outside of the Commonwealth of Massachusetts mail system. Do not click on links or open attachments unless you recognize the sender and know the content is safe.

Hello,

I retired about 9 months ago from the Town of Acton Conservation Division. I am now the volunteer land steward of the Acton Arboretum, a 65 acre town owned conservation land in the heart of Acton with wheelchair accessible trails, picnic tables and gardens.

Formerly an apple orchard for a couple hundred years, much of the Acton Arboretum has thickets of multiflora rose and honeysuckle. We battle garlic mustard and Japanese knotweed. My fellow land stewards, who volunteer on all 2,000 acres of Acton's conservation land, would be exceedingly grateful if the wetland permitting process for invasive species management were simplified.

Additionally, we have two ponds which are impounded sections of Nashoba Brook infested with trapa natans (water chestnut). These plants destroy open water ecosystems. Time flies and just as we thought we were in the clear, the plants come back and it's time to file again.

We absolutely advocate for performance standards to protect our wetland functions and values. Please create new Minor Activities in 310 CMR 10.02(2)(b)(2) for routine work in Riverfront and Buffer Zone conducted by homeowners and land managers such as cutting of certain high-risk trees and removal of invasive vegetation.

Please create new Limited Projects (310 CMR 10.24 and 10.53) and other provisions to simplify trail permitting and invasives species management in wetland resources areas.

?

Thank you for hard work to protect our natural resources and for your very kind attention!

Sincerely,  
Bettina D. Abe  
Acton, MA



**From:** [David Spidaliere](#)  
**To:** [DEP Wetlands \(DEP\)](#)  
**Subject:** Wetlands-401 Resilience Comments  
**Date:** Tuesday, April 30, 2024 12:07:41 PM

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**CAUTION:** This email originated from a sender outside of the Commonwealth of Massachusetts mail system. Do not click on links or open attachments unless you recognize the sender and know the content is safe.

Dear MassDEP Wetlands Program,

Thank you for the opportunity to comment on the draft Wetlands Protection Act regulations as part of MassDEP's "Climate Resilience 1.0" package. These are positive steps toward protecting our coastal resources and infrastructure, and making Massachusetts more climate resilient. I appreciate MassDEP's considerable time and effort to prepare these proposed regulations.

The Beverly Conservation Commission is in general support of the proposed MassDEP changes. The Commission also agrees with the comments/proposed revisions to these changes from MACC and MSMCP, aside from the comment about not recording an ORAD (the Commission thinks these should still be required to be recorded at the Registry of Deeds).

The Commission urges MassDEP to begin work on "Climate Resiliency 2.0" to continue improving the Wetland Protection Act regulations.

Thanks,

**David Spidaliere**

*City of Beverly*

*Conservation Agent*

978-605-2345

[dspidaliere@beverlyma.gov](mailto:dspidaliere@beverlyma.gov)

**From:** [William Bulens](#)  
**To:** [DEP Wetlands \(DEP\)](#)  
**Subject:** Wetlands-401 Resilience Comments  
**Date:** Tuesday, April 30, 2024 4:09:07 PM

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Good afternoon

I'm writing to let you know that I believe the recommendations and minor exemptions put forward by the MSMCP will be a good update to the MassDep regulations. We have just gone through a lengthy process in attempting to permit the bike trail in Billerica. In particular the increase in the width of the boardwalks and bridges would be a benefit.

Thank you for time

William Bulens

Chair of the Billerica Conservation Commission.

Have a great day

Bill



**From:** [Nathaniel E. Mahonen](#)  
**To:** [DEP Wetlands \(DEP\)](#)  
**Cc:** [Caroline Clark](#); [Brad Johnson](#); [Will Granbery](#); "[TEAM-TRG-NE@nf.bohlereng.com](#)"  
**Subject:** RE: Wetlands-401 Resilience Comments  
**Date:** Monday, April 29, 2024 9:44:29 AM  
**Attachments:** [image001.png](#)  
[Bohler List of DEP Comments and Questions 2024-04-17.pdf](#)

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**CAUTION:** This email originated from a sender outside of the Commonwealth of Massachusetts mail system. Do not click on links or open attachments unless you recognize the sender and know the content is safe.

Good morning – Our initial list of comments (attached) contained comments relative to the two items below. We wanted to follow up after having discussions with several consultants regarding the below criteria to determine / reduce water temperature for stormwater runoff. General feedback from consultants so far is that determining the temperature is not an easy task and they were hesitant to give specifics on how to achieve this. Based on these discussions we'd like to stress the importance of DEP providing very specific guidance, standards, calculations, etc. for determining how the temperature reduction is supposed to be achieved and document in stormwater reports. Especially where a specific temperature (e.g. 68 degrees F) is noted as there are a lot of variables (air temperature, surface temperature, surface cover etc.). that can impact the temperature of runoff and in the summer water will easily exceed 68 degrees F. A recommendation would be to remove the specific temperature requirement and replace with the requirement to incorporate certain practices that will help reduce the water temperature prior to discharge.

- For discharges to a critical area the Stormwater Control Measures (SCM) shall also reduce the temperature of the stormwater being discharged
- Unless a discharge to a cold-water fishery is infiltrated or an ESSD practice is used, the temperature of the stormwater shall not exceed 68 degrees F at the discharge point

Thank you for your time and consideration in reviewing our feedback.

**Nathaniel E. Mahonen, P.E.**

Chief Engineer

352 Turnpike Road

Southborough, MA 01772

o 508-480-9900 / c 978-660-8945 / [nmahonen@bohlereng.com](mailto:nmahonen@bohlereng.com)

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**BOHLER //**

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**From:** Nathaniel E. Mahonen

## Review Comments on Proposed Regulation Change – 310 CMR 10.00 and associated Stormwater Handbook

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### General Comments

- + Based upon a review of the Summary of Target Recharge Volume Evaluation Memorandum we support the change from one (1) inch of recharge volume to 0.8 inches of recharge.
- + Please provide a redline of the changes between draft handbook and final handbook for ease of review by designers and Commissions.
- + Please also provide a Q&A of common questions to understand what was revised and what wasn't as well as why.
- + Anywhere that more clarity or specificity can be added it will be helpful to minimize debate and review between designers, Commissions, and reviewers. Understanding that some flexibility in design is good but too much can create problems during permitting and reviews
- + We appreciate the extension of time to review the revised handbook as it is extensive. Our comments below represent what we were able to compile within the extended limits but there is potential that additional comments may follow. In general, we ask that a thorough review of the handbook be completed prior to issuance of final to eliminate discrepancies, now working links, inconsistencies etc. within the document.

### WPA 310 CMR 10 Questions / Comments

- + Definition of alter notes “increasing of the volume of untreated stormwater runoff directed to a wetland resource standard”. Presuming this is language to enforce the new increased standards on water quality treatment and not a requirement that no volume increase is allowed? Please confirm that a volume increase is allowed as long as it is treated.
- + EPA PRC definition notes that the handbook may not reflect any future updates to the BATT. How often does DEP intend to track and keep regulations up to date to reflect new data? Can designer submit up to date BATT data to allow for a different curve than shown in the handbook? We believe this provision should be allowed.
- + New stormwater discharge definition defines “new or increased runoff” and that increased runoff means “additional stormwater volume or higher discharge rate”. So, for redevelopments if we are matching peak rates but increasing volumes then we are creating a “new stormwater discharge” and this discharge would be subject to new development standards for water quality? Please confirm and/or provide clarity in the handbook.
- + Setback definition talks about “structure” or other “developed feature” but neither of these terms are defined. Please provide clarity / definitions for each term to avoid potential differences of interpretation between Applicants and Commissions / peer reviewers. See additional comments on structure table below.
- + References “2023 Handbook” in multiple locations. Should this be 2024 as Handbook is not finalized at this time?
- + 310 CMR 10.05 (6)(K) – Talks about ESSD / LID
  - o References “all components” – What does this mean? Include all pipes and discharge locations? Please provide clarity / definitions for each term to avoid potential differences of interpretation between Applicants and Commissions / peer reviewers.

## Review Comments on Proposed Regulation Change – 310 CMR 10.00 and associated Stormwater Handbook

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### + Standard 3

- 0.01 in/hour is too low permeability rate to allow for infiltration of runoff. This will also make system footprints very large to get the 72-hr drawdown time. We would recommend staying at the current minimum requirement or maybe allowing to a 0.01 in/hr. rate for redevelopment projects and sites that are comprised solely of C/D soils and ledge.
- Groundwater mounding
  - Section notes that the mound does not “elevate into the infiltration practice”. Please provide more information as to what this means and how to comply. (e.g. Elevate above lowest elevation?)
  - Section notes that the mound does not “Elevate the water surface of any resource area”. Please clarify to confirm that this means the mound shall stay below ground elevation. Below estimated seasonal high water table? DEP should also provide more definitive guidance on how this is determined and what technology / software is appropriate (e.g., MoundSolv). See additional mounding comments in Handbook section below.
  - Will DEP provide an estimated rise in water table elevation that is considered de minimis/negligible? Bohler requests that MassDEP define the limit at which a groundwater mound is deemed de minimis. The report entitled Simulation of Groundwater Mounding Beneath Hypothetical Stormwater Infiltration Basins, prepared by the U.S. Geological Survey (USGS) identifies 0.25 feet as the “lower limit of mounding considered significant.”
  - Bohler requests that MassDEP provide or cite guidance on the selection of the design parameters to be used to estimate groundwater mounding. The publicly available Hantush spreadsheet was developed by the USGS in collaboration with the New Jersey Department of Environmental Protection. Some municipalities have developed methodologies that differ from USGS/NJDEP. The lack of specific guidance can result in differing approaches between designer and reviewing body.

### + Standard 4

- For proprietary manufactured devices the regulations reference the TARP protocol which is out of date and defunct. The regulations should reference other applicable standards and allow more flexibility and not be as narrow in the number of allowable references. For example: NJCAT, TAPE Program as long as it is a reliable testing reference.
- For proprietary manufactured devices why is field testing required and laboratory studies not allowed?
- Comments for changes and improvements to the new Crosswalk
  - Add “pre-treatment” or “terminal treatment” to each category of SCM so its clearer which category is allowed for which type of SCM. Either new column or to header (e.g. Non-Structural (Pre-treatment)).

## Review Comments on Proposed Regulation Change – 310 CMR 10.00 and associated Stormwater Handbook

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- Confirm that Proprietary Manufactured Separator units are pre-treatment practices only including redevelopment projects? If this is the case, we believe that these units should be allowed as terminal treatment in redevelopment to allow for flexibility in improving existing conditions.

### + Standard 6

- For discharges to a critical area the Stormwater Control Measures (SCM) shall also reduce the temperature of the stormwater being discharged. It feels like there are several variables to consider (air temperature, surface temperature, surface cover, etc.) that could lead to different temperatures. More info is needed from DEP for designers on how this is to be determined and calculated.
- “Unless a discharge to a cold-water fishery is infiltrated or an ESSD practice is used, the temperature of the stormwater shall not exceed 68 degrees F at the discharge point.”
  - Does “infiltrated” mean that 100% infiltration is required? Or only partially? Please clarify what standard we need to meet when designing.
  - Do ESSD credits apply to utilizing an “ESSD Practice”? Does the ESSD practice need to be an infiltration practice, or can it be any ESSD practice? Please clarify.
  - More info is needed from DEP for designers on how to calculate / determine the 68-degree temperature will be met.

### + Master Setback Table

- The narrative text refers that the setbacks are measured to the “outermost portion” of the SCM but the table itself notes it is from “any component” of the system. These are inconsistent with each other, and neither terminology is defined.
  - Needs clarity such that there is no ambiguity when discussing the required setbacks with local Commissions and peer reviewers.
  - Both languages are too restrictive if intended to include pipes, discharges or similar components. Recommend that it is to the limit of the area where recharge and/or treatment is provided. For instance, the outside of the basin berm of an infiltration basin or the inside of the berm if an impervious core or liner is provided.
- Setback outside of Zone I, IWPA, Zone A is too restrictive and may render entire properties undevelopable even in a redevelopment scenario. In particular, redevelopment that improves existing conditions within these zones should be allowed to improve the water quality and recharge of these resource areas.
- For surface waters – who determines / when is it determined if the additional setback provision is required and how much additional setback is needed? If at the discretion of the Commission, then this could leave it open to arbitrary requirements depending upon the Commission and project. It will be hard for designers to anticipate potential design requirements especially if the Commission doesn't have or has not updated their local regulations.

## Review Comments on Proposed Regulation Change – 310 CMR 10.00 and associated Stormwater Handbook

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- Why ten-foot setback to property line? Does not feel this is appropriate for stormwater management especially in terms of “any component”.
- What is min. vertical separation to seasonal high groundwater for wet basins and wet water quality swales? Are they allowed to intercept?
- 100-foot setback to any slope that is greater than 5% for infiltration basins, surface exposed or underground infiltration trench, or infiltrating bioretention area feels arbitrary and unnecessary. Many sites will not be developable including in redevelopment scenarios.
  - Setback from slopes >3:1 would be more appropriate if the concern is regarding breakout/erosion as the basin berm return slope is allowed to be a maximum of 3:1.
  - To save space and limit the impacts and extents of the overall development designers will often utilize a 2:1 or 3:1 slope to transition from the site / parking etc. to the basin. Would this setback be applicable to these slopes as well or is this intended to be existing slopes only? Setbacks to proposed slopes would require the limits of the development to expand, by decreasing the slope of the grading and/or requiring more earthwork/fill. This seems counterintuitive to the ESSD intent of the handbook in minimizing disturbance and maintaining natural vegetation.

### Stormwater handbook

- + In general, it would be helpful to have the following to navigate the extensive handbook.
  - Chapter and section #'s at bottom of page along w/page #'s
  - Page # references when figures, equations, tables etc. Are noted in the text, sometimes the noted item is in another section that is not remotely close to the text.
- + Standard 1
  - New stormwater discharge definition defines “new or increased runoff” and that increased runoff means “additional stormwater volume or higher discharge rate”. So, for redevelopments if we are matching peak rates but increasing volumes then we are creating a “new stormwater discharge” and this discharge would be subject to new development standards for water quality? Please confirm and/or provide clarity in the handbook.
- + Standard 2
  - Provide copy of, or hyperlink to, the NRCS Field Handbook – Massachusetts Supplement referenced in handbook available for download on the DEP website. Could not locate online including NRCS website.
  - Provide website or better way to evaluate locations of Cities / Towns where there is a transition between the NOAA C and D distributions. Figure 6-3 is unusable for this purpose. The lookup table noted in step 3 on page 6-16 would work but none is available on the link that is provided. Alternatively, could this be a layer that is added to MassMapper?

## Review Comments on Proposed Regulation Change – 310 CMR 10.00 and associated Stormwater Handbook

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### + Standard 3

- 0.01 in/hour is too low permeability rate to allow for infiltration of runoff. This will also make system footprints very large to get the 72-hr drawdown time. We would recommend staying at the current minimum requirement or maybe allowing to a 0.01 in/hr. rate for redevelopment projects and sites that are comprised solely of C/D soils and ledge.
- Page 2-9 infiltration systems must be installed in soils capable of absorbing the recharge volumes (i.e. not D soils). Is this contradictory to 0.01 min rate?
- Groundwater mounding
  - Section notes that the mound does not “elevate into the infiltration practice”. Please provide more information as to what this means and how to comply. (e.g. Elevate above lowest elevation?)
  - Section notes that the mound does not “Elevate the water surface of any resource area”. Please clarify to confirm that this means the mound shall stay below ground elevation. Below estimated seasonal high water table? DEP should also provide more definitive guidance on how this is determined and what technology / software is appropriate (e.g., MoundSolv). See additional mounding comments in Handbook section below.
  - Industry-standard mounding calculations and software, including the Hantush method, produce results that approach, but do not reach, a value of zero. Will DEP provide an estimated rise in water table elevation that is considered de minimis/negligible?
- Page 2-8 states to calculate recharge volume for each soil type and then add the volumes. Then it states to use a weighted average to determine the Rv. Which is the appropriate method? Past handbook required separate calculation then adding the volumes.
- Page 2-9: “for site comprised solely of Hydrologic Soil Group (HSG) D soils and bedrock at or within 2 feet of the land surface” – Change and to or
  - Same comment applies to language within table 2-1

### + Standard 4

- Why is 25% treatment required for roof runoff? Only noted exceptions are when it's directed to a dry well or roof dripline filters. Roof runoff (non-metal) has been treated as clean runoff in the past and pre-treatment prior to any infiltration or discharge isn't needed.
- For proprietary manufactured devices it references TARP protocol which is out of date and defunct. Reference other applicable standards and allow more flexibility / not as narrow in # of allowable references. EG: NJCAT, TAPE Program as long as it is a reliable testing reference. See additional comments below.



## Review Comments on Proposed Regulation Change – 310 CMR 10.00 and associated Stormwater Handbook

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- Provide an example for all four treatment train scenarios outlined on page 2-16 – 2-17, particularly the “multiple wetland” scenario, to minimize any ambiguity in interpretation.
- Table 2-2
  - Add “pre-treatment” or “terminal treatment” to each category of SCM so its clearer which category is allowed for which type of treatment. Either new column or to header (e.g. Non-Structural (Pre-treatment)).
  - Confirm that Proprietary Manufactured Separator units are pre-treatment practices only including redevelopment projects? If this is the case, we believe that these units should be allowed as terminal treatment in redevelopment to allow for flexibility in improving existing conditions.
- Will DEP provide a particle size distribution for the sizing of proprietary separators and filters? Current and proposed guidance requires units to be sized for a specific water quality depth but provides no guidance as to what particle size a given unit should be designed to review.
- + Standard 5
  - 1” of WQV requirement is noted as being multiplied by the “total impervious area for the site” (TIA). TIA is defined as the “total impervious are on a Project Site”. An exclusion for clean runoff (non-metal) should be applied to this definition in the handbook.
- + Standard 6
  - References 2022 Stormwater Handbook
- + Standard 7
  - Requirement that off-site mitigation must be used to achieve 80/50 removal is excessive.
    - Keep 80/50 requirement but to MEP on-site only.
    - Alternative recommendation is to reduce the area of potential off-site mitigation to be MEP to extend to be within the municipality the project is contained. Working within the same HUC 12 watershed would require coordination / approvals of other municipalities and may not be practicable or achievable depending on the requirements (cost, timing, etc.) of the adjacent municipalities. We would suggest adding a provision to allow for monitory contributions to the Town/City for providing TSS mitigation in lieu of constructing the off-site improvements.
    - Off-site mitigation requirements may be unfairly biased toward different types of developments. For instance, a developer may wish to do a smaller development that is less impactful overall and can’t meet the 80/50 onsite but does not have the means to provide offsite mitigation. Whereas another

## Review Comments on Proposed Regulation Change – 310 CMR 10.00 and associated Stormwater Handbook

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developer looking at the same property may have the means to provide the offsite mitigation, but their overall development program may have more impacts to stormwater, resource areas and surrounding community (e.g. more impervious, more traffic etc.). In this case we think the smaller development should be encouraged given the less overall impact but may not be achievable due to one standard.

- This also requires approval by 3rd party, either private and/or Town/City, which can't be guaranteed. Expect many adjoining property owners will not want to encumber their own lots which would hinder potential redevelopment or improvements of their own parcels and still be able to achieve new standards on their own lots.
  - We can see this as a roadblock to redevelopment. Redevelopment of underutilized and degraded sites should be encouraged rather than potentially pushing to develop new areas. For instance, a site that has existing contamination w/in a resource area buffer zone, in this case it may be more beneficial to have the site redeveloped and the contamination mitigated / cleaned up rather than being derailed by having to provide offsite water quality treatment.
  - In general, older sites that were developed under little regulation or supervision should be encouraged to be redeveloped especially when they can provide improvements to existing conditions (reduce impervious, increase recharge, restore buffer zones etc.) that are a positive benefit and not be derailed by one provision alone.
- + Table 2-4b: References DEP NOI WM-09 whereas page 6-69 footnote 89 references DEP NOI WM 15. Based on a review of DEP website it appears WM 15 has replaced WM 09. Please confirm and update either section as required.
- + Section 2.5
- SCM's must not be installed inside or under buildings. This is sometimes necessary to accommodate needed improvements for areas of redevelopment or w/in densely populated / developed areas.
    - A suggestion would be to allow under buildings but for recharge only, not water quality (direct only clean runoff (i.e. roof)) to minimize need for access/maintenance.
    - The 4/3 webinar noted DEP is considering deferring to the building/plumbing code. We would support this change in language.
  - Stormwater outlets must not be installed within noted resource areas including BVW.
    - Provisions should be allowed for redevelopment and improvements to existing stormwater outlets. Including the installation of stabilization w/in wetlands to correct existing erosions problems. This could be clarified as one of the items that is allowed as part of the MEP alternatives analysis.

## Review Comments on Proposed Regulation Change – 310 CMR 10.00 and associated Stormwater Handbook

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- Table 2-8

- Page 2-53 notes that for horizontal setbacks “all distances along a horizontal plane from the appropriate boundary, edge of SCM, edge of building, structure, or other object.” However, the WPA definition for SCM “includes but is not limited to, a basin, discharge outlet, swale, rain garden, filter, some Low Impact Development techniques or practices, or other stormwater treatment practice or measure either alone or in combination, including without limitation, any overflow pipe, conduit, weir control structure that:
  - *Is not naturally occurring.*
  - *Is not designed as a wetland replication area, and*
  - *Has been designed, constructed, and installed for the purposes of conveying, collecting, storing, discharging, recharging or treating stormwater. “*

The definition of SCM that includes basically every component, including conveyances, is far too restrictive and will make many sites undevelopable as many treatment practices need to appropriately discharge stormwater. It feels appropriate to have the setbacks measured to the location where infiltration and/or treatment occur but not to the conveyance structures / components themselves.

- Page 2-53 “for example: for an infiltration basin with an earthen berm around the perimeter, the setback from the Resource Area is measured from the outside toe (i.e., bottom) of the infiltration berm wall.” Clarification is requested as to why this is measured from the outside toe. Measuring from the top of berm or water elevation location is more appropriate as that is where the infiltration and treatment occurs. Geotechnical information can be provided to show that the basin sidewalls / outside slopes are stable.
- Any stormwater discharge to be setback outside of Zone I, IWPA, Zone A is too restrictive and may render entire properties undevelopable even in a redevelopment scenario where there are existing discharges that could be improved.
- Why is there a ten (10) foot setback to property lines? Does not feel this is appropriate for stormwater management.
- Incorrect footnote referenced for maintenance access around perimeter of SCM.
- Table is inconsistent with proposed changes to the WPA which require a 100-foot setback to any slope that is “greater than 5% to an infiltration basin, surface exposed or underground infiltration trench, or infiltrating bioretention area”. Table notes a 50 ft setback from any slopes > 15% for infiltration basin.
  - 50 ft setback from any slopes > 15% for infiltration basin feels arbitrary and unnecessary.

## Review Comments on Proposed Regulation Change – 310 CMR 10.00 and associated Stormwater Handbook

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- Setback from slopes >3:1 would be more appropriate if the concern is regarding breakout/erosion as the basin berm return slope is allowed to be a maximum of 3:1
  - To save space and limit the impacts and extents of the overall development designers will often utilize a 2:1 or 3:1 slope to transition from the site / parking etc. to the basin. Would this setback be applicable to these slopes as well or is this intended to be existing slopes only? Setbacks to proposed slopes would require the limits of the development to expand, by either decreasing the slope of the grading and/or requiring more earthwork/fill. This seems counterintuitive to the ESSD intent of the handbook in minimizing disturbance and maintaining natural vegetation.
  - Footnote 8 that states “Structural Stormwater Management systems (e.g. pipes, catch basins) and structural SCMs are not allowed to be installed in groundwater. Invert of pipes must be installed above seasonally high groundwater.”
    - This is extremely prohibitive and will require additional fill (environmental impacts) and cost to develop sites to keep pipes above ESHGW. There are provisions that can be implemented to prevent the migration of groundwater along pipe trenches such as the use of anti-seep collars.
    - This also prohibits a lot of practical SCMs that may require a deeper footprint. (e.g., Tree box filters, hydrodynamic separators etc.)
    - If it is to remain then clarification is needed on the following:
      - “not installed in groundwater” does this mean estimated seasonal high or observed / actual? Observed / actual that could be determined by monitoring wells is more appropriate.
      - What needs to be above ESHGW elevations? An example is given re: the pipes but it notes “structural SCM” so do all components of a catch basin (i.e. sump) need to be above ESHGW. This could be even more prohibitive with sites that have relatively moderate depths to groundwater as catch basin structures are at least 7 feet deep.
- + Page 3-14 has incorrect references to the current CGP dates / timeframes.
- + Page 5-7 notes that all Proprietary Manufactured Separators and Media filters must be configured offline. Does this mean that Separator style units that can be designed to function as an inlet as well are no longer allowed? These inlet style units are beneficial in redevelopments w/limited space to provide improved water quality. They are also beneficial in new developments to help reduce watershed sizes and provide small scale controls rather than centralizing stormwater systems.

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- + Page 5-9
  - Why are previous reviews under TARP now null in void if they were conducted in accordance with the TARP protocol?
  - Why are products that were reviewed and certified under the TAPE program not allowed without the additional case-by-case TARP evaluation? The TAPE program is listed as a reliable source of information for Commissions to review products. If it's reliable for review, then certification through this program should make it an approved SCM.
- + Chapter 6 describes the information and calculations that must be submitted in a stormwater report to document compliance. Why not have this information mixed in with the other chapters that cover the standards? For instance, most of the information could be inserted in Chapter 2 along with the corresponding standard. It would make it easier to reference rather than tabbing back and forth between two chapters that are far apart.
- + Page 6-7
  - Allow rip rap splash pads or aprons within resource areas as part of redevelopment. Can be utilized to improve erosion issues that are existing on site. It could be noted that it is allowed if no other reasonable alternative is available to correct the erosion (e.g., relocating pipe discharge outside of resource areas).
- + Page 6-16 – Use of NOAA distributions must not be used for analysis.
  - As of 2/10/2024 HydroCAD has an updated version of their software that included Atlas 14 rainfall distributions for Northeastern states specifically (refer to enclosed email). These should be allowed for use in the analysis.
- + Page 6-19 Peak rate mitigation
  - Provide clarification as to why in-situ saturated hydraulic conductivity values shall not be used for peak rate computations. They are suitable for dynamic methods in determining groundwater recharge volume. It would seem more appropriate to have localized testing govern the rate vs. rates established by NRCS as part of broad soil mapping efforts.
  - Storage volume shall not be assumed to be provided in media, stone or other subsurface materials. We are requesting clarification on this decision as these materials will provide storage volume, especially stone which has a 35% void ratio. This will require basins to be subsurface infrastructure to be oversized and more costly.
  - Only consider bottom surface for exfiltration. No credit shall be given to sidewall exfiltration. This may make more sense for surface basins but seems excessive for sub-surface infiltration structures as there is free flow between the structures, stone and surrounding areas including sidewalls.
- + Page 6-26 footnote 71: states that, "If the infiltration facility is a practice that uses stone or another media such as a dry well, only the void spaces must be considered. In those circumstances, use  $n \cdot D$  instead of  $D$ , where  $n$  is the percent porosity of the stone or other media.

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- It makes sense to account for the porosity of the media material, but this presumption excludes a good portion of the structure used as part of the infiltration practice. For example, the dry well scenario which typically provides a large portion of its storage capacity within the structure itself vs. in the stone voids, this requirement would exclude all but 35% of the depth of the drywell structure.
- Recommend rewording this footnote and removing the drywell example.
- + Page 6-36 & 6-37 Drawdown requirements
  - The first paragraph states Computations must reflect drawdown within the 72-hour period for whatever volume is directed to the recharge practice. For example, if a recharge practice is proposed to exfiltrate the entire runoff volume associated with the 100-year 24-hour storm, the drawdown analysis needs to demonstrate it is accomplished within 72-hours.
  - The second paragraph states that a “mounding analysis must be conducted as part of the Drawdown analysis for recharge practices with 4’ or less of separation to SHGW AND where the recharge practice is proposed to exfiltrate the runoff volume from the 10-year or higher storm.” Clarify mounding analysis is required for recharge practices with less than 4’ of separation and for recharge practices proposed to attenuate the peak discharge from a 10yr or higher 24-hr storm.
  - Equation 6-6 states that the volume (Vscm) used for calculating drawdown is the required recharge volume computed using the Static and Dynamic methods. This is in contradiction to the language of the first paragraph which indicates total volume w/in the SCM.
  - Example appears to have a typo and incorrectly indicates 76 hours is less than (<) 72 hours in the result
- + Page 6-38: Water Budgeting
  - Mentions use of Thornwaite method – Online training tools or programs offered by DEP or accredited third parties would be helpful for engineers to learn this methodology.
  - Clarification needed to understand what constitutes “alteration”
- + Page 6-40: Mounding Analysis
  - Definition contradicts language in second paragraph on pg 6-36, which indicates mounding is required when separation to SHGW is 4’ or less. Also contradicting language regarding attenuating peak discharge vs. exfiltrating volume from 10yr or higher storms. Language needs to be identical to avoid confusion.
  - Will DEP provide an estimated rise in water table elevation that is considered de minimis/negligible? Bohler requests that MassDEP define the limit at which a groundwater mound is deemed de minimis. The report entitled Simulation of Groundwater Mounding Beneath Hypothetical Stormwater Infiltration Basins, prepared by the U.S. Geological Survey (USGS) identifies 0.25 feet as the “lower limit of mounding considered significant.”



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- Bohler requests that MassDEP provide or cite guidance on the selection of the design parameters to be used to estimate groundwater mounding. The publicly available Hantush spreadsheet was developed by the USGS in collaboration with the New Jersey Department of Environmental Protection. Some municipalities have developed methodologies that differ from USGS/NJDEP. The lack of specific guidance can result in differing approaches between designer and reviewing body.
- + Page 6-51: When calculating required treatment volume why use two separate naming conventions when using SCM w/EPA curves (Design Storage Volume – DSV) and SCMs without curves (Water Quality Volume - WQV)? This seems unnecessary and overly complicated. One terminology could be utilized for both scenarios.
- + Page 6-65: Equation 6-11 appears to have typo and should read ( $A_{off} \times F_{off}\%$ )
- + Page 6-73: Footnote 99 does not work.
- + Section 6.3
  - This section would be better suited near the recharge standard for ease of reference.
  - Confirm that the definition of competent soils professional includes geotechnical engineers. If it does not, we recommend that soils professionals should be included.
- + Page 6-75 footnote 100
  - First link is not valid and gives 404 error
  - The 2nd link we do not trust as it goes to a page related to “Avanan”?
  - Why not reference Websoil Survey by NRCS. This is the go-to reference to our knowledge (link below)
    - <https://websoilsurvey.nrcs.usda.gov/app/>
- + Section 6.3.1 References 618.67 (Texture Class, Texture Modifier, and Terms Used in Lieu of Texture). Believe this is an incorrect reference and should note section 618.72.
- + Section 6.3.2 & 6.3.3: Presuming that the HSG is identified by the NRCS soil survey as part of step 1 and the site visit confirms everything is consistent with the NRCS. Please confirm if the Static Method can utilize the Ksat values from table 6-4 without any additional in-situ testing for the purposes of peak rate calculations. Can these values also be used for the soils at specific locations where recharge is proposed or is additional in field testing required at these locations?
- + Section 6.3.3: The testing requirements outlined in this section are excessive.
  - One test location (which includes two test pits per location) per acre is excessive and leads to disturbance of existing soil that isn't needed.
    - This increases to one test location per 5,000 SF for ESSD credits, 3, 4 and 7? If so, this is overkill and much of the native soil would be disturbed for testing efforts.
  - A minimum of four (4) test locations is required per site, resulting in a minimum of eight (8) test pits or bore holes required. This is excessive, especially on small sites.

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- Test location and test pit are defined differently but are being used interchangeably. Paragraph 2 on pg 6-76 indicates a minimum of two borings/test pits are required for each **test location**. Step 1 (iii) indicates a minimum of three (3) **test locations** per infiltration practice. This might read that six (6) borings/test pits are required per infiltration practice, which is excessive.
- The number of test location, and subsequent pits, for infiltration systems is excessive especially for smaller systems. You could be disturbing a large portion of the native soil within a small system and its not needed for small systems as soil is not expected to drastically change over footprints of this size.
- There is no provision to exclude wetland resource areas from this calculation. These areas should not be disturbed to verify soil types. How would this be permissible through the Conservation Commissions prior to filing an NOI? Would RDA provisions be an acceptable method?
- + Page 6-79: When fill materials are determined to be present:
  - Clarify first bullet that this is relative to exiting fill material on site prior to design of the SCM and is not meant to cover construction materials associated with the design and installation of the SCM.
  - Construction materials associated with and underlying the SCM should be suitable for infiltration and of equal to or greater Ksat than the underlying soils.
- + Section 6.4 states that “Drainage from the other 9-acres of the Project Locus drains through the 1-acre Project Site to a wetland. Therefore, the entire Project Locus is considered the contributing drainage area for Standards 3 and 4 and may include adjacent impervious areas outside the Project Locus if they drain through the Project Site.”
  - The intent of this should be clarified. For example, if runoff from the 9-acres is conveyed through the other acre via an independent pipe network then this area would not need to be considered part of the contributing area for standards 3 and 4 as it does not interact with the proposed stormwater system for the 1-acre project.
  - Depending upon the age of the previous development and topography, this example could require that the 1-acre redevelopment complies with standards 3 and 4 for the entire 10-acre locus if they drain through the project site. This could be a very expensive provision for developers to incorporate into the design and may cause them to shy away from redeveloping an otherwise underutilized site. In addition, the redevelopment could provide some improvements to a site that may currently have no recharge or water quality treatment and even an increase in treatment for the 1-acre site would be beneficial.
  - See comments on section 6.5 as the same reasoning and rational apply to this example provided for standards 3 and 4.
- + Section 6.5 states that “Impervious area is typically just on the Project Site. However, when run-on from offsite impervious area(s) occurs to the on-site impervious area, that off-site area must be included.”

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- This is an unnecessary provision to try and address existing water quality/recharge issues that are being forced on developments to correct past problems. Correction for these existing problems should be addressed through the redevelopment standard and for the parcel in question, not the neighboring downstream owner / developer. If to remain then additional comments below to be considered.
- This section implies that any off-site impervious area that runs on to proposed on-site impervious area needs to be accounted for in the calculations for Standards 3 and 4.
- This requires a new project to provide treatment and recharge for an existing condition that is on an adjacent property and was previously constructed, or to find a way to divert runoff from that area around the project site. For example, if a developer was working on a 2-acre parcel of which 1-acre was impervious area and an additional 0.5-acres of impervious area drained onto the site, then the required water quality and recharge volume would be based off 1.5-acres of impervious area and not the 1-acres for the development?
  - In turn, if this was a redevelopment and only 1-acre of proposed impervious can be treated on-site in accordance with the 80/50 redevelopment standard. Then the other 0.5-acres needs to be treated off site in accordance with standard 3? This requires off-site mitigation for an existing off-site issue.
- .
- What if the water being discharged onto the proposed impervious area is from an existing outlet pipe and the water has already been treated / recharged on the adjacent site? Does this provision still apply?
- What if the impervious area is associated with an existing roadway? A private development is now required to provide improvements for a public entity. Could treating this additional off-site run on be counted as part of offsite mitigation under the 80/50 water quality redevelopment standards?

### Stormwater Handbook – Appendix A

#### + ESSD Credit 1

- Confirm that if all minimum criteria are met that the designer does not need to show separate calculations / compliance with standards 3,4 &7. Compliance with the remaining standards 1,2, 5, 6, and 8 –11 will still need to be shown separately.
  - On the 4/3 webinar it was noted that standard 2 did not need to be met either unless we misinterpreted, however the table for this credit notes that this credit provides no peak flow attenuation. This should be confirmed and clarified in the handbook.
- The total impervious cover footprint of less than 15% requirement is very restrictive and we cannot think of very many sites, if any, that would be able to meet this provision especially when having to discount wetland resource areas from the base lot area calculation.

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- Consideration for assigning different maximum impervious cover % depending upon the proposed use. For instance, allow a higher threshold for residential subdivision vs. a commercial shopping center.
  - Credit requires that the site can't have soils with seasonal high groundwater elevation within two feet of land surface. This eliminates practically all sites that have BVW or other resource areas as many of these have ESHGW within two feet of land surface. It is especially more restrictive on large developments that have tens if not hundreds of acres of land area. Language should be altered to state that land surfaces within developed areas can't have ESHWT within two feet of land surface.
  - Would it be more appropriate to look at some of these provisions on an individual subcatchment and/or design point basis or some other methodology so that one portion of a development may be able to utilize this credit, but another may not.
  - Grass pavers be excluded from impervious % calculations?
- + ESSD Credit 2
- Pg. 5-25: 5.5.2 ESSD for Solar Projects
    - PVS array designs which do not qualify for ESSD Credit shall demonstrate compliance with the Stormwater Standards; however, Standards 2 and 3 do not need to be met when the ground surface under and adjacent to the PVS arrays is on a slope less than 5% and consists of gravel/crushed stone or is planted and maintained with native vegetative cover sufficient to provide adequate infiltration and eliminate all surface water runoff during the 2-year 24-hour storm specified in Section 2.3.2."
    - a. I re-read this, and I think the language here doesn't relate to that in Appendix A, since this text in green specifies PVS arrays that don't qualify for ESSD credits by meeting the "minimum required criteria".
    - b. Suggest shifting the text above from the "ESSD for Solar Projects" green box to a new bullet in the section below
    - c. Is language intended to indicate a "reduction in surface water runoff during the 2-year 24-hour storm"? It is extremely challenging to eliminate all surface runoff with solely a land cover change.
  - Pg A-7: ESSD Credit 2: ESSD for Solar Arrays
    - Clarify the "minimum required criteria" is only applicable to where the solar arrays are located. If this doesn't apply to all criteria, indicate specifically which bullets this applies to.
    - Bullet #2: Clarify this means direct discharges within Buffer Zones/Resource Areas/etc., and not "untreated" direct discharges

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- Bullet #5: Provide suggested spacing. Otherwise, clarify who this is up to (reviewer, agency, municipality, registered landscape architect, solar array manufacturer, etc.).
- Bullet #7: We recommend that if panel drip edges are greater than 2-3', appropriate EC measures may be provided underneath panels to minimize splash erosion.
- Bullet #8: We recommend that discharges are allowed in order to provide peak rate attenuation.
- Bullet #9: We recommend this language is moved to Bullet #1, since this is most restrictive given that ESSD Credit 2 is defined as solar projects within the buffer zone to a wetland resource area.
- Bullet #10: We recommend that other structural SCMs shall be permitted, such as scour holes, swales and berms, check dams, drainage channels, etc. and in locations acceptable per the Standards.
- Per Appendix A, Infiltration trenches do NOT provide peak attenuation. Therefore, aside from providing erosion control measures, what is the benefit of installing infiltration trenches?
- Bullet #11: Clarify this is only applicable to where the solar arrays are located, and that other areas of the site can use any TR55 curve number, as appropriate (e.g. wooded area).

### + ESSD Credit 3

- Based on this credit providing reduction in required water quality treatment it is the presumption that rooftop runoff can no longer be considered clean runoff? Please confirm.
- If this credit is applied and all minimum criteria are met, then no additional calculations are required to show compliance with standards 3,4 and 11? For areas directed to the QPA, all other areas would still need to show compliance, please confirm and clarify in handbook.
- Suggest adding credit for standard 11 to table QPA 2 key for clarity.
- We ask that DEP define “industrial purposes” as certain industrial uses such as warehouse would feel appropriate to include under this credit. Understanding that more pollutant potential uses (e.g. manufacturing) would be appropriate to exclude.
- We ask that DEP provide a graphical example of how this Credit is to be met, similar to EESD Credit 1 including demonstrating that runoff enters the QPA uniformly across its entire length as sheet flow and not point discharge and the 75-foot maximum upstream flow path.

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### + ESSD Credit 4

- If this credit is applied and all minimum criteria are met, then no additional calculations are required to show compliance with standards 3,4 and 11? For areas directed to the QPA, all other areas would still need to show compliance. Please confirm and clarify in handbook.
- Suggest adding credit for standard 11 to table QPA 3 key for clarity.
- We ask that DEP provide a graphical example of how this Credit is to be met, similar to EESD Credit 1 including demonstrating that runoff enters the QPA uniformly across its entire length as sheet flow and not point discharge and the 75-foot maximum upstream flow path.
- The example states that all soils are HSG A and one of the QPA has a contributing area ratio of 2:1. The example states that the 2:1 ratio allows for ESSD credits, however table QPA 3 indicates a 2:1 ratio for A soils receive no credit. Please clarify the example or the table.

### + ESSD Credit 5

- This credit is incredibly complex and very detailed to calculate however it provides very little credit. The example in the handbook only provides a 3% reduction in impervious area. Given the complexity of this credit and the apparent minimal benefit it appears that most sites may just back into this credit and take what they can get rather than this being a credit that drives the use of ESSD. Can more credit be provided to make it a more beneficial technique.
- If more benefit was provided with this credit than we feel it would be more likely to be used as developers / designers ass more costs could be dedicated to landscaping vs. stormwater.
- Following comments are from our landscape architectural group
  - Tree table:
    - Add Emerald Ash Borer
    - Add Dutch elm (resistant varieties only)
    - Remove Callery Per – on invasives list.
    - Remove Washington Hawthorn – Low canopy and thorny.
  - Under tree canopy implementation examples, note to avoid monoculture, plant a variety of trees.
  - There is a tree canopy example showing small trees on both side of the road. However, small trees tend to be short lived.
  - Minimum Required Criteria requires trees to be 4" diameter at breast height. This requirement is too large as this size is very expensive, hard to get established and not easily planted within sidewalks. It is also not per current Nursery Association guidelines (6" above root flare is standard).



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- + ESSD Credit 6
  - To avoid misinterpretation, please add a step 2 after step 1 to show how the  $\Delta$ TIA is applied to the impervious area and what the resulting TIA would be. In other words, clarify if the 25% reduction applied to the 2-acre total or the 1.5-acre reduced impervious area.
  - This would make step 2 step 3
- + ESSD Credit 7
  - The Table for ability to meet specific standards, for standard 5 it states that “it may not be used for runoff from land uses with Higher Potential Pollutant Loads (LUHPPLs) except for parking lots with high intensity uses that generate more than 1,000 vehicle trips per day or more.” Please confirm that this language is correct as it states that the only LUHPPL it can be used for is parking lots with high intensity uses. Note that the same language that is in the table also appears in the checklist of minimum requirements on page A-33.
  - Suggest adding credit for standard 11 to table QPA 3 key for clarity.
  - The example states that all soils are HSG B and the buffer area has a contributing area ratio of 2:1. The example states that the 2:1 ratio allows for ESSD credits, however table Buffer 1 indicates a 2:1 ratio for B soils receive no credit. Please clarify the example or the table.
- + ESSD technique: No disturbance to wetland resource areas
  - ESSD credit section states that “practices that preserve that use natural drainage systems are recognized to be ESSD/LID”. This appears to be a copy from the previous section on preservation of natural drainage systems and the sentence should state that leaving wetland resource areas undisturbed is recognized to be ESSD/LID.
- + ESSD technique: Small Scale Controls
  - ESSD credit section states that “practices that preserve that use natural drainage systems are recognized to be ESSD/LID”. This appears to be a copy from the previous section on preservation of natural drainage systems and the sentence should state that utilizing small scale controls is recognized to be ESSD/LID.
- + Structural Infiltration: Infiltration basins (A-139)
  - Minimum of three test pits or borings for each basin is excessive especially for smaller footprint systems. You could be disturbing a large portion of the native soil within a small system and its not needed for small systems as soil is not expected to drastically change over footprints of this size. This comment would apply to any other similar requirements within the SCM design considerations or stormwater standards.
    - It is also noted that this section is contradictory to section 6.3.3 which states that this type of system would require a minimum of three test locations and that each location requires two test pits or borings per location. These requirements should be consistent and six test holes for a 5,000 SF system is excessive.

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- A recommendation would be to follow something similar to the New Hampshire Stormwater testing requirements, see snapshot below.

**Table 1-2. Minimum Number of Test Pits/Borings Required**

Facility	Minimum Number of Test Pits / Borings Required
Infiltration Basins Less than 2,500 sf	1 test
Infiltration Basins 2,500 sf or more	2,500 sf – 20,000 sf = 2 tests 20,000 sf – 30,000 sf = 3 tests 30,000 – 40,000 = 4 tests 1 additional test for every additional 10,000 sf.
Infiltration Trenches	0 LF – 100 LF = 1 test 100 LF – 200 LF = 2 tests 200 LF – 300 LF = 3 tests 1 additional test for every additional 100 LF.

- The design considerations sections states that “greater separation is necessary for bedrock. If there is bedrock on the site, conduct an analysis to determine the appropriate vertical separation”. More clarification and specificity are required for what DEP would consider an appropriate analysis and vertical setback to bedrock. This will help reduce ambiguity when discussing projects with Commissions and peer reviewers.
- It would be helpful if the handbook specified what it meant by “well graded sand” (page A-142) when discussing mounded infiltration basins. The current description is very vague and could lead to differences of opinion and discussion amongst designers, Town Commissions, and peer reviewers.
- Clarify the amount of A/B soils and compost (ratio, depth, etc.) to be utilized as additives for amending the existing soil. (page A-143). The current description is very vague and could lead to differences of opinion and discussion amongst designers, Town Commissions, and peer reviewers. The top layer wants to be free draining and not become like a layer of topsoil that would be restrictive to draining.
- The previous two comments go to a broader comment on the entire handbook as we were unable to review all 860+/- pages. Anywhere that more clarity or specificity can be added it will be helpful to minimize debate and review between designers, Commissions, and reviewers. Understanding that some flexibility in design is good but too much can create problems during permitting and reviews.

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- + Structural Infiltration: Infiltration trench (A-147)
  - Detail shows 6" deep sand filter or fabric equivalent. This is contradictory on pg. A-149, Design Considerations, which indicates that fabric should never be used at the bottom or sides & 12" of sand is required.
  - Infiltration trenches are considered LID techniques. Pg. 150, Construction, indicates that an infiltration trench may be filled with topsoil and planted. What is the difference between this type of SCM and an underground pipe and stone or chamber system, which aren't considered LID techniques? Underground pipe/stone or chamber systems should also be considered LID techniques. See additional comments below.
- + Structural Infiltration: Subsurface infiltrators (A-160)
  - Why is it not a recognized ESSD/LID technique? Utilizing subsurface systems to minimize land disturbance, change in land cover and work within buffer zones would seem to be an appropriate to consider for low impact development.
  - Revise language to remove "proof" from the ports. Recommended change: "Design ports such that they limit the number of mosquitoes able to breed within the SCM".
  - "All of these devices must have an appropriate number of observation wells to monitor the water surface elevation within this well and to serve as a sampling port" Suggest revising this language to "All subsurface infiltrator devices shall must have an appropriate number of inspection ports to monitor water surface elevation within the device and to serve as a sampling port" or something similar to provide clarity as "observation wells" may be confused for monitoring wells.
  - Why are systems restricted such that the recharge volume "must not be included in the volumetric storage for peak runoff rate"? This seems unnecessary and we do not see a rationale for the requirement. Surface infiltration basins do not need to exclude this volume from peak rate control and subsurface basins should not either. We would ask that this requirement be removed. If to remain, please clarify that this would be applicable to only the volume required under the standard and not any local zoning requirements. For instances there are some communities that require more than 1" of runoff be stored. It would be up to those communities if they wanted to provide a similar restriction above and beyond the state standard.
  - It also restricts the systems such that the volume associated with TSS/TP removal "must not be included in the volumetric storage for peak rate runoff". It would be nice to provide an example such as the isolator row for a chamber system would need to be excluded. This makes sense and is similar to excluding the volume stored in a forebay associated with a surface basin.
  - Why do "subsurface chambers need to contain 5 stages for design purposes"? Often multiple stages are needed for appropriate peak rate control and compliance with standards but requiring one at each design storm stage is not needed. For instance, there are sometimes sites that require 100% of the volume to be recharged to meet peak rate requirements and those designs could not comply with this requirement. The number of stages should be at the discretion of the designer as long as the

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appropriate stormwater standards are met for the system. This also appears to conflict with the language noted in the next comment.

- Why are systems designs restricted to allowing “only runoff in elevation above the maximum design storm but below the freeboard elevation stage may be routed to a surface discharge” If we are interpreting this correctly then the systems need to be sized to hold up to the 100-year design storm (listed as the max design storm in the manual – Stage 4) and only water between the 100-year storm elevation in the system and freeboard is allowed to discharge. This seems unnecessary and we do not see a rationale for this requirement. Designers will need the flexibility to let out water during lower design storms for design flexibility and cost control of the system. This requirement will make these systems unnecessarily large and expensive. We feel this provision should be removed. However, if it is to remain then clarity on the intent of this requirement is needed and an example calculation would be helpful.
- Section is inconsistent, it states that “at least 4 feet of separation to seasonal high groundwater must be provided” then later it states that a “mounding analysis is required if results from soil testing indicates that there is less than 4-feet of separation”. Should the first portion state “at least 2 feet of separation”? If not and 4-feet is a minimum, why is this requirement greater than surface basins?
- Outright requiring MODFLOW to be used for mounding analysis does not feel appropriate.
  - Other computer-based software that is not based on the Hantush method should be acceptable (e.g., MoundSolv)
  - Also, Hantush may be appropriate for these types of systems as not all the systems are linear in shape. The overall shape of the system can frequently be rectangular in shape depending on the chamber/pipe/stone layout.
- The section states “The system must not be sized using the static method (including the volume to store the peak runoff rate) and not the simple or dynamic field methods.”
  - Is this working correct, and should it state “must be sized using the static method”?
  - If the wording is correct, then the only remaining method to use is the continuous simulation method.
  - Please provide a rationale for why the static method or the continuous simulation method must be used for sizing these systems.
- Provide rationale as to why systems but be downgradient of building foundations. Often even when upgradient these systems are lower than foundation grades.
- 0.01 in/hr. infiltration rate is too low for infiltration systems. We would recommend staying at the current minimum requirement as noted in the initial portion of this comment letter.
- “The overflow drainage may not be designed to be surcharged upwards through manholes.” Asking DEP to clarify that this provision is applicable to inlet pipe systems (manholes, catch basins etc.) that convey water to the system. Allowing system

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outlets that include surface relief/discharge through an independent system of grated structures, such as manholes with grate or trench drains, (i.e. outflow only, even if by surcharge) that are designed for discharge only should be permissible.

- Chambers are not allowed in BLSF, ILSF or LSCSF. This is restricted for space limited sites especially in densely developed areas that may have not alternative location to provide recharge systems. It is acknowledged that these systems will not provide recharge during flooding events but will provide at the remaining times of the year. This would appear to be a benefit rather than the sites not providing recharge at all. We would like to see this removed or provisions considered for redevelopment and/or certain densely developed areas.
- + Remove requirement for maintenance budgets within the O&M plan. There does not appear to be a need and does not impact the requirements to provide the maintenance.
- + Site criteria or design considerations for the following infiltration practices note they must not be placed over fill materials. Section 6.3.3 provides provisions for allowing recharge on fill provided certain materials and testing. Why are the below SCMs excluded from this provision?
  - Dry wells
  - Infiltration Basin
  - Infiltration trenches

## Nathaniel E. Mahonen

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**From:** HydroCAD Support <support2@hydrocad.net>  
**Sent:** Monday, February 19, 2024 12:48 PM  
**To:** Brad Johnson  
**Cc:** Nathaniel E. Mahonen  
**Subject:** Re: MassDEP Revised Rainfall Distributions

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EXTERNAL: Use caution with attachments and links.

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Hi Brad,

That's correct. Please use the latest 4b release at [www.hydrocad.net/flex/download.htm](http://www.hydrocad.net/flex/download.htm)

For details see [www.hydrocad.net/flex/newsletter/news24-02.htm](http://www.hydrocad.net/flex/newsletter/news24-02.htm)

Peter Smart

> Hello HydroCAD Team,  
>  
> As I'm sure you are aware, the Massachusetts Department of  
> Environmental Protection has issued draft versions of their  
> revised stormwater management standards and supporting  
> handbook. The revised methodology for peak rate calculations  
> includes new Rainfall Distributions. As shown in the attached,  
> the State will now require NOAA Atlas 14 distribution curves.  
> The draft handbook includes the below note.  
> [cid:image002.png@01DA631A.F6228D50]  
>  
> Per your website, it appears the latest HydroCAD build  
> addresses this. Could you confirm this to be accurate?  
>  
> [cid:image003.png@01DA631C.1B10A240]  
>  
> Thank you,  
>  
> Brad Johnson, P.E.  
> Project Engineer  
> 45 Franklin Street, 5th Floor  
> Boston, MA 02110  
> o 617-849-8040 / [bjohnson@bohlereng.com](mailto:bjohnson@bohlereng.com)  
> [www.BohlerEngineering.com](http://www.BohlerEngineering.com)<<https://www.BohlerEngineering.com>>  
>  
> [cid:image001.png@01DA6319.DE196770]  
>  
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**From:** [Land Use Admin](#)  
**To:** [DEP Wetlands \(DEP\)](#)  
**Cc:** [Rebecca Bucciaglia](#)  
**Subject:** Wetlands-401 Resilience Comments  
**Date:** Monday, April 29, 2024 12:50:01 PM  
**Attachments:** [MSMCP Wetland Reg Revision Comment Letter 2024.pdf](#)  
[LT MSMCP re Regulatory Updates \(1\).pdf](#)

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**CAUTION:** This email originated from a sender outside of the Commonwealth of Massachusetts mail system. Do not click on links or open attachments unless you recognize the sender and know the content is safe.

Good afternoon,

Attached please find a comment letter from MSMCP regarding MassDEP's Resilience 1.0 Draft Regulations and 2.0 Recommendations, along with a letter of support from the Bolton Conservation Commission.

Thank you,

**Lauren Ducat**

Landuse Administrative Assistant

Town of Bolton

663 Main Street

Bolton, MA 01740

Phone: 978-779-3307

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Email: [landuseadmin@townofbolton.com](mailto:landuseadmin@townofbolton.com)

*Office hours: Monday - Thursday, 9:00 AM to 1:00 PM.*



## Town of Bolton Conservation Commission

663 Main Street  
Bolton, Massachusetts 01740  
(978) 779-3304  
FAX (978) 779-5461  
[concom@townofbolton.com](mailto:concom@townofbolton.com)



April 29, 2024

Massachusetts Department of Environmental Protection  
Sent via email: [dep.wetlands@mass.gov](mailto:dep.wetlands@mass.gov)  
Subject Line: Wetlands-401 Resilience Comments

RE: **Support of Comment Letter from MSMCP on MassDEP'S  
Resilience 1.0 Draft Regulations and 2.0 Recommendations**

Dear MassDEP,

The Bolton Conservation Commission would like to express their support for the attached comment letter from MSMCP, dated April 19, 2024, regarding the recent regulatory updates.

Sincerely,

The Bolton Conservation Commission



Massachusetts Society of Municipal  
Conservation Professionals  
c/o Conservation Office  
1000 Commonwealth Ave.  
Newton, MA 02459

April 19, 2024

MassDEP

Sent via [dep.wetlands@mass.gov](mailto:dep.wetlands@mass.gov)

Subject Line: **Wetlands-401 Resilience Comments**

**RE: MSMCP's Comments on MassDEP's Resilience 1.0 Draft Regulations and 2.0 Recommendations**

Dear MassDEP:

MSMCP is a body of municipal conservation professionals representing over 100 member municipalities and reaching hundreds of individual professionals. Our mission is to support one another through a robust offering of educational and networking events.

MSMCP members focus on implementation and permitting under the Wetland Protection Act (WPA) Regulations (the Regulations). Our comments are from the perspective of those who daily engage with consultants, residents, and municipal officials and the Regulations and permit processes in efforts to protect and enhance remarkably diverse wetland ecosystems in these challenging times of climate change. Our board alone has over 150 combined years of experience implementing these regulations across the Commonwealth.

MSMCP has been working closely with MACC, Mass Audubon, Mass Rivers Alliance, AMWS, and other technical experts to review, assess, and comment on the proposed Resilience 1.0 Draft Regulations. While MSMCP has been focused on general and inland wetland regulations, our partners have focused on the proposed changes to Chapter 91, Section 401, the Stormwater Regulations & Handbook, Coastal Resources, and Restoration. We hope that MassDEP gives careful consideration to their comments and recommendations.

This letter focuses on the general and inland wetland regulations. It provides MSMCP's suggested modifications of the proposed "1.0" changes and our suggestions for the forthcoming "2.0" reg change package. Throughout the letter, underlining indicates topics and **bold-face indicates specific requests**.

We sincerely appreciate the effort that MassDEP put into creating these draft regulation changes and commend MassDEP for focusing on ways to make Massachusetts and its wetland resources more resilient to climate change. We see many of the proposed changes to the general and inland wetland regulations as valuable steps towards increased public safety and ecological health in the face of climate change. **All the proposed changes to the general and inland wetland regulations on which we (and our colleagues) have not commented, we endorse and encourage you to promulgate swiftly.**

## Overarching Concerns

We feel that some of the proposed changes will be very challenging to implement and/or could lead to unintended detrimental consequences and so should be refined prior to promulgation. Many of our detailed comments can be summarized under four overarching concerns.

- The revised regulations must strike a reasonable balance between scientific precision and overly burdensome requirements that render them too difficult for a majority of volunteer conservation commissions and applicants to implement. In other words, they must be readily practicable.
- Regulations should provide performance standards that protect wetland functions and values and not specific methods and means of achieving those performance standards. Methods and means should be addressed in guidance documents.
- In the face of climate change and invasive species, the revised regulations must acknowledge and reflect the difference between “alterations” resulting from new development and “alterations” resulting from ecological restoration. Ecological restoration projects should be considered projects that support “public health and safety”, as mosquito control projects are.
- Regulation revisions must strive to create greater consistency of thresholds, exemptions/allowances, and requirements based on existing wetland functions and values and the potential impacts (or benefits) on those wetland functions and values of proposed projects, not on the user groups conducting the activity.
- MassDEP should **immediately engage day-to-day practitioners in the “Resilience 2.0” planning process.** Regulatory changes should be borne of **early and close coordination** with conservation commissions, conservation staff, and professional non-profit staff, **the people responsible for day-to-day interpretation and consistent implementation of these regulations.**

## Recommendations for the Proposed “1.0” Inland Regulations

As a large group of daily implementers of the wetland regulations, MSMCP urges MassDEP to give careful consideration to our detailed comments (and those of our colleagues), reach out with questions or for assistance, and make the necessary changes prior to promulgation.

### 310 CMR 10.02(2)(b) Minor Exemptions

- 10.02(2)(b)(2)(r). We agree that maintenance of shared use paths should be allowed without the need for permitting, so this new minor activity is appropriate, but it has too many details about means and methods and creates too narrow a management opportunity. We suggest the following revisions:
  - 10.02(2)(b)r.iv. The draft language is too detailed. The language as proposed creates implementation challenges since the means and methods are site-specific. We are concerned that the allowance of cutting shrubs and branches, and chipping and spreading this material in place may result in the unintended localized spread of invasive species. We recognize that the proposed language mirrors existing language in 10.02(2)(b)(2)n. (vegetation cutting for road safety maintenance). **We recommend deleting the language under 10.02(2)(b)4.iv. between “To prevent the possible export (...) disposed” and creating a guidance document or policy instead. We recommend that this type of specificity be removed from existing language under 10.02(2)(b)(2)n for similar reasons.**
  - 10.02(2)(b)r.v. We question why the language incorporates the provision that “(...) no work on any component of a Stormwater Management System is performed, including but not limited to drainage swales” occurs under this minor activity provision. This is contradictory to activities that are already exempt as maintenance of stormwater systems. **We are in favor of the new minor activity but request that the following proposed language be deleted: “(...) no work on**

**any component of a Stormwater Management System is performed, including but not limited to drainage swales.”**

- 10.02(2)(b)n.iv. We recognize that MassDEP’s proposed language immediately above comes from this passage (10.02(2)(b)n.iv. Vegetation cutting for road safety maintenance), however, as noted above, we believe that the allowance for cutting and chipping in place of vegetation could lead to unintended consequences of spreading invasive species. **We urge MassDEP to revise this language through guidance on best management practices rather than keeping these details in the regulations.**

### **310 CMR 10.04 Definitions**

- Highway Specific Considerations. This gives one agency (MassDOT) special rights. Municipal DPWs often have control of roadways of similar size and undertake projects of similar scales, and so should be afforded similar allowances. **The regulations should not be based on the governing agency, but should be based on the size of the roadway, the scale of the proposed project, the intended public benefits, and the potential environmental impacts.**
- Impervious surface. Since solar arrays are often sited in fields and other entirely pervious areas, **there should be opportunities for applicants to utilize site-specific information on pre- and post-construction land cover and infiltration capacities to determine the need for stormwater management systems.**
- Maintenance of an Existing Public Roadway. **This definition should not include all instances of “replacing existing drainage pipes”.** Since some drainage pipes are deep beneath the paved surface, replacement might require extensive excavation, large spoil piles, and dewatering.
- Maintenance of an Existing Public Roadway. This new term adds confusion because of language in 10.02(2)(b)(2) and 10.53(3)(f).
- Public Shared Use Paths. The new definition in 10.04 states that the Path must be on “public property or on private property pursuant to an easement that provides for public access”. **MassDEP should afford all owners of publicly accessible land with Public Shared Use Paths the same allowances and requirements under the regulations.** This could include land trust and other permanently protected public or private property with public access. ■
- The proposed definition of Zone A references 310 CMR 22 (Drinking Water), but the text does not match. The draft wetland regs use the term "surface water" where Drinking Water (22.00) uses the term "surface water source", which is defined therein as a public water supply. Surface water is not defined as a public water supply.
- Many New Terms or Definitions have been introduced and incorporated throughout the redline version (e.g., the multiple new definitions introduced in 10.36(2)). **All terms should have an entry in 10.04 with either a standalone definition or a reference to the section where the term is defined and used.** Examples of new terms include:
  - Limit of Moderate Wave Action (LiMWA)
  - Scientific Research Projects

### **310 CMR 10.05 Procedures**

- 10.05(4)(a) Notices of Intent. The regulations should not require such a high level of stormwater management detail for every NOI filing. We recommend two possible alternatives.



- **Strike the new sentence “A construction period .... Activities” and replace with “All projects must address erosion, sedimentation control, and pollution prevention with plans appropriate to and commensurate with the proposed alterations, even those projects otherwise exempt from the stormwater standards.” OR**
- **Strike the new sentence “A construction period .... Activities” and change the text in the general instructions for NOIs.**
- **Please note there is a typo: “... operation and maintenance plan, and an illicit discharge compliance statement.”**
- **10.05(6)(m)(6): Requiring unpaved footpaths in natural areas to comply with the Stormwater Management Standards seems unreasonable. Trails generally rely on country drainage and so do not “fit” the intentions of the Standards. We ask MassDEP to include unpaved footpaths in natural areas as exempt activity under the Stormwater Management Standards 10.05(6)(l).**
- **10.05(6)(m)(7): This new provision now requires that Maintenance of an Existing Public Roadway comply with the Stormwater Standards to the maximum extent practicable, however, 10.02(2)(b)(2)(p) appears to exempt the same roadway maintenance from review.**

### **310 CMR 10.12 Notice of Intent for an Ecological Restoration Project**

- **(2) The numbering underlined below needs to be fixed because the original (2) was stricken. “Notwithstanding the provisions of 310 CMR 10.54(4)(a)5., 10.56(4)(a)4., and 10.60, a person submitting a Notice of Intent for an Ecological Restoration Project that meets the requirements of 310 CMR 10.12(1) and (2) is exempt ...”**

### **310 CMR 10.13 Eligibility Criteria for Restoration Order of Conditions**

- **(f) We suggest using the word “evidence” in place of the word “demonstration”. “If the project will involve the dredging of 100 cubic yards of sediment or more or dredging of any amount in an Outstanding Resource Water, the Notice of Intent includes a demonstration that an application ...”**

### **310 CMR 10.53 and 10.24 Limited Project Provisions**

- **10.53(u)8. & 10.24 (7)(c)(8) Public Shared Use Paths**
  - **Delete the statement that a separate NOI may be filed either concurrently to the filing of the NOI for the project, or after the OOC is issued, for vegetation management and other activities as defined in 310 CMR 10.02(2)(b)2.r.i.-v. in wetland Resource Areas. Applicants are always welcome to file NOIs.**
  - **Delete “abandoned railbed” in first line. “Public Shared Use Path” is already defined in 10.04. MassDEP should consider more broadly defining a Public Shared Use Path in this limited project provision. Municipal or land trust paths should be afforded the same limited project status.**
- **10.53(4)(e)5. Typo: The letter “r” is missing from the word “through” in “...set forth in 310 CMR 10.53(4)(a) though (d)...”**

### **Additional Miscellaneous Suggestions**

- **Include a list of common acronyms, particularly for new definitions. This could be incorporated in Section 10.04.**

- **Provide frequent outreach and education about the new regulations once promulgated.** Dissemination of detailed and multi-faceted explanations of these new regulations and the purposes and intents behind them for the Conservation Commissions and conservation professionals who will implement them will be essential. MSMCP welcomes the opportunity to assist MassDEP in these efforts.
  - **Provide headers at the top of every page of the new regulations with the complete section and subsection reference** to facilitate navigation through the numerous lengthy sections that comprise many pages.
  - **Make sure the new version of the regulations is formatted with headers so that the pdf will have internal hyperlinks allowing users to “jump” to specific sections.**
- 

## 2. Coordinate on the Development of Regulatory Reform Package 2.0

As we all know, these draft regulation changes alone will not achieve our goal of true resilience. We appreciate that MassDEP has said that it is already working on regulatory reform package “2.0.” MSMCP has identified a number of issues that should be addressed in the next regulatory reform package. Many of these suggested revisions are straightforward. Some of these suggestions warrant additional discussion. We implement the wetland regulations on a daily basis and know what works well and what is challenging. We have a lot to offer to help make 2.0 a real success. **We urge MassDEP to begin a robust process of stakeholder engagement with consultants, field professionals, and conservation agents so that we may help you develop practical, strong, climate resilient regulations.** Here we provide some suggestions to begin the conversation.

### 310 CMR 10.02(2)(a) Activities Within the Areas Subject to Protection ...

- Trail Maintenance. **We ask MassDEP to create a new section to exempt Maintenance of Existing Trails in use by the public.** This could be done by adding a new section “10.02(2)(a)3. Maintenance activities on trails that traverse Areas Subject to Protection under M.G.L. c. 131, § 40” which reads: “Activities conducted to maintain, repair or replace, but not substantially change or enlarge an existing public trail, provided said work utilizes the best practical measures to avoid or minimize impacts to wetland resource areas outside the footprint of said trail”. Boardwalks, puncheons, waterbars, and other basic trail infrastructure need to be routinely maintained or replaced. Land managers should be able to conduct this essential maintenance work to protect wetland resource areas without having to secure a permit.

### 310 CMR 10.02(2)(b) Minor Exemptions

- 10.02(2)(b)(a) Unpaved pedestrian walkways. **We ask Mass MassDEP to define Conservation Property to include all these types of natural land onto which the public is invited.** Currently, unpaved pedestrian walkways (trails) less than 3 feet wide for public access on “Conservation Property” are exempt from the regulations. However, many trails traverse general municipal land, land trust properties, and private property with conservation restrictions affording public access. **Additionally, we urge MassDEP to consider increasing the 3-foot width to 4 feet because the state’s own guidance on [accessible trails](#) encourages trails are “at least 36” wide, and usually wider” (emphasis added).**
- 10.02(2)(b)(e) Conversion of lawn to uses accessory to residential structures such as decks, sheds, patios, pools. **We ask MassDEP to remove inground swimming pools from this minor activity.** Construction of inground swimming pools involve significant excavation, large impervious areas around

the pool, fencing, and often involves discharge of chlorinated water. Having no Conservation Commission oversight of these projects has often led to after-the-fact permitting due to erosion or other problems which have impacted wetland resource areas. Tree cutting and grading has occurred in concert with some pool projects when landowners misunderstood these activities were not part of the minor activity provision. As an exempt activity, there is no requirement for an O&M plan to ensure that chlorinated water is not discharged to wetland resources areas without first being dechlorinated. Requiring a wetland permit and preconstruction review of all inground pool projects in the buffer zone and Riverfront Area will result in better oversight and reduce the non-compliance we see problematic with exempting some inground pools from wetland permitting.

- 10.02(2)(b)(n) Vegetation cutting for road safety maintenance.
  - **We ask MassDEP to update the AASHTO 2011 Policy to “7th edition, 2018 or most current”.**
  - **10.02(2)(b)(n)(iv), We ask MassDEP to remove the detailed language: “To prevent the possible export .... Chipping, disposal method and spreading chips...”** This language is too detailed (means and methods are site-specific and creates some implementation challenges). We suggest working with a stakeholder group and creating a guidance document on appropriate vegetation cutting BMPs that could be applicable to this and other minor activities that involve vegetation cutting.
- Cutting of certain high-risk trees. **We ask MassDEP to add a new minor activity: allowing landowners to remove up to 5 unsafe trees over 6 inches that are in the buffer zone or riverfront area and are threatening structures or human safety.** Trees are suffering from the effects of climate change. Invasive pests like woolly adelgid and emerald ash borer are decimating many of our native hemlocks and ashes. Increases in the number and severity of storms have resulted in more damaged trees. We recognize that certain parameters need to be codified and suggest a guidance document could be created to define and address thresholds associated with minor land management activities and requirements for Conservation Commission notification for certain activities (e.g., giving the Commission 30 days to comment but not necessarily require a permit, akin to forest cutting plans).
- Removal of invasive vegetation. **We ask MassDEP to add a new minor activity to 310 CMR 10.02(2)(b)(2) which reads: “Removal of turf lawn and/or non-native invasive herbs, vines, and shrubs, provided: (1) the activity is located more than 50 feet from the mean annual high water line within Riverfront Area or from BVW, whichever is farther and (2) provided erosion and sedimentation controls are implemented until the area is stabilized with 75% coverage of native species”.** Invasive plants are one of the biggest threats to our native habitats. Quick and effective management of invasives is essential in controlling the spread of invasive plants.

### **310 CMR 10.03(6)(b), 10.04 (Alter), 10.05(3)(2)(b), and 10.58(6) Application of Herbicides and Cutting in Rail Rights-of-Way**

- Regulation of herbicides and cutting in railway rights-of-way. **We ask that MassDEP clarify the requirements for permitting the use of herbicides and cutting to control vegetation in rail rights-of-way in Buffer Zones and Riverfront Area.** MBTA and Keolis routinely claim exemptions that do not seem to exist and many cases are now in litigation.

### **310 CMR 10.04 Definitions**

- "Activity" and "Alter". **We ask MassDEP to consider clarifying that "vegetation" used in the definitions of "Activity" and "Alter" applies only to NATIVE vegetation.** See the explanation below.

- Definitions for “Vernal Pool” and “Vernal Pool Habitat”. **We ask MassDEP to create new definitions for “Vernal Pool” and “Vernal Pool Habitat”**. Currently, Vernal pool habitat includes the definition of both the depression and the 100’ jurisdictional area. **We also ask that MassDEP extend the jurisdiction to provide a 100-foot Buffer Zone to vernal pools, regardless of whether it falls within a resource area.**  
Suggested changes:

- “Vernal Pool” is a basin or depression that typically holds water for at least two continuous months through the spring and is free of adult, reproducing fish populations. Vernal pools are essential breeding habitat for a variety of amphibian species such as Wood Frog (*Lithobates sylvaticus*) and the Spotted Salamander (*Ambystoma maculatum*) and provide other extremely important wildlife habitat functions during the non-breeding season for these species. Vernal pools are important habitat for other wildlife species. The boundary of a vernal pool is the maximum water level in such a basin or depression and is identified by direct observation or by field indicators of the maximum extent of flooding.
- “Vernal Pool Habitat” is the area between the boundary of a vernal pool and the boundary of a jurisdictional resource area that contains the vernal pool, or 100 feet from the edge of the vernal pool boundary, whichever distance is greater.

### 310 CMR 10.05: Procedures

- **We ask MassDEP to add the following sentence in 10.05(8) “If requesting an ORAD Extension, the Applicant must submit written confirmation by a professional with relevant expertise that the resource area delineations remain accurate”**. This language appears in 10.05(6)(d) however most Commissions and conservation professionals are unaware of this language since it appears in the wrong section in the regulations (it’s placed in the Order of Conditions section and not the Extensions section).
- **We ask MassDEP to clarify which projects are subject to stormwater management**. Currently, any activity other than the 4 listed categories appear to be subject to stormwater management regulations, however, small projects (e.g., restoration, foot paths) appear to require stormwater management.
- **10.05(8) We ask MassDEP to: (1) move mention of rules associated with extensions from 10.05(6)(d) to 10.05(8); and (2) within 10.05(8) to allow 5-year extensions for any appropriate project (i.e., “where special circumstances warrant and where those special circumstances are set forth in the Order.”)**

### 310 CMR 10.06: Emergencies

- **We ask MassDEP to add new text 10.06(6): “An Emergency Certification issued by a conservation commission shall be signed by a majority of the commission. It may also be signed by a single member or agent of the commission, if said Certification is ratified by a majority of members at the next scheduled meeting of the Commission”**, similar to language provided for Enforcement Orders.

### 310 CMR 10.24 Limited Projects

- 10.24(1)(b). The nature-based resiliency requirement is non-binding. Having applicants merely “consider” these measures does not mean they will implement them. **MassDEP should consider stricter requirements for these measures.**

- 10.24(7)(c). Limited Projects in Coastal Areas at Risk from Sea Level Rise. Allowing the relocation of roads and railroads to avoid the impacts of sea level rise could result in damage to other ecosystems. **We ask MassDEP to postpone this proposed modification until completion of the Resilient Coasts plan.**

### **310 CMR 10.53 Limited Projects**

- **We ask MassDEP to expand the Limited Project provisions to simplify permitting requirements for routine land management projects necessary to address the impacts of climate change.**
  - **We ask MassDEP to expand the Limited Project provisions to facilitate large scale invasive species work in wetland resource areas with specific regulatory review standards.** Some invasive species removal projects extend into wetlands and cover >5,000 s.f. There should be a simplified way of allowing landowners and other organizations to tackle invasive species removal projects without triggering complicated permitting processes.
  - **We ask MassDEP to add a limited project provision which specifically allows small- and medium-scale invasive species removal projects with specific regulatory review standards.** Non-native invasive plants pose a major threat to the health and survival of our native ecosystems, and are on the rise with climate change. Currently, invasive plant control work requires time-consuming, costly, and complex wetland permitting devised for construction projects. Quick identification and removal of invasive plants minimizes the dramatic negative effects of these plants and allows for the recovery of native species diversity and native wildlife habitat, a recognized wetland value.
  - **We ask MassDEP to expand the limited project provision in 10.53(j)(a) to allow: “The construction of new public footpaths and associated boardwalks/ puncheons that are constructed close to the ground provided, however, that such structures are constructed on pilings, sills, or posts so as to permit the reasonably unobstructed flowage of water.”** Boardwalks and other basic trail infrastructure that cannot avoid wet environments serve to protect the wetland resource areas and their functions and values. Because most boardwalks and puncheons are only elevated 4-12” above the ground for safety reasons, shading is inevitable, and because many boardwalks and puncheons are built on sills, loss of vegetation under the sills is inevitable. Therefore, under the current regulations, all boardwalk and puncheon construction in BVW requires wetland replication. Our proposed minor modification (above) would allow Conservation Commissions to approve public boardwalks and puncheons as Limited Projects. This would reduce the need for inland wetland replication which generally results in the destruction of forested buffer zones in protected public open spaces. Larger public boardwalk/puncheon projects could still be required to undertake wetland replication based on the size, scope, and nature of the project and the opportunity for less impactful alternatives. Below in this letter are recommendations for a Guidance Document of Best Trail Management Practices (BTMPs) to ensure the health of wetland resource areas.

### **310 CMR 10.55 Bordering Vegetated Wetland Performance Standards**

- **10.55(2). We ask that MassDEP modify the definition of BVW and how the boundary of a BVW is defined, to reflect the 2022 “Massachusetts Handbook for Delineation of Bordering Vegetated Wetlands” that was released in March 2023.**
- **10.55(4)(c). We ask that MassDEP simplify the permitting process for trail construction projects by adding to the Bordering Vegetated Wetland regulations a new section in 10.55(4)(c)(4) allowing**



Commissions to permit new trails in wetlands when: "said work involves the creation of a public trail for non-motorized use (i.e., hiking, skiing, mountain biking, etc.) which will alter less than 500 s.f. of BVW, provided alternatives that attempted to avoid and minimize impacts were considered and that the trail will permit the reasonably unobstructed flowage of water." Wetland trail construction should be subject to review under the WPA, but that review should be simplified. Narrow unpaved pedestrian walkways in publicly accessible open space often traverse wetlands. When wetland trails are properly constructed, they preserve wetland functions and values and help build a culture of appreciation and stewardship for these vital resources. (Note: Allowance for ADA compliance and motorized mobility devices must be considered.)

### **310 CMR 10.57 Land Subject To Flooding (Bordering and Isolated Areas)**

- 10.57(2)(a)5. Vernal Pool Habitat should not necessarily need to be certified by DFW in order to be afforded protection. **We ask that MassDEP consider allowing field-based evidence submitted to the Conservation Commission by competent professionals as acceptable proof of vernal pool habitat.**
- 10.57(2)(a)6. Vernal pools. We ask that MassDEP revise the language to read: "The boundary of a certified or uncertified vernal pool shall be based on field observations of the maximum extent of flooding and delineated by a competent source meeting the criteria in 310 CMR 10.60(1)(b). Vernal pool habitat shall include the area within 100 feet of the boundary of the vernal pool itself." DFW does not certify the boundary of vernal pools, so we suggest removing those references. The application would be submitted with the applicant's representative delineating the vernal pool boundary and the Conservation Commission or MassDEP, as the issuing authority, verifying that delineation. Conservation Commissions and MassDEP staff may meet the requirements under 10.60 but they may not; simply listing the reference to 10.60 would be adequate here.
- 10.57(2)(a)3. We ask MassDEP to change references from the software-based BLSF calculations to "listed in the National Oceanic and Atmospheric Administration (NOAA) Atlas 14 Volume 10 (version 3.0 or later version are permissible)" and any such references to using NOAA 14 throughout the proposed Wetland Protection Act Regulatory changes and Stormwater Handbook to "listed in the most recent "National Oceanic and Atmospheric Administration (NOAA) Atlas". No changes have been proposed to the ILSF section, but ISLF calculations currently refer to BLSF. Changes to 10.57(2)(a)(3)a-c change to require a more comprehensive software to be used in the BLSF calculations, and reference NOAA Atlas 14. Using the most recent rainfall data available through NOAA promotes climate resilience and avoids the necessity to update the Regulations in the future. NOAA 15 is already in development.

### **10.57(2)(b) Isolated Land Subject to flooding**

- We ask MassDEP to consider expanding the jurisdiction over small isolated wetlands by reducing the size of ILSF to account for loss of isolated wetland protections as a result of the Sackett Decision.
- We ask that MassDEP consider adding vernal pools as its own dedicated wetland resource area, with a 100-foot Buffer Zone. Vernal pools truly are a vital wetland resource subject to flooding, as identified in the Act: "No person shall remove, fill, dredge or alter any bank, riverfront area, fresh water wetland, coastal wetland, beach, dune, flat, marsh, meadow or swamp bordering on the ocean or on any estuary, creek, river, stream, pond, or lake, or any land under said waters or any land subject to tidal action, coastal storm flowage, or flooding, other than in the course of maintaining..." (emphasis added).



### 310 CMR 10.58: Riverfront Area Regulation Revisions

- Many Conservation Commissions and Conservation Agents find it difficult to interpret many sections of the Riverfront Area sections. We are grateful for the hard work of the working groups who helped develop the regulations which were promulgated in 1996, however, after almost 30 years of implementing these regulations, we have discovered a number of challenges. We welcome discussions with MassDEP as the areas of concern are too complex to detail here. **We ask that MassDEP work with MSMCP and MACC to address the following areas of concern.**
  - Defining Mean Annual High Water
  - Interpreting “practical and economically equivalent”
  - Interpreting the Redevelopment requirements for mitigation/restoration for “non-compliance” of more than one performance standard
  - Clarifying the distinction, if any, between 310 CMR 10.58(5)(c) and (d)
  - Requiring an Alternatives Analysis for Redevelopment projects
  - How the regulations apply to large sites with small amounts of pre-existing development

### WPA Forms

Since MassDEP has recently requested MACC and MSMCP to provide comments on the WPA application and permit forms, following we share just a few of our most pressing requests. **We ask that MassDEP work closely with MSMCP and MACC to update the application and permit forms.**

- General Comments.
  - Application forms should mirror permit forms.
  - Application forms and permit forms should reflect the regulations.
  - Forms should list the date, project, site, and owner/applicant information on the first page.
  - Forms should rely on “appendices” for site or project specific information (such as coastal resource areas, rare species, and stormwater).
  - There should be forms that are tailored for purely inland municipalities.
  - The language of the forms should be made intelligible to laypeople.
  - Wetland Fees do not cover the administrative costs for processing, reviewing, issuing, and mailing wetland permits. **We ask MassDEP to increase application fees.**
- Comments regarding the NOI form.
  - The NOI should be greatly simplified and shortened.
  - Much of the NOI is not relevant to a majority of projects; the use of appendices would greatly simplify the application for many applicants.
  - The NOI form (under C.7.) should add categories of projects to which the stormwater standards do not apply (i.e., not “industrial, commercial, institutional, office, residential and transportation projects”).
  - The NOI form should reflect the regulations and ask the applicant to confirm they have met the relevant performance standards. For example, although applicants are required to check off whether a project qualifies as redevelopment in Riverfront Area, this doesn’t require confirmation how the applicant has met the standards for 310 CMR 10.58(5).
- Comments regarding the OOC form.
  - The OOC should be modifiable, to allow for routine additions such as longer lists of approved plans, the Commission’s findings, and the Commission’s site-specific conditions.

- The OOC should be more succinct and tailored so that the information is pertinent and homeowners and contractors will read it.
- The OOC should not ask for data that is not supplied by the applicant, e.g., the closest distance from work to wetlands.
- Clarification should be given for whether the “work” in the “closest distance from work to wetlands” includes restoration work which may happen 0 feet from the wetlands edge or the closest new construction which may be 25 or 50 feet away.
- The OOC Riverfront Area fields should be simplified and clarified to ensure consistency of information. For example, how commissions define and fill out areas of alteration and replication fields is highly inconsistent. (How does one “replace” riverfront area?)
- Comments regarding the Determination of Applicability form.
  - Conservation Commissions need to have more latitude to issue negative determinations of applicability or general permits for small-scale or low-impact projects (such as the hand-pulling of aquatic invasives). The full-scale NOI/OOC permitting process is an enormous disincentive to ecological restoration and management. After all, it is the invasive plants that are creating the alteration and violating the Act, not the efforts to remove them. ;-)
- Comments regarding the ORAD (Form 4B)
  - The ORAD form should be revised to correct an inconsistency. **The Recording Block on Page 1 and the Recording Information on Page 7 should be removed.** MassDEP Circuit Riders have confirmed that ORADs do not need to be recorded, yet Form 4B (last revised 4/22/2020) indicated that said Form must be recorded. ORADs are simply confirming a wetland boundary for 3 years; no work is associated with ORADs. When applicants record this document, it creates a cloud on a title. Although a landowner can Request a Certificate of Compliance (Form 8A) - that form does not include language appropriate for closing out an ORAD.
  - The ORAD form should be revised to reiterate an important regulatory requirement. **DEP should add a regulatory note on ORADs which states “If requesting an Extension, the Applicant must submit written confirmation by a professional with relevant expertise that the resource area delineations remain accurate, per 310 CMR 10.05(6)(d).”** Most Commissions and conservation professionals are unaware of this language since it is difficult to find in the regulations.

## Develop Guidance Documents

Conservation commissions and conservation staff would benefit from guidance documents which provide more detail about various regulatory provisions.

- Herbicides and cutting in rail rights-of-way. **We ask DEP to issue a guidance document outlining not only the exemptions afforded to railroads but permitting requirements and the recommended material to be submitted to each commission should railroads wish to conduct other activities which are not exempt.** That way, Commissions can properly review the request and fully understand what is being asked of them. It does not appear that railroads are a qualifying structure which meets the exemptions of 310 CMR 10.02(2)(a)(2) or 310 CMR 10.03(6). In addition, mechanical removal is not included in 310 CMR 10.05(3)(2)(b); this only applies to herbicide removal.
  - MBTA and Keolis have claimed exemptions which don’t exist (i.e. MBTA claims to be exempt from filing a Notice of Intent for mechanical vegetation removal).

- In 2020, Keolis, on behalf of MBTA, filed RDAs in 99 communities for the review of the wetlands maps in each community as part of the renewal of the 5-year Vegetative Management Plan (VMP). In the “work description” Keolis stated that “This work includes both chemical and mechanical controls as represented within the VMP available for viewing at [fdccerailroadvegetation.com](http://fdccerailroadvegetation.com)”. In the submission, Keolis suggested the Commission consider issuing a Negative #2 determination (indicating the work is within an area subject to protection but will not remove, fill, dredge, or alter that area...) or issue a Number Negative 5 determination, citing as exemption 310 CMR 10.02(2)(a)(2). Twenty-two Commissions disagreed with Keolis’ interpretation of the Regulations and denied the mechanical work under the RDA. MassDEP issued an SDA concurring with those decisions, which MBTA/Keolis appealed and the case is now in adjudicatory hearing with OADR. Unless mechanical cutting is an exempt activity expressly given to railroads, it seems prudent that Railroads be required to submit detailed plans when they wish to cut vegetation or trees within Resource Areas and Buffer Zones.
- Land management activities. **We Ask MassDEP to Issue Guidance Documents clarifying and simplifying wetland permitting on essential land management activities.** Best Management Practices surrounding high-risk tree removal, trail maintenance and construction, and invasive species management are well documented. Finding ways which allow landowners to manage their open space while ensuring best practices are adhered to is critical. MSMCP and other organizations welcome future discussions with MassDEP on devising guidance documents which simplifies the wetland permitting process and helps landowners conduct more climate resilience land management activities. For example, a guidance document regarding habitat restoration could set regulatory review standards based on the scope, scale, and size of restoration projects.
- Puncheons and Boardwalks. **As an alternative to our recommendation to allow boardwalks and puncheons on publicly accessible trails to be permitted as Limited Projects (as described on page 11), we Ask MassDEP to Issue a Guidance Document clarifying thresholds of negligible impact of boardwalks and/or puncheons on BVW functions and values as a result of shade and loss.** MassDEP has required replication for small publicly accessible puncheons (because of shading and wetland loss) and elevated boardwalks (because of helical piers). A Guidance Document identifying Best trail management practices (BTMPs) to create and maintain stable trail surfaces and limit improper widening of the footbed and trampling of vegetation by hikers seeking to avoid wet areas should be promoted. Such BTMPs are ever more important as climate change intensifies storms and worsens flooding.

## Miscellaneous

Our membership has suggested the following additional miscellaneous changes.

- Update the 401 Water Quality Certification regulations regarding Outstanding Resources Waters (ORWs). **We ask that MassDEP make practical allowances for minor incursions into ORWs for small projects that are responding to climate change and restoration needs.** Currently, there is no provision in the Surface Water Regulations that allows even a negligible amount of fill to be introduced into an ORW. Even building a small boardwalk or puncheon on a walking path is considered ‘fill’ and requires filing for a major Water Quality Certification. Obviously, work in ORWs must be carefully regulated, however, prohibiting even a single puncheon on a wetland trail within an ORW is unreasonable.
- 10.05(3)(a)(1). **To use consistent, defined terms, we ask that MassDEP change the language to read: “Any person who desires a determination as to whether M.G.L. c. 131, § 40 applies to land or to**

work that may alter an Area Subject to Protection under M.G.L. c. 131, § 40, may submit to the conservation commission a Request for a Determination of Applicability, Form 1.”

- 10.05(3)(a)(2). Currently, an RDA or NOI is required for any activity in the buffer zone. **We encourage MassDEP to provide some discretion for local conservation commissions to utilize an administrative approval process for activities in the buffer zone which will not impact wetland functions and values.** We feel strongly that individuals who wish to undertake minor activities (such as the removal of a high-risk tree) should be able to receive local approval from their local Conservation Commission without filing for a state permit.
- Amending an OOC. **We ask that MassDEP include a specific provision in the regulations that clarifies how an Order of Conditions can be amended. MassDEP should consider allowing Amended Orders that include minimal increases in resource area impacts,** instead of requiring a new NOI to be filed. **We also ask that MassDEP clarify whether an amendment to an Ecological Restoration OOC needs to be re-advertised in the Environmental Monitor.**

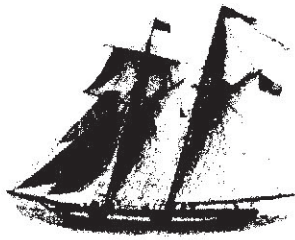
Thank you for the opportunity to share our comments. As partners in the implementation of the Wetland Regulations, we deeply appreciate your efforts to engage with us and are excited to continue this very important conversation as the 1.0 changes are finalized and as the 2.0 changes begin to be fleshed out.

Sincerely,

Regen Milani (Canton), President  
Kathy Sferra (Stow), Co-Vice President  
Angela Panaccione, Co-Vice President  
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Cassie Tragert (Easthampton), Board Member

*The Massachusetts Society of Municipal Conservation Professionals (MSMCP) is a non-profit 501(c)3 organization dedicated to serving the professional staff members that work for Massachusetts Conservation Commissions. MSMCP was founded in 1984 to provide networking and educational opportunities to these municipal professionals focused specifically on their needs. MSMCP works to raise the level of professionalism by providing a forum for professional information exchange, sponsoring technical and scientific seminars and conferences, and fostering cooperation among contiguous or regionally related conservation commissions and their staffs. <https://www.msmcp.org/>*





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Monitoring: VIII F 69

## **RE: Wetlands and Waterways Resilience Comments**

April 19, 2024

Please accept my comments as a concerned citizen and an owner of a water dependent business over my deep concerns over DEP's proposed changes.

### **BACKGROUND & EXPERTISE:**

I am one of the owners of Constitution Marina based in the Charlestown section of Boston Harbor. We were the first recreational marina in Boston Harbor. I am a second-generation owner of this family-owned business in Boston since the 1960's. My business partner and I have owned and operated the marina since 1998 which is considered a premier marina nationwide.

As a 3<sup>rd</sup> generation life-time sailor, I grew up respecting the sea and climate. Understanding our environment is the only way to both survive the open ocean and coexist with climate changes to the waterfront. My marine background and many years of experience give me a unique perspective on the good, bad and the ugly of waterfront use and development.

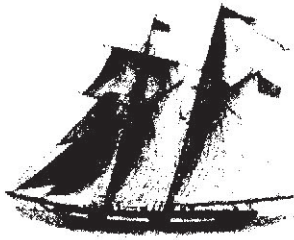
I have been closely involved with Bosport Docking d/b/a Constitution Marina operations since the 1960's and have worked at the marina full-time for almost 40-years, the company having been founded by my father, Bob Davidoff and his partner Jack Roberts.

In addition to the business side of the marina, I am responsible for the management of marine contracting, marina maintenance, related consulting services and development of new sites.

I have sailed Boston Harbor and the Atlantic from Newfoundland Canada to the equator. Educated at Lehigh University and graduated with a BS in engineering, I also hold many professional certifications including: Certified Marina Manager (CMM), Construction Supervisors and Hoisting Engineers Licenses. I also hold Homeland Security documents: US Coast Guard Masters License and TWIC clearance.

I was responsible for the installation of Boston Harbors first marina based pumpout facility at Constitution Marina and instrumental in creating and building the infrastructure for a number of the Sail Boston – Tall Ship events.

I served on the Board of **The Boston Harbor Associates** now known as **Boston Harbor Now**, an advocacy group that monitors and comments on the commercial and private development of



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Boston's waterfront and islands and was one of the first voted to the **Citizens Advisory Committees** for the Department of Conservation Charles River Shoreline Improvement, for the National Park Service Boston Harbor Islands and for Stellwagen Bank, all dealing with infrastructure planning and development in and around Boston Harbor and Massachusetts Bay.

I was involved in formulating the **Massachusetts Clean Marina Guide** issued by the Coastal Zone Management Division of the Department of Environmental Protection.

### **CONCERNS & RECOMMENDATIONS:**

I am concerned that unlike many other countries, cities & private developers around the world creating workable solutions to sea level rise and climate change and have incorporated the views of concerned parties and technical experts, that the DEP's preliminary regulations do not allow for engineered and other technical solutions, but stress a retreat from the water's edge as the primary action. This managed action is impractical for many businesses like marinas and boat yards.

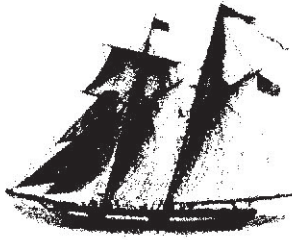
Proposed regulations **MUST** guarantee current water dependent entities the ability to survive and grow as protected in Ch91's water dependent regulations. Giving local conservation commissions the final word whether or not to permit a current water dependent business, to obtain or modify an existing license will bring all new development and current uses to a stop. Financing will become difficult or impossible to afford for the changes needed to expand to deal with climate change. Financing companies will not take the "Risk" of an existing permit that **MAY** be renewed or approved for climate infrastructure changes. As proposed, current water dependent uses are not protected under the DEP draft. Additionally, water dependent uses should be exempt from the bans on buildings in Land Subject to Coastal Storm Flowage. Water dependent uses must continue have the land at the waters edge to survive.

### **ADAPTABILITY & ENGINEERED SOLUTIONS:**

As you have correctly discussed, sea level rise is here, we have to deal with it from now on. Engineering solutions seen all around the world offer almost any facility the ability to adapt and prosper during these changes.

Over the past 40-years I have worked on the waterfront, climate change has affected the harbor environment. At Constitution Marina, we have and plan to take a number of steps to manage sea level rise and environmental changes. Back in the 1980's we built a new marina office building raising the foundation well above grade, and more recently have raised all our utilities in anticipation of future sea level rise. The fender piles surrounding Hoosac Pier were cut short when installed by Massport in the 1980's. We are now in the process of engineering extensions to the fender pile system at locations where our docks may come in contact. This engineered solution solves the potential problem of our docks topping the short fender piles there by eliminating





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damage to our docks and customers boats. Floating docks secured by pilings will be extended or replaced using engineered solutions. Most of the marina uses a mooring system that is easily extended as necessary. The water's edges of our parking lot have been modified over the years with a stone berm to limit topping. We continue to modify the parking lot for the few remaining areas that will need addressing. All the changes we have and plan to make are based on sound engineering solutions, not by retreating from the water's edge.

We have been able to live with the already changing environment by responsibly anticipating and planning using available solutions without the need to retreat from the water's edge. Your preliminary regulations would put us and all other marinas out of business. Boating in Massachusetts is a \$5+ Billion industry that would be significantly affected if the preliminary rules were not modified to allow solutions other than a managed retreat from the water's edge to deal with sea level rise and climate change.

I strongly request and recommend that you extend your comment period and meet with more stake holders that have the technical expertise or have hired professionals to meet and find solutions to climate change that works for the watershed, water dependent business and the citizens of the Commonwealth.

Thank you for your consideration.

Sincerely,

Peter Davidoff



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[bostonharbornow.org](http://bostonharbornow.org)

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April 30th, 2024

Via email: [dep.wetlands@mass.gov](mailto:dep.wetlands@mass.gov)

MassDEP - BWR Wetlands Program  
Attn: Wetlands-401 Resilience Comments  
100 Cambridge Street, Suite 900  
Boston, MA 02114

Re: Proposed Regulatory Changes

Dear Ms. Rhodes and MassDEP Wetlands Team:

Thank you for the opportunity to comment on the proposed changes to 310CMR 10.00. Boston Harbor Now's mission is to ensure that Boston Harbor, the Waterfront, and the Islands are accessible and inclusive and that these assets are properly adapted to the risks of climate change. We do this in order to realize our vision of a vibrant, welcoming, and resilient Boston Harbor, Waterfront, and Islands for the benefit of everyone. We are encouraged by the Massachusetts Department of Environmental Protection's (MassDEP) willingness to update the implementing regulations (310 CMR 10.00) for the Wetlands Protection Act, to reduce storm and flood damage, minimize the risk to public health and safety, and protect the natural function of the floodplain. We hope these changes help to prepare communities for coastal flooding while providing enough flexibility to deliver thoughtfully designed and innovative flood resilience measures.

Boston Harbor Now has long advocated for a resilient, equitable, and accessible waterfront. As part of our mission to prepare Boston Harbor for sea-level rise and storm surge caused by intensifying climate change, we have advocated for flood measures that help contribute to district-scale flood protection and improve ecosystem services and waterfront activation.

As advocates of Boston Harbor and champions of thoughtfully designed and innovative flood resilience measures that contribute to district-wide flood protection, we hope these new updates will allow for the continuation and expansion of waterfront access and flood protection.

***General Provisions – 10.24***

Per the proposed regulations, new buildings, even those on piles, are no longer permitted in the velocity zone (V-Zone) due to the adverse impact structures have on Land Subject to Coastal Storm Flowage (LSCSF). As noted by the Department, "Open Piles necessary to support buildings and other structures are likely to cause scour from the turbulence of asymmetrical waves and swash" and "human activities associated with buildings typically result in loss of vegetation" resulting in "areas [that] cannot naturally recover as readily as undisturbed flood zones, frequently resulting in storm surge waves breaking



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further landward.” We concur and believe that most new structures and buildings should not be built in the V-Zone. In addition to undermining LSCSF, we believe that permitting most new development in the V-Zone would set them up for failure, exposing them to extreme wave action during coastal storms.

However, there are some instances in which development must occur along the water and occasionally be built within a V-Zone. By virtue of their purpose, water-dependent uses must be located in areas along the waterfront, where we expect to see the most wave action. As advocates of the working port who recognize the valuable role they play in Boston’s economy, we appreciate that MassDEP will allow water-dependent uses to continue in the V-Zone. However, we are concerned by the narrow scope of listed uses deemed water-dependent. The new regulations state that water-dependent uses “includes only docking facilities, port facilities that are necessary for the loading and unloading of cargo or passengers, and ship building and ship repair facilities, but does not include long-term storage or related manufacturing facilities.” The listed acceptable uses do not match those identified as being water-dependent as per the Massachusetts Public Waterfront Act (Chapter 91), which defines water-dependent as:

“...those uses and facilities which require direct access to, or location in, marine or tidal waters and which therefore cannot be located inland, including but not limited to: marinas, recreational uses, navigational and commercial fishing and boating facilities, water-based recreational uses, navigation aids, basins, and channels, industrial uses dependent upon waterborne transportation or requiring large volumes of cooling or process water which cannot reasonably be located or operated at an inland site.”

We would like to see the definition of ‘water-dependent’ in 310 CMR 10:00 align with 310 CMR 9.00 allowing water dependent uses we hope to see along the harbor. Should the opportunity arise, we would support the building of renewable energy infrastructure that cannot reasonably be located inland. Other examples include fish processing facilities such as those water-dependent uses found in South Boston; facilities that promote water recreation and enjoyment of the water; and flood, and shore protection infrastructure that contributes to coastal resilience. These types of uses are forbidden in the proposed Wetlands Protection Act regulation revisions. We suggest that the proposed regulations be revised to allow these uses, as well as others outlined in 310 CMR 9.00 in the V-Zone.

***Land Subject to Coastal Storm Flowage (Redevelopment Within Previously Developed Land Subject to Coastal Storm Flowage.) – 10.36(8)***

Boston Harbor Now is actively trying to promote the development of district-wide flood infrastructure. As proposed, the regulations would make it more challenging or impossible to build flood protection into the site. We suggest MassDEP revise the regulations to allow and even encourage thoughtful flood infrastructure creation. We are specifically concerned that the regulations that restrict the placement of fill for flood control purposes to the MiWA Zone are overly



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prohibitive, potentially preventing flood infrastructure from being built seaward of the MiWA Zone. The creation of flood infrastructure should be allowed in any of the zones so long as they are capable of providing thoughtful flood protection that protects the site from flooding while maintaining a connection to the waterfront and minimizing harm to other properties and natural systems. We believe the creation of thoughtfully designed, district-wide flood protection should be prioritized, and worry that restricting its location could result in less effective protection.

#### ***Procedures (Scientific Research Projects) – 10.05(12)***

Boston Harbor Now and our partners at the Stone Living Lab are strong advocates of Nature-Based Approaches (NBAs) that mimic natural landforms, which provide protection while restoring ecosystems and providing co-benefits to coastal communities as alternatives and complements to gray infrastructure. Although they provide a myriad of benefits, major gaps exist in innovating, permitting, and financing successful nature-based approaches. Through our efforts with the Stone Living Lab to conduct nature-based demonstration projects in the intertidal zone, we've found that the existing rules either do not allow them or make these projects extraordinarily time-consuming and prohibitively expensive.

We appreciate MassDEP acknowledging the value of demonstration projects so that we can inform future resiliency strategies and implement nature-based approaches around the Commonwealth. However, we are concerned the proposed regulations, even though an improvement, will prohibit research and demonstration projects given the proposed size limitations. The proposed regulations do not adequately address the need to streamline and allow research and demonstration projects of the size needed for coastal resilience and saltmarsh restoration projects - specifically NBAs. The proposed regulations restrict the size and duration of demonstration projects to ensure they will have a "negligible or no adverse effect on the Resource Area's ability to protect the interests identified in M.G.L. c. 131, § 40." The proposed restrictions functionally stymie research projects due to their severe constraints.

Research projects like the ones planned by the Stone Living Lab on the Boston Harbor Islands and along the shoreline require far more time and space than outlined in the proposed regulations. The draft regulations should be revised to enlarge the scale of research and demonstration projects and extend the timeframe for testing and evaluation.

In conclusion, we believe that regulatory flexibility and pathways are needed to advance flood resilience best practices. Boston Harbor Now is concerned that water-dependent uses, critical flood infrastructure and research and demonstration projects need greater flexibility and incentives to ensure that research and demonstration projects can proceed immediately.



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As MassDEP revises the proposed regulations, we suggest the department move swiftly to allow and encourage resilience projects. The existing regulatory framework which was established decades before the impacts of sea level rise and climate were known, must be adapted to the immediate challenges thereby actively encouraging nature-based approaches to the impact of climate change.

We appreciate the opportunity to comment on the proposed regulatory revisions and look forward to continuing to work with MassDEP, local and federal officials to ensure that appropriate research and demonstration projects for resilience can move forward expeditiously.

We would be happy to speak with the Department to address any questions regarding these comments.

Sincerely,

A handwritten signature in black ink, appearing to read "K. Abbott", written over a horizontal line.

Katherine F. Abbott  
President and CEO  
Boston Harbor Now



**Boston Water and  
Sewer Commission**

980 Harrison Avenue  
Boston, MA 02119-2540  
617-989-7000



April 30, 2024

Ms. Lisa Rhodes  
MassDEP – BWR Wetlands Program  
100 Cambridge Street  
Suite 900  
Boston, MA 02114

Attn: Wetlands - 401 Resilience Comments

Dear Ms. Rhodes:

The Boston Water and Sewer Commission (the “Commission”) provides drinking water, sewer and storm drain services to over one-million residents, workers, commuters, students, tourists, shoppers and many others, within the city of Boston daily. The Commission has reviewed the proposed changes to the Wetlands Protection Act (“WPA”) and Water Quality Certification (“WQC”) regulations and submits comments as contained herein.

BWSC submits these comments for its own part individually; however, it also supports the comments submitted by the City of Boston.

The Commission supports DEPs efforts to (1) promote nature-based Environmentally Sensitive Site Design (“ESSD”) and Low Impact Development (“LID”) in project designs; (2) revise the WPA/WQC Stormwater Management Standards and Stormwater Handbook to more closely align with the EPA General Permits for Stormwater Discharges from Small Municipal Separate Storm Sewer Systems in Massachusetts (“MS4 Permit”); (3) replace outdated precipitation frequency estimates used for design storms with more recent and accurate precipitation estimates to reflect more current, higher precipitation associated with extreme storms and (4) add a new standard for achievement of Total Maximum Daily Loads (“TMDLs”).

While the Commission is encouraged by the EPA’s efforts to improve the WPA/WQC, it has concerns with some of the proposed changes.

The regulations do not adequately prioritize and enable climate resilience projects. Much of the City’s coastline consists of filled land just above high tide, leaving Boston’s coastal areas increasingly vulnerable to flooding, rising sea levels and tidal surges. The Commission is concerned that the new regulations may inhibit or even prevent the ability to install the climate resilient infrastructure necessary to mitigate flooding, sea level rise and tidal surge. For example, under the proposed regulations new buildings, even on piles, are not allowed in the Velocity Zone (V-Zone) and Buildings in the Moderate Wave Action Zone (MoWA) must be elevated an additional two feet above base flood elevation. “Buildings” is not defined in the regulations leaving it subject to interpretation. What type of “building” is intended to be





excluded? Any type of building? What is the difference between a building and a structure? Are “structures” allowed? What constitutes a structure?

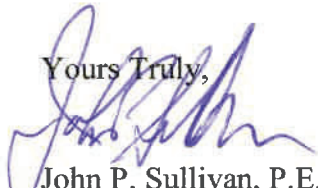
The new regulations allow for berms and seawalls to be approved in the Resource Areas. However, climate resilience projects could involve installation of buildings and or structures to enclose pump stations, storage facilities and related infrastructure. These buildings or structures may, by design and purpose, need to infringe on Resource Areas and Land Subject to Coastal Storm Flowage. The regulations should provide more flexibility in allowing climate resilience projects to fill or alter Resource Areas and reduce Land Subject to Coastal Storm Flowage if demonstrated to be necessary.

The Commission is concerned that the 80% TSS and 50% TP removal rates required for redevelopment may be unachievable for some projects, given site constraints and lot size limits of developed properties within Boston’s highly urbanized area. The limits on TSS and TP for redevelopment projects should be eliminated, or at least be lowered, and the allowance to remove TSS and TP to the Maximum Extent Possible (“MEP”) for redevelopment be retained in the revised regulations.

The proposed regulations establish a new Stormwater Management Standard 11 for projects that discharge to waters with a designated Total Maximum Daily Load limits for phosphorus, nitrogen, metals, or pathogens. Projects subject to Standard 11 must implement Source Control Measures (“SCMs”) that specifically target the TMDL pollutant of concern and identify such measures specifically in the long-term pollution prevention plan required by the regulations. It should be made clear in the regulations that the Conservation Commission is responsible for receiving and reviewing the long-term pollution prevention plan required by the WPA regulations. The long-term pollution prevention plan should identify what entity (if not the Conservation Commission), will be responsible for ensuring the developer and later the property owner, implement and comply with the respective components of the plan, including the SCMs.

Thank you for the opportunity to comment on the proposed changes to the Wetlands Protection Act and Water Quality Certification regulations. If you have any questions or concerns regarding these comments, please feel free to contact me (617-989-7444) or Ms. Amy M. Schofield (617-989-7432), of my staff.

Yours Truly,



John P. Sullivan, P.E.  
Chief Engineer

JPS/AS



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OFFICE OF  
CONSERVATION COMMISSION

April 30, 2024

Massachusetts Department of Environmental Protection  
Bureau of Water Resources -Wetlands Program  
Attention: Wetlands-401 Resilience Comments  
100 Cambridge Street, Suite 900  
Boston, MA 02114

Dear MassDEP Wetlands Program:

Thank you for the opportunity to comment on the draft Wetlands Protection Act regulations as part of MassDEP's "Climate Resilience 1.0" package. These are positive steps forward protecting our coastal resources and infrastructure, and making Massachusetts more climate resilient. As the Chair of the Brewster Conservation Commission, I am submitting this comment letter.

The Brewster Conservation Commission has been following the progress of the public outreach effort and appreciate MassDEP's considerable time and effort to prepare these proposed regulations. This being said, the Brewster Conservation Commission has some general and specific comments to briefly add as we know you are receiving a lot of feedback.

Generally, the Brewster Conservation Commission supports the extensive comments and efforts provided to MassDEP by the Massachusetts Association of Conservation Commission in April 2024; the Massachusetts Society of Municipal Conservation Professionals on April 26, 2024; their affiliates The Keystone Project; as well as the Brewster Natural Resources Advisory Commission for both the Climate Resilience 1.0 now and 2.0 in the future. With the workload associated at the local Conservation permitting, administration and enforcement level, the leadership offered by these groups is critical and consideration of their points is paramount as a voice for the Commonwealth's Conservation Commissions.

#### Climate Resilience 1.0

More specifically, under the Climate Resilience 1.0, the Brewster Conservation Commission supports the updates of the precipitation calculations for stormwater designs, moving toward more consistency with MS4 permits, making provisions for scientific research projects in coastal resource areas, establishing restrictions on new development in high risk areas and establishing performance standards for Land Subject to Coastal Storm Flowage (LSCSF).

Below are several details that The Brewster Conservation Commission suggests:

1. Public projects with demonstrated public benefits should be afforded unique performance standards.
2. MassDOT is afforded exemptions and special rights while Municipal Departments of Public Works are not. Please consider normalizing this.
3. Numerous work/activities such as nature path platform construction and nature path maintenance involving vegetative management should not be held to the same standard as dwellings, roads or equivalent. Please consider the scale of the adverse effects and not just the absolute activity with regards to assigning work/activity to exemptions and permissible minor activities. Additionally, the preservation of the surrounding land is the mitigation for a new nature trail with conditions such as no motorized vehicles, horses or equivalent.
4. The proposed Land Subject to Coastal Storm Flowage performance standards prohibit construction in the Velocity Zone. This conflicts with the current and proposed Building Code Performance Standards. Please consider adding language to the effect that "the stricter standard applies" or a process for resolution between the two jurisdictions.
5. Swimming pools in the resource area or buffer zones are impervious and have secondary impacts such as aprons, fencing and vegetative clearing so they should not be exempt.
6. Regarding ponds, Conservation Commissions need to have definitive protocols and permit requirements to pursue as this work is in the resource areas and can create a slippery slope. It is all too easy for these pond invasive management projects to turn into surface clearing of all plants including those necessary for ecological habitat. Pond weeding should be treated equally - through an NOI - whether it is for native or invasive species. Given that each pond is unique, any management strategy is a de facto experiment and should be treated as such. There need to be clear indicators monitored as part of the project for adverse unintended consequences, particularly in shallow, wind-mixed ponds which have a diminished capacity for absorbing trophic shifts.

## Climate Resilience 2.0

Looking forward, the Brewster Conservation Commission suggests that MassDEP begin to work on Climate Resilience 2.0 to continue improving the Wetland Protection Act regulations.

Below are several points, the Brewster Conservation Commission would like to offer:

1. Many Towns are introducing Municipal Storm Water Management Bylaws. Normalizing the Stormwater Standards at the State Level with MS4 and coordinating a 6-month review period and interactive workshops with Conservation Commissions and Staff to flush out comments would likely reveal common regional themes and considerations helpful to the process.
2. With regard to Stormwater Standard #10 Illicit Discharge, please provide a form to be signed by the responsible party and establish a chain of custody that transfers with the property ownership and a requirement to record it at the Registry of Deeds or Land Court.

3. In light of the Sackett Decision, please add Vernal Pool and Vernal Pool Habitat as a resource area with more expansive protection and definitions to include certified and potential vernal pools. As an example, submittal of field-based observations to the Conservation Commission by competent professionals should be sufficient evidence and not just the vernal pool certification process through the Natural Heritage and Endangered Species Program which is time consuming and prolongs the public meeting process.
4. In light of the Sackett Decision, please expand the jurisdiction over small isolated wetlands by reducing the size of Isolated Land Subject To Flooding as an offset.
5. Please consider collaborating a 6-month review period and interactive workshops with Conservation Commissions and Staff to flush out comments regarding WPA Filing Forms and Fees.
6. With regard to Title V, please add septic systems as an exemption to Stormwater Standards with 310 CMR 10.0 regulations and the WPA Form 3/Notice of Intent.
7. With regard to Title V, please add language that wetland delineation approval is through the authorizing authority (Municipal Conservation Commission, MassDEP or USACE) or add a definition that provides equivalent meaning.

If you have any questions or need additional assistance, please contact Bill Grafton, Brewster Conservation Administrator by email or at (508) 896-4546 ext. 4242.

Respectfully,



Mike Tobin  
Conservation Chair

cc Bill Grafton, Brewster Conservation Administrator  
Kim Pearson, Brewster Natural Resources Committee Chair  
Chris Miller, Brewster Director of Natural Resources  
Peter Lombardi, Brewster Town Manager



# *Town of Brookline*

## *Conservation Commission*

*Marcus Quigley, Chair*  
*Roberta Schnoor, Vice Chair*  
*Werner Lohe*  
*Pallavi Kalra Mande*  
*Pamela Harvey*  
*Samuel Burrington*  
*Will Corrin*

**Associates**  
*Marian Lazar*

April 29, 2024

Via Electronic Mail

MassDEP – BWR Wetlands Program Attn: Wetlands-401 Resilience Comments  
100 Cambridge Street, Suite 900 Boston, MA 02114

[dep.wetlands@mass.gov](mailto:dep.wetlands@mass.gov)

Re: Wetlands-401 Resilience Comments

MassDEP – BWR Wetlands Program

Attn: Waterways Resilience Comments 100 Cambridge Street,  
Suite 900 Boston, MA 02114

[dep.waterways@mass.gov](mailto:dep.waterways@mass.gov)

Re: Waterways Resilience Comments

We sincerely appreciate the effort that went into creating these draft regulations and commend MassDEP for focusing on ways to make Massachusetts and its wetland resources more resilient to climate change. We appreciate the great strides made in the following areas and are eager to see the following new regulations promulgated right away.

- Supporting greater use of nature-based solutions.
- Safeguarding our coasts and waterways from flooding and stormwater pollution through the development of Land Subject to Coastal Storm Flowage performance standards and prohibiting new development in the highest risk coastal flood zone and requiring other development to be more resilient and protective of nature.
- Including sea level rise in the revisions to the Massachusetts Waterfront Regulations.
- Updating the precipitation calculations for stormwater designs.
- Allowing Scientific Research Projects in coastal wetland resource areas.

Below, we provide some suggestions for improving the proposed “1.0” changes and suggestions for the forthcoming “Resilience 2.0” changes.

### **General Recommendations for 1.0 Changes**

Some of the proposed regulation changes will be challenging to implement and/or will lead to unintended detrimental consequences and so should be refined prior to promulgation.

- MassDEP should engage with day-to-day practitioners in their regulatory revision efforts: conservation agents, conservation commissioners, and other professional non-profit staff – the people responsible for interpretation and consistent implementation of these regulations.
- The regulations should provide performance standards that protect wetland functions and values and not specific methods and means of achieving those performance standards. Methods and means should be addressed in guidance documents.
- The revised regulations provide some excellent detail, but must strike a reasonable balance between scientific precision and overly complex or burdensome requirements that render them too difficult for a majority of volunteer conservation commissions and applicants to implement. The proposed stormwater requirements, for example, exceed the review capabilities of most conservation commissions.
- With the new LSCSF regulations DEP has taken a positive step to address flooding from sea level rise, but it must do more to ensure that nature can thrive and to protect our communities from flooding and water pollution. Prohibiting new structures in the highest risk areas and providing standards for development and redevelopment throughout the coastal floodplain are appropriate and appreciated. The maps for where restrictions apply should, however, take the most up-to-date data on sea level rise and erosion rates into consideration.
- Although we agree that the current Stormwater Handbook has much room for improvement, and although the new Stormwater Handbook is nicely organized, the new 860-page behemoth is far too complex to: (1) be usable by most conservation agents or commissions; and (2) facilitate efficient review and permitting. Many of the new details of stormwater management should be removed from the regulations to facilitate future updates.
- Although we agree that referencing the NOAA14+ precipitation data is a great step in the right direction, it does not factor in climate change. The Handbook could at least refer to the new EEA Climate change projections dashboard (part of Climate Resilient Mass) which provides town-specific precipitation projections using NOAA 14+).
- Provide frequent outreach and education about the new regulations once promulgated. Dissemination of detailed and multi-faceted explanations of these new regulations and the purposes and intents behind them for the Conservation Commissions and conservation professionals who will implement them will be essential. MSMCP welcomes the opportunity to assist MassDEP in these efforts.

## Requests for 2.0 Changes

The 1.0 draft regulation changes alone will not achieve our goal of true resilience. We appreciate that MassDEP has said that it is already working on regulatory reform package “2.0.” Conservation Commissions across the Commonwealth implement the wetland regulations on a daily basis and know what works well and what is challenging. We urge MassDEP to begin a robust process of stakeholder engagement with consultants, field professionals, and conservation agents so that we may help you develop practical, strong, climate resilient regulations.

Here we provide some suggestions to begin the conversation:

- In the wetland regulations and Chapter 91, DEP must acknowledge and reflect the difference between wetland “alterations” resulting from new development and wetland “alterations” resulting from ecological restoration efforts and must streamline permitting for wetlands restoration projects to achieve the state’s resiliency goals by:



- Reversing historic damage to our wetlands,
  - Addressing climate change, rising sea levels, ever-increasing invasive species,
  - Allowing for salt marsh migration,
  - Promoting carbon sequestration, improved water quality, and increased biodiversity, and
  - Promoting living shorelines and other nature-based solutions.
- Create new Minor Activities (in 310 CMR 10.02(2)(b)(2)) for routine work in Riverfront and Buffer Zone conducted by homeowners and land managers such as:
  - Cutting of certain high-risk trees.
  - Removal of invasive vegetation.
- Create new Limited Projects (310 CMR 10.24 and 10.53) and other provisions to simplify trail permitting and invasive species management in wetland resources areas.
- Work with Conservation Agents to update the Riverfront Area regulations to clarify some of the sections that are particularly difficult to interpret and lead to inconsistent implementation.
- Work with Conservation Agents to update and greatly simplify the WPA application and permit forms.
- Increase application fees. Wetland Fees do not cover the administrative costs for processing, reviewing, issuing, and mailing wetland permits.
- Develop guidance documents. Conservation commissions and conservation staff would benefit from guidance documents which provide more detail about various regulatory provisions.
- To account for their inherent value, particularly in the face of climate change, consider expanding Isolated Land Subject to Flooding (ILSF) jurisdiction to include small isolated wetlands by reducing the size of ILSF in 10.57(2)(b).
- Consider adding vernal pools as a new wetland resource area, with a 100-foot Buffer Zone.
- Provide some discretion for local conservation commissions to utilize an administrative approval process for activities in the buffer zone which will not impact wetland functions and values. We feel strongly that individuals who wish to undertake minor activities (such as the removal of a high-risk tree) should be able to receive local approval from their local Conservation Commission without filing for a state permit.

Thank you for the opportunity to share our comments. As partners in the implementation of the Wetland Regulations, we deeply appreciate your efforts to engage with Conservation Commissions and are excited to continue this very important conversation as the 1.0 changes are finalized and as the 2.0 changes begin to be fleshed out.

Sincerely,



Marcus Quigley P.E  
Chairman  
Brookline Conservation Commission

**From:** [REDACTED]  
**To:** [DEP Wetlands \(DEP\)](#)  
**Cc:** [REDACTED] [Armida Dano](#)  
**Subject:** Wetlands-401 Resilience Comments  
**Date:** Wednesday, January 31, 2024 1:59:30 PM

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**CAUTION:** This email originated from a sender outside of the Commonwealth of Massachusetts mail system. Do not click on links or open attachments unless you recognize the sender and know the content is safe.

Hello,

As the owner of a property on West Island in Fairhaven, MA, I am writing to express my deep concerns regarding the proposed Updates to the Massachusetts Wetlands and 401 Regulations. These updates will significantly impact my property, particularly limiting my ability to tearing down my existing home and rebuilding a new and bigger home on cement pillars, as I have been planning to do for sometime.

For the public comment testimony and official record, I would like to address the following points:

1. **Abutter Notifications:** According to the Wetlands Protection Act, all Notice of Applications should include certified abutter notifications to properties that may be affected. I am puzzled as to why the Department of Environmental Protection (DEP) has not adhered to these regulations by notifying all landowners along the shoreline who would bear a substantial financial impact due to potential land takings without compensation.
2. **Size Restrictions on Existing Cottages:** I am seeking clarification on the rationale behind limiting existing cottages in developed areas to their original 1930-1950 sizes. The proposed one-size-fits-all approach raises questions about fairness and practicality.
3. **Diversity of Velocity Zone Properties:** It seems impractical to treat all velocity zone properties the same when they vary significantly in distance from the water, elevation, and accuracy of FEMA mapping. Some properties are situated a considerable distance from the shoreline, separated by dense wooded areas, while others boast higher elevations. Additionally, discrepancies in FEMA mapping have led to inaccuracies in assessing these properties.

I appreciate your attention to these concerns, and I kindly request that they be documented as part of my public comment testimony. Your assistance in addressing these issues will contribute to a more comprehensive and equitable understanding of the potential impacts of the proposed regulations.

Thank you for your time and consideration.

Sincerely,

**Bryan Esposito**

This e-mail, and any attachments hereto, are intended for use by the addressee(s) only and may contain information that is (I)

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APRIL 30, 2024

Massachusetts Department of Environmental Protection  
**Attn: Wetlands-401 Resilience Comments**  
100 Cambridge Street, Suite 900  
Boston, MA, 02114  
**Submitted Electronically to [dep.wetlands@mass.gov](mailto:dep.wetlands@mass.gov)**

**RE: Wetlands-401 Resilience Comments Submittal**

Dear MassDEP:

BSC Group, Inc. (BSC) commends the Department's efforts to update the Wetlands Protection Act (WPA) Regulations, Massachusetts Stormwater Handbook, and the Section 401 Water Quality Certification Regulations to promote nature-based project designs, prepare for climate change, and improve water quality in the Commonwealth. However, BSC has concerns that the proposed regulatory changes are geared towards large-scale commercial or single site development, and do not consider the immense cost and effort for linear facilities and municipalities across the state. Although much of our letter focuses on impacts for linear utility infrastructure projects, BSC fears the changes proposed could also result in economic impact to municipalities and put major constraints on disadvantaged communities where land is more affordable. Otherwise, beneficial redevelopment may also be stymied or otherwise abandoned where site conditions are too challenging. It also seems necessary to provide for a process similar to a Variance that allows projects to demonstrate overriding public benefit or interest for a Project that is otherwise denied because it cannot meet revised Stormwater Standards.

BSC is submitting the following comments to MassDEP for consideration regarding revisions to the new regulations.

**DEFINITIONS COMMENTS**

- The **definition of "Compacted Gravel or Soil"** could be clarified to provide specific sizes of materials that are considered impervious. The current definition could be left to interpretation during permitting and could cause confusion and delay. We advise that MassDEP clarify what constitutes a gravel and/or soil that is impervious when compacted. Whether it be grain size distribution or specific threshold for permeability.
- Defining **Compacted Gravel or Soil as "impervious"** will essentially make dirt roads and trails "Impervious" and therefore, any "improvements" to the roads will be subject

to the Stormwater Standards, including pollutant removal of total suspended solids (TSS) and total phosphorous (TP). This, along with the setbacks and requirements specifically for Coldwater Fisheries Resources (CFR) (100-foot setbacks & cooling water to 68 degrees) will pose significant challenges for rural MA communities to comply and, additionally, to fund. A significant portion of the dirt roads in western MA are likely to cross a CFR at least once, and it is often where continuing repairs are needed. The major problem facing dirt roads is washouts/erosion/mud/ dust resulting in TSS. Prior to requiring implementation through regulation, we recommend case studies or guidance demonstrating how one would successfully use LID/ESSD (or SCM), have a 100-ft setback and lower the water temperature to 68 degrees prior to any discharges to a CFR. BSC suggests that the BMPs in the *Massachusetts Unpaved Road Best Management Practice Manual* (Berkshire Regional Planning Commission, 2001) be accepted to meet the stormwater requirements to provide country drainage for unpaved roads.

- The **"Compacted Gravel" definition** will significantly constrain linear utility projects that need to build or improve miles of access roads and gravel work pads to safely perform work (or emergency work) in linear rights-of-way (ROWs). The costs of the required analyses to meet the pollutant removal (TSS, TP) standards would be significant. ROWs are less frequently accessed and do not generate the pollutant loading of a public roadway or parking lot. The main "pollutant" of concern for utility corridor gravel roads would be sediment from erosion of the gravel which can be overcome with long-term BMPs such as swales, plunge pools, and water bars. BSC has recommended that utility corridor gravel access improvements be exempt from compliance with the Stormwater Standards, specifically as noted below. However, the guidance in *The Massachusetts Unpaved Road Best Management Practice Manual* (or similar) could be accepted as adequately meeting stormwater requirements without requiring extensive field test pits, hydrologic and hydraulic calculations, and design.
- **Impervious Surface Definition (Roads):** Including gravel and dirt roads as "Impervious" based on compaction measurement of 145 PSI is difficult to measure (and for Conservation Commissions to confirm). BSC recommends that MassDEP define a specific permeability threshold to define if a surface is impervious. MassDEP could also acknowledge a grain size distribution which could be considered pervious. For example, less than a certain percentage passing the No. 4 sieve (sand) and less than a certain percentage passing the No. 200 sieve (silt/clay fines). Alternatively, allow for project applicants to demonstrate through laboratory testing that a specific material has a permeability that is considered pervious (i.e., define a specific permeability rate [cm/s]).
  - States such as Vermont and Rhode Island have been willing to consider specific materials or mixes to be acceptable for use as utility access roads without complying with state stormwater standards requiring detailed hydrology and hydraulic calculations or stormwater designs.
    - Through the Vermont Stormwater Permit process for similar projects, Vermont Department of Environmental Conservation (VTDEC) has

accepted the use of the Vermont Agency of Transportation Standard Specification Material 704.06 "Dense Graded Crushed Stone" for recent projects involving constructed gravel roads and work pads without considering the material "impervious" and requiring detailed hydraulic calculations or stormwater design.

- Rhode Island Department of Environmental Management (RIDEM) has acknowledged, on a case-by-case basis, through permitting that utility access roads constructed with crushed gravel do not need to meet the Rhode Island State Stormwater Standards if appropriate erosion and sedimentation control BMPs are utilized.
- **Impervious Surface Definition (Solar):** The Impervious Surface Definition includes solar arrays as impervious. DEP's *Policy 17-1: Photovoltaic System Solar Array Review* states the solar panels are not impervious surfaces. Specifically, the policy states: *"The Stormwater Management Standards contained at 310 CMR 10.05(6)(k) apply to PVS projects. The stormwater standards include: attenuation of peak rates of runoff caused by land development (310 CMR 10.05(6)(k)2), provision of recharge (310 CMR 10.05(6)(k)3), control of Total Suspended Solids (TSS) from impervious surfaces (excluding solar panels)..."*. This policy would seem to conflict with the revised definition for "Impervious Surface". Therefore, clarification on what portion of the solar array will be considered impervious under the revised regulations is important. Is it the array itself, the footings or the land under the array?
- **Impracticable Definition:** The definition of impracticable meaning "impossible" is highly restrictive. In addition, prohibiting the consideration of costs is unreasonable.
- **Redevelopment Definition:** Work in utility corridors could be considered Redevelopment and therefore, the stormwater management system could be designed to comply with the standards to the Maximum Extent Practicable. However, according to the WPA definition (b), Redevelopment is defined as:  
*"(b) development, rehabilitation, expansion and phased projects on previously developed sites provided the Redevelopment results in no net increase in impervious areas..."*

Therefore, as the updated definition of impervious surface includes gravel and the definition of Redevelopment cannot include a net increase in impervious area, utility projects where gravel access roads and work areas are proposed will be required to meet the proposed updated regulations and the Stormwater Standards to the full extent. They do not appear to be able to qualify for Maximum Extent Practicable as a Redevelopment Project.

Could utility roads be considered redevelopment and the Stormwater Standards be met to the Maximum Extent Practicable?

- **Redevelopment Definition:** Including dirt and gravel roads as impervious surfaces will severely limit the projects meeting the Redevelopment definition. Could this be refined and a definition added of "reuse of degraded or previously developed areas." Similar to the Redevelopment definition under Riverfront Area (310 CMR 10.58(5))?



## MUNICIPAL DIRT ROADS, TRAILS, AND LINEAR UTILITY CONSIDERATIONS

- **310 CMR 10.05(k) – including non-point source storm water discharges in jurisdictional areas requiring ESSD/LID techniques:** Case law in the Matter of Berkshire Community College Docket No. WET-2015-023 from MassDEP Office of Appeals and Dispute Resolution established that compliance with the Stormwater Standards is not required for construction projects that do not create new point source discharges in jurisdictional areas. Including non-point source discharges as requiring to meet ESSD/LID stormwater standards, would bring a lot more projects into jurisdiction, including linear projects in which the only potential pollutant would be sediment from erosion and washouts. Suggest review of the case law and a more specific definition for what non-point source discharges are included and at what distance these discharges would apply. For example, if sheet flow discharges to vegetated areas that are far from environmental resources or stormwater catchment, should this non-point source discharge require additional treatment?
- Regarding **linear trail projects**, consideration to "New Trails" versus "Rail-Trails" should be defined as either can utilize a porous or non-porous (e.g., hot mix asphalt) surface and carry little to no vehicular traffic. Therefore, pollutant loading for a trail project would be minimal compared to public roads and parking lots. In addition, existing abandoned railbeds generally consist of compacted soil or gravel surface and therefore applying a new hot mix asphalt surface essentially results in little to no impact to the hydrology. Regarding Public Shared Use Paths as limited projects at 10.24 and 10.53, we recommend extending limited project status beyond those sited on abandoned railbeds.
- Regarding gravel access required to maintain utilities along cross-country linear easement/ROWs, BSC offers the following specific comments:
  - Transmission and distribution lines along utility ROWs are an essential part of the electrical grid in New England, need to be maintained for resiliency, and require access by construction vehicles to implement maintenance and construction projects. The utility ROWs vary in widths, can be space constrained, and often traverse steep and challenging terrain with bedrock and boulders prevalent, making it difficult to design and construct SCMs without requiring extreme construction measures and grading. All of which will add substantial costs to maintain the utilities.
  - Preliminary engineering calculations based on typical conditions along a utility ROW indicate that the increase in peak discharge rates from pre- to post-construction of gravel access roads and work pads along a utility ROW would be very low compared to a typical commercial or industrial development where significant impervious pavement and rooftops are proposed. The increase in peak discharge for a cross-country utility ROW project involving construction of gravel access is approximately the same or less as the increases typical of single-family residential developments of up to four lots, which are exempt from compliance with the Stormwater Standards. Depending on the size of the watershed, steepness of the

topography, and hydrologic soil group (HSG) type of the soils in the watershed, the increases anticipated based on preliminary calculations are up to approximately 1-2 cubic feet per second (cfs) of peak rate discharge, and in many cases less than 1 cfs. Single-family residential developments of up to four lots, depending on the size of the lots, driveways, yards, and structures, would be expected to range from approximately 1 to 4 cfs peak discharge rates. Increases from commercial or industrial developments, depending on the size of the development, would likely be orders of magnitude higher (10s or 100s of cfs) than the increases expected from the construction of gravel access improvements along the utility ROW.

- Increase to peak discharge rates resulting from utility corridor gravel access improvements would be low and consistent with those anticipated for single-family residential development (which is exempt from meeting the Stormwater Standards for developments with up to four lots).
- Despite the relatively low increase in peak discharge rates and low likelihood of impacts to water resources, the effort and cost to comply with the Stormwater Standards would be significant, requiring Stormwater Control Measures (SCMs) like infiltration basins to be constructed frequently along the utility corridors. For large roadway/utility projects, multiple infiltration basins will be required in each watershed to offset peak discharge rates as well as meet required recharge and water quality treatment volumes.
- A significant portion of the utility ROWs run through remote areas surrounded by forested land, and most of the constructed gravel access will runoff or be discharged to these adjacent forested areas, which will serve as a substantial vegetated buffer and provide the recharge to groundwater and pollutant removal that the Stormwater Standards aim to provide. Rarely would locations along the ROWs discharge to municipal stormwater systems, but these locations could be addressed on a case-by-case basis. Therefore, the relatively low increase in peak discharge rates associated with construction of gravel access improvements is even less likely to have an impact on water resources.
- The additional SCMs required to comply with Standards 2, 3, and 4, specifically, would result in additional impacts to the existing land within the ROW. Depending upon existing topography, the grading and land alteration required to install these additional SCMs may be significant and would result in more land becoming surfaced with stone in lieu of vegetation. As many ROWs serve as valuable habitat for both common and rare species, this significant reduction to vegetated land could impact these species. The scrub shrub vegetation along utility ROWs provides valuable habitat for wildlife and pollinators.
- Often utility easements/ROWs may not allow for the construction of additional infrastructure, other than utility structures and access improvements to the structures, that would further encumber to underlying property. Compliance with the Stormwater Standards requiring construction of additions

stormwater infrastructure would create additional challenges to maintaining the critical infrastructure serving the public.

- Some utility corridor projects being 50 or more miles long in the Commonwealth, could require hundreds or thousands of basins along the lines to meet the Stormwater Standards. At least one test pit to evaluate soils and seasonal high groundwater is required at each proposed infiltration SCM. The majority of these cross-country utility ROWs are difficult to access. The field testing, hydrologic calculations, and design associated with the projects would be extremely time-consuming and costly.
- Conservation Commissions may end up needing peer reviews for every linear project to review the calculations to make sure they are adequate. Many towns consider utilities to be exempt from stormwater bylaws and do not have the time or resources to review the resulting lengthy stormwater reports.
- **Setbacks:** The Wetland and Surface Water Setbacks may be impossible to meet for utility and roadway projects where they need to build large gravel/stone work pads to perform work safely or construct drainage swales/outfalls. At the toe of the slope of the work pads are often wetlands. BMPs/SCMs will need to be placed in those locations to ensure the wetlands are protected from erosion/sedimentation.
- **Setbacks:** The slope setback may be impossible to meet for utility projects where they need to build work pads/access roads with stormwater controls along steep slopes in order to access existing infrastructure and/or perform work.
- Based on the reasons detailed above, BSC recommends that gravel access for utility corridors be exempt from compliance with the Stormwater Standards. If exemption from the regulations is not feasible, BSC recommends that specific provisions in the regulations or policy providing specific guidance be provided for linear utility projects. The excess effort, cost, and additional impacts required to comply with the Stormwater Standards based on marginal impact to hydrology along the utility corridors outweighs the benefits to water quality in these specific cases.
- **310 CMR 10.05(m) – Maximum Extent Practicable:** If an exemption cannot be provided, could linear utility and municipal dirt road projects be added to the list to allow the Stormwater Standards to apply to the Maximum Extent Practicable?
- DEP referenced the **Berkshire Regional Planning Commission – The Massachusetts Unpaved Road Best Management Practice Manual** during their office hours. There are examples of “BMP’s in action – selected case studies” that provide some examples of stormwater techniques that can be applied to save roads and protect the environment at the same time. If an exemption cannot be provided, could these be considered as ESSD/LID and meet the Stormwater Standards for municipal dirt road and linear projects?

## **OTHER REVISED REGULATIONS COMMENTS**

- The purpose of the Credits in Table 1 should be further explained and clarified to how they can be applied to the Stormwater Standards. It is unclear that if you can obtain these credits - what does it mean? This will help clarify for Conservation Commissions who are reviewing the stormwater reports and plans.
- **Off-site Stormwater Management for Redevelopment:** This may push many redevelopment projects to provide their stormwater management off-site. This could result in encumbering areas that are already socially constrained (EJ areas) and not meet the equity goals for the state of MA.
- The **prohibition of construction period runoff directed to post-construction SCMs** or other BMPs is not reasonable, in particular for large highway or linear projects in which existing or proposed controls need to be used due to site constraints.
- **Updated BLSF Section 10.57(2)(a)6 - vernal pool:** If including Conservation Commissions as a competent source to certify vernal pools, suggest modifying language to state at least one commissioner meets the criteria specified in 310 CMR 10.60(1)(b).

## **UPDATED MA STORMWATER HANDBOOK COMMENTS**

- **Requirement for Two borings or test pits for each potential infiltration location:** Two borings (or test pits) at each test location doubles the previous requirement and is not necessary to gather the required information. In addition, this may be difficult to do in areas that are difficult to access due to steep slopes and rugged terrain (and wetland crossings) such as linear utility ROWs. The requirement for two borings/test pits, especially for long linear projects, could result in 1,000s of test pits which would be extremely time consuming and costly. Further, environmental impacts from construction equipment to conduct and access the test pits locations would occur without a noticeable benefit in terms of understanding the subsurface conditions to the point required for stormwater infiltration design.
- **Step 1: Perform Field Testing Analysis Section, Linear Infiltration SCMs:** Two borings every 50 feet is an excessive number of test locations for stormwater infiltration. For comparison, structural retaining walls require one boring every 100 feet.
- **Revised Standard O&M requirements** – Long-term O&M semi-annual inspections and repairs would now be required for ROW/linear/municipal road projects with gravel/dirt roads and gravel workpads. For utility ROWs, some are difficult to get to and if teams are now required to be sent out over miles of ROWs twice a year when no one is using the gravel roads/workpads and not traveled on, this could be time consuming and costly. Utilities may not have the support to conduct the O&M maintenance over all of the jurisdictional gravel areas. Could this requirement be scaled back for those locations where areas not traveled on regularly and used minimally. The standard O&M requirements for BMPs in SW handbook are excessive

for utility gravel access roads. Recommend coordination with utilities to establish an O&M policy.

- **Field inspection of construction period BMPs** part of the sedimentation, erosion, and pollution prevention plan with a report is required to be performed once every 7 days during construction and maintenance. Although this is somewhat consistent with the EPA CGP and SWPPP, not all projects require a SWPPP. Requiring reports be prepared and made available is exorbitant.

#### **LSCSF COMMENTS:**

- With the new Performance Standards for LSCSF its more important now to determine when you are in LSCSF vs BLSF. LSCSF could apply to non-coastal / non-CZM mapped tidally influenced rivers. During one of the MassDEP office hours, it was stated that the BLSF/LSCSF line is determined by the FEMA hydrologic study. Conservation Commissions may not be aware of the appropriate reference documentation to use in their review. FEMA and CZM definitions of Mouth of River may not always be aligned and also may not conform to survey and delineation conditions over time. MassDEP should clearly define where the LSCSF resource area boundary is indicated as it relates to BLSF and clarify that this resource can be present in certain areas of non-coastal / non CZM mapped portions of rivers which are tidally influenced. MassDEP could also consider calling out specific sections of rivers and indicating whether LSCSF applies.
- The implementation of performance standards for LSCSF will bring radical change to the future of coastal development in Massachusetts. These standards are necessary to build resilience in the Commonwealth to the impacts of climate change and sea level rise.

We thank you for the opportunity to submit comments. Please feel free to contact us if you have any questions regarding our comments.

Sincerely,

BSC Group, Inc.



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Senior Associate



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## TOWN OF BURLINGTON

### *Conservation Commission*

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April 30, 2024

Via email: [dep.wetlands@mass.gov](mailto:dep.wetlands@mass.gov)

#### **RE: Wetlands-401 Resilience Comments**

*Burlington Conservation Commission Comments on MA DEP's Resilience 1.0 Regulation Changes and Recommendations on Resilience 2.0 Regulation Changes*

The Burlington Conservation Commission (BCC) appreciates the opportunity to review and provide comments on the proposed Resilience 1.0 regulations changes and would also like to take this as an opportunity to provide suggestions for the forthcoming Resilience 2.0 draft regulations changes which we understand are currently being drafted by MA DEP.

The BCC sincerely appreciates the effort that went into creating the Resilience 1.0 regulations changes and commends MA DEP for focusing on ways to make Massachusetts and its wetland resources more resilient to climate change. We appreciate the great strides made in the following areas and are eager to see the following new regulations promulgated right away:

- Supporting greater use of nature-based solutions.
- Updating the precipitation calculations for stormwater designs.

However, some of the proposed regulation changes will be challenging to implement and/or will lead to unintended detrimental consequences or costs and because of this, should be refined prior to promulgation. This comment letter includes suggestions for improving the proposed "Resilience 1.0" regulation changes as well as suggestions for the forthcoming "Resilience 2.0" regulation changes.

### **Suggestions to Improve Resilience 1.0**

**1. General – Formatting and ease of use:** The regulations, 310 CMR 10.00, are a lengthy document and even in their current form without updates, can be difficult for users to review. Two suggestions to improve usability are below:

- 1) Provide headers at the top of every page of the updated regulations with the complete section and subsection reference to facilitate navigation through the numerous lengthy sections that comprise many pages.
- 2) Format the updated version of the regulations as a PDF document with headers that have internal hyperlinks allowing users to "jump" to specific sections by simply clicking on the section header or section in the table of contents.



**2. Throughout the regulations, 310 CMR 10.00 – consideration of performance standards vs. methods and means:** The regulations should provide performance standards that protect wetland functions and values and not specific methods and means of achieving those performance standards. Methods and means should be addressed in guidance documents.

**3. Throughout the regulations, 310 CMR 10.00 – need for simplicity:** The revised regulations provide some excellent detail, but must strike a reasonable balance between scientific precision and overly complex or burdensome requirements that render them too difficult for a majority of volunteer conservation commissions and project applicants to implement.

**4. Throughout the regulations, 310 CMR 10.00 – need to create greater consistency:** Regulation revisions must strive to create greater consistency of thresholds, exemptions/allowances, and requirements based on existing wetland functions and values and the potential impacts (or benefits) on those wetland functions and values of proposed projects, not on the user groups conducting the activity.

**5. 310 CMR 10.05(4)(a) – Notices of Intent:** The regulations should not require such a high level of stormwater management detail for every Notice of Intent (NOI) filing. Two possible alternatives are suggested here.

- 1) Strike the new sentence “A construction period .... Activities” and replace with “All projects must address erosion, sedimentation control, and pollution prevention with plans appropriate to and commensurate with the proposed alterations, even those projects otherwise exempt from the stormwater standards.” OR
- 2) Strike the new sentence “A construction period .... Activities” and change the text in the general instructions for NOIs.

**6. 310 CMR 10.05(6)(m)(6) – Stormwater management for unpaved footpaths:** Requiring unpaved footpaths in natural areas to comply with the Stormwater Management Standards is unreasonable due to the limited impacts these paths have to resource areas, the financial impacts this will cause for municipalities, land trusts, and homeowners that create these public access trails, and the likely additional impacts this will cause to natural areas. • Trails generally rely on country drainage and therefore do not “fit” the intentions of the Stormwater Standards. • Requiring unpaved footpaths to comply with the Stormwater Standards will likely have significant cost impacts for municipalities, land trusts, and private homeowners that build these public access trails with negligible benefits to wetland resource areas. • Requiring unpaved footpaths to comply with the Stormwater Standards could have unintended impacts to natural areas around wetlands from the additional vegetation clearing, soil disturbance, and, potentially, construction of stormwater structures and features to comply with the Stormwater Management Standards. • MA DEP should further revise the regulations to include unpaved footpaths in natural areas as an exempt activity under the Stormwater Management Standards 10.05(6)(l).

**7. Stormwater Handbook, general:** Although the new Stormwater Handbook is nicely organized, the new 860-page document is far too complex. • The complexity and length of the Stormwater Handbook renders it essentially unusable by most conservation commissions and agents.

- The complexity and length of the Stormwater Handbook does not facilitate efficient review and permitting by conservation commissions.
- Because of the complexity, many conservation commissions will be forced to rely on third party peer review of projects that currently, commissions can review without assistance. This will add unexpected costs to applicants during permitting to fund these peer review costs.

**8. Stormwater Handbook, precipitation data:** Referencing the NOAA14+ precipitation data in the Stormwater Handbook is a step in the right direction however, this data does not factor in climate change. • As an alternative, MA DEP should consider further revising the Stormwater Handbook to refer to the new EEA ResilientMass Climate & Hazards Viewer which provides town-specific precipitation projections using NOAA 14+.

- Designing stormwater systems today that will account for the increasing precipitation of tomorrow is a major component of resilient building. Communities in the northeastern part of the state are already feeling the impacts of a changing climate as it relates to precipitation. In 2023 for example the northeast received 44.47 inches of precipitation, over 3x the annual historical average of 12.95 inches.

**9. Stormwater Handbook, Appendix A, Page A-16 – environmentally sensitive site design, Tree Canopy Implementation for Runoff Reduction:** While it is understood that native trees *may* not be appropriate for all street tree plantings, more emphasis should be added to this section on the importance of selecting native trees and the additional benefits that planting native trees has over planting non-native trees. • MA DEP could consider adding provisions to this section of the handbook that tree cost is not a consideration that can be used when selecting between native and non-native trees for a site.

- MA DEP could further explain in this section the ecological benefits and improved resiliency that come from planting native trees.

**10. Stormwater Handbook, Appendix A, Page A-17 – environmentally sensitive site design, Tree Canopy Implementation for Runoff Reduction, tree table:** There are multiple comments and suggested changes to this table:

*The table does not match the DCR list which it references.*

- Many native trees listed on the MA DCR referenced list at <https://masstreewardens.org/wp-content/uploads/Tree-Selection-1.pdf> are not listed in the table in the Stormwater Handbook Appendix.
- There are also non-native trees in the table in the Stormwater Handbook Appendix that are not included in the MA DCR list which the table refers to.
- If the Appendix is referencing the MA DCR list, then updates should be made to the table in the Appendix to better align the table to the MA DCR list, especially as the MA DCR lists includes additional native trees that are currently not listed in the table.

*Callery pear (*Pyrus calleryana*) should be removed from this list.*

- A caption above the table indicates that “The table below presents tree height, mature spread, and area of average mature spread for a limited selection of native and non-native street trees recommended by Massachusetts Department of Transportation (MassDOT) and Department of Conservation and Recreation (DCR)” however, callery pear (along with several other non-native trees) is not included in the MA DCR list when reviewing this list at the provided website (<https://masstreewardens.org/wp-content/uploads/Tree-Selection-1.pdf>).
- Callery pear are weak trees that are prone to wind and ice damage making them a poor choice for street trees due to the high level of maintenance the trees require and high likelihood the trees will have to be replaced.
- The seeds of callery pear and its various cultivars are easily dispersed by birds, allowing it to invade open spaces such as pastures, grassland and open woodlands. Its rapid growth quickly fills in these open spaces, converting them to woodlands.

- While not currently listed as invasive tree in Massachusetts, Ohio has banned growing or selling Callery pear; South Carolina and Pennsylvania have passed similar bans that take effect this year (2024); and in Virginia Callery pear is listed on the DCR Invasive Plants list. Considering a warming climate in Massachusetts and the climate similarities between Massachusetts and these states that have already prohibited Callery pear today due to its invasive tendencies, it is not unlikely that Callery pear will eventually be listed as an invasive plant in Massachusetts as well.

***Green Ash (*Fraxinus pennsylvanica*) should be removed from the list.***

- Although some green ash trees appear to have a natural resistance to emerald ash borer (EAB), most are not resistant.
- Encouraging these trees to be planted as street trees creates a potentially hazardous situation in the future when the trees are dying due to EAB infestation and dropping limbs.
- Encouraging these trees to be planted as street trees may have unintended future financial impacts for municipalities, homeowners, and businesses if the trees become infested and must be removed and replaced.

## **Suggestions for the Forthcoming Resilience 2.0**

As we are all aware, the regulatory changes proposed in Resilience1.0 alone will not achieve our shared goal of true resilience. We appreciate that MA DEP has indicated that it is already working on an additional regulatory reform package “Resilience 2.0”and would like to take this letter as an opportunity to provide suggestions that MA DEP can consider while drafting these changes.

**1. General–The process of creating the regulatory changes in Resilience 2.0 should be a collaborative process between MA DEP and those that work daily with the regulations:** MA DEP should begin a robust process of stakeholder engagement with consultants, field professionals, and conservation agents so that we can collaborate to develop practical, strong, climate resilient regulations.

**2. Creation of a new exempt activity in wetland resource areas–Trail maintenance:**

We ask MA DEP to create a new section in the regulations to exempt Maintenance of Existing Trails in use by the public.

- This could be done by adding a new section “10.02(2)(a)3. Maintenance activities on trails that traverse Areas Subject to Protection under M.G.L. c. 131, § 40” that reads: “Activities conducted to maintain, repair or replace, but not substantially change or enlarge an existing public trail, provided said work utilizes the best practical measures to avoid or minimize impacts to wetland resource areas outside the footprint of said trail”.
- Because boardwalks, puncheons, waterbars, and other basic trail infrastructure need to be routinely maintained or replaced land managers, including municipalities, land trusts, and property owners of trails that are open to the public should be able to conduct this essential maintenance work which ultimately protects wetland resource areas, without having to secure a permit.
- The costs and time associated with the currently required permitting process often prevents this maintenance work from being completed resulting in impacts to wetland resource areas from trail users.

**3. 310 CMR 10.02(2)(b)(a)–Unpaved pedestrian walkways:** MA DEP should define “Conservation Property” to include all types of natural lands onto which the public is invited.

- Currently, unpaved pedestrian walkways (trails) less than 3 feet wide for public access on “Conservation Property” are exempt from the regulations. However, many trails traverse general municipal land, land trust properties, and private properties with conservation restrictions or trail easements affording public access. These are the types of properties that should be included in the definition of “Conservation Property”.
- MA DEP should also consider increasing the 3-foot width of exempt, unpaved pedestrian walkways to 4 feet to encourage these accessible trails to be built. The state’s own guidance on accessible trails encourages trails that are “at least 36-inches wide, and usually wider” (<https://www.mass.gov/info-details/accessible-trails#:~:text=Types%20of%20accessible%20trails,-There%20are%20many&text=These%20accessible%20trails%20are%20either,inches%20wide%2C%25https://www.mass.gov/info-details/accessible-trails>).

**4. 310 CMR 10.02(2)(b)(e) Conversion of lawn to uses accessory to residential structures such as decks, sheds, patios, pools:** MA DEP should remove construction or installation of in-ground swimming pools as an exempt minor activity.

- Construction of in-ground swimming pools involves significant excavation, stockpiles, large impervious areas around the pool, fencing, and often these pools involve discharge of chlorinated water as part of routine pool cleaning and / or when a repair is needed.
- Having no conservation commission oversight of these projects can led to enforcement actions and after-the-fact permitting due to erosion, sedimentation, or other problems which adversely impact wetland resource areas.
- Tree cutting and grading, which are not exempt activities, sometimes occur as part of in-ground pool construction and installation. This can lead to landowner misunderstanding when they believe that the whole project is exempt when in fact only a portion of the project, the conversion of lawn is exempt.
- As an exempt activity, there is no requirement for an O&M plan to ensure that after construction, chlorinated water is not discharged to wetland resources areas without first being dechlorinated.
- Requiring permitting and preconstruction review of all in-ground pool projects in the buffer zone and Riverfront Area will result in better oversight of these projects and reduce unintended wetland resource area impacts.

**5. Creation of a new exempt activity in the buffer zone/Riverfront Area, 310 CMR**

**10.02(2)(b)(2) – Cutting certain high-risk trees:** Trees are suffering from the effects of climate change. Invasive pests like wooly adelgid and emerald ash borer are decimating many of our native hemlock and ash trees. Increases in the number and severity of storms have resulted in more damaged trees.

- MA DEP should create a new exempt activity for removal of up to 5 hazard trees by homeowners provided that the trees are located at least 50-feet from the mean annual high-water line within the Riverfront Area, Bank or from Bordering Vegetated Wetland, whichever is farther.
- The exemption should be worded to only allow the trees to be cut flush with the ground but not to exempt stump pulling or grinding of the cut trees due to the soil disturbance associated with this activity.
- The exemption should apply only if the trees are threatening structures or human safety. To facilitate this review, a guidance document could be created by MA DEP to require submittal of a letter from a state certified arborist attesting to the hazardous nature of the tree to the commission for their review to qualify for the exemption.
- While certain parameters need to be codified to ensure that unanticipated impacts to wetland resource areas do not occur, a guidance document could be created by MA DEP to define and address thresholds associated with this activity with requirements for notice to be given to conservation commissions before conducting the activity and giving the conservation commission a

30-day period for it or its agent to determine if the proposed work meets the thresholds for the exemption or requires a permit. This is similar to the process for forest cutting plans.

#### **6. Creation of a new exempt activity in the buffer zone and Riverfront Area, 310 CMR**

**10.02(2)(b)(2) – Removal of invasive vegetation:** Invasive plants are one of the biggest threats to our native habitats. Quick and effective management of invasive plants is essential to control the further spread of invasive plants.

- To facilitate quick removal of invasive plants, MA DEP should add a new minor activity to 310 CMR 10.02(2)(b)(2) which reads: “Removal of turf lawn and/or non-native invasive herbs, vines, and shrubs, provided that:
  - (1) the activity is located at least 50-feet from the mean annual high water line within Riverfront Area or from the edge BVW, whichever is farther and
  - (2) provided that erosion and sedimentation controls are implemented until the area is stabilized with at least 75% coverage of native species.

**7. 310 CMR 10.04 – Definitions for “Vernal Pool” and “Vernal Pool Habitat”.** MA DEP should create new, separate definitions for “Vernal Pool” and “Vernal Pool Habitat” which currently are both defined in one definition. Additionally, MA DEP should extend jurisdiction to provide a 100-foot Vernal Pool Habitat to all vernal pools, regardless overlap with another wetland resource area. This is vital protect the habitat of vernal pool species as many of these species spend a majority of their lives in upland habitat almost 2,000-feet from vernal pools. Potential definitions for these two areas are:

- “Vernal Pool” is a basin or depression that typically holds water for at least two continuous months through the spring and is free of adult, reproducing fish populations. Vernal pools are essential breeding habitat for a variety of amphibian species such as Wood Frog (*Lithobates sylvaticus*) and the Spotted Salamander (*Ambystoma maculatum*) and provide other extremely important wildlife habitat functions during the non-breeding season for these species. Vernal pools are important habitat for other wildlife species. The boundary of a vernal pool is the maximum water level in such a basin or depression and is identified by direct observation or by field indicators of the maximum extent of flooding.
- “Vernal Pool Habitat” is the area between the boundary of a vernal pool and the boundary of a jurisdictional resource area that contains the vernal pool, or 100 feet from the edge of the vernal pool boundary, whichever distance is greater.

**8. 310 CMR 10.05 – Procedures, stormwater standards:** MA DEP should clarify what projects are subject to stormwater management or include additional projects that are exempt from stormwater standards.

- Currently, any activity other than the listed activities appear to be subject to stormwater management regulations. This reads that small projects (e.g., restoration, foot paths) are required to have stormwater management which is often unrealistic and/or unnecessary for these small projects.

**9. 310 CMR 10.53 – Limited Projects, invasive plant removal projects:** MA DEP should add a new limited project provision which specifically allows small- and medium-scale invasive plant removal projects with specific regulatory review standards.

- Non-native invasive plants pose a major threat to the health and survival of our native ecosystems, and are on the rise with climate change.
- Currently, invasive plant control work requires time-consuming, costly, and complex wetland permitting devised for construction projects.



- Quick identification and removal of invasive plants minimizes the dramatic negative effects of these plants and allows for the recovery of native species diversity and native wildlife habitat, a recognized wetland value.

**10. 310 CMR 10.53(j)(a) – Limited Projects, public footpaths:** MA DEP should expand the limited project provision in 10.53(j)(a) to allow: “The construction of new public footpaths and associated boardwalks / puncheons that are constructed close to the ground provided, however, that such structures are constructed on helical screws, pilings, sills, or posts so as to permit the reasonably unobstructed flowage of water.”

- Boardwalks and other basic trail infrastructure that cannot avoid wet environments serve to protect the wetland resource areas and their functions and values.
- Because most boardwalks and puncheons are only elevated 4-12” above the ground for safety reasons, shading is inevitable, and because many boardwalks and puncheons are built on sills, loss of vegetation under the sills is inevitable. Therefore, under the current regulations, all boardwalk and puncheon construction in BVW requires wetland replication.
- The proposed modification above would allow conservation commissions to approve public boardwalks and puncheons as Limited Projects.
- This would reduce the need for inland wetland replication which generally results in the destruction of forested buffer zones in protected public open spaces.
- In addition to preventing destruction of forested buffers, eliminating the need for replication reduces the costs for these projects. A reduction of cost could allow more municipalities, land trusts, and other land owners with trails open to the public to install these systems to protect wetland resource areas from damage by trail users.
- Larger public boardwalk/puncheon projects could still be required to undertake wetland replication based on the size, scope, and/or nature of the project and the opportunity for less impactful alternatives.
- A Guidance Document of Best Trail Management Practices (BTMPs) could be simultaneously created to ensure the health of wetland resource areas.

**11. 310 CMR 10.55(4)(c)(4) – Bordering Vegetated Wetland performance standards, trails:**

MA DEP should simplify the permitting process for trail construction projects by adding to the Bordering Vegetated Wetland (BVW) regulations a new section in 10.55(4)(c)(4) allowing conservation commissions to permit new trails in wetlands when: "said work involves the creation of a public trail for non-motorized use (i.e., hiking, skiing, mountain biking, etc.) which will alter less than 500 s.f. of BVW, provided that alternatives that attempted to avoid and minimize impacts were considered and that the trail will permit the reasonably unobstructed flowage of water.”

- While wetland trail construction should be subject to review under the Act, that review should be simplified.
- Narrow unpaved pedestrian walkways in publicly accessible open space often traverse wetlands. When wetland trails are properly constructed, they preserve wetland functions and values and help build a culture of appreciation and stewardship for these vital resources.
- Allowance for ADA compliance and motorized mobility devices must also be considered in this section if required for a site.

**12. 310 10.57(2)(b) – Isolated Land Subject to Flooding:** MA DEP should consider expanding jurisdiction over small isolated wetlands, isolated land subject to flooding (ILSF), by substantially reducing the size threshold of ILSF to account for the loss of isolated wetland protections as a result of the Sackett Decision.

- Because they are cut off from other surface waters, the slow flow path of isolated wetlands provides up to 2x better retention of nutrients and pollutants compared to wetlands that border surface waters



(Frederick Y Cheng et al, Disconnectivity matters: the outsized role of small ephemeral wetlands in landscape-scale nutrient retention, *Environmental Research Letters* (2022). DOI: 10.1088/1748-9326/acab17) • Due to the above reasons, this means that small, isolated vegetated wetlands, even of size that do not qualify for protections as ILSF under the regulations today, provide protection of public interests. This includes protection of public & private water supply; protection of groundwater supply; prevention of pollution and storm damage; and control of floods.

- Increasing state protection to isolated vegetative wetlands is also especially important in communities that do not have local wetland protection bylaws that provide protections to isolated vegetated wetlands.

**13. 310 CMR 10.58 – Revisions to Riverfront Area regulations:** It can be difficult to interpret many of the current Riverfront Area sections. We are grateful for the hard work of the working groups who helped develop the Riverfront Area regulations which were promulgated in 1996, however, after almost 30 years of implementing these regulations, a number of challenges have come to light. MA DEP should work with stakeholders and professional conservation groups such as MSMCP and MACC to address the following areas of concern.

- Defining Mean Annual High Water
- Guidance to interpret “practical and economically equivalent”
- Guidance to interpret the redevelopment requirements for mitigation/restoration for “non-compliance” of more than one performance standard
- Clarifying the distinction, if any, between 310 CMR 10.58(5)(c) and (d)
- Requiring an Alternatives Analysis for Redevelopment projects
- How the regulations apply to large sites with small amounts of pre-existing development

The BCC appreciates and would like to thank MA DEP for your careful consideration of these recommended regulatory changes for Resilience 1.0 and suggestions for Resilience 2.0. As partners in the implementation of the Wetlands Protection Act and regulations there under, the BCC deeply appreciates MA DEP’s efforts to engage with conservation commissions and other stakeholders in this process. The BCC looks forward to continuing this important collaboration as the Resilience 1.0 changes are finalized and as the Resilience 2.0 changes are drafted.

Sincerely,

***The Burlington Conservation Commission***

Larry Cohen, Chair

William Boivin, Vice Chair

Indra Deb

Edwin LoTurco

Robert Sheahan

Kent Moffatt

Sarah Wolinski

**From:** [Toby Burr](#)  
**To:** [DEP Wetlands \(DEP\)](#); [Waterways, DEP \(DEP\)](#)  
**Subject:** Wetlands and Waterways Resilience Comments  
**Date:** Monday, April 29, 2024 1:58:05 PM

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CAUTION: This email originated from a sender outside of the Commonwealth of Massachusetts mail system. Do not click on links or open attachments unless you recognize the sender and know the content is safe.

Dear DEP,

Thank you for the opportunity to comment on the proposed regulations.


Our third-generation family business, a boatyard, is at the water's edge. It has to be to service boats. There is nowhere to retreat. We have invested our lives and all our capital in this business. Dozens of families rely on employment here. We have to keep reinvesting to react to changing consumer demands, changing technology, and deterioration due to age. If we can no longer invest, we go out of business--and we are not alone.

These regulations will have a devastating economic impact on the coastal communities of Massachusetts. Thousands of Massachusetts homes and businesses will lose their current value and lose future investments if these proposed regulations are not drastically changed. These regulations would reach hundreds of houses in the heart of our village. As the waterfront and village homes are valued less, the property tax burden will shift inland to the people who can afford it the least.

Please:

1) Acknowledge that water dependent uses need the certainty that they can continue to improve their services so citizens and their boats can have access to the water. We have been designing for, adapting to, and surviving hurricanes for generations. We have a hurricane preparedness plan; our electrical outlets are raised 7 to 8 feet off the floor, as are much of our tools and equipment; and new buildings are built to hurricane codes.

2) Continue public hearings at the local level. Only 1 out of 100 homeowners impacted know there are new regulations in the works, let alone what the regulations say.

Sincerely,  
Toby Burr  
Burr Brothers Boats, Inc.  
309 Front St.  
Marion, MA 02738  




**CITY OF CAMBRIDGE**  
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April 30, 2024

sent via email

MassDEP - BWR Wetlands Program  
Attn: Wetlands-401 Resilience Comments  
100 Cambridge Street, Suite 900  
Boston, MA 02114

***Re: Wetland-401 Resilience Comments***

Dear Commissioners,

The City of Cambridge Water Department (CWD) appreciates the opportunity to submit comments regarding the Proposed Wetlands Resilience 1.0 Draft Regulations and the 2023 Draft Massachusetts Stormwater Management Handbook. The Wetlands Protection Act is a critical piece of legislation that is essential for protecting Cambridge's drinking water supply. CWD is overall supportive of the proposed updates, particularly the new definitions in 310 CMR 10.04, the emphasis on Environmentally Sensitive Site Design (ESSD) and Low Impact Development (LID), and the using new precipitation datasets to model design storms to better reflect current conditions.

In addition to the general comments above, CWD also has 24 specific comments for MassDEP's consideration. These comments are enumerated and described in the table attached to this letter.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Jamie O'Connell'.

Jamie O'Connell, Watershed Protection Supervisor, CWD  
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617-349-4781

Cc: Cambridge Water Board  
Mark Gallagher, CWD, Managing Director  
Julie Greenwood-Torelli, CWD, Director of Water Operations  
David Kaplan, CWD, Watershed Manager

**CWD Comments on Wetlands Resilience 1.0 Draft Regulations and the 2023 Draft Massachusetts Stormwater Management Handbook**

#	Topic	Comment
<b>310 CMR 10.04: <u>Definitions</u></b>		
1	Definition of <u>“Alter”</u>	<p>CWD supports MassDEP’s proposed text at the end of the definition:</p> <p><i>(e) “increasing the volume of untreated stormwater runoff directed to a wetland Resource Area”</i></p> <p>CWD suggests that MassDEP develop definitions for “treated” and “untreated” stormwater runoff to include in 310 CMR 10.04. These definitions could help clarify such questions as:</p> <ol style="list-style-type: none"> <li>1. Is untreated stormwater a discharge that does not meet the Stormwater Standards?</li> <li>2. Can untreated stormwater runoff be both point and non-point source runoff?</li> <li>3. Would an increase in stormwater from a catchment area with natural land cover be considered “untreated”?</li> </ol> <p>These are important questions in highly engineered watersheds.</p> <p>The term “treated” is discussed on page 2-2 of the Draft Stormwater Handbook [2023 Edition, section 2.3.1] in the context of Standard 1. This language could be incorporated into a formal definition in section 310 CMR 10.04.</p>
2	Definition of <u>Environmental Protection Agency Performance Removal Curve (EPA-PRC)</u>  And	<p>CWD supports the proposed definition of “Environmental Protection Agency Performance Removal Curve (EPA-PRC)” but suggests clarifying the last sentence:</p> <p><i>Graphical representations of the EPA-PRC are published in Appendix B of the Massachusetts Stormwater Handbook [2023 Edition] and may not reflect any future updates to the BATT.</i></p>

	The Draft Stormwater Handbook [2023 Edition] Appendix B Preface	<p>Specifically, CWD recommends clarifying whether EPA-PRCs from the most updated BATT version should be used instead of the graphs in Appendix B of the Draft Stormwater Handbook [2023 Edition], should discrepancies arise. The Appendix B Preface “encourages” Applicants to use updated versions of EPA-PRCs and the BMP-BATT once available, but it does not state that Applicants are required to do so:</p> <p><i>MassDEP has created this Appendix to memorialize tabular and graphical versions of the EPA-PRC’s that are embedded in version 2.0 of the BMP-BATT...As indicated in 310 CMR 10.04, MassDEP will presume that updated versions of the EPA-PRC meet the relevant pollutant removal standards. As such, Applicants are encouraged to use updated versions of the EPA-PRCs and the BMP-BATT as they become available.</i></p> <p>Specifying whether Applicants are required to use the most up-to-date versions of EPA-PRCs from future BMP-BATT tool updates will ensure that pollutant removal calculations are consistent between projects.</p>
3	Definition of <u>Near</u>	<p>CWD supports the proposed definition of “Near”. CWD requests that MassDEP correct an apparent mistake in the definition where it references 310 CMR 10.05(6)(k)(6), a part of the proposed regulations that does not exist as formatted below with parentheses around the last "6":</p> <p><i>Near means, for purposes of stormwater management (310 CMR 10.05(6)(k)(6)), where a stormwater discharge has a strong likelihood of causing a significant impact to Critical Area...</i></p> <p>“Near” is mentioned numerous times in 310 CMR 10.05(6)(k)4. and 310 CMR 10.05(6)(k)6., which perhaps should be referenced in the proposed definition instead of 310 CMR 10.05(6)(k)(6).</p>
4	Definition of <u>New Stormwater Discharge</u>	CWD strongly supports the proposed definition for New Stormwater Discharge. However, CWD requests that MassDEP amend the text to clarify that increased runoff

		<p>could also occur from new Impervious Surface runoff that enters a Resource Area through an existing stormwater conveyance, a common scenario in the Cambridge drinking water supply watershed.</p> <p>CWD’s proposed language is as follows, with CWD edits in red:</p> <p><i><u>New Stormwater Discharge</u> means new or increased runoff directed to a Resource Area from new Impervious Surface, <del>or</del> through a New Stormwater Conveyance, or through an existing stormwater conveyance. Increased runoff means additional stormwater volume or higher discharge rate than currently exists. Stormwater discharges can be from public or privately owned Impervious Surfaces or conveyances.</i></p> <p>CWD also encourages MassDEP to clarify whether a “New Stormwater Discharge” can occur from increased non-point source runoff, such as overland flow from new Impervious Surfaces, or whether the “New Stormwater Discharge” definition is limited to point source discharges.</p>
5	<p>Definition of <u>Redevelopment</u> proposed in 310 CMR 10.04 conflicts with the Redevelopment definition in 310 CMR 10.58(5)</p>	<p>Currently, the definition of <u>Redevelopment</u> for Riverfront Area in 310 CMR 10.04 matches the Redevelopment definition in 310 CMR 10.58 (5). However, the proposed updated definition of <u>Redevelopment</u> in 310 CMR 10.04 no longer matches definition in 310 CMR 10.58(5). The proposed 310 CMR 10.04 definition reads:</p> <p><i><u>Redevelopment</u> means replacement, rehabilitation, or expansion of existing structures, Improvement of an Existing Public Roadway or reuse of previously developed areas for purposes of 310 CMR 10.58, governing work in the Riverfront Area ...</i></p> <p>The second sentence of 310 CMR 10.58(5), which is not proposed for revision, says:</p> <p><i>Redevelopment means replacement, rehabilitation or expansion of existing structures, improvement of existing</i></p>



		<p><i>roads, or reuse of degraded or previously developed areas.</i></p> <p>The discrepancies between the two definitions could cause confusion. Specific differences include:</p> <ol style="list-style-type: none"> <li>1. The deletion of the word “degraded” from the proposed 310 CMR 10.04 definition</li> <li>2. The use of “Improvement of Existing Public Roadways” in 310 CMR 10.04 instead of “improvement of existing roads”</li> </ol>
6	Definition of <u>Stormwater Management System</u>	<p>The proposed updated definition to Stormwater Management System reads (<i>CWD emphasis added in bold</i>):</p> <p><i><u>Stormwater Management System</u> means a system for conveying, collecting, storing, discharging, recharging or treating stormwater on-site including Stormwater Control Measures or Best Management Practices and any pipes and outlets intended to transport and discharge stormwater to the ground water, a surface water or a <b>municipal</b> separate storm sewer system.</i></p> <p>CWD believes that entities other than municipalities operating storm sewer systems are intended to be included as “municipal separate storm sewer systems”, such as those systems run by MassDOT. For example, the definition of a “Small Municipal Separate Sewer System” in 314 CMR 3.02 makes clear that these systems include “all separate storm sewers that are (a) Owned or operated by the United States, the Commonwealth of Massachusetts, a city, town, borough, county, parish, district, association, or other public body (created by or pursuant to state law) having jurisdiction over disposal of sewage, industrial wastes, storm water, or other wastes, including special districts under state law....” and that “[t]his term includes systems similar to separate storm sewer systems in municipalities, such as systems at military bases, large hospitals or prison complexes, and highways and other thoroughfares...”</p> <p>If that is the case, to enable the correct interpretation of this definition, CWD strongly urges MassDEP to further</p>

		define or clarify a “municipal separate storm sewer system.” Lacking definition, practitioners could interpret systems that discharge to a statewide or non-municipal entity’s separate storm sewer system, such as MassDOT’s system, as being excluded from the definition of “Stormwater Management System.”
<b>310 CMR 10.05(5)(k) – Stormwater Management Standards</b>		
7	Possible typographical error and suggested text edits for clarity	<p>CWD finds the last phrase of the first sentence of 310 CMR 10.05(5)(k) confusing:</p> <p><i>...unless Impracticable, and a Setback from the receiving waters and wetlands.</i></p> <p>It appears that words are missing, or a comma has been misplaced. CWD recommends that MassDEP reword the phrase for clarity. CWD has provided possible edits in red below. Text in red brackets could also be incorporated, depending on MassDEP’s intended meaning:</p> <p><i>(k) Except as expressly provided, stormwater runoff from all industrial, commercial, institutional, office, residential and transportation projects that are subject to regulation under M.G.L. c. 131, § 40 and all point and non-point source stormwater discharges from said projects within an Area Subject to Protection under M.G.L. c. 131, § 40 or within the Buffer Zone shall be provided with Environmentally Sensitive Site Design (ESSD) and Low Impact Development (LID) techniques or practices to attenuate pollutants unless Impracticable, and shall meet all a [minimum] Setback requirements [from the receiving waters and wetlands] [specified in 310 CMR 10.05(6)(q)].</i></p> <p>Or</p> <p><i>(k) Except as expressly provided, stormwater runoff from all industrial, commercial, institutional, office, residential and transportation projects that are subject to regulation under M.G.L. c. 131, § 40 and all point and non-point source stormwater discharges from said projects within an Area Subject to Protection under M.G.L. c. 131, § 40 or within the Buffer Zone shall be provided with</i></p>

		<i>Environmentally Sensitive Site Design (ESSD) and Low Impact Development (LID) techniques or practices to attenuate pollutants unless Impracticable; and shall be provided with a Setback from the receiving waters and wetlands.</i>
8	310 CMR 10.05(k)2. / Stormwater Management Standard 2  Proposed precipitation dataset for design storms	<p>CWD supports the proposed updates to Stormwater Management Standard 2, specifically updating the precipitation dataset used to calculate post-development peak discharge rates to account for current rainfall conditions (NOAA Atlas 14 Volume 10 at the upper confidence interval multiplied by 0.9).</p> <p>CWD suggests that MassDEP consider creating a mechanism to review and reconsider new, more protective design storms as new climate information becomes available, that could be incorporated before these regulations are again under review.</p>
9	10.05(6)(k)4.e  Typographical error	<p>For clarity, CWD suggests that MassDEP fix the apparent typographical error where “e.” is italicized when it appears it should be regular font. CWD suggested changes in red below:</p> <p><del>“e.”</del> e. When a proprietary manufactured separator, proprietary media filter...”</p>
10	310 CMR 10.05(6)(k)6. / Stormwater Management Standard 6  And  Stormwater Handbook page 2-25  Typographical error	<p>For clarity, the apparent typographical error of the sentence fragment “described in 2023” should be deleted from both the proposed regulations in 310 CMR 10.05(6)(k)6. and from the Definitions section of the Stormwater Handbook on page 2-25. CWD’s proposed deletion is shown in red strikethrough below:</p> <p><i>...When SCMs and BMPs specifically described in the Massachusetts Stormwater Handbook [2023 Edition] as appropriate for Critical Areas are provided, this portion of the standard is presumed to be met. <del>described in 2023</del> Stormwater discharges and all components of structural</i></p>

		<i>and nonstructural SCMs, located Near or that discharge to Critical Areas...</i>
11	<p>310 CMR 10.05(6)(k)6. / Stormwater Management Standard 6</p> <p>Definition of “stormwater discharge” needed</p>	<p>CWD urges MassDEP to add a definition of “stormwater discharge” to the Definitions in section 310 CMR 10.04. Although MassDEP has proposed a definition for the term “New Stormwater Discharge” in 310 CMR 10.04 and the Draft Stormwater Handbook [2023 Edition] discusses what constitutes an “existing discharge” on pages 2-3 and 2-4 in the context of Standard 1, MassDEP has not proposed adding a formal definition for “stormwater discharge” in section 310 CMR 10.04.</p> <p>The term “stormwater discharge” is mentioned frequently throughout Stormwater Management Standard 6. CWD has found that the lack of definition for “stormwater discharge” makes interpretation and implementation of Standard 6 challenging. Having a definition for “stormwater discharge” is especially important since Standard 6 also mentions a “storm water discharge” (“stormwater” versus “storm water”) in the following sentence:</p> <p><i>A “storm water discharge” as defined in 314 CMR 3.04(2)(a) or (b) to an Outstanding Resource Water or Special Resource Water shall comply with 314 CMR 3.00: Surface Water Discharge Permit Program and 314 CMR 4.00: Massachusetts Surface Water Quality Standards.</i></p> <p>Having a formal definition for “stormwater discharge” will ensure that Stormwater Management Standard 6 is properly implemented, ensuring that Critical Areas, such as the Zone A of the Cambridge Water Supply, are adequately protected.</p>
12	<p>310 CMR 10.05(6)(k)9. / Stormwater Management Standard 9</p> <p>And</p>	<p>CWD strongly supports the proposed updates to 310 CMR 10.05(6)(k)9. that explain requirements for developing and implementing a long-term operations and maintenance plan (O&amp;M Plan) and Maintenance Log. However, CWD finds the last three sentences of 310 CMR 10.05(6)(k)9. confusing:</p>

	<p>Stormwater Handbook 2.3.9 Standard 9: Operation and Maintenance Plan, page 2-42</p> <p>Clarification needed</p>	<p><i>After a Certificate of Compliance has been issued or the Order of Conditions has expired, a Maintenance Log shall list the maintenance activities and LTPPP measures that have occurred and the specific dates of the maintenance and pollution prevention activities. The Maintenance Log shall be kept up-to-date. The Maintenance Log shall be made available to the Issuing Authority no later than 5 business days after any request.</i></p> <p>It is unclear whether MassDEP intends for the Maintenance Log to document O&amp;M Plan and LTPPP activities only up until the date that the Order of Conditions expires/Certificate of Compliance is issued or if MassDEP intends for the Maintenance Log to serve as a record of ongoing maintenance work occurring after the Order of Conditions expires/Certificate of Compliance is issued. Assuming the latter, CWD also recommends that MassDEP make the following edit to the second to last paragraph on page 2-42 if the Stormwater Handbook (CWD edits in red below):</p> <p><i>The Conservation Commission may consider adding <b>continuing</b> Special Conditions to ensure that the O&amp;M plan is properly implemented by the responsible party. These same continuing conditions should be included in the Certificate of Compliance.</i></p>
13	<p>310 CMR 10.05(6)(k)11. / Stormwater Management Standard 11</p> <p>And</p> <p>Draft 2023 Stormwater Handbook, section 2.3.11</p> <p>Include chloride (non-metal) TMDLs in Standard 11 and in Stormwater Handbook guidance</p>	<p>CWD strongly supports the addition of Stormwater Management Standard 11 (310 CMR 10.05(6)(k)11.). However, the Standard appears to apply exclusively to TMDLs for “phosphorus, nitrogen, pathogens, and/or metals.” In the Cambridge drinking water supply watershed, chloride (a non-metal) is a pollutant of significant concern. Hobbs Brook Reservoir and its tributaries are listed as Chloride Impaired Category 5 Waters (requiring a TMDL) in the 2022 List of Integrated Waters.</p> <p>Once a TMDL for chloride has been completed for the Hobbs Brook watershed, it will be essential for protection of Cambridge’s drinking water supply that Stormwater Management Standard 11 apply. ESSD, LID, and non-</p>

		<p>structural SCMs are important tools for protecting against chloride pollution.</p> <p>Therefore, CWD urges MassDEP to update Stormwater Management Standard 11 and the supporting section of the Stormwater Handbook (section 2.3.11) to account for chloride TMDLs and any future TMDLs for unlisted parameters.</p>
14	<p>310 CMR 10.05(6)(k)11. / Stormwater Standard 11</p> <p>Typographical error or definition needed for “Source Control Measures”</p>	<p>Stormwater Management Standard 11 (310 CMR 10.05(6)(k)11.) requires “Source Control Measures” as follows (CWD emphasis added in bold):</p> <p><i>If the project will discharge stormwater to a wetland Resource Area for which a TMDL has been approved by EPA, or an Alternative TMDL has been accepted by EPA, for phosphorus, nitrogen, pathogens, and/or metals, <b>Source Control Measures shall be identified in the LTPPP required by 310 CMR 10.05(6)(k)4.</b> to eliminate or reduce such pollution and shall thereafter be implemented.</i></p> <p>Despite being capitalized, no definition of “Source Control Measures” exists anywhere in 310 CMR 10.00. However, “Stormwater Control Measures” (SCMs) are defined and mentioned extensively throughout 310 CMR 10.00. It is unclear if there was a typographical error where “Source Control Measures” is supposed to read “Stormwater Control Measures” or if “Source Control Measures” is intended to be its own distinct term that requires a definition in 310 CMR 10.04.</p>
<b>310 CMR 10.05(6)(q) - Setbacks</b>		
15	<p>310 CMR 10.05(6)(q)</p> <p>And</p> <p>Draft Stormwater Handbook [2023 Edition] Table 2-8</p> <p>Increase Setback Distance of Conveyance SCMs from Soil</p>	<p>The table in 310 CMR 10.05(6)(q) proposes a 50-foot minimum Setback from a Soil Absorption System and any component of a septic system to any component of a Stormwater Management System. However, Title V setbacks (310 CMR 15.211) require 100 feet of separation between a soil absorption system and “Open, Surface or Subsurface Drains which discharge to Surface Water Supplies or tributaries thereto.”</p>



	Absorption Systems to match Title V	For consistency with Title V, CWD requests that MassDEP add this 100-foot setback as another row to the 310 CMR 10.05(6)(q) table and to Table 2-8 of the Draft Stormwater Handbook.
<b>Draft Stormwater Handbook [2023 Edition]</b>		
16	List of Tables, List of Figures, and List of Appendices  Hyperlinks needed	CWD supports having all parts of the Stormwater Handbook in one document. For ease of navigation, CWD requests that MassDEP include hyperlinks for the items in the List of Tables, List of Figures, and List of Appendices sections, similar to the Table of Contents where users can click a header name to quickly navigate to the desired section of the Handbook. Including these links would make navigating the 860-page document much easier.
17	Definitions subsections, all pages  Ensure definitions quoted from 310 CMR 10.00 are up-to-date and that the correct Stormwater Handbook edition is referenced	MassDEP should confirm that all Definitions subsections match the most up-to-date definitions proposed in 310 CMR 10.05(6)(k)1-11; for example, the Draft Stormwater Handbook text often references a “2021 Edition” and a “2022 Edition” of the Stormwater Handbook, whereas the proposed regulations in 310 CMR 10.05(6)(k)1-11 reference a “2023 Edition” of the Stormwater Handbook.  MassDEP should ensure that all section of the Stormwater Handbook reference the correct year for the final edition of the Handbook.
18	Section 2.3, Standard 1: No Untreated Discharges or Erosion to Wetlands, page 2-3  Typographical error	Possible typographical error, with a semi colon shown instead of comma after “annual volume of runoff” as indicated in red below:  <b><i>What Constitutes an Existing Discharge?</i></b> <i>The following are considered to be existing stormwater discharges provided that any relocated or combined outlet points are not located in an Area Subject to Protection under M.G.L. c. 131, § 40, other than bordering land subject to flooding, isolated land subject to flooding, land subject to coastal storm flowage, or riverfront area, and provided the annualized pollutant load, annual volume of runoff<del>;</del>, and the peak runoff rate for the 2-, 10-</i>

		<i>and 100-year 24-hour storms is equivalent to or less than existing conditions:</i>
19	2.3.2 Standard 2: Peak Rate Attenuation, page 2-5  Broken hyperlink	The hyperlink for NRCS TR 20&55 in footnote 7 links to a webpage that does not exist: <a href="https://www.nrcs.usda.gov/wps/portal/nrcs/detailfull/national/water/manage/hydrology/?cid=stelprdb1042480">https://www.nrcs.usda.gov/wps/portal/nrcs/detailfull/national/water/manage/hydrology/?cid=stelprdb1042480</a>
20	2.3.6 Standard 6 Critical Areas, page 2-26, footnote 21  Typographical error	Footnote 21 discusses setback and treatment requirements for “new stormwater discharges” (highlight added below):  <i>Zone A requirements are not applied to backup drinking water sources pursuant to 310 CMR 22.00. However, any backup drinking water sources designated in the Surface Water Quality Discharge Standards as ORWs, are still Critical Areas, and any new stormwater discharges must be setback from the ORW and provided the highest and best practical method of treatment. For example, see 314 CMR 9.06(6).</i>  CWD requests that MassDEP clarify if “new stormwater discharges” (lower case) is intended to represent the new definition proposed in 310 CMR 10.04 for “New Stormwater Discharge” (upper case). If so, CWD recommends capitalizing “New Stormwater Discharges” in footnote 21 for clarity.
21	Section 2.3.11 Standard 11: Total Maximum Daily Loads, page 2-46  Typographical error quoting Stormwater Management Standard 11 from 310 CMR 10.05(6)(k)11.	The text quoted in the draft Stormwater Handbook for Standard 11 does not match the text proposed in 10.05(6)(k)11. Areas where the text in the draft Stormwater Handbook differs from the text proposed in 310 CMR 10.05(6)(k)11. are highlighted in yellow below:  Draft Stormwater Handbook [2023 Edition], section 2.3.11, page 2-46:  <i>If the project will discharge stormwater to a wetland Resource Area for which a TMDL has been approved by EPA, or an Alternative TMDL has been accepted by EPA, for phosphorus, nitrogen, pathogens, and/or metals, Source Control Measures shall be identified in the long-term pollution prevention plan required by 310 CMR</i>

		<p>10.05(6)(k)4. to eliminate or reduce such pollution and shall thereafter be implemented. The Stormwater Management System, including Environmentally Sensitive Site Design and Low Impact Development, shall be presumed to meet this standard when:</p> <ul style="list-style-type: none"> <li>a. <b>Stormwater Control Measures</b> listed in the Massachusetts Stormwater Handbook <b>[2022 Edition]</b> that specifically address any applicable TMDL or Alternative TMDL are implemented;</li> <li>b. A <b>long-term pollution prevention plan</b> is implemented;</li> <li>c. For new development, the Stormwater Management System is designed to comply with 310 CMR 10.05(6)(k)3. and 4.; and</li> <li>d. For Redevelopment, the Stormwater Management System is designed to comply with 310 CMR 10.05(6)(k)7. for recharge to the Maximum Extent Practicable, and the SMS provides water quality treatment for 80% TSS and 50% TP removal and adequate pretreatment.</li> </ul>
22	<p>2.5 Horizontal Setbacks and Vertical Separation Distance Requirements, page 2-53</p> <p>Clarify whether drainage from the top deck of an open air parking garage is stormwater or wastewater.</p>	<p>CWD urges MassDEP to clarify whether runoff from the top deck of parking garages, if exposed to the air, is considered wastewater or if it is considered stormwater that may discharge to the storm drainage system. In CWD's experience reviewing project proposals requiring Orders of Conditions, runoff from the top parking deck of garages without roofs is managed as stormwater and discharges to the storm drainage system (while runoff from the lower decks is managed as wastewater). The text CWD requests that MassDEP clarify is below:</p> <p><b>Parking garages.</b> Drainage from open air parking garages that may include multiple decks is considered wastewater and must meet the Massachusetts State Plumbing Code regulations. As such, drainage from parking garages must not be directed to a Wetland Resource Area or storm drainage system. Significant runoff is not generated in parking garages other than the roof top deck. When a parking garage is subject to review pursuant to the Wetlands Protection Act or 401 regulations, both the Wetlands/401 regulations and State Plumbing Code provisions must be met. Underground</p>

		<i>floor drains are not allowed in parking garages pursuant to the Underground Injection Control provisions, 310 CMR 27.00.</i>
23	<p>Appendix A, ESSD Credit 1: Environmentally Sensitive Site Design, pages A-5 and A-6</p> <p>15% impervious threshold may be too high</p>	<p>The proposed ESSD Credit 1 Minimum Required Criteria (MRC) requires impervious cover (IC) to remain below 15% of the base lot area. If IC remains below this percentage, and the other MRC are met, projects will fully meet the recharge and TSS/TP removal requirements of Stormwater Standards 3 and 4.</p> <p>CWD questions whether the 15% IC maximum is too high to be protective of water quality and water body health. For example, the Reformulated Impervious Cover Model suggests that stream quality switches from “sensitive” to “impacted” at 5% to 10% impervious cover.<sup>1</sup></p> <p>Likewise, Critical Areas include Cold-water Fisheries, such as Stony Brook in the Cambridge drinking water supply watershed. Currently, MassDEP assessment protocols use IC thresholds that are much lower than 15% (combined with Natural Land cover thresholds) to determine whether exceedances of the Cold-water Fishery temperature Surface Water Quality Standard (314 CMR 4.00) are naturally occurring.<sup>2</sup> According to this guidance, stream temperature exceedances in watersheds with more than 4% impervious cover are not naturally occurring and could lead to an impairment designation in the Integrated List of Waters.</p>
24	Appendix A, all ESSD Credit Fact Sheets	CWD supports MassDEP’s revisions to the Stormwater Standards in 310 CMR 10.05(k)1-11 requiring the use of ESSD and LID techniques unless Impracticable. However, CWD urges MassDEP to provide guidance in the Stormwater Handbook and/or the regulations to ensure that landscape features used to obtain ESSD credits for recharge and TSS/TP removal are protected in perpetuity and are not accidentally removed during future projects.

<sup>1</sup> Schueler, Thomas & Fraley-McNeal, Lisa & Capiella, Karen. (2009). Is Impervious Cover Still Important? Review of Recent Research. Journal of Hydrologic Engineering - J HYDROL ENG. 14. 10.1061/(ASCE)1084-0699(2009)14:4(309). [https://www.researchgate.net/publication/245287007\\_Is\\_Impervious\\_Cover\\_Still\\_Important\\_Review\\_of\\_Recent\\_Research](https://www.researchgate.net/publication/245287007_Is_Impervious_Cover_Still_Important_Review_of_Recent_Research)

<sup>2</sup> Massachusetts Consolidated Assessment and Listing Methodology (CALM) Guidance Manual for the 2022 Reporting Cycle, Appendix A: <https://www.mass.gov/doc/2022-consolidated-assessment-and-listing-methodology-guidance/download>

		<p>For example, canopy trees used to reduce the Effective Impervious Cover (EIC) for ESSD Credit 5 could be removed due to storm damage, disease, or hazard reasons in the decades after project construction. This could result in a Stormwater Management System with insufficient recharge and/or TSS and TP removal capacity to handle the increase in EIC area following tree removal.</p>
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April 29, 2024

Massachusetts Department of Environmental Protection  
Bureau of Water Resources (BWR) Wetlands Program  
100 Cambridge Street, Suite 900  
Boston, MA 02114

Via Email: [dep.wetlands@mass.gov](mailto:dep.wetlands@mass.gov)

Re: Wetlands Resiliency Regulations 1.0

Dear Commissioner Heiple and Wetlands Program Chief Rhodes,

Cape Cod Commission (Commission) staff have reviewed the proposed revisions to the Stormwater Regulations and the proposed Land Subject to Coastal Storm Flowage Regulations located in 310 CMR 10, 314 CMR 9, and the newly revised and updated Stormwater Handbook, and offer the following comments.

### **Floodplain Regulations**

Cape Cod has one third of the Commonwealth's coastline with 13,000 homes located in the floodplain, cumulatively valued at over \$16 billion. Additionally, approximately 300 miles of roads are also at risk, now or in the future, of storm-related flooding. By 2050, 45 miles of roads are projected to be at risk of daily tidal flooding. Communities are coming to terms with the threats flood risk pose and the enormity of the challenges we face. All levels of government will need to change regulations and policies to effectively manage development in the floodplain.

In addition to the threats to these assets, coastal resources are threatened with a changing and often reduced footprint as sea levels rise. The long-term viability of the state's coastal habitats are of particular concern as there is limited opportunity for them to migrate given the extensive existing development in the floodplain. Preserving the existing and future functions of coastal resources on Cape Cod is imperative for the continued health of our beach, dune, and saltmarsh habitats and the fauna they support, and for the ecosystem services these resources provide.

With urgency in mind, I am writing in support of the proposed Wetlands Resiliency Regulations 1.0. The regulations are a meaningful step towards reducing the expansion of development within flood hazard areas and providing a uniform approach across the Commonwealth as to how we regulate development in these crucially important areas.





The Commission, with funding support from the Executive Office of Energy and Environmental Affairs, has led an effort to develop a body of floodplain regulations to achieve very similar goals to the proposed MassDEP Wetlands Resiliency Regulations 1.0. In collaboration with the Cape Cod Cooperative Extension, WHOI Sea Grant, the Urban Harbors Institute, and multiple Cape Cod communities, we have produced a [model coastal resiliency \(wetlands\) bylaw](#), and will soon complete complementary model floodplain wetlands regulations and a model floodplain zoning bylaw with more stringent standards than the state and federal minimums. Separately, with funding from the Economic Development Administration, we have produced comprehensive [Flood Area Design Guidelines for Cape Cod](#). These resources were initiated before we learned of the state's effort to promulgate draft floodplain regulations but have been coordinated with what we understand to be the direction and content of the developing state regulations.

While largely consistent with the state regulations, the Commission's model regulations incorporate the potential for communities to regulate beyond the current floodplain and to anticipate future flooding by incorporating the Massachusetts Coast Flood Risk Model (MCFRM). We believe that this forward-looking approach to regulation will be critical to successfully protect the future health and function of our shared coastal resources. Noting that the proposed DEP regulations make reference to the MCFRM, we strongly encourage the DEP to incorporate future flood projections into the Wetlands Resilience Regulations 2.0<sup>1</sup>.

Noting the current and ongoing need to support the longevity of coastal wetlands, Commission staff support efforts to streamline permitting for projects that benefit wetlands, such as restoration projects and vegetative enhancements. Similarly, the provisions acknowledging the importance of scientific research within wetlands is valuable, however, it may be beneficial to extend the duration beyond one year to allow for multiple years of research in appropriate situations.

### **Stormwater Regulations and Stormwater Handbook**

Cape Cod Commission staff also strongly support the proposed changes to the stormwater regulations in 310 CMR 10, the Water Quality Certification regulations in 314 CMR 9, and the newly revised and updated stormwater handbook. The changes across these three codes address multiple needs to bring stormwater management into alignment with the changing climate and stormwater best practices, including updating the precipitation basis for design and sizing of stormwater control measures. We suggest that while the proposed precipitation tables are important updates to bring design standards into alignment with historical precipitation patterns, it will be important to make additional changes within the near future to incorporate anticipated increased precipitation into design standards for new infrastructure. Additionally, reference to and alignment with the New England Stormwater Retrofit Manual will benefit the broader Commonwealth community as we work collectively to consistently improve the practice of stormwater management.

Importantly, the proposed changes will codify local compliance with the requirements of the 2016 Massachusetts MS4 permit where many municipalities had relied on reference to the prior stormwater handbook. The 1-inch recharge volume requirement is consistent with requirements

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<sup>1</sup> Our analysis has shown that MCFRM flood extents and elevations on Cape Cod do not always exceed FEMA flood mapping. Care will be needed to ensure that new regulations do not contradict or undermine protections in the existing FEMA-based regulatory framework.

adopted and applied regionally through the 2018 Cape Cod Regional Policy Plan and the supporting Water Resources Technical Bulletin. Additionally, the proposed emphasis on utilizing green infrastructure, low impact and environmentally sensitive design is consistent with regional practices to expand and improve natural treatment and infiltration of stormwater through measures that will achieve co-benefits for the community. We suggest confirming that consistent terminology for these practices is used across these documents to improve understanding and compliance. Lastly, we support the incorporation of total maximum daily loads and associated treatment requirements into the regulations to help ensure that water quality targets are considered, designed for, and met.

Thank you for the opportunity to comment on these important changes to the Commonwealth's regulatory framework. Commission staff are available to answer any questions you might have.

Sincerely,



Kristy Senatori  
Executive Director



April 30, 2024

MassDEP - BWR Wetlands Program  
Attn:Wetlands-401 Resilience Comments  
100 Cambridge Street, Suite 900  
Boston, MA 02114

To Whom It May Concern,

The Cape Cod Conservation District has the following comments to offer on the draft revision of the MassDEP Stormwater Handbook:

- Can the regulatory process be streamlined when the proposed project purpose is to improve water quality by capturing and treating the first one-inch of runoff into critical areas?

Example: the retrofitting of existing storm drains, roads, and existing impervious areas to reduce runoff, and which does not involve new development or re-development.

- Can regulatory process be streamlined when the proposed project is in cooperation with the Cape Cod Conservation District and in cooperation with and funded by the USDA Natural Resources Conservation Service's Cape Cod Water Resources Restoration Project, and will meet NRCS practice standards and specifications? This would be similar to the requirements of farm conservation plans by NRCS for some DEP exemptions.

Sincerely,

Martha Craig, Program Manager  
Cape Cod Conservation District



**CAPE COD  
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Via Email: [dep.wetlands@mass.gov](mailto:dep.wetlands@mass.gov)

**RE: Wetlands Resiliency Regulations 1.0**

Dear Commissioner Heiple and Wetlands Program Chief Rhodes,

Cape Cod Cooperative Extension/Woods Hole Oceanographic Institution (WHOI) Sea Grant staff have reviewed the proposed Land Subject to Coastal Storm Flowage Regulations located in 310 CMR 10 and offer the following comments.

Cape Cod has one third of the Commonwealth's coastline with 13,000 homes located in the floodplain, cumulatively valued at over \$16 billion. Additionally, approximately 300 miles of roads are also at risk, now or in the future, of storm-related flooding. By 2050, 45 miles of roads are projected to be at risk of daily tidal flooding. Communities are coming to terms with the threats flood risks pose and the enormity of the challenges we face. All levels of government will need to change regulations and policies to effectively manage development in the floodplain.

In addition to the threats to these assets, coastal resources are threatened with a changing and often reduced footprint as sea levels rise. The long-term viability of the state's coastal habitats are of particular concern as there is limited opportunity for them to migrate given the extensive existing development in the floodplain. Preserving the existing and future functions of coastal resources on Cape Cod is imperative for the continued health of our beach, dune, and saltmarsh habitats and the fauna they support, and for the ecosystem services these resources provide.

With urgency in mind, I am writing in support of the proposed Wetlands Resiliency Regulations 1.0, the Land Subject to Coastal Storm Flowage proposed regulations at 310 CRM 10. The regulations are a meaningful step towards reducing the expansion of development within flood hazard areas and providing a uniform approach across the Commonwealth as to how we regulate development in these crucially important areas.

Cape Cod Cooperative Extension/WHOI Sea Grant have partnered with the Cape Cod Commission to develop a body of floodplain regulations to achieve very similar goals to the proposed MassDEP Wetlands Resiliency Regulations 1.0 with funding support from the Executive Office of Energy and Environmental Affairs. In collaboration with the Urban Harbors Institute and multiple Cape Cod communities, we have produced a model coastal resiliency (wetlands) bylaw, and will soon complete complementary model floodplain wetlands regulations and a model floodplain zoning bylaw with more stringent standards than the state and federal minimums. Separately, with funding from the Economic Development Administration, the Cape Cod Commission with input from the Cooperative Extension/WHOI Sea Grant have produced comprehensive Flood Area Design Guidelines for Cape Cod. These resources were initiated before we learned of the state's effort to promulgate draft floodplain regulations but have been coordinated with what we understand to be the direction and content of the developing state regulations.

While largely consistent with the state regulations, the Commission’s model regulations incorporate the potential for communities to regulate beyond the current floodplain and to anticipate future flooding by incorporating the Massachusetts Coast Flood Risk Model (MCFRM). We believe that this forward-looking approach to regulation will be critical to successfully protect the future health and function of our shared coastal resources. Noting that the proposed DEP regulations make reference to the MCFRM, we strongly encourage the DEP to incorporate future flood projections into the Wetlands Resilience Regulations 2.01.

Noting the current and ongoing need to support the longevity of coastal wetlands, Commission staff support efforts to streamline permitting for projects that benefit wetlands, such as restoration projects and vegetative enhancements. Similarly, the provisions acknowledging the importance of scientific research within wetlands is valuable, however, it may be beneficial to extend the duration beyond one year to allow for multiple years of research in appropriate situations.

Further, we offer the following specific comments/clarifications that apply to multiple sections.

- **(C-2) Terms of FEMA Flood Hazard Mitigation Zone and Coastal A Zone**  
FEMA's terms are federal, and the terms are incorporated into federal regulations administered locally and through the Massachusetts State Building Code, Flood Insurance Rate Maps (FIRMs), and other guidance intended to help communities with enforcement of National Flood Insurance Program regulations and more stringent standards. We do not have the ability to change these terms at the federal level, so it would be helpful if proposed language from

DEP were consistent with FEMA's terms. Furthermore, enforcement of these areas will rely on FIRMS, so it would be helpful to regulatory staff if the terminology were consistent. It gets very confusing talking with different departments and new staff who do not understand that the MiWA is the A Zone and the MoWA is the Coastal A Zone.

- The use of fill is referred to several times. It would be helpful to have an accompanying guide to help Conservation Commissions understand how to enforce some of these provisions and how to make determinations as to whether fill is appropriate.
- Where does LSCSF end in a riverine scenario?
- It would be nice to see a restriction on storage of hazardous materials larger than household quantities in LSCSF.

We offer the following comments broken down by section.

- 10.36(3) Boundaries: is this saying you cannot use a Letter of Map Revision (LOMR) that reduces the extent of the flood zone/Base Flood Elevation? Maps should only be rebuttable if they are more stringent, but we do not want to eliminate this option.
- 10.36(4): This section should make clear that compliance with the building code is required at a minimum. The building code is likely to change more often than these regulations.
- 10.36(6)(e) says septs are allowed as long as they don't need fill for mounding. Does this mean that they are only allowed if they meet groundwater separation distances without needing to be elevated? Or perhaps an elevated tight tank would be allowed (if the physics work for that)? I do not disagree with reducing new fill introduced to these high hazard floodplains; however, this will mean that many existing septs will likely fall into disrepair because they cannot be updated and/or the property will become uninhabitable. The question would certainly be asked whether this would qualify as a taking. Further information on this section would be useful.
- 10.36(6) end matter: Be aware that sometimes AO zone regulations are actually higher than adjacent A zones. In relation to Base Flood Elevation, I would say whichever elevation is higher: AO zone depth + building code compliant freeboard, or MoWA BFE + freeboard
- 10.36(7)(c): What is a flood easement? It should be defined.
- 10.36(8)(c): It's not clear whether this limits vertical expansion as well as horizontal expansion, or if it has any impact on new decks. Further guidance would be helpful. Any expansion would reduce in greater potential for storm debris in resource areas.
- 10.36(8)(e): What does "alteration of existing buildings with new foundations" mean, particularly in that it appears to be different than Substantial Repair of a Foundation?
- 10.36(8)(e): PLEASE DO NOT issue a blanket exemption for historic structures. According to the Code of Federal Regulations, they may only receive the minimum exemption necessary to preserve their character-defining features that qualify them for listing on the National Register, as Contributing to a National Register District, or as historic by a Certified Local Government. The regulations can refer to the exemption as laid out in the Code of Federal Regulations: 44 CFR 60.6(A), which states that the exemption may be invoked ONLY if: "(i) the proposed repair or rehabilitation will not preclude the structure's continued designation as a historic structure and (ii) the **variance is the minimum necessary** to preserve the historic character and design of the structure." Historic structures must follow building code and potentially zoning (if



relevant) regulations. Our office has model zoning language to address this, and my understanding is that DCR will soon release similar guidance.

- 10.36(8)(f): How do Conservation Commissions determine if fill placement could redirect floodwaters onto a neighboring property?

Thank you for the opportunity to comment on these valuable changes to the commonwealth's floodplain regulations. Staff are available to answer any questions you may have and we appreciate your time and consideration.

Sincerely,

A handwritten signature in black ink, appearing to read 'Shannon Hulst', with a stylized, cursive script.

Shannon Hulst, CFM

Deputy Director, Cape Cod Cooperative Extension  
Floodplain Specialist & Community Rating System Coordinator  
Cape Cod Cooperative Extension / Woods Hole Oceanographic Institution Sea Grant

**From:** [Wendy Goodwin](#)  
**To:** [DEP Wetlands \(DEP\)](#)  
**Subject:** Wetlands and Waterways Resilience Comments from Cape Cod Shipbuilding  
**Date:** Thursday, April 18, 2024 5:44:24 PM

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**CAUTION:** This email originated from a sender outside of the Commonwealth of Massachusetts mail system. Do not click on links or open attachments unless you recognize the sender and know the content is safe.

Dear DEP:

I'm writing regarding the December 22, 2023 proposed wetland waterways regulation changes. If enacted, these regulations would prohibit new buildings in high wind and wave areas, even if safely designed and elevated. The changes would leave decisions to the discretion of local volunteer Conservation Commissions whether existing buildings, piers and docks can be relocated, expanded or new ones built. The regulations would make relicensing uncertain for even existing buildings, docks and piers upon expiration of the current term.

These regulations are not ready, changes to the proposal are needed. Moving forward will cause the coastal economy to collapse. Financing, money to invest is needed in upgrading and adapting existing facilities, some of which have been around for decades. We need private sector money to invest in our coastal communities for climate change adaptation. Our family run boatyard has been in Wareham since 1899 and on the current waterfront location since 1920. This year we're celebrating 125 years in the boat business. Over the years we have invested where we could in infrastructure like our travel lift pier and storage buildings to assure we can continue building & repairing boats years to come. With the proposed changes, it appears like we would not be able to continue that in the future.

My family is asking you to be more inclusive of impacted communities. Hold more public hearings and listen to what the community is saying. We don't feel it should be left to each Conservation Commission's discretion to refuse waterfront property use especially for water dependent businesses like ours. We make, repair & store boats, our livelihood is at the water's edge. We need to continue to run our business, service our docks and piers in the Wareham river, and maintain our buildings which store boats in the off season. We need to remain at the waters edge as our customers sail to our dock each fall & sail away from our dock each spring. Do not prohibit water dependent businesses based on geography of high wind or high wave zones. It would be more wise to require sound, safe engineering and design for individual locations so how the wind and wave activity impacts that particular location will factor into any proposed improvement.

Our family business has been weathering the highs & lows of wind & waves for three generations now. We know how to design and adapt to the storms and have been doing so for 125 years. I'm writing today to urge you to let us continue to do so.

Sincerely,

Wendy J. Goodwin  
President

Cape Cod Shipbuilding Co.  
7 Narrows Rd. P.O. Box 152  
Wareham, MA 02571-0152  
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**Central Massachusetts Regional Stormwater Coalition**

c/o Town of Spencer, MA • 157 Main Street • Spencer, MA 01562  
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April 30, 2024

Lisa Rhodes

Wetlands Program Chief

Massachusetts Department of Environmental Protection – Bureau of Water Resources

100 Cambridge Street, Suite 900

Boston, MA 02114

Sent via email to: [dep.wetlands@mass.gov](mailto:dep.wetlands@mass.gov)

**RE: Wetlands-401 Resilience Comments**

Dear Ms. Rhodes,

The Central Massachusetts Regional Stormwater Coalition (CMRSWC) is a group of 30 communities working together to address municipal stormwater management. The Central Massachusetts Regional Stormwater Coalition was originally formed by a group of 13 communities including the communities of Auburn, Charlton, Dudley, Holden, Leicester, Millbury, Oxford, Paxton, Shrewsbury, Spencer, Sturbridge, Webster, and West Boylston. Since then other municipalities have joined the Coalition, including Ashland, Fitchburg, Framingham, Grafton, Hopkinton, Lunenburg, Marlborough, Natick, Northbridge, Northborough, Palmer, Rutland, Southborough, Southbridge, Sterling, Upton, Uxbridge and Westborough. CMRSWC helps its communities meet requirements of the 2016 General Permit for Stormwater Discharges from Small Municipal Separate Storm Sewer Systems (MS4 permit). Working as a group allows us to collectively protect the resources we share, and to meet the requirements of the MS4 Permit in an efficient and cost-effective manner.

Central Massachusetts Regional Stormwater Coalition appreciates the opportunity to submit comments to the Massachusetts Department of Environmental Protection (MassDEP) on the proposed revisions to the Wetlands regulations and the draft Massachusetts Stormwater Management Handbook, dated December 2023. CMRSWC has been advocating for many years for MassDEP to update the Stormwater Standards to align with EPA's MS4 General Permit to provide consistency between federal, state, and local regulations. We sincerely appreciate the effort that MassDEP put into developing these updated regulations and handbook. We feel most of the proposed changes support greater consistency with the MS4 Permit and strengthening stormwater management across the Commonwealth.

CMRSWC was privileged to be invited to participate as a member of the Massachusetts Stormwater Management Updates Advisory Committee which was created to inform and seek input from interested stakeholders about proposed changes to MassDEP's stormwater regulations and handbook. CMRSWC participated in several advisory meetings in 2020 and 2021. We found the advisory committee approach to be both informative and beneficial. CMRSWC was disappointed that a similar approach was not used to present and gain feedback for the draft changes presented in 2024.

CMRSWC has been collaborating with the Massachusetts Statewide Municipal Stormwater Coalition, Massachusetts Municipal Association, Massachusetts Coalition for Water Resources Stewardship, Massachusetts Association of Conservation Commissions, and MA Society of Municipal Conservation Professionals on reviewing and providing feedback on the draft changes. We have greatly appreciated a collaborative approach and endorse the comments submitted by these organizations under separate cover.

CMRSWC provides the following comments and concerns on the proposed changes:

- The new Stormwater Handbook appears to be better organized and more comprehensive than the current version, but the proposed changes are very complex and technical. We struggled to understand the changes proposed in the 860-page document as engineers, public works, and conservation professionals who are familiar with stormwater management and have been expecting these updates. We cannot imagine how difficult it will be for volunteer Conservation Commissioners and Planning Board members to understand them or for developers and consulting engineers to design and implement these changes. We request significant help from the State to inform and educate stakeholders on the changes before making them effective. We also request, at minimum, that the effective date is at least one year following the issuance date of the final updates to allow time for practitioners to become educated on the updates.
- The definition of redevelopment proposed in the final draft is different from the definition used by EPA and different from the definition that had been presented to the advisory committee previously. We feel that the new proposed definition of redevelopment in the final draft of the regulations is too restrictive. This definition will trigger most public roadway or utility operations and maintenance projects to comply with the proposed regulations and will make it more difficult to complete public work. Additionally, the new redevelopment requirements in the stormwater regulations appear to be in conflict with redevelopment goals promoted by other state-led initiatives like affordable housing initiatives, transit-oriented redevelopment, and complete streets. We request that the redevelopment definition considers public projects to meet community goals differently than private development for profit. We propose that the definition includes exclusions for the public sector and for long, linear projects like roadway projects.
- The detailed, precise requirements in the draft handbook provide little flexibility to adjust to site-specific conditions. Performance standards or “maximum extent practicable” provided flexibility. We request that additional flexibility be provided to best meet the intent of the updates while allowing local jurisdictions to adjust to case-by-case site-specific challenges and opportunities.
- We hope that MassDEP will review the comments provided and provide another draft revision for public review and comment prior to finalizing changes. We hope that MassDEP considers the advisory committee approach, similar to the one used to review the 2020 draft, for this and future proposed changes to the stormwater standards.

We appreciate the opportunity to comment on the draft updates and look forward to working with MassDEP to improve stormwater management in the Commonwealth.

Sincerely,  
CMRSWC



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Massachusetts Department of Environmental Protection  
Bureau of Water Resources Wetlands Program  
Attention: Wetlands-401 Resilience Comments  
100 Cambridge Street, Suite 900  
Boston, MA 02114

April 26, 2024

Dear Ms. Rhodes and the MassDEP Wetlands Program,

Thank you for the opportunity to comment on the draft Wetlands Protection Act regulations as part of MassDEP's "Climate Resilience 1.0" package.

At the Charles River Conservancy, we strive to make the Charles River and its parks a well-maintained network of natural urban places that invite and engage all in their use and stewardship.

One crucial pillar of our work is envisioning a swimmable Charles River, which we proudly showcase in our public (and permitted) annual river swim "City Splash" off the Esplanade. Increased precipitation due to climate change leads to CSOs that discharge untreated sewage and stormwater into the Charles River, causing unsafe, unreliable conditions for swimming. We have had to cancel our annual river swim in multiple recent years—including last year's—due to bacterial conditions caused by excess rainwater.

Another major initiative of the Charles River Conservancy is the installation of floating wetlands, which explores an ecological intervention to reduce harmful algal blooms in the Charles River. We were fully aware that the current permitting framework is designed to be arduous in order to prevent intrusion and harm to water bodies. An unfortunate consequence is that nature-based solutions that are intended to provide net benefits are also more challenging to execute within the same framework. The floating wetland project was no exception, making the permitting phase a significant part of the overall effort. We therefore strongly support a simplified, streamlined permitting process to accelerate the pace of restoration projects.



In sum, the Charles River community and the Commonwealth of Massachusetts need climate resilient permitting and improved regulations associated with stormwater and habitat restoration.

We are pleased to see that these regulations advance climate resilience. These are necessary steps towards ecological restoration, public safety, and preparing our communities for the impacts of climate change. We appreciate the years of work MassDEP has spent crafting these draft regulations, and strongly support many of the proposed provisions. We also appreciate MassDEP's responsiveness to the public during the rollout of Climate Resilience 1.0, and hope that there will be a similar level of support given to educating conservation commissions and other practitioners on the final set of regulations.

Though the draft regulations are overall moving in a positive direction, they do not go far enough in achieving the stated goals of "Resilience 1.0."

As a member of the Massachusetts Rivers Alliance, the Charles River Conservancy concurs with the following statements made by MRA regarding where the **regulations must be refined**:

- The nature-based resilience requirement for coastal projects is non-binding.<sup>1</sup> Having applicants merely "consider" these measures does not mean they will implement them. While the provision states that "the Issuing Authority may require" natural methods and materials, it is not clear under what circumstances MassDEP would do so. We ask that MassDEP make this provision more stringent by requiring applicants to analyze nature-based methods as their first option, and set a high bar of impracticability.
- The updated data (NOAA14+) that MassDEP is proposing be tied to the Wetland Protection Act regulations<sup>2</sup> is likely to become outdated soon. These draft regulations bring us to present precipitation trends; they do not yet bring us into the future. Instead, the Commonwealth needs to use dynamic, forward-looking projections and subsequent versions for precipitation that will protect our community for decades to come.
- MassDEP has proposed to strike out the "Combined Application" option for the Wetlands Protection Act, Waterways, and Section 401 Water Quality Certifications,<sup>3</sup> without proposing a new procedure to fill its place. To accelerate the pace of restoration projects, Massachusetts needs a simplified permitting process. This is a missed opportunity to create that streamlined process. Such a process would also be especially beneficial to municipalities with predominantly environmental justice populations who need these projects for health and safety reasons, and are often deterred from pursuing such projects due to the high permitting costs.
- We are concerned that the "Maximum Extent Practicable" recharge standard for all soil types in redevelopment<sup>4</sup> will be too easy for applicants to skirt, resulting in insufficient recharge in many sites. MassDEP must hold recharge to a more stringent standard than MEP to truly meet the climate resilience intentions of these regulations.
- While we are glad that basic Shared Use Path maintenance is exempted from permitting, the directives of subsection (iv) ("cut vegetation may be...and properly disposed") are too narrow to be included in regulation, since management methods are highly site-specific. Instead, these

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<sup>1</sup> 310 CMR 10.24 (1)(b)

<sup>2</sup> Stormwater Handbook Standard 2

<sup>3</sup> 310 CMR 10.04

<sup>4</sup> Stormwater Handbook Standard 3

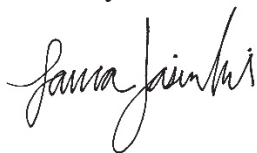
methods should be developed as a Best Management Practice or guidance document. Furthermore, we question why MassDEP would prohibit “work on any component of a Stormwater Management System,” including drainage swales.<sup>5</sup> This language is contradictory to exemptions already made for stormwater management projects, unhelpful at increasing flood protection, and should be deleted.

- We are glad to see adaptive Resource Area conversion allowed for climate resilience. However, the proposed regulation could prove difficult for project managers to interpret, as the allowance for restoration projects is inhibited by language further down in the provision. Section 10.24 (b) starts with: “the Issuing Authority may require the restoration, enhancement, or creation of wetland Resource Areas through natural methods and materials.” Further down, 10.24 (b) also reads: “the project will not cause an increase in flood velocity, volume, or elevation on other properties.”<sup>6</sup> Many of the wetland restoration projects suggested in this provision would increase the volume, velocity, and sometimes elevation of water on other properties (though, importantly, without adversely impacting neighboring infrastructure). Replacing an undersized pipe culvert with an open bottom culvert that meets Stream Crossing Standards allows more water to pass underneath; the same is true for dam removals, and some salt marsh restoration projects. We understand and support MassDEP’s intent of this regulation, to protect neighboring properties from flooding during storms, but the current language nearly precludes the coastal restoration projects it is supposed to encourage. We recommend that MassDEP refine this language to clarify the agency’s allowance, and encouragement, of coastal restoration projects that improve resilience during storms.
- We are concerned with the provision allowing the relocation of roads and railroads as Limited Projects.<sup>7</sup> Of course the siting of our coastal roads and railroads needs to be seriously reexamined in light of sea level rise, but done so in context with all other coastal infrastructure and ecosystems. The Healey administration’s ResilientCoasts Initiative has just begun to do this, studying each coastal neighborhood’s assets and risks. Relocating roads and railroads will need to take into account impacts on ecosystem function and habitat at the new sites. For these reasons, we recommend removing Limited Project status for relocating roads and railroads until a greater, coastwide strategy and decision-making process are established.

**After swift promulgation of these updates, we strongly encourage MassDEP to begin the “2.0” process to continue improving the Wetland Protection Act regulations.** There must be no delay in ramping up our regulatory approach to development to match the challenge of the climate crisis before us.

Thank you for the considerable time and effort the agency has invested in creating these draft regulations thus far. We look forward to continuing to work together to protect Massachusetts’ rivers, ecosystems, and communities from the impacts of climate change.

Sincerely,



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<sup>5</sup> 310 CMR 10.02 (2)(b)(r)(v)

<sup>6</sup> 310 CMR 10.24 (1)(b)

<sup>7</sup> 310 CMR 10.24 (7)(c)(9)

Laura Jasinski  
Executive Director, Charles River Conservancy  
[ljaskinski@thecharles.org](mailto:ljaskinski@thecharles.org)



April 30, 2024

MassDEP - BWR Wetlands Program  
100 Cambridge Street, Suite 900  
Boston, MA 02114

*Via Email: [dep.wetlands@mass.gov](mailto:dep.wetlands@mass.gov)*

**Re: Wetlands-401 Resilience Comments**

Dear MassDEP Wetlands Program:

Charles River Watershed Association (“CRWA”) appreciates the opportunity to comment on the draft Resilience 1.0 regulatory updates to 310 CMR 10, the “Wetlands Protection Act Regulations.” As one of the country’s oldest watershed organizations, CRWA protects, preserves, and enhances the Charles River and its watershed through science, advocacy, and the law. Over the last five decades, our initiatives have dramatically improved water quality in the watershed, fundamentally changed approaches to water resource management, and protected the Charles River as a public resource for current and future generations.

CRWA has fully reviewed the draft regulatory updates. We are grateful to the Massachusetts Department of Environmental Protection (“MassDEP”) for the years of work you have put into these draft regulations. We thank you for helping make Massachusetts ecosystems more resilient to climate change. Our state must take steps towards ecological restoration, public safety, and preparing our communities for the impacts of climate change. The purposes of the Wetlands Protection Act (“WPA”) are to (1) protect private or public water supply, (2) protect groundwater, (3) provide flood control, (4) prevent storm damage, (5) prevent pollution, (6) protect land containing shellfish, (7) protect wildlife habitat, and (8) protect fisheries.<sup>1</sup> As such, the WPA regulations can and should play an integral role in climate adaptation and mitigation in Massachusetts. In our review, CRWA has particularly focused on the revised stormwater standards. While these standards improve upon the existing standards, exemptions for both new and redevelopment fail to protect aquatic health and will, in many cases, result in increased nutrient loading. We urge that MassDEP follow EPA’s suggestions for a watershed protection standard and adopt a simpler and more effective approach as follows:

- **Adopt a Net-zero stormwater pollution standard:** The goal of the stormwater regulations should be to offset 100% of pollutant loading from impervious surfaces and achieve the natural (pre-development) hydrology and nutrient loading.
- **Close the redevelopment loopholes:** While we applaud the use of a 1-inch infiltration standard for new development, relatively few projects will be required to meet this standard.
- **Eliminate “maximum extent practicable”, and expand Offsite Mitigation:** In cases where site constraints limit options for infiltration, required load reduction must be met at an alternate site.

In addition to these critical steps, CRWA submits the following comments.

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<sup>1</sup> 310 CMR 10.01.

CRWA commends MassDEP for amending the existing regulations:

*The use of the most updated precipitation projections is imperative*

CRWA greatly appreciates MassDEP's efforts to incorporate forward-looking precipitation projections by using the National Oceanic and Atmospheric Administration ("NOAA") Atlas 14 Volume 10 - most recently updated in 2019 - in place of the outdated 1961 U.S. Weather Bureau Technical Paper 40 ("TP40") rainfall estimates. As MassDEP acknowledges, "TP40 substantially underrepresents current conditions while 'the use of NOAA Atlas 14 will bring Massachusetts up to date with current conditions.'"<sup>2</sup> CRWA particularly appreciates the use of a scaling factor to "account for uncertainty in extreme precipitation represented by larger currently observed storms documented in the NOAA Atlas 14 data."<sup>3</sup> CRWA also endorses the use of future projected precipitation values associated with climate change for design storms such as the 2070 values utilized by the City of Cambridge. We recommend that MassDEP recognize and encourage such more protective local regulations.

*Defining artificial turf as an impervious surface is a positive change that will improve stormwater management and environmental health*

Defining artificial turf as an impervious surface for the purposes of stormwater management in 310 CMR 10.04 reflects the growing scientific understanding of artificial turf's negative impacts. CRWA notes several studies reflecting artificial turf's impacts on runoff and stormwater retention<sup>4</sup> and endorses this definitional change.

*The change from "grandfathered" to "exempted" is a laudable shift away from a problematic term*

CRWA appreciates MassDEP's staff for their commitment to shifting away from problematic terminology and suggests that in addition to "exempted," "legacied" or "legacy" can be used as another synonym. Relatedly, while CRWA applauds the removal of the term "grandfathering," we'd more so appreciate the removal of the concept itself. There are few instances in the environmental sector where - in the long-term - providing exemptions benefits the citizens of the Commonwealth or our environment.

*Expanding the system for Low Impact Design and Environmentally Sensitive Site Design Credits recognizes the expansion of effective green infrastructure and design methodologies and will encourage regulatory compliance*

CRWA thanks MassDEP for revisiting how it permits stormwater and green design best management practices ("BMPs"). We have reviewed the updated list in the Stormwater Handbook and encourage its swift implementation.

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<sup>2</sup> Preface for Reviewers to the Proposed 2023 Revisions to the WPA and WQC Regulations for Stormwater Management.

<sup>3</sup> *Id.*

<sup>4</sup> Thomas J. Simpson, Robert A. Francis, *Artificial lawns exhibit increased runoff and decreased water retention compared to living lawns following controlled rainfall experiments*, Urban Forestry & Urban Greening, Volume 63, 2021, <https://doi.org/10.1016/j.ufug.2021.127232>.

*Aligning state requirements with the Environmental Protection Agency's Massachusetts Small Municipal Separate Storm Sewer System General Permit streamlines regulatory compliance*

Given how complex the regulatory system in Massachusetts can be with water-body specific total maximum daily loads ("TMDLs"), the Massachusetts-wide small municipal separate storm sewer system ("MS4") permit, and the Environmental Protection Agency's ("EPA") pending residual designation authority permit, **CRWA supports simplifying compliance by aligning the WPA's conditions with the small MS4 general permit.**

*The 1-inch retention standard simplifies regulatory compliance and is broadly protective*

CRWA is heartened to see the inclusion of a 1-inch retention standard as part of the new stormwater standards (Standard 3). **If applied uniformly to new and redevelopment projects this standard would be highly protective.** In most cases, requiring storage and infiltration of the first inch of rainwater will reduce total phosphorus ("TP") loading from impervious surfaces by between 90%-100%. The 1-inch retention standard is consistent with EPA's recommendation for a "watershed protection standard" ("WPS"). The WPS is a standard for control of runoff from impervious surfaces that would be adequate to preserve natural hydrology and pre-development nutrient loading across a range of soil types. In EPA's analysis, a 1-inch retention standard met this goal and could be applied even to poorly infiltrating soils (e.g., Class D)<sup>5</sup>. An across-the-board 1-inch static-retention and infiltration standard simplifies engineering design and permit review. This standard is broadly protective of aquatic health and easy to communicate to the general public.

*Carefully managed holistic offsite mitigation is a feasible alternative where on-site standards cannot be achieved*

As discussed below, CRWA is concerned with over-utilizing the maximum extent practicable ("MEP") standard; we suggest that MassDEP implement more offsite mitigation requirements in lieu of the MEP standard. To further improve its efficacy, **we would like to see offsite mitigation implemented in a stronger way that removes the 60% TP reduction requirement and instead requires offsite mitigation for 100% TP load of a project site.**

CRWA recommends further refinement in these areas:

*As the use of the most updated precipitation projections is imperative, MassDEP must find a way to include language that will reference the most up-to-date data*

While the use of NOAA Atlas 14 upper confidence interval multiplied by 0.9 should help account for larger currently observed storms, CRWA recommends the addition of language that would allow for seamless utilization of more current data, such as **"In the event, NOAA 14 Atlas is updated, the most recent published edition shall apply," or "...and subsequent versions."**

The Fifth National Climate Report, released November 2023, found that the Northeast has seen a roughly 60% increase in the number of days with extreme precipitation - the largest increase of all the U.S.

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<sup>5</sup> U.S. Environmental Protection Agency. *Next-Generation Watershed Management Practices for Conservation Development*. (2022)

<<https://www.epa.gov/system/files/documents/2023-04/fdc2b-final-report.pdf>>



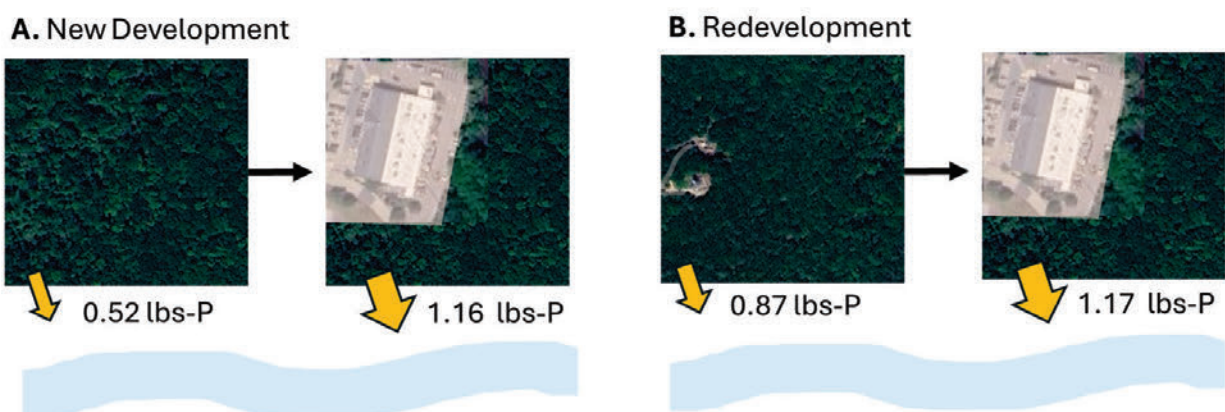
regions.<sup>6</sup> Accordingly, the WPA should acknowledge that no single data set - no matter how erudite or which modifiers are applied - will be able to accurately model future rainfall in perpetuity. CRWA understands that there may be some legal issues associated with a modifiable standard, but notes that in the Resilience 1.0 regulatory updates to 310 CMR 9, projected sea-level rise requirements contain a requirement that “[a]n applicant shall consult the Resilient.mass.gov website for the most current mapping and other available information related to shoreline change and sea level rise or other similarly reliable sources, as deemed appropriate by the Department.”<sup>7</sup> **CRWA therefore urges MassDEP to add similar language to the Resilience 1.0 WPA updates.**

*The distinction between new development and redevelopment enables existing properties to develop in a way that may result in net increases in pollution*

The current WPA and stormwater pollutant removal requirements (Standard 4 & Standard 7) fail to protect the interests of the WPA and do not adequately safeguard the aquatic health of our lakes, rivers, and streams. Under the proposed revision to the Massachusetts Stormwater Handbook, Standard 4 requires that for new development, “stormwater management systems be designed to remove... 60% of the average post-construction load of total phosphorus.” Under Standard 7, this standard is reduced to “50% of the average post-construction load of total phosphorus” for redevelopment projects.

**Under these standards, many new and redevelopment projects can, have, and will result in net increases in pollution.** For example, Figure 1 shows a hypothetical four-acre site that is converted from a forest to a shopping plaza and parking lot (Fig. 1 A). If directly connected impervious area (“DCIA”) is added to only 50% of the site, those added impervious acres would produce an additional loading of 3.56 lbs. If 60% of that loading is mitigated through BMPs the result is a net increase of 1.16 lbs of total phosphorus loading. If the same project were to be implemented on a lot with an existing ¼ acre structure (Fig. 1 B) only 50% of that load would need to be mitigated resulting in a net increase of 1.17lbs of total phosphorus. These changes in loading are summarized in Table 1.

**Figure 1.** Example of shopping center development



<sup>6</sup> <https://nca2023.globalchange.gov/chapter/21/>

<sup>7</sup> 310 CMR 9.37(1)(d)

**Table 1.** Phosphorus loading changes due to development after application of Standard 4

Site	Pre-development		Post-development		Net Change*
	Land Use	Loading*	Land Use	Loading*	
A	Forest: 4 acres	0.52	Commercial: 2 Acres Forest: 2 Acres	1.68	1.16
B	Forest: 3.75 Acres Residential: 0.25 Acres	0.87	Commercial: 2 Acres Forest: 2 Acres	2.04	1.17

\* Loading calculated per MS4 attachment 1 to appendix F, table 1-2. Units are Lbs-total phosphorus

In both cases, **development that meets WPA requirements results in net increases in nutrient loading.** While redevelopment that takes place on existing lots with high DCIA coverage can result in a net decrease in loading, this outcome is unlikely for many redevelopment projects, especially in rural and suburban areas. The WPA should be written to protect wetlands by, at a minimum, prohibiting increases in pollution.

*All “maximum extent practicable” language should be eliminated.*

**All “maximum extent practicable/feasible” language should be eliminated.** in cases where watershed protective standards cannot be met onsite, nutrient reduction and infiltration volume targets must be met offsite. The loopholes created by **weakened standards for re-development projects are not protective of water quality** and undermine the proposed stormwater standards.

As written, the MEP standard creates significant regulatory loopholes and results in increased pollution. Consistent with the previous stormwater standards the current language will fail to adequately regulate stormwater pollution in the following scenarios:

- Redevelopment of any kind (only requires MEP)
- New development on Class D soils (only requires 1-inch to the MEP)
- Redevelopment projects that do not increase impervious area

Because the majority of development projects within the Charles River watershed are redevelopment projects this reverts the nutrient removal to Standard 4 which as described above is not protective. A requirement that “[a]ll provisions of 310 CMR 10.05(6)(k)4. apply to Redevelopment Projects, except that Stormwater Management Systems for Redevelopment shall be designed to remove 80% of the average annual post-construction load of TSS and 50% of the average annual post-construction load of TP” is grossly inadequate and results in deteriorating water quality.

CRWA recommends that phosphorus removal standards are instead brought in line with the 1-inch retention standard. BMP performance curves contained in the MS4 permit show that infiltrative stormwater controls sized for 1-inch retention will result in between 90%-100% phosphorus removal (for moderate to well-draining soils). **At a minimum, water quality standards should require 90% phosphorus removal from all impervious areas** for both development and redevelopment projects. If this cannot be met onsite, offsite mitigation can be considered. A stronger and more flexible option would

be to **require that any project achieve zero-net increase compared to predevelopment<sup>8</sup> loading.** When this standard cannot be met onsite the proponent has the option of reducing the scope of the project or providing offsite mitigation.

Many redevelopment projects avoid stormwater regulation by simply reducing total impervious area, while these projects do reduce existing loading they represent a substantial missed opportunity for progress toward TMDL and water quality goals. For this reason, municipalities like Lowell have adopted regulatory triggers that require stormwater controls for projects that cost greater than \$500,000 or represent an investment greater than 20% of the property value. MassDEP should consider adopting financial or alternative regulatory triggers to capture major projects that currently may not trigger stormwater permits.

It is concerning that MassDEP appears to acknowledge the potential weaknesses of the MEP standard<sup>9</sup> while simultaneously “propos[ing] that existing stormwater exemptions and projects subject to the MEP standard as defined in 310 CMR 10.05(6)(l) and (m) will not change,” and that in fact, there will be “categories of projects that will be subject to the MEP standard (including Stormwater Management Standard 7) such as existing public roadway maintenance.”<sup>10</sup>

The draft regulations do not update the MEP standard as defined at 310 CMR 10.05(6)(o) which is a narrative standard, meaning that it is foreseeable that there will be significant differences in the stringency of its application. We understand the need to balance sustainable development with rigorous environmental standards, but water protection standards should protect water.

*Static sizing should be the default methodology used for sizing stormwater control features.*

The Stormwater Handbook accepts retention sizing calculations performed using a variety of methods including the static method, the simple dynamic method, and the Continuous Simulation Method. Of all of these methods, the Static Method is the most straightforward and conservative. Because the static method does not take into account active infiltration out of BMPs it results in the most conservative water quality volume sizings. For these reasons, **we recommend that stormwater standards use only the static method for sizing BMPs.** This practice will decrease the complexity of regulatory review for local engineering departments and improve tracking of BMP performance for MS4 compliance especially in regions with nutrient TMDLs. While the use of static sizing may result in BMPs that are slightly larger compared to the use of other methods, this added capacity will be protective of water quality and provide a safety margin as BMP water quality volume can decrease over time due to lack of maintenance.

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<sup>8</sup> We follow the EPA holistic water management framing here predevelopment mean natural conditions (e.g., field or forest) not existing condition (e.g., existing parking lot or building).

<sup>9</sup> “...numeric criteria for pollutant removal will result in greater water quality protection in wetland areas and downstream locations and will facilitate achievement of TMDLs. **Water quality improvements that are sufficient to meet TMDLs may not be achieved with the current MEP standard for water quality in Redevelopment.**”

*Supra* note 2.

<sup>10</sup> *Id.*

*Combined applications should not be eliminated until a suitable, protective equivalent replacement is instituted*

CRWA endorses and incorporates the comments relating to combined applications contained within the organizational sign-on letter submitted by the Massachusetts Audubon Society relating to combined applications under the WPA. CRWA understands that the conversation around streamlining permitting initiatives will continue. However, while processes are being developed, CRWA recommends that combined application procedures are retained.

CRWA eagerly anticipates Resilience 2.0 and looks forward to working further with the Waterways Program

*CRWA understands and appreciates the intent behind a shift to a .8 Inch Recharge Rate, but recommends caution in its implementation*

CRWA appreciates MassDEP's inclusion of a "Recharge Rationale" document, which has been extremely helpful in evaluating this proposed shift. Following a review of that document, we understand the intent behind this shift, but caution that a .8-inch retention standard would not be as protective if project proponents used dynamic sizing methodology rather than static capture. Further, the 0.8-inch standard is less straightforward and memorable than a simple 1-inch standard. CRWA anticipates that the average cost savings in moving from 1-inch retention to 0.8-inch are not significant but the increased difficulty in communication and clarity would be significant. For these reasons, CRWA strongly recommends that **the infiltration standard should remain a 1-inch static retention standard during the Resilience 2.0 process.**

*Small isolated wetlands and vernal pools should receive expanded statewide protection in the wake of recent Supreme Court rulings*

CRWA would like to see expanded protections for small isolated wetlands and vernal pools, some of which have been left more vulnerable in the wake of *Sackett v. EPA*. Analysis by the Environmental Law Institute shows that our state is best positioned to take advantage of our strong state-level authority to protect these areas.<sup>11</sup> Many towns already consider the WPA's requirements as a floor and have instituted protections for these vital natural features. The state should lead the way by instituting these protections in the WPA.

*Single application coordinated review would be an incredible regulatory streamlining initiative in Resilience 2.0*

CRWA endorses and incorporates the comments relating to the value of a single combined application contained within the organizational sign-on letter submitted by the Massachusetts Audubon Society. As noted, while we understand the intent behind eliminating combined applications, **we endorse the goal of establishing a single permit application, managed by a single agency that coordinates across all other agencies and with the project proponent, resulting in a single combined permit issued quickly, preferably within 90 days of submission of a complete application.**

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<sup>11</sup> <https://www.eli.org/research-report/filling-gaps-strategies-statestribes-protection-non-wotus-waters>  
Charles River Watershed Association

*Invasive species management and cranberry bog restoration should be encouraged through specific inclusion as Ecological Restoration Projects or other regulatory mechanisms*

CRWA endorses and incorporates the comments relating to Ecological Restoration Projects (“ERPs”) contained within the organizational sign-on letter submitted by the Massachusetts Audubon Society.

The WPA regulations currently do not provide any sort of regulatory streamlining for cranberry bog restoration efforts, despite the significant benefits these projects provide. Accordingly, cranberry bog restoration should be explicitly identified as an ERP in 310 CMR 10.13.

Another beneficial update would be to explicitly include “stream bank restoration” as an ERP. This could be done using existing subcategories, in either 10.13(3) regarding eligibility for freshwater stream crossing repair and replacement or 10.13(4) regarding eligibility for stream daylighting. Restoration of banks is a critical repair activity that improves resilience to flooding and provides habitat. Explicitly referencing it and any necessary eligibility requirements could encourage further restoration projects.

Another area where expanded ERP eligibility would be beneficial for state wetlands protection is invasive species management. CRWA organizes several invasive species removal efforts and regularly contends with the challenges involved with invasive species management. Non-native plant species threaten wetlands throughout the state, while climate change creates changes conducive to rampant invasive species growth. Stemming the tide of invasive species propagation is challenging enough with additional regulatory hurdles; currently, invasive plant control work requires the same time-consuming, costly, and complex wetland permitting devised for construction projects. Quick identification and removal of invasive plants can minimize the dramatic negative effects of these plants and allow for the recovery of native species diversity and native wildlife habitat, a recognized wetland value. As other commenters have, CRWA asks that MassDEP simplify the permitting process for certain habitat restoration projects involving invasive species management. This could be accomplished by the following changes:

- A. Create a new minor activity in 310 CMR 10.02(2)(b)(2) which allows for the removal of turf lawn and/or non-native invasive herbs, vines, and shrubs, provided erosion and sedimentation controls are implemented until the area is restabilized with native species.
- B. Add small-, medium-, and large-scale invasive species removal projects as eligible ERPs under 310 CMR 10.13. Special conditions could be added to invasive species removal efforts as ERPs by adding a specific section in 310 CMR 10.14, as has been done for similarly important initiatives, including rare species habitat restoration, dam removal, and fish passageway restoration projects.

The survival of our native ecosystems is at stake. CRWA looks forward to continuing to coordinate with MassDEP to improve restoration permitting in Massachusetts

*The list of mitigation projects for riverfront development under 310 CMR 10.58(5)(g) should be clarified and expanded*

Dam removal is allowed as a mitigation project under 310 CMR 10.58(5)(g). While this is recognized by the December 2007 “Dam Removal and the Wetlands Regulations” document, it should be specifically called out and encouraged as an effective mitigation project to restore aquatic ecosystem functionality.<sup>12</sup>

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<sup>12</sup> [Dam Removal and the Wetlands Regulations](#).



More broadly, creative restoration mitigation options should be encouraged and expanded in future regulatory updates.

*Updates to trail maintenance and construction could spur outdoor engagement, drive the outdoor recreation economy, and still protect wetland areas*

CRWA endorses and incorporates comments relating to trail maintenance and construction made by the Massachusetts Society of Municipal Conservation Professionals. Currently, trail maintenance projects are often time-consuming, costly, or involve complex wetland permitting. Properly implemented trail projects protect wetland resources by creating stable trail surfaces that limit improper widening of the footbed and trampling of vegetation by hikers seeking to avoid wet areas. Furthermore, well-used trails help build a culture of appreciation and stewardship for these vital wetland resources.

### Conclusion

CRWA is grateful for the opportunity to comment on these regulatory updates. They represent a new era in Massachusetts as we prepare for the realities of climate change. We appreciate that MassDEP has already recognized that more changes will be necessary and that a Resilience 2.0 update package is already planned. As other commenters have done throughout this process, we strongly encourage MassDEP to begin to engage stakeholders now in the Resilience 2.0 planning process. Future regulatory changes will benefit from early and close coordination with local stakeholders.

We look forward to working with the Wetlands Program and MassDEP to continue to improve our Commonwealth's climate resilience.

Thank you for your consideration of these comments.

Respectfully,



Zeus Smith, Esq.  
Associate Attorney, CRWA



Max Rome, PhD  
Stormwater Program Manager, CRWA



**From:** [Chase Gerbig](#)  
**To:** [DEP Wetlands \(DEP\)](#)  
**Subject:** Wetlands-401 Resilience Comments  
**Date:** Thursday, January 18, 2024 12:35:35 PM

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Good Afternoon,

Please accept the following comment regarding the proposed amendments to 310 CMR 10.00: Wetlands Protection Act Regulations

310 CMR 10.24(1)(b) regarding General Provisions is proposed to be revised and to read, in part: "In planning shoreline protection projects, Applicants shall consult the [resilientma.org](https://resilientma.org) website for the most current mapping and other available information related to shoreline change and sea level rise or similarly reliable local data acceptable to the Issuing Authority."

This revision is ambiguous and should be revised to provide more clarity as to what climate/sea level rise model outputs will be accepted by the Department. Specifically:

- Consider revising the regulation to provide presumptive certainty that the information at [resilientma.org](https://resilientma.org) will be accepted as a reasonable basis for a design.
- Absent presumptive certainty, the department, Conservation Commissions, and project proponents are left with little-to-no meaningful guidance as to what should for the basis for design standards. "And other available information related to shoreline change and sea level rise or similarly reliable local data acceptable to the Issuing Authority" is overwhelmingly and unworkably vague. Certainly, MassDEP wants to afford proponents an opportunity to consult other sources of information, but the regulation as proposed does not provide any weight to the State's determination of what is valid versus other models and interpretations. Adding a presumptive certainty statement regarding [resilientma.org](https://resilientma.org) alleviates this ambiguity while still affording proponents the opportunity to present alternative evidence and information.
- The design life of projects could be decades long and climate models decades into the future have incredibly large degrees of uncertainty based on factors that are currently unknowable. It is preferable to have reasoned experts at the MassDEP who are responsible for maintaining [resilientma.org](https://resilientma.org) determine which model outputs within that range of uncertainty are reasonable design standards. The difference between models many decades into the future could be feet of sea level rise.
- It is preferable from a design perspective to know what design inputs are going to be accepted. Many regulations make unambiguous references to design standards. For example, an existing paragraph of the regulated regulations at 310 CMR 9.00 (9.37(1)(b)) states that construction for a Chapter 91 license "shall be designed and constructed in a manner that...complies with applicable state requirements...in accordance with the State Building Code." This provides a definitive basis for a design. The regulations rightly do not state that applicants need to *consider* the State Building Code *and other available information related to building codes, as deemed appropriate by the Department*. That is obviously absurd.
- Project proponents, Conservation Commissions, and permit reviewers at MassDEP do not necessarily have the expertise to determine which climate model is the appropriate

one to utilize. By adding a presumptive certainty standard regarding the information at [resilientma.org](https://resilientma.org) you are alleviating project proponents of enormous costs associated with determining which climate/sea level rise model is the appropriate one, which inputs and outputs are appropriate, how to account for ranges in uncertainty, and defending their choices. Frankly, this is a specialized skill set that only a limited number of people have. By creating ambiguity in the current regulation draft you are also setting up MassDEP and Conservation Commissions to render divergent opinions on a regular basis about what is reasonable. Some of this will still happen and will be a challenge because you are correctly providing flexibility with models, but a presumptive certainty standard would significantly cut down on the potential for this to occur. A presumptive certainty standard also puts the onus on project proponents that are utilizing a different model to explain the differences in model information relative to the model that has presumptive certainty.

- Without a clear indication of the "right" model, MassDEP, Conservation Commissions, and project proponents are exposed to unnecessary challenges to decisions. For example, who is going to determine which is the correct model if a project proponent uses a set of inputs and models that show sea level rise to be six inches in 50 years, but a project opponent can show an equally credible model with a different set of equally credible inputs that result in a sea level rise of 18-inches? Asking courts to reach such a determination about which climate model is appropriate during the review of a challenge to a MassDEP or Conservation Commission decision is a waste of resources and a court is a poor forum to dispute these topics. Certainly, project proponents may willingly open themselves up to these challenges by using alternative sources of information, but project proponents should be afforded the option to choose certainty that they will not get bogged down in fruitless disputes about climate models. Adding presumptive certainty regarding [resilientma.org](https://resilientma.org) resolves this ambiguity.
- Guidance documents that provide a degree of certainty regarding [resilientma.org](https://resilientma.org) are an inferior tool for this purpose. First, guidance documents will take a substantial amount of time to prepare. Furthermore, guidance documents only provide a limited degree of certainty regarding the usability of information at [resilientma.org](https://resilientma.org), which helps but does not resolve the matters discussed above. You have an opportunity now to provide the necessary certainty about the information at [resilientma.org](https://resilientma.org) and should take it by revising the regulations before promulgating them.
- I also note here that the references to [resilientma.org](https://resilientma.org) in proposed changes to 310 CMR 9.00 and 310 CMR 10.00 are slightly inconsistent. 310 CMR 9.00 references "[Resilient.mass.gov](https://Resilient.mass.gov)" and 310 CMR 10.00 references "[resilientma.org](https://resilientma.org)." Reconciling these references may alleviate a small amount of confusion.

Note that I make these comments as an individual, although base them on my experience as both a member of the Littleton Conservation Commission and as a licensed environmental engineer in the Commonwealth who works with private and municipal clients to navigate Massachusetts Wetlands Protection Act and Chapter 91 matters. Please also note that I have a related comment regarding the proposed Chapter 91 revisions and have submitted a comment to the same effect regarding the revision of those regulations.

Thank you for considering my comment.

c

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Chase Gerbig

Cell: [REDACTED]

**From:** [Christine Erb](#)  
**To:** [DEP Wetlands \(DEP\)](#)  
**Subject:** Wetlands-401 Resilience Comments  
**Date:** Saturday, February 3, 2024 10:11:00 AM

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**CAUTION:** This email originated from a sender outside of the Commonwealth of Massachusetts mail system. Do not click on links or open attachments unless you recognize the sender and know the content is safe.

I am very much in favor of restricting new developments in coastal floodplains. I have seen property losses and believe that insuring these properties raises costs for everyone. Until the US and other countries work together to slow global warming, it makes no sense to build where rising sea water will destroy whatever is built.

I am in favor of additional streamlining of wetlands restoration. This is the best way to preserve and protect Massachusetts land.

Sincerely,  
Christine Erb

**From:** [Christine Walsh](#)  
**To:** [DEP Wetlands \(DEP\)](#); [Waterways, DEP \(DEP\)](#); [Patrick O'Connor](#); [patrick.kearney@mahouse.gov](mailto:patrick.kearney@mahouse.gov)  
**Subject:** 12/22/2023 Proposed DEP Changes  
**Date:** Tuesday, April 30, 2024 8:37:50 PM

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To Whom It May Concern,

I was just notified of this 4th hand last night.

As a coastal resident, I believe the proposed regulations (as I understand them) would be catastrophic if implemented.

I am vehemently opposed.

Without proper vetting & discussion of the entirety of the impact to residents, business', towns etc. this is wholly irresponsible.

Sincerely,

Christine R. Walsh



**From:** [Christopher Silvia](#)  
**To:** [DEP Wetlands \(DEP\)](#)  
**Subject:** Wetlands-401 Resilience Comments  
**Date:** Tuesday, April 30, 2024 1:03:48 PM

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**CAUTION:** This email originated from a sender outside of the Commonwealth of Massachusetts mail system. Do not click on links or open attachments unless you recognize the sender and know the content is safe.

Dear MassDEP,

I would like to respectfully submit a comment to the Wetlands Protection and Water Quality Certification Regulations for Stormwater Management

I ask the DEP to extend shared use paths exemptions to all shared use paths, not only shared use paths in abandoned rail beds.

Section 10.24(8), "Public Shared Use Paths within abandoned rail beds", should be amended to "Public Shared Use Paths, including not limited to paths within abandoned rail beds".

I ask MassDEP to consider making the first sentence of the redlined section as follows:

"Public Shared Use Paths, including not limited to paths within abandoned rail beds: The construction of a Public Shared Use Path, or the minor improvement, repair, and/or replacement of an existing Public Shared Use Path; provided that it is carried out in accordance with the following conditions and any additional conditions deemed necessary by the Issuing Authority."

Thank you for consideration of my comment. Best wishes,  
Christopher Silvia  
Woburn, MA





April 30, 2024

Massachusetts Department of Environmental Protection  
BWR Wetlands Program  
Attn: Wetlands - 401 Resilience Comments  
100 Cambridge Street, Suite 900  
Boston, MA 02114

**RE: 310 CMR 10.00 Draft Regulations and Proposed Revisions to the Stormwater Handbook**

*By Electronic Submission to [dep.wetlands@mass.gov](mailto:dep.wetlands@mass.gov)*

Ms. Rhodes and MassDEP Wetlands Team,

We want to thank the Department of Environmental Protection (Department) for the extended opportunity to provide feedback on the proposed 310 CMR 10.00 Wetlands Protection Act Regulations and Massachusetts Stormwater Handbook (collectively, the “Draft Regulations”).<sup>1</sup> We appreciate the Department’s extensive work and stakeholder engagement on these important issues, including the need to meaningfully build resilience to flooding, both as it occurs now and as it is projected to increase in the future due to climate change.

In this context, resilience is measured from multiple perspectives, including (i) the capacity of Resource Areas to absorb stormwater and precipitation, and (ii) the protection of residents, buildings, infrastructure and government services from adverse impacts of flooding. While the former often contributes to the latter, protecting our residents will at times require a more nuanced approach to our regulation of Resource Areas. For example, resilience measures to reduce flood risks may require altering or even reducing a Resource Area or Buffer Zone. This type of balancing is not new but may need to become more frequent as we strive for a resilient future on a holistic basis.

At a high level, our comments focus on four principles that the Draft Regulations should advance:

1. **Prioritizing and enabling resilience projects**, including by allowing certain resilience projects to fill or alter Resource Areas, reduce Land Subject to Coastal Storm Flowage,

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<sup>1</sup> The City also submitted comments on the Department’s draft 310 CMR 9.00 Massachusetts Waterways Regulation on April 30, 2024.

and redirect coastal water energy or flood water. The Draft Regulations should also allow smaller nature-based resilience projects to proceed without a Notice of Intent, streamline the application and review process for other resilience projects with public benefits, and authorize Conservation Commissions to require resilience measures for historic structures.

2. **Prioritizing nature-based solutions where feasible**, including as stand alone measures to address shoreline resilience and stormwater management or as part of hybrid solutions. Because the feasibility of nature-based solutions, including Environmentally Sensitive Site Design (ESSD) and Low Impact Development (LID) techniques and practices, will vary based on community, site and project characteristics, the Draft Regulations should include a more nuanced analysis of when such measures are feasible.
3. **Avoiding disproportionate burdens in dense urban and environmental justice neighborhoods**, including by ensuring that the prioritization of ESSD and LID and setback requirements for stormwater management systems do not have outsized impacts in densely developed neighborhoods due to space constraints. Because many environmental justice neighborhoods are in densely developed areas, this raises concerns about who will bear higher costs of compliance or forgo new projects that could alleviate the impacts of flooding. The Draft Regulations should provide Conservation Commissions more flexibility in determining how requirements, like setbacks, apply in densely developed areas. (The Riverfront Protection Act is an example of a state law that reflects different standards for urban areas.)
4. **Minimizing administrative burdens**, including by reducing permit and review requirements for work with de minimis impacts, increasing the maximum term of scientific research projects, and providing accessible data and guidance.

Given how difficult it is to create a “one size fits all” regulation for the diverse array of Resource Areas and communities in the Commonwealth, we appreciate that the Draft Regulations continue to set a floor for action while allowing municipalities to tailor requirements for their jurisdictions. Additional flexibility is needed to ensure that local conditions are reflected.

We respectfully request the Department to adopt the recommendations in this letter when it finalizes the Draft Regulations. Coastal flooding and increased precipitation is already impacting the City and the region; we cannot delay in building resilience measures. To the extent the Department elects to reserve certain issues for a second phase of revising the regulations, we encourage the Department to authorize pilot resilience projects in the interim.

The guiding principles and examples of their application are discussed in greater detail in Sections I-IV below. Section V is a table that aligns specific comments and recommendations with the relevant sections of the Draft Regulations. These comments generally focus on recommendations relevant to coastal resilience; we look forward to a greater focus on inland resilience during the Resilience 2.0 process.

## **I. Prioritize and Enable Resilience Projects**

The need to increase resilience to current and future flooding due to tidal and high frequency storm events is underscored in multiple reports from the Commonwealth and City. Since Boston's founding in 1630, the City's footprint has increased considerably as tidal marshes were filled to build entire neighborhoods. This means that much of the City's coastline consists of filled land just above high tide, leaving coastal areas at risk from flooding and sea level rise. While we no longer create large swathes of new filled land, we need to protect what was developed over the last several hundred years, including the housing, jobs and infrastructure that has been built on this land.

We appreciate the initial steps the Draft Regulations take to strengthen resilience from coastal and inland flooding, including integrating the use of updated data<sup>2</sup> and continuing to allow municipalities to require the use of reliable local data. However, more needs to be done to address challenges to resilience projects. Specific recommendations are provided below.

### **A. Allow Resilience Projects to Fill or Alter Resource Areas**

There needs to be greater flexibility in allowing resilience projects to impact Resource Areas. The Draft Regulations address this issue in part, *e.g.*, allowing certain conversions of Resource Areas (Section 10.24(b)), but there are also scenarios when resilience-related projects should be allowed to impact or reduce, without converting or replicating, Resource Areas. Authority for Conservation Commissions to approve resilience projects that impact or reduce Resource Areas should be in connection with existing buildings and infrastructure and redevelopment and maintenance of such structures, not to create resilience for new development. Examples of scenarios where impact to or reduction of Resources Areas should be allowed include the following:

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<sup>2</sup> An example is the inclusion of more current precipitation data (NOAA Atlas 14+). To support the continued relevance of the regulations, data sets should be tied to periodic updates rather than presented as static information. Thus, references to NOAA Atlas 14+ data should be to "NOAA Atlas 14+ data or the most recent data adopted by NOAA." *See e.g.*, 310 CMR Sections 10.05(6)(k)(2), 10.05(6)(k)(4)(e), 10.57(2)(a)(3)(a) and 10.57(2)(a)(4) and references to NOAA Atlas 14+ data throughout the Stormwater Handbook. NOAA Atlas 15 is currently under development and would include future climate projections. This would mirror the Draft Regulations' reference to [resilientma.org](http://resilientma.org), a living source that is periodically updated, for information on current mapping of shoreline change. To support ongoing use, references to websites should be paired with a title/definition of the linked material in case a weblink breaks in the future.

- Impacting a Resource Area when the work will contribute to the long-term viability of a Resource Area. The review of resilience projects should be informed by a long-term view of the impacts. For example, adding a thin layer of deposition to a site may be treated as filling a Resource Area but will provide long-term sustainability of the Resource Area in the face of future climate impacts.<sup>3</sup> (Akin to what is allowed for nourishment at coastal beaches in 310 CMR 10.27(5)). Prohibiting work *now* because it could impact a Resource Area may actually contribute to the long term loss of such Resource Area.
- Impacting a Resource Area when the work will contribute to the resilience of neighboring residents and property: Some coastal resilience measures, such as building bioswales and other nature-based solutions under buildings on piers, would require work on land under the ocean or other Resource Area, thereby technically adding fill to a Resource Area. Such measures are often preferable to adding hard infrastructure, such as a seawall farther from shore, so should be allowed when developing resilience for (i) existing buildings and infrastructure and (ii) the redevelopment/renovation of existing buildings and infrastructure. [[Table Section, 10.25\(3\)](#)]
- Reducing Land Subject to Coastal Storm Flowage in developed and largely impermeable areas. The need for a nuanced balancing of resilience goals, including protection of natural and human resources, is highlighted by how we treat Land Subject to Coastal Storm Flowage (LSCSF) (Section 10.36). When a coastal area is largely undeveloped and permeable, there is value in keeping it open as a pathway for water in order to protect neighboring and inland property. However, once a coastal area is built out with predominantly *impermeable* surfaces, it can no longer provide the same benefits. In a developed area, resilience for residents and buildings can be achieved by *reducing* the amount of LSCSF on-site.<sup>4</sup> To reflect these dynamics, the Draft Regulations should (i) revise the assumption that LSCSF are “per se significant” for storm damage prevention and flood control to distinguish between open areas in LSCSF versus densely developed impermeable areas in LSCSF; (ii) amend the performance standard for LSCSF so that climate resilience projects that deflect water would be allowed and (iii) provide that densely developed impermeable areas in LSCSF can be altered or reduced if a project will improve resilience for existing buildings or infrastructure in the area. Revisions to

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<sup>3</sup> Raposa, K., K. Wasson, J. Nelson, M. Fountain, J. West, C. Endris, and A. Woolfolk. 2020. “Guidance for Thin-Layer Sediment Placement as a Strategy to Enhance Tidal Marsh Resilience to Sea-Level Rise.” Published in collaboration with the National Estuarine Research Reserve System Science Collaborative. (finding “there may be a trade-off between optimizing long-term sustainability of a marsh and decreasing vegetative cover in the short term.”)

<sup>4</sup> A similar analysis should be considered for inland land subject to flooding.

the Draft Regulations beyond those recommended in Section V of this letter are needed to address these points. [[Table Section, 10.36\(8\)\(a\)](#)]

- Redirecting water energy or flood waters from coastal projects. While it is important to consider whether and how projects may deflect water onto neighboring sites, this is an issue of much greater concern for projects that affect a finite body of water like a river or pond. Unlike these finite bodies, where hydrological equilibrium can be affected by a large project, the scale of the ocean means that any water redirection from coastal resilience projects is unlikely to have more than de minimis impacts (beyond occasional wave action). Thus the redirection of water to another Resource Area, or to property outside of Resource Areas, should not be an absolute bar to coastal resilience projects; a more nuanced approach, such as a threshold for redirection of water, would better reflect natural conditions. [[Table, Section 10.36\(8\)\(f\)](#)]

These recommendations do not support only a future need; ongoing projects demonstrate that communities need this flexibility now. An example is the City of Boston's and City of Revere's joint Resilient Bennington Street and Fredericks Park Project.

**Project Example: The City of Boston's and City of Revere's joint Resilient Bennington Street and Fredericks Park Project**

The cities identified this project as a near-term priority for coastal resilience due to current extensive flooding and extreme flood risk in 2030 for environmental justice communities in East Boston and Revere. The project's goal is to use nature-based and hybrid solutions to (i) reduce near- and long-term flood risk to surrounding residences and the MBTA Blue Line, (ii) improve public safety, multi-modal transportation, and recreational open space and (iii) enhance the habitat value of Belle Isle Marsh. Adding a vegetative berm is the preferred solution as it would protect important community assets from flooding, including Beachmont Veterans of Foreign Wars, Fredericks Park (which serves as an open space for schools and the community), and residential housing that is currently flooding during high tide. However, a small section of the vegetative berm would go through a salt marsh that is currently filled with phragmites and in a degraded condition. Constructing the berm at a gradual slope could provide opportunities for marsh migration as sea levels rise and offset the impacts to the salt marsh Resource Area. Alternative solutions would not protect as many assets and would leave environmental justice and priority populations exposed to flooding.

B. Allow Certain Resilience Projects as of Right and Streamline the Application and Review Process for Resilience Projects with Public Benefits

Certain smaller-scale resilience projects that protect existing development or that are implemented in connection with the renovation/redevelopment of previously developed areas should be allowed as of right, without the filing and review of a Notice of Intent. Such projects should be reflected in the list of minor activities allowed without a Notice of Intent, *e.g.*, Sections 10.02(2)(a) and (b). The Draft Regulations could establish criteria for what qualifies as an exempt minor resilience project or delegate such authority to Conservation Commissions. (A hybrid approach would be for the Draft Regulations to include guiding criteria that municipalities could revise to reflect local needs and priorities.) Examples of such criteria could include: the square footage that will be directly impacted by a project; the type of activity, *e.g.*, nature-based activities or repairs to existing hard infrastructure or “Fill” authorized by G.L. ch. 91; and the expected impact to neighboring properties, *e.g.*, de minimis or insignificant change in water flow patterns or volumes. [[Table, Section 10.02\(a\)](#) and [Table, Section 10.02\(b\)](#)]

While a resilience project could seek a variance from the Department under the existing regulations, the commentary to the existing regulations provides that variances are “intended to be employed only in rare and unusual cases.”<sup>5</sup> The Draft Regulations should delegate authority to Conservation Commissions to issue variances (pursuant to Section 10.05(10)) and issue Orders of Conditions (pursuant to Section 10.24(7)) for resilience projects that are consistent with state or municipal plans to minimize or mitigate the impacts of flooding from sea level rise, storms, precipitation or other events. [[Table, Section 10.05\(10\)](#) and [Table, Section 10.24\(7\)](#)]

C. Allow Conservation Commissions to Require Resilience Measures for Historic Structures

Historic structures should not have a blanket exemption from resilience-related measures, such as elevation requirements for redevelopment in LSCSF (Section 10.36(8)(e)). Historic preservation cannot operate in a vacuum; preservation efforts must account for how the environment, including the impacts of climate change, will affect protected resources. The value of historic structures is dependent on them existing in the future. For example, maintaining the facade of a historic structure will lose meaning if part of it is under water or if a building is so damaged by flooding that it cannot be maintained. We need to act proactively to implement measures that can mitigate anticipated adverse climate affects, such as rising sea levels. Conservation Commissions should have the discretion to require, after consultation with any local historic commission, integration of resilience measures in projects involving historic structures. [[Table Section, 10.36\(8\)\(e\)](#)]

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<sup>5</sup> CRM 10.05 Commentary



## II. Prioritizing Nature-based Solutions Where Feasible

The City supports the Draft Regulations' consideration of feasible nature-based, Environmentally Sensitive Site Design (ESSD) and Low Impact Development (LID) measures prior to pursuing alternative options for shoreline resilience and stormwater management. This aligns with the City's focus on green infrastructure but recognizes that, particularly in densely developed urban areas, we need to keep the full suite of options open as we pursue resilience measures over the coming years and decades. As discussed in [Section III](#), Conservation Commissions should have the flexibility to assess the feasibility of nature-based solutions, ESSD and LID measures in accordance with local conditions and the characteristics of projects and applicants.

### A. Benefits of Nature-Based, ESSD and LID Measures

Numerous reports emphasize that living shorelines<sup>6</sup> can be a more effective tool than gray stormwater infrastructure for managing competing goals along the waterfront because of their various co-benefits, such as ecosystem benefits, lower costs and public access. Research has also found that living shorelines can be an effective mechanism against sea level-related threats such as erosion, floods, storm surge, rising-sea levels and tidal floods. From a coastal perspective, nature-based approaches can be used in multiple ways, including to:

- Soften or replace existing gray infrastructure;
- Increase the capacity of existing gray infrastructure to meet projected flooding and related risks; and/or
- Take the place of new gray infrastructure.

The feasibility of these options will vary by shoreline features, location and type of development.

Nature-based solutions (often described as or as including green infrastructure) as a tool for reducing flooding and pollutant runoff from stormwater similarly present co-benefits. In addition to their stormwater management functions, green infrastructure can reduce urban heat islands, add habitat value, improve air quality, and provide mental health benefits. We appreciate that the Draft Regulations promote a variety of ESSD and LID techniques and practices and retain the authority for Conservation Commissions to further prioritize specific ESSD and LID measures, either generally or in specific contexts. For instance, the ESSD and LID techniques and practices in the Draft Regulations can be further broken into two groups, vegetative (green) and non-vegetative (hard surfaces), which can provide different co-benefits. To support applicant adoption and municipal evaluation of ESSD and LID measures, the Department could

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<sup>6</sup> In this context living shorelines refer to planted or built infrastructure that adopts at least some green shoreline elements to support a coastal or riverine ecosystem.

issue guidance detailing the various co-benefits provided by the techniques and practices listed in the Draft Regulations.

#### **B. Feasibility of Nature-Based, ESSD and LID Measures**

The feasibility of nature based solutions will vary by location and type of development. For instance, much of the shoreline in Boston is already hardened and includes dense commercial and residential development. In these locations, the opportunities for softening the shoreline may focus on hybrid shoreline infrastructure, which combines gray and nature-based features, or green enhancements to existing gray shoreline infrastructure. We therefore support provisions in the Draft Regulations that allow for the repair and maintenance of existing coastal engineering structures to preservice structural integrity in the V-Zone and MoWA Zone (Section 10.36(6)(d)). [[Table, Section 10.24\(1\)\(b\)](#)]

The Draft Regulations should also explicitly permit upgrades to existing coastal engineering structures to increase capacity to account for current and projected conditions, including sea level rise (as is allowed in V-Zones and MoWA Zones of LSCSF, Section 10.36(8)(g)). While such upgrades should consider nature-based solutions as a first step, the work should not be limited to nature-based solutions. This recognizes the resources that have already been invested into existing infrastructure and the important protections they provide.

The feasibility of ESSD or LID responses to stormwater management may also be affected by factors such as lot size and building footprints, either directly or indirectly by leading to significantly higher costs. As discussed in Section III, we need to assure that the preference for ESSD and LID measures does not inadvertently create inequitable burdens on residents based on their location and local development patterns.

### **III. Avoid Disproportionate Burdens in Environmental Justice and Dense Urban Neighborhoods**

While the focus in the Draft Regulations on nature-based solutions, including ESSD and LID measures for addressing stormwater management, is important, the feasibility assessments for such measures must take into account local conditions. For instance, Section 10.05(6)(k) requires applicants to use ESSD and LID techniques to attenuate pollutants unless “Impracticable,” with impracticability measured solely in terms of physical space constraints. In densely developed areas, where lots are built to or close to property lines, even where a measure may be technically feasible, it could cost significantly more than a similar measure at a lot with a large amount of open space. This dynamic raises equity concerns given that many environmental justice neighborhoods are in densely developed areas. Due to these concerns, the regulations should explicitly note that new construction and Redevelopment projects that are required to use ESSD and LID techniques unless “Impracticable” or to the “Maximum Extent Practicable” (*e.g.*,

Sections 10.05(6)(m) and 10.05(6)(k)(7)) may consider a range of factors, including additional costs, in conducting this analysis.<sup>7</sup>

While ESSD and LID solutions on small spaces could be more expensive, they may not always be so. To ensure maximum practicable adoption of ESSD and LID measures that do not disproportionately financially burden residents in developed areas, Conservation Commissions should be able to consider other forms of “impracticability” or “practicability” on a case-by-case basis. For instance, Conservation Commissions should be able to consider factors such as:

- The size of the lot;
- The type and extent of existing lot coverage, *e.g.*, building footprints, underground utilities, or other structural elements that may limit the installation of ESSD or LID measures;
- The size and type of the proposed project for which stormwater management work is being done, *e.g.*, projects to create resilience versus new development or substantial reconstruction;
- For residential projects, whether the project includes deed-restricted affordable units and the income-level of the project owner, *e.g.*, low-income as defined by area median incomes; and
- Whether the cost of installing ESSD or LID measures would significantly increase the total project costs.<sup>8</sup>

This information could be integrated into the written alternatives analysis that applicants are already required to prepare to demonstrate ESSD and LID techniques are impracticable. To support the development of affordable housing, Conservation Commissions should have the discretion to waive some or all of the required written alternative analysis for housing projects and redevelopment projects that have deed-restricted affordable units or are owned by low-income individuals. [Section 10.05(6)(k)(3), 10.05(6)(k)(4) and 10.05(6)(k)(7)] [[Table, Section 10.05\(6\)\(o\)](#)]

The Draft Regulations’ proposed setback requirements for stormwater management systems (Section 10.05(6)(q)) could similarly have outsized impacts on projects in densely developed areas due to space constraints, and in some instances would prevent systems with demonstrated

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<sup>7</sup> The Stormwater Handbook seems to indicate that new construction and redevelopment projects should consider the feasibility of implementing ESSD and LID techniques [Page 4-19] and defines “infeasible” for purposes of stormwater management as “not technologically possible, or not economically practicable and achievable in light of best industry practices.” [Page viii]

<sup>8</sup> This type of analysis would more closely mirror the definition/determination of whether work is “practicable” (Section 10.04).

success. For example, existing projects in Boston have stormwater management systems in or under buildings that could be prevented in the future because of the proposed setback from building foundations. Underground harvesting tanks aid in resilience and storage in flood prone areas by storing flood waters until the storm subsides. Systems in smaller setback areas can be designed to protect buildings by, for example, requiring the use of impermeable liners.

**Project Examples:** Buildings in Boston with stormwater management systems in the building footprints.

- ❖ A high rise residential building with over 100 units has a storage tank in the basement connected to injection wells on the exterior of the building. The injection wells are protected by roadway boxes in the sidewalk and are used as inspection ports for maintenance.
- ❖ Another building has a recharge chamber system under the building with inspection ports for maintenance at grade of the basement.

We appreciate that the Department has indicated that it will revisit the setback requirements. One approach would be to (i) adopt smaller setback requirements for densely developed areas, including removing limitations on systems in or under buildings<sup>9</sup> and (ii) condition the imposition of setbacks on a feasibility analysis conducted by Conservation Commissions.<sup>10</sup> Such feasibility analysis could consider factors similar to those proposed above for evaluating the practicability of ESDD and LID measures. [[Table, Section 10.05\(6\)\(q\)](#)]

#### **IV. Minimizing Administrative Burdens**

The Wetlands Protection Act and Rivers Protection Act provide critical services, but as with any law, successful implementation requires time and work by applicants and administrators. Opportunities to support compliance and reduce administrative burdens should be pursued. Examples in the Draft Regulations include: expanding the set of minor activities that do not require a Notice of Intent; creating a permitting pathway for scientific research projects; and improving access to relevant data. The Department should continue to look for and integrate mechanisms that reduce administrative burdens, including as follows:

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<sup>9</sup> A precedent for this would be the Riverfront Protection Act's reduction of jurisdictional areas in densely developed communities.

<sup>10</sup> For example, the Philadelphia Water Departments's Stormwater Management Guidance Manual includes exceptions for bioretention area setbacks from property lines and building foundations, including waiving the minimum setback for existing and proposed buildings with basements if the basin is a water-tight planter box with its own structural integrity (pg. 17/234).

- Allow more work as-of-right: As discussed in Section I, the regulations should allow additional minor activities to proceed without a Notice of Intent, including resilience and accessibility-related projects and other work with small footprints (Section 10.02(a) and (b)). Where Conservation Commission approval is required, the Department should evaluate additional opportunities to utilize administrative reviews. [[Table, Section 10.02\(a\)](#) and [Table, Section 10.02\(b\)](#)]
- Increase the duration of scientific research projects: Scientific research projects (Section 10.05(12)) are an important tool to ensure that anticipated benefits for adaptation and resilience of Resource Areas are effective and to protect residents, buildings, and infrastructure from the impacts of climate change, including rising sea levels and flooding. In many instances, the effectiveness of a research project may require longer than a year to gather sufficient data, *e.g.*, projects that need multiple sampling sessions or require sufficient growing time to provide measurable benefits. Requiring applicants to re-apply, and Conservation Commissions to re-issue, Orders of Conditions for research projects on an annual basis will be burdensome. The regulations can integrate sufficient safety measures to allow Conservation Commissions to issue multi-year Orders of Conditions. [[Table, Section 10.05\(12\)\(b\)\(4\)](#)]
- Tailor certain reporting or data collection requirements to the size and type of a project: As discussed in Section III, Conservation Commissions should have the discretion, in certain situations, to waive some or all of the required written alternative analysis for housing projects and redevelopment projects that have deed-restricted affordable units or are owned by low-income individuals. [[Table, Section 10.05\(6\)\(o\)](#)]

The requirements for soil testing specified in Section 6.3.3 of the Stormwater Handbook are important, but could also be tailored to reduce implementation burdens. For instance, the number of tests required during the design phase of a project has the potential to do more harm than good. For example, if recharge systems are proposed within a roadway or sidewalk, test pits will necessitate temporary patching of the pavement, which will remain in that condition until construction (which in some cases could take years). These impacts, and the burdens they create, can be reduced by (i) requiring a smaller number of test pits to determine infiltration capacity, soil texture, and seasonal high groundwater in the general vicinity of the proposed recharge system during site design and assessment and (ii) adding a requirement in the Order of Conditions to conduct additional test pits to confirm soil assumptions during the start of construction. Additionally, a Soil Evaluator

pursuant to 310 CMR 15.017 and 15.018 should be considered a Competent Soil Professional as defined by the Draft Regulations.<sup>11</sup> [[Table, Section Definitions](#) and [Table, Section 6.3.3](#)]

- Provide accessible data and guidance: Regulations and accompanying materials that are easy to access and interpret can support compliance and reduce administrative and capacity burdens. We appreciate that the Department intends to release guidance for Conservation Commissions regarding changes in the regulations (which would also be helpful for applicants). It would also be helpful to provide clear maps of LSCSF and the relevant zones (Section 10.36(3)), preferably via an online platform that is searchable. Many stakeholders have raised questions and concerns about identifying LSCSF zones on current FEMA maps.

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<sup>11</sup> Soil Evaluators gain more knowledge related to soil textural analysis, seasonal high groundwater evaluation and saturated hydraulic conductivity testing than a Registered Professional Engineer (PE) or an Engineer in Training (EIT) may have from their accredited college courses.



## V. Specific Comments and Recommendations

The following table proposes line edits to various sections of the Draft Regulations. These proposals do not necessarily include all revisions required to fully implement the recommendations in Sections I-IV.

Table: Specific recommendations regarding the Draft Regulations

310 CMR 10.00: WETLANDS PROTECTION ACT	
Section	Comments and/or Recommendation
<b>10.01(2)</b> Purpose	<p>To reflect the importance of promoting resilience in the face of climate change, the interests for which Resource Areas are regulated should be expanded to include “mitigate impacts from climate change.”</p> <p><u>Revise Draft Regulations as follows:</u></p> <p>10.01(2)</p> <p>“Purpose. M.G.L. c. 131, § 40 sets forth a public review and decision-making process by which activities affecting Areas Subject to Protection under M.G.L. c. 131, § 40 are to be regulated in order to contribute to the following interests:</p> <p>...</p> <p><b>-mitigate impacts from climate change”</b></p> <p>The definition of “Interests of the Act” in Section 10.23 and references in the Stormwater Management Handbook to the interests identified in the Act should be similarly updated.</p>
<b>10.02(2)(a)</b> Activities Within the Areas Subject to Protection under M.G.L. c. 131, § 40	<p>Allow more minor activities in Resource Areas without a Notice of Intent, including resilience projects and work to comply with accessibility requirements.</p> <p><u>Revise Draft Regulations as follows:</u></p> <p>Add Section 10.02(2)(a)(4)</p> <p><b>“4. installation of a pedestrian ramp, stairs, or railings if such project (i) is for accessibility purposes at a private building and will permanently impact less than 250 sq. ft. of a Resource Area, (ii) is for compliance with 521 CMR 1.00 <i>et seq.</i>, or (iii) is a reasonable modification under the Fair Housing Act, 42 U.S.C. Ch. 45.”</b></p>

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Add Section 10.02(2)(a)(5):

“5. minor resilience projects in any Resource Area provided that the work is performed in a manner so as to reduce the potential for any adverse impacts to the Resource Area during construction, and with post-construction measures implemented to stabilize any disturbed area. For purposes of this section, projects shall be deemed minor if they:

- (a) Help redress flooding at areas that are already developed or predominantly covered in impervious surfaces;
- (b) Utilize nature-based solutions;
- (c) Permanently impact less than 1,000 sq. ft. of a Resource Area;
- (d) Will be implemented without staging heavy equipment in more than 1,000 sq. ft. of a Resource Areas;
- (e) Are not located in an Area of Critical Environmental Concern; and
- (f) Will not deflect a significant amount of water onto surrounding properties.”

Add Section 10.02(2)(a)(6):

“5. Any activity that permanently impacts less than 100 sq. ft. of a Resource Area.”

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**10.02(2)(b) Activities Within the Buffer Zone**

Allow more minor activities within Buffer Zones without a Notice of Intent, including resilience projects and work to comply with accessibility requirements.

Revise Draft Regulations as follows:

Amend 10.02(2)(b)(2):

“e. The conversion of lawn to uses accessory to residential structures such as decks, sheds, patios, pools, replacement of a basement bulkhead and the installation of a ramp, stairs, or railings for compliance with accessibility requirements or to meet accessibility needs at private residences, provided the activity, including material staging and stockpiling is located more than 50 feet from the mean annual high-water line within the Riverfront Area, Bank or from Bordering Vegetated Wetland, whichever is farther, and erosion and sedimentation controls are implemented during construction. The conversion of such uses accessory to existing single family houses to lawn is also allowed. (Mowing of lawns is not subject to jurisdiction under 310 CMR 10.00);

b. Fencing, stairs, railings, or bicycle racks provided it will not constitute a barrier to wildlife movement; stonewalls; stacks of cordwood.

f. The conversion of impervious to vegetated or pervious surfaces, provided erosion and sedimentation controls are implemented during construction;

s. Nature-based resilience projects that will permanently impact less than 1,000 sq. ft. of a Resource Area.

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t. The installation of a pedestrian ramp, stairs, or railings if such project (i) is for accessibility purposes at a private building and will permanently impact less than 250 sq. ft. of a Resource Area, (ii) is for compliance with 521 CMR 1.00 *et seq.*, or (iii) is a reasonable modification under the Fair Housing Act, 42 U.S.C. Ch. 45.

u. Any activity that permanently impacts less than 100 sq. ft. of a Resource Area.”

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## Definitions

### 10.04 Definitions

Alter: The existing definition of alter is already broad and the revision proposed by the Draft Regulations could cause confusion in interpretation. As such, we recommend that the regulations retain the current definition of Alter.

Impracticable: To ensure maximum practicable adoption of ESSD and LID measures that do not disproportionately financially burden residents in developed areas, Conservation Commissions should be able to consider other forms of “impracticability” on a case-by-case basis.

Revise Draft Regulations as follows:

Section 10.04: Impracticable

“Impracticable for use in 310 CMR 10.05(6)(k)-(q) for purposes of stormwater management means impossible in practice to do or carry out based ~~solely~~ on: (i) physical constraints; (ii) lot size; (iii) type and extent of existing lot coverage, including building footprints and underground utilities; (iv) proposed use; (v) for residential projects, whether the project includes deed-restricted affordable housing or is owned by low-income individuals based on Area Median Incomes; and (vi) whether the cost of ESSD or LID techniques or practices would significantly increase the total cost of a project or whether the cost of complying with Stormwater Management Standards would significantly increase the total cost of a Redevelopment project.”

Low Impact Development: Remove the qualification of “innovative” from the definition of Low Impact Development (LID) so as not to inadvertently prevent the use of measures that have been successfully demonstrated.

Revise Draft Regulations as follows:

“Low Impact Development (LID) means ~~innovative~~ stormwater management systems that are modeled after natural hydrological features.”

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## Stormwater Management Standards

<b>10.05(6)(k)</b>	<p>To support coastal resilience work, the Draft Regulations should allow alteration or fill to land under ocean for the impoundment or detention of stormwater.</p> <p><u>Revise Draft Regulations as follows:</u> 10.05(6)(k), Sentence 6: “Additionally, no Area Subject to Protection under M.G.L. c. 131, § 40, other than Bordering Land Subject to Flooding, isolated land subject to flooding, Land Subject to Coastal Storm Flowage, <del>or</del> Riverfront Area, <b>or land under ocean</b>, may be altered or filled for the impoundment or detention of stormwater, infiltration, the control of sedimentation or the attenuation of pollutants in stormwater discharges, and the applicable performance standards shall apply to any such alteration or fill in the aforementioned other areas.”</p>
<b>10.05(6)(l)</b> Projects Not Subject to Stormwater Management Standards	<p>Include certain nature-based resilience projects in the list of projects to which the Stormwater Management Standards do not apply.</p> <p><u>Revise Draft Regulations as follows:</u> 10.05(6)(l), add (6) “<b>6. Nature-based resilience projects provided that there are no new Impervious Surfaces and that any deflection of water will have negligible impacts on surrounding properties.</b>”</p>
<b>10.05(6)(o)</b> Projects proponents seeking to demonstrate compliance with some or all of Stormwater Management Standards to the Maximum Extent Practicable	<p>To help project proponents understand what information needs to be included in a written alternatives analysis (as part of demonstrating compliance with some or all of the Stormwater Management Standards to the Maximum Extent Practicable), the Draft Regulations should clarify that the written alternatives analysis should be prepared in accordance with Section 6.1.4 of the Stormwater Handbook. To support the development of affordable housing, Conservation Commissions should have the discretion to waive some or all of the required written alternative analysis for housing projects with deed-restricted affordable units or owned by low-income individuals.</p> <p><u>Revise Draft Regulations as follows:</u> 10.05(6)(o)(2) “2. They have made a written alternatives analysis, <b>in accordance with section 6.1.4 of the Stormwater Management Handbook</b>, of possible stormwater management measures including ESSD and LID techniques or practices that minimize land disturbance and Impervious Surfaces, structural SCMs, BMPs, pollution prevention, erosion and sedimentation control, and proper operation and maintenance of stormwater.”</p>

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10.05(6)(o), add a new last sentence

“The Issuing Authority may, at its discretion, waive some or all of the written alternative analysis requirements for housing and multifamily housing development and Redevelopment projects that include deed-restricted affordable housing or are owned by low-income individuals based on Area Median Income. For multifamily housing, Conservation Commissions shall set the percentage of units that must be affordable for a partial or complete waiver.”

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**10.05(6)(q) Minimum Setbacks**

The Draft Regulations’ proposed setback requirements for stormwater management systems could have outsize impacts in densely developed urban areas and environmental justice communities in these areas. Alternative setback requirements should be added for densely developed areas, including removing obstacles to stormwater management systems in or under buildings. Regardless of whether the setback requirements are revised, Conservation Commissions should have the discretion to adjust setback requirements.

Revise Draft Regulations as follows:

10.05(6)(q)

“The following minimum Setbacks from any component of a Stormwater Management System shall be met **unless an Issuing Authority determines that a smaller setback would be reasonable in light of (i) physical constraints; (ii) lot size; (iii) type and extent of existing lot coverage, including building footprints and underground utilities; (iv) proposed use; (v) for residential projects, whether the project includes deed-restricted affordable housing or is owned by low-income individuals based on Area Median Incomes; and (vi) whether the cost of complying with the minimum Setbacks would significantly increase the total cost of a project.**”

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**10.05(10) Variance**

As discussed in [Section I.B](#), Conservation Commissions should be able to issue variances for certain resilience projects.

Revise Draft Regulations as follows:

10.05(10), add a new paragraph (b)

“(b) Conservation Commissions may waive the application of any regulation(s) in 310 CMR 10.21 through 10.60 for resilience projects that are consistent with a state or municipal plan to minimize or mitigate the impacts of flooding from sea level rise, storms, precipitation or other events when the Conservation Commission finds that the conditions in 310 CMR 10.05(10)(a) are met. A request for such a variance shall be sent to the Conservation Commission in accordance with the requirements for filing a Notice of Intent.”

## Scientific Research

### 10.05(12)(a) General

Scientific Research Projects should be allowed with respect to impacts of climate change on any type of Resource Area, not just sea level rise effects on coastal areas.

Revise Draft Regulations as follows

10.05(12)(a), 1st sentence.

“The purpose of 310 CMR 10.05(12) is to establish procedures and standards for permitting Scientific Research Projects that are solely intended to gather information or test hypotheses on the ability of ~~coastal-wetland~~ Resource Areas to respond to the effects of climate change, ~~including or~~ sea level rise.”

10.15(12)(b)(2)

“the project must have as its sole goal the collection of data or testing of hypotheses directly related to the ability of ~~coastal-wetland~~ Resource Areas to respond to climate change. ~~With respect to sea level rise, projects should focus on responses to through-associated~~ changes in salinity, sediment distribution, flow patterns, chemistry of soils or water, changes in vegetation, or the capacity to reduce flooding and prevent storm damage;”

“Expertise in environmental science” should be defined broadly and as including indigenous knowledge. The Department should consider issuing guidance on determining expertise.

Revise Draft Regulations as follows:

10.05(12)(a), 3rd sentence

“The project shall be designed and conducted by an individual with the requisite expertise in environmental science. ~~Such expertise can be demonstrated through academic degrees, professional experience, indigenous knowledge, volunteer experience, or as otherwise provided in guidance issued by the Department.~~”

### 10.05(12)(b)(1) Eligibility Criteria

In establishing eligible applicants, the Draft Regulations should include (i) federally and state recognized tribes and (ii) nonprofit organizations without a qualifier that they focus on environmental issues.

Revise Draft Regulations as follows:

10.05(12)(b)(1)



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“1. The Applicant is an established entity or institution, such as a college/university, environmental agency, **a federally or state recognized tribe**, or ~~an environmental~~ nonprofit organization that demonstrates it has the requisite expertise in environmental science necessary to design and conduct the research;”

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**10.05(12)(b)(4)** Eligibility  
Criteria

Extend the maximum project duration from one year to three years with scheduled check-ins with the Issuing Authority. The proposed one year duration may limit the ability of projects to achieve the desired results, *e.g.*, projects may be seasonally dependent or require multiple growing seasons. Giving Conversation Commissions the discretion to grant longer approvals could reduce administrative burdens associated with needing to re-apply on an annual basis.

Revise Draft Regulations as follows:

10.05(12)(b)(4)

“4. the project shall be limited in duration to no longer than ~~one~~ **three** years, **provided that the Order of Conditions for any project with more than a one year term shall require the Applicant to submit updates to the Issuing Authority and, if requested, appear at a meeting at least once a year;**”

Revise 10.05(12)(e) to reflect this change.

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**10.05(12)(b)(5)** Eligibility  
Criteria

The Draft Regulations should allow the size of Project Sites to be measured as a percentage of a Resource Area that is being studied, without regards to property boundaries. For larger projects, the Draft Regulations could impose a maximum square footage that should not be exceeded. Larger project sizes could be conditioned on a requirement for lost Resources Areas to be replaced as required by an Issuing Authority. Project Sites that are too small could impair project success.

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**10.05(12)(c)(3)(f)** Notice of  
Intent

The Draft Regulations should reflect that Conservation Commissions may require projects to improve any disturbed Resource Areas, *e.g.*, by removing invasive species, rather than return them to pre-existing conditions.

Revise Draft Regulations as follows:

10.05(12)(c)(3)(f)

“ f. a plan for restoration of all disturbed Resource Areas to pre-existing conditions **or such other conditions specified by the Order of Conditions** and a schedule for completing the restoration before the Order of Conditions expires.”

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**10.24(1)(b)** General Provisions, work in any coastal Resource Area or Buffer Zone along the shoreline

As discussed in [Section II](#), nature-based solutions should be prioritized but as feasibility of these options may vary by shoreline features we need to keep the full suite of options open as we pursue resilience measures.

Revise Draft Regulations as follows:

10.24(1)(b), first sentence

“For work in any coastal Resource Area or Buffer Zone along the shoreline, the Applicant shall consider, and the Issuing Authority may require, the restoration, enhancement, or creation of wetland Resource Areas through natural methods and materials **or hybrid methods when feasible** as an alternative to coastal engineering structures to promote resiliency along the shoreline.”

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As discussed in [Section I](#), (i) Conservation Commissions should have the authority to authorize resilience projects that would fill or reduce a Resource Areas or Buffer Zone and (ii) the redirection of water to another Resource Area, or to property outside of Resource Areas, should not be an absolute bar to coastal resilience projects.

Revise Draft Regulations as follows:

10.24(1)(b), 5th and 6th sentences

“Notwithstanding the provisions of 310 CMR 10.24(2), the Issuing Authority may allow **(i)** the conversion of one Resource Area to other Resource Areas to achieve greater shoreline resiliency, but there shall be no loss of Salt Marsh, no alteration of Primary Frontal Dune, **(ii) fill or other impacts to Resource Areas or Buffer Zones to enable nature-based resilience projects that reduce or address the impacts of flooding on developed or redeveloped sites, and (iii) the reduction of Land Subject to Coastal Storm Flowage in developed and largely impermeable areas**~~and no cumulative net loss of or adverse effects on Resource Areas~~. The Issuing Authority shall confirm that the project will not cause **a significant** increase in flood velocity, volume, or elevation on other properties resulting in storm damage.”

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**10.24(5)(b)** Area of Critical Environmental Concern (ACEC)

Include flood resilience projects that are consistent with state or municipal plans to minimize or mitigate the impacts of flooding from sea level rise, storms, precipitation or other events as a type of work that can occur in ACECs.

Revise Draft Regulations as follows:

10.24(5)(b)

“(b) When any portion of a designated Area of Critical Environmental Concern is determined by the Issuing Authority to be significant to any of the interests of M.G.L. c. 131, § 40, any proposed project in or impacting that portion of the Area of Critical Environmental Concern shall have no adverse effect upon those interests, except as provided under 310 CMR 10.25(4) for

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maintenance dredging, under 310 CMR 10.11 through 10.14, 10.24(8) and 10.53(4) for Ecological Restoration Projects, **and** under 310 CMR 10.25(3) for improvement dredging conducted by a public entity for the sole purpose of the maintenance or restoration of historic, safe navigation channels or turnaround basins of a minimum length, width, and depth consistent with a Resource Management Plan adopted by the municipality(ies) and approved by the Secretary of the Executive Office of Energy and Environmental Affairs, **and flood resilience projects that are consistent with a state or municipal plan to minimize or mitigate the impacts of flooding from sea level rise, storms, precipitation or other events.”**

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**10.25(3) Land under the Ocean**

As discussed in [Section I.A.](#) of this letter, allowing resilience projects to fill Resource Areas will be beneficial in some situations.

Revise Draft Regulations as follows:

10.25, add a new (7)

**“(7) Nature-based resilience projects that are consistent with a state or municipal plan to minimize or mitigate the impacts of flooding from sea level rise, storms, precipitation or other events may alter Nearshore areas of land under the ocean so as to increase resilience to flooding, storm damage, or erosion.**

**(~~7~~8) Notwithstanding the provisions of 310 CMR 10.25(3) through (~~6~~7), no project may be permitted which will have any adverse effect on specified habitat sites of rare vertebrate or invertebrate species, as identified by procedures established under 310 CMR 10.37. ”**

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**Limited Projects**

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**10.24(7) Order of Conditions for Limited Projects**

Expand the projects that Issuing Authorities may approve pursuant to 10.24(7) to include resilience activities that are consistent with a state or municipal plan to minimize or mitigate the impacts of flooding from sea level rise, storms, precipitation or other events.

Revise Draft Regulations as follows:

10.24(7), add subsection (d)

**“The construction, reconstruction, operation and maintenance of resilience projects that are consistent with a state or municipal plan to minimize or mitigate the impacts of flooding from sea level rise, storms, precipitation or other events may be permitted as a limited project pursuant to 310 CMR 10.24(7) provided that the project is proposed to be constructed and operated in accordance with all applicable provisions of 310 CMR 10.24(1), 10.24(4)(a), 10.24(6) and 10.24(9)-(10).”**

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## Land Subject to Coastal Storm Flowage

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### 10.36(1) Preamble

As discussed in [Section I.A](#), the regulations should recognize that the value/functions of LSCSF are significantly decreased in areas that are densely developed and largely impermeable (versus in areas that are open space with large permeable areas).

Revise Draft Regulations as follows:

10.36(1), 1st paragraph

“(1) Preamble. Land Subject to Coastal Storm Flowage is likely to be significant to storm damage prevention and flood control. Land Subject to Coastal Storm Flowage reduces storm damage and flooding by diminishing and buffering the high energy effects of storms within the coastal floodplain; **the function of Land Subject to Coastal Storm Flowage may be impacted if surface areas are densely developed or highly impermeable.** Velocity Zones (V-Zones) and Moderate Wave Action Zones (MoWA Zones), the seaward areas of Land Subject to Coastal Storm Flowage, are particularly subject to hazardous flooding, wave impact, erosion, backrush, sediment transport, and scour. The V-Zones and MoWA Zones within Land Subject to Coastal Storm Flowage are per se significant to storm damage prevention and flood control **except when the area is densely developed and covered in highly impermeable surfaces.**”

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### 10.36(2) Definitions

Clarify that vegetative cover is not deemed an obstruction in the space below a building on Open Piles. As described in the Draft Regulations, such vegetation can “prevent erosion, slow moving water, and filter sediments”, so should be encouraged (10.36(1)).

Revise Draft Regulations as follows:

10.36(2), Open Piles

“Open Piles means the vertical structures supporting an elevated building, without grade beams below the base flood elevation, without concrete footings or pads, and where the space below the building is free of obstruction **(vegetative cover shall not be considered an obstruction).**”

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### 10.36(4)(a) Application of Performance Standards

Allow Conservation Commissions to set higher requirements to support the flow of flood water under new buildings. In areas where the shoreline or project site has already been modified to minimize or remove flood inundation risks from sea level rise or storms, it may not be necessary, or helpful, to design a building to allow flood water to flow under it. In such situations, Issuing Authorities should have the discretion to reduce or waive the elevation requirement.

Revise Draft Regulations as such:

10.36(4)(a)

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“(a) The construction of new buildings proposed within the MoWA Zone or an AO Zone adjacent to a V-Zone shall be designed to allow flood water to flow completely unobstructed under the building during the 1% annual change storm, with a minimum of **the higher of (i) two feet above the 1% annual chance base flood evaluation, or (ii) the elevation required to meet the standards 310 CMR 10.28 (Coastal Dunes), or (iii) an elevation required by the Conservation Commission, whichever is higher.** To the extent a shoreline or project site has already been modified to minimize or remove flood inundation risks from sea level rise or storms, an Issuing Authority may reduce or waive such height requirements when doing so would support resilience to flooding and be in the public interest.”

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**10.36(5)(a)** Adverse Effects in the V-Zone and MoWA Zone

As discussed in [Section I.A](#), there are situations in which resilience may be promoted by allowing non-significant redirection of water energy or flood waters.

Revise Draft Regulations as follows:

10.36(5)(a)

“(a) Impeding the ability of the area to dissipate wave energy and decrease the velocity of moving water **by more than a de minimis amount** by altering the area’s topography, vegetation, soil, and sediment characteristics (e.g., roughness, composition, size, shape and density of material) and the erodibility, transportability, and permeability of the soil and sediment;”

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**10.36(6)** Activities in the V-Zone and MoWA Zone

Clarify that the prohibition on “new construction of a building” in the V-Zone would not apply to adding new buildings to existing open piles<sup>12</sup>. The activities that the Issuing Authority may permit in the V-Zone and MoWA Zone should include (i) resilience related work, and (ii) a wider array of water dependent issues. For the latter, the uses should align with the definition of “water-dependent” in 310 CMR 9.00. (The definition in 310 CMR 9.00 may need revision, but it would make sense to use the same approach in both sets of regulations.)

Revise Draft Regulations as follows:

Amend 10.36(6) first paragraph and subsections (c) and (d)

“(6) Activities in the V-Zone and MoWA Zone. New construction of a building, including on Open Piles, is prohibited in the V-Zone, **provided however, that construction of a new building on existing Open Piles is allowed. . .**”

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<sup>12</sup> The definition of Redevelopment in 310 CMR 10.04 seems to address this point, but there could be ambiguity if an area contains both buildings and previously developed space.

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(c) Commercial or public boat launching facilities, elevated open rack boat storage facilities, navigational aids, piers, docks, wharves, ~~and dolphins and other water-dependent uses as that term is defined in 310 CMR 9.02.~~

(d) Repair and maintenance of an existing coastal engineering structure to preserve its structural integrity, ~~including the addition of nature-based features to accommodate current and projected levels of sea rise.”~~

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**10.36(8)(a)** Redevelopment  
Within Previously Developed  
LSCSF

As discussed in [Section I.A.](#), there are situations in which resilience may be promoted by (i) reducing LSCSF and (ii) allowing non-significant redirection of water energy or flood waters.

Revise Draft Regulations as follows:

10.36(8)(a)

“(a) At a minimum, proposed work shall result in ~~an improvement~~ improved resilience to the impacts of storm damage and flooding compared to ~~over~~ existing conditions. ~~of the capacity of the Land Subject to Coastal Storm Flowage to protect the interests of storm damage prevention and flood control to the maximum extent practicable.~~ Existing conditions may be improved by topographical alterations to provide flood storage, planting of vegetation, reducing impervious surfaces, increasing permeability, removing vertical impediments to flowage, and restoring or creating coastal Resource Areas where they do not currently exist or are currently covered by impervious surfaces. Where a previously developed coastal Resource Area has not been regulated under the applicable performance standards to protect the interests of flood control and storm damage prevention, the proposed work shall restore those interests to the extent practicable. ~~Where an area in Land Subject to Coastal Storm Flowage is densely developed with predominantly impervious surfaces, an improvement over existing conditions for storm damage prevention and flood control may result in the temporary or permanent loss of Land Subject to Coastal Storm Flowage;”~~

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**10.36(8)(e)**

In order to preserve and protect historic structures, provide discretion to Conservation Commissions to require the elevation of Redeveloped historic structures.

Revise Draft Regulations as follows:

10.36(8)(e)

“~~A Conservation Commission may, after consultation with the local historical commission, apply the elevation requirements identified in 310 CMR 10.36(8) to a Historic Structure.~~ Historic structures are otherwise exempt from the elevation requirements identified in 310 CMR 10.36(8).”



**10.36(8)(f)**

As discussed in [Section I.A.](#), not all redirection of wave energy or flood waters is problematic.

Revise Draft Regulations as follows:

10.36(8)(f)

“(f) The placement of fill for flood control purposes may be allowed in a MiWA Zone where impervious surfaces have predominantly replaced the natural coastal floodplain; provided that there shall be no **significant** redirection of wave energy or of flood waters to other properties, and other requirements of 310 CMR 10.36(7) and (8) have been met;”

**10.36(8)(g)**

As discussed in [Section I.A.](#), not all redirection of wave energy or flood waters is problematic.

Revise Draft Regulations as follow:

10.36(8)(g)

“(g) The elevation in height of an existing seawall or the construction of a berm with associated fill for flood control purposes in a V-Zone or a MoWA Zone of Land Subject to Coastal Storm Flowage in an area where impervious surfaces have predominantly replaced the natural coastal floodplain may be allowed when conducted by the public agency responsible for the infrastructure, or in the case of private seawalls or berms, when supported by the municipality. The Issuing Authority shall determine that the proposed work will achieve the objectives of promoting resiliency and effective flood control in the area while preserving floodplain functions to the extent practicable. The work shall not redirect wave energy or flood waters **in a way that would significantly negatively affect** ~~to~~ other properties or **significantly** impede the return flow of flood waters.”

**STORMWATER HANDBOOK**

**Section**

**Comments and/or Recommendation**

**Definitions**

Competent Soils Professional: As discussed in [Section IV](#) of these comments, a Soil Evaluator pursuant to 310 CMR 15.017 and 15.018 should be considered a Competent Soil Professional.

Revise the Handbook as follows (similar revisions should be made to footnote 93 on pg. 6-72)

“Competent Soils Professional. An individual with demonstrated expertise in soil science, limited to the following: a Massachusetts Registered Professional Engineer in civil or environmental engineering; or an Engineer in Training (EIT certificate) with a concentration in civil or environmental engineering, or who has a Bachelor of Arts or Sciences degree or more advanced degree in soil science, geology, or groundwater hydrology from an accredited college or university, that for purposes of stormwater

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management, assesses the Seasonal High Groundwater Elevation, soil texture, Saturated Hydraulic Conductivity Test, and hydrologic soil group. A soil evaluator pursuant to 310 CMR 15.017 and 15.018 ~~is shall be considered not~~ a Competent Soils Professional.”

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**Table 2-7** Ability of Structural Control Measures to Meet Specific Standards

In the column for “Standard 4: Does SCM remove TSS or TP?”, the options consist of “Yes”, “Both”, or “TSS Only”. This may cause confusion as to the difference between “Yes” and “Both”. Revise the Draft Regulations by using the options “Yes”, “TSS Only”, or “TP Only” or add some clarification.

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**2.5** Horizontal Setbacks and Vertical Separation Requirement

As discussed in [Section III](#), the proposed setbacks for stormwater control measures, including with respect to building foundations, property boundaries, distance from slope, and limiting installation of systems inside or under buildings, are problematic in densely developed areas and could disproportionately affect environmental justice communities. The Handbook should be revised to reflect changes to the Draft Regulations. The Department could accompany the reduction or removal of setback requirements with recommendations for protecting buildings that are closer to stormwater control measures, such as installing permeable liners against building foundations.

**Table 2-8** Summary of Applicable Horizontal Setbacks and Vertical Separation Distances by SCM

**Table 2-8** Summary of Applicable Horizontal Setbacks and Vertical Separation Distances by SCM

**Distance from any Slope > 5% : > 100-ft**

Bioretention is listed as one of the SCMs that shall follow this requirement. Bioretention SCMs can be designed and constructed in a linear/swale practice and standard side slopes for swales are typically 3:1 which equates to ~33% slopes. This requirement is very limiting as to where locations of bioretention can be proposed. While we understand the concern of undercutting/breakout of a feature adjacent to a slope, we recommend selecting a steeper slope for this requirement. Consider (i) clarifying that this requirement is of an SCM located upslope, not down slope and (ii) adding a clause that the maximum adjacent slope could be a function of the size of the feature, *e.g.*, volume of water storage versus slope).

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**Table 4-1** Summary of MassDEP Recognized ESSD/LID Techniques

As discussed in [Section II](#) above, green ESSD/LID techniques can provide co-benefits beyond stormwater management. Guidance from the Department that distinguishes vegetative (green) and non-vegetative (hard surfaces) techniques, and identifies the co-benefits associated with vegetative techniques, could help inform applicants/developers in their project choices.

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**6.1.4** Written Alternatives Analysis Requirements

As discussed in [Section III](#) and with respect to section 10.05(6)(o) of this table, Conservation Commissions should have discretion to waive certain requirements for housing projects and redevelopment projects that have deed-restricted affordable units or are owned by low-income individuals.

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**6.3.3 Field Verifying Soils at Specific Location Where Recharge is Proposed**

While the soil testing methods specified in the Draft Regulations are important, the quantity of tests required during the design phase of a project could potentially create more harm than good as discussed in [Section IV](#). Applicants should only be required to create a small number of test pits to determine infiltration capacity, soil texture, and seasonal high groundwater in the general vicinity of the proposed recharge system. Additional test pits can be conducted at the start of construction to confirm soil assumptions.

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**Appendix A**

On page A-73, in the section titled “Peak Reduction Modeling”, the Department provides guidance and requirements for how Bioretention should be modeled to evaluate Standard 2: Peak Rate Reduction. This section is very helpful to the designer. “Peak Reduction Modeling” sections should be added to the other Structural Treatment, Structural Infiltration, and Accessories cut sheets in Appendix A. This will ensure designers are using the same processes when modeling the stormwater management systems.

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We respectfully urge the Department to initiate the “Resilience 2.0” process as soon as the Draft Regulations are finalized and to conduct further review of the 310 CMR 10.00 regulations as part of a comprehensive evaluation of laws and programs that affect coastal resilience work. Topics that will be important to address in the “Resilience 2.0” process include, but are by no means limited to, inland flood risks, strategies for streamlining wetlands permitting - including for coastal and inland resilience projects, and ensuring that we are preparing now for future conditions. We encourage the Department to convene more working groups to inform the Resilience 2.0 analysis and respectfully request that the City have a seat in such groups.

We are happy to answer any questions as helpful and look forward to future opportunities to engage. Thank you for your attention to these comments and ongoing work on these important issues.

Sincerely,



Aladdine Joroff  
Director of Climate Policy  
[aladdine.joroff@boston.gov](mailto:aladdine.joroff@boston.gov)  
617-635-3407



City of Cambridge  
Department of Public Works

*Katherine F. Watkins, Commissioner*

147 Hampshire Street  
Cambridge, MA 02139  
theworks@cambridgema.gov

Voice: 617 349 4800

TDD: 617 499 9924

April 29, 2024

*Via email*

MassDEP - BWR Wetlands Program  
Attn: Wetlands-401 Resilience Comments  
100 Cambridge Street, Suite 900  
Boston, MA 02114

**Subject: Written Comments on Draft MassDEP Wetlands 401 Resilience Package**

Dear Commissioner Heiple,

We are writing to provide comments in response to the proposed revisions to the Wetlands regulations 310 CMR 10.00 and corresponding Massachusetts Stormwater Management Handbook. The City of Cambridge appreciates the efforts put forth by MassDEP in updating the regulations and Stormwater Handbook and believes a regulatory update is needed to meet urgent resiliency and water quality goals. While we are supportive of the intention behind many of the updates, we anticipate implementing some of the proposed changes will be restrictive in our urban environment and we wish to offer the following feedback.

We would like to note City staff have been closely coordinating with the Massachusetts Statewide Stormwater Coalition and Massachusetts Association of Conservation Commissions and we strongly support the written comments submitted by these groups. City Staff also attended MassDEP's virtual Public Information Sessions, Public Hearings, and Office Hours. It is our understanding that some of our comments below are consistent with those raised by these groups and others and may already be under consideration for revision by MassDEP. To avoid duplication of detailed comments, we offer the following general recommendations and concerns.

**Wetlands Protection Act: 310 CMR 10.0**

10.02(2)(b)(1)(r) – The original intent of this section and subsections was specific to Buffer Zone only areas. It appears Riverfront Area was added to the list of exemptions specific to Buffer Zone only. We strongly believe Riverfront Area access, work, and mitigation should continue to be reviewed and permitted by the local Conservation Commissions for all projects. This is a critical resource area that would be put at risk for significant impacts and loss without proper oversight. We would be in favor of the new proposed exemptions of this section as long as they remain applicable to Buffer Zone only.



WPA Jurisdiction - The term 'Floodway' remains undefined and unregulated in the Act despite being a vital component to the Floodplain and Overland Stormwater Model depicted on the FEMA Flood Insurance Rate Maps. Work in floodways could impact the ability of floodwaters to recede unimpeded. The accumulated adverse effects of this may be detrimental to downstream properties, therefore some review at the municipal level may mitigate these impacts.

## **Massachusetts Stormwater Management Handbook**

### Precipitation Data

We strongly support MassDEP updating rainfall data to reflect current and future climatic conditions. As stated in the 2021 Comment Letter from 10 municipalities to the Stormwater Advisory Committee, we urge MassDEP to use statewide downscaled rainfall projections and future projections of extreme precipitation. We would like to see the Stormwater Handbook reference the latest statewide climate projections developed by the ResilientMass Action Team led by the Executive Office of Energy and Environmental Affairs. The Handbook could reference NOAA Atlas 14 data as a minimum, and allow for use of "the latest available standard precipitation data," whether it be updated Cornell data, downscaled global data, or other reliable sources. In this way, data delays beyond municipal control should not prevent communities from requiring that the best available data be used in enforcing regulations. This will also allow Issuing Authorities to use local jurisdiction if their regulations use more stringent precipitation data, preventing designers from needing to complete peak rate analyses twice.

### Flexibility for Urban Sites

Standard 2 - We support the inclusion of various Stormwater Control Measures (SCMs) in stormwater management plans, particularly for highly urbanized sites. However, we urge reconsideration regarding the restrictive nature of some provisions. For instance, Section 2.3.2 lists SCMs that are not eligible to partially or fully meet Standard 2. We advocate for flexibility in allowing these SCMs, such as sand filters and tree box filters, to contribute toward peak rate reduction, especially when designed as exfiltrating systems. Not allowing these SCMs to contribute towards a site's peak rate reduction, especially in highly urbanized sites, disincentivizes their use.

Standard 3 - Requiring 1-inch recharge for all sites regardless of soil type will be extremely difficult for some project locations. We support continuing to determine minimum recharge volume based on soil type. If there is a minimum recharge requirement that is not specific to HSG, we strongly support reducing this Required Recharge Volume requirement to be a depth of 0.8 inches.

Setbacks - Section 2.5 outlines horizontal setbacks and vertical separation requirements for stormwater systems. We would like to see the flexibility to allow all projects to meet setbacks and vertical separation requirements to the MEP with responsible engineering review and design, as determined by the Issuing Authority. We believe this may not require a full a written alternatives analysis in every case, which is burdensome, both for project applicants to prepare and for Issuing Authorities to review.



### Consistency with the MS4 Permit

The City of Cambridge appreciates MassDEP's effort to align the Stormwater Handbook with the MS4 Permit. However, certain inconsistencies remain, potentially causing confusion.

**Definition of 'Redevelopment'** – To avoid confusion, the definition of redevelopment should be consistent between MassDEP and EPA. Having two definitions of redevelopment defeats the purpose of intended consistency between the Stormwater Handbook and the MS4 Permit.

**Retrofits** - We believe it is MassDEP's intention to encourage retrofits to meet TMDL and water quality goals, but the categorization, and thus requirements, for these projects as written are unclear. We suggest MassDEP create a category of projects specifically for retrofits to help clarify requirements.

**Standard 11** - The eligibility criteria for SCMs to meet Standard 11 warrants reconsideration. Excluding filtering SCMs, green roofs, and rain barrels/cisterns from eligibility disincentivizes the use of green infrastructure in TMDL watersheds, which we believe is not MassDEP's intent. Under the MS4 Permit, these types of SCMs have performance curves for phosphorus and nitrogen removal.

**EPA Performance Curves** - The Stormwater Handbook cites alignment with the MS4 Permit but requires a water quality volume of 1-inch for certain scenarios, including discharge from LUHPPLs, near or to Critical Areas, and sites with rapidly infiltrating soils. We would like the ability to use the EPA Performance removal curves to demonstrate TSS and TP removal for consistency with the MS4 permit for these scenarios. Adoption of the EPA Performance Curves should be consistent for all Stormwater Standards.

**ESSD Credits** - Utilizing ESSD Credits 1, 2 and 5 to meet TSS and TP reduction requirements is potentially confusing for projects that are also subject to MS4 Permit post-construction requirements because these ESSD Credits do not have quantifiable pollutant reductions under the MS4 permit. For a project subject to both WPA and MS4 Permit requirements utilizing ESSD Credits, this will result in two sets of calculations. ESSD Credits 3 and 4 are also inconsistent with the MS4 Permit by not allowing credit in HSG D soils. In addition, projects are only eligible for ESSD Credit 6 when reducing impervious cover by 15% or more. For large redevelopment projects, reductions of 10% or even 5% of total impervious area can provide water quality benefits and should be incentivized.

### **Conclusion**

In conclusion, while we are supportive of the general direction taken by MassDEP in updating the Wetlands regulations and Stormwater Handbook, we strongly suggest revisions that support flexibility and innovation in urban sites while remaining consistent with MS4 Permit requirements. We appreciate the opportunity to provide feedback and MassDEP's consideration of the above comments.

Sincerely,



Katherine Watkins, P.E.  
DPW Commissioner







## CITY OF MELROSE

### DEPARTMENT OF PUBLIC WORKS

*Administration–Engineering–Water–Sewer–Facilities  
Parks–Forestry–Highway–Sanitation–Cemetery–Fleet*

Vonnie Reis, P.E.  
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April 29, 2024

Lisa Rhodes  
Attn: Wetlands-401 Resilience Comments  
MassDEP – BWR  
100 Cambridge Street, Suite 900  
Boston, MA 02114  
Via email: [dep.wetlands@mass.gov](mailto:dep.wetlands@mass.gov)

Re: City of Melrose, Wetlands-401 Resilience Comments

Dear Ms. Rhodes,

Thank you for the opportunity to comment on the proposed update to wetlands protection regulations (310 CMR 10.00). Stormwater management and wetland protection are critical issues for the City of Melrose. In recent years we have experienced flooding and water quality impacts during extreme storms caused by climate change. Our hope is that the revised regulations will address current and predicted stormwater impacts with feasible and cost-effective policies. Many urban areas, including Melrose, are challenged by existing wetland areas or streams that have accumulated sediment (and debris) and no longer function as needed. That, coupled with limited open areas to manage stormwater, has left our city vulnerable to flooding.

As MassDEP staff said during public meetings on these proposed regulations, they need to be considered the “1.0” version of regulatory updates, due to the pressing and accelerating challenges of extreme precipitation, sea level rise, and coastal storms. We do not believe these changes fully address the changing needs. **We strongly encourage you to finalize these regulations as quickly as possible, and immediately start on the 2.0 version.** Our remaining comments relate to improvements to these proposed regulations that should be made as quickly as possible.

Critical improvements include the following:

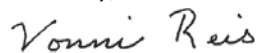
- Projected rainfall and coastal flood data (sea level and coastal storms) based on high quality downscaled global climate models need to replace empirical data. With extreme weather events increasingly diverging from historical data, regulations must be pegged to the external conditions expected by the end of a project lifespan, not its beginning.
- The regulations should require evaluation of future conditions for new projects. Current development review for stormwater designs does not take climate change into account, leaving Cities and Towns with no authority to levy more stringent design requirements.
- During extreme precipitation events, water quality is impacted when polluted flood waters flow into nearby water bodies. Sound wetland regulations need to accommodate operation and maintenance of critical resource areas, without sacrificing the ability to respond quickly and efficiently to repair damage done by

extreme storms. This should include nature-based solutions, such as constructed wetlands. This request is for efforts larger than what is typically covered under a “maintenance” Order of Conditions.

- Incorporating regional planning into regulatory actions. MassDEP regulatory actions focus on parcel-by-parcel projects without the benefit of regional planning. As a member community of the Resilient Mystic Collaborative, we strongly recommend the regulations reflect broader policies and priorities.
- Updating wetlands regulations to encourage stormwater wetlands with upstream BMPs. With flash flooding/flash droughts and winter rains becoming the norm, we need to be able to expand existing wetland fragments to capture and hold more filtered stormwater. Current regulations make it very difficult to permit and construct such projects.
- Melrose has several underground streams that were enclosed in culverts centuries ago when the City was developed. We support the change that culvert work will not require Chapter 91 review, but feel the change could go further. Under the existing regulations, work on these man-made structures may be considered work in “riverfront”, even though they are fully enclosed and buried under paved streets. Essentially, they function as a large drainage pipe. We request, in accordance with the intentions of the WPA, that these structures be classified as man-made conveyances for the purpose of replacement or repairs.
- Currently, multiple coastal flood management strategies have been designed (including with nature-based solutions) to protect urban neighborhoods from chronic King Tide and storm flooding but are not currently able to be permitted. New regulations should include the legal framework/mechanics for an updated regulatory pathway for such projects to be implemented more quickly and without unintended negative consequences.

Again, thank you for your work and for your commitment to Massachusetts and our natural and human communities. We look forward to working with you as we all seek to meet the challenge of surviving and thriving in a rapidly changing climate.

Sincerely,



Vonnie Reis, P.E.  
City Engineer, Melrose, MA

cc: Mayor Jennifer Grigoraitis  
Ellena Proakis Ellis, DPW Director  
Julie Wormser, Senior Policy Advisor, MyWRA

Conservation Commission  
COHASSET TOWN HALL  
41 HIGHLAND AVENUE  
COHASSET, MA 02025



**Charlotte Pechtl**  
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April 30, 2024

MassDEP - BWR Wetlands Program  
Attn: *Wetlands-401 Resilience Comments*  
100 Cambridge Street, Suite 900  
Boston, MA 02114

**Re: Cohasset Conservation Commission for DEP's Proposed Regulatory Revisions**  
(sent via email to [dep.wetlands@mass.gov](mailto:dep.wetlands@mass.gov))

To Whom it May Concern,

The Cohasset Conservation Commission (CCC) wishes to express their appreciation for MassDEP's hard work and efforts to develop and distribute the draft revisions to the Massachusetts Wetlands Protection Act (WPA) and the Massachusetts Stormwater Standards to further improve the State's regulatory backbone for wetland resource protection and increase resiliency to climate change impacts.

The CCC is pleased to provide the following summary of comments and recommendations described below for MassDEP's review and consideration.

***While the CCC has provided additional comments regarding the Wetlands Protection Act not related to the 1.0 proposed changes, the CCC urges MassDEP to prioritize the proposed revisions for Land Subject to Coastal Storm Flowage and the Stormwater Standards to create a critically needed standard for proactively protecting coastal Resource Areas and their protected interests.***

There will always be a need for further changes and improvements, but the CCC strongly feels the currently proposed 1.0 revisions are necessary to finalize as soon as possible while also carefully considering all submitted comments from multiple stakeholders to ensure robust and clear performance standards.

Please do not hesitate to reach out to our Conservation Agent, Charlotte Pechtl, regarding any questions related to these comments.

Sincerely,

**Charlotte Pechtl**  
Charlotte Pechtl, MPS  
(signed on behalf of) The Cohasset Conservation Commission

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## **General Recommendations for 1.0 Revisions:**

The CCC has received and reviewed MSMCP's draft comments regarding general recommendations for the regulatory review process moving forward, and concur with the overall comments and recommendations summarized below:

- MassDEP should engage with day-to-day practitioners in their regulatory revision efforts (e.g., Conservation Agents and Commissioners, Professional Non-Profit Staff) responsible for the vital and consistent interpretation and implementation of these regulations to other professionals, internal staff, residents, and project applicants.
- The regulation revisions provide excellent detail but need to strike a feasible balance between scientific precision and overly complex or burdensome requirements for both applicants and their professional representatives, and local permitting authorities, responsible for understanding and implementing these regulations.
- With the newly proposed Land Subject to Coastal Storm Flowage (LSCSF) standards, the CCC appreciates the strides to proactively address climate change impacts and protect communities from flooding and water pollution. Prohibiting new structures in the highest risk areas and providing performance standards for development and redevelopment throughout the coastal floodplain are appreciated and appropriate. The maps for where restrictions apply should incorporate the latest data on sea level rise and erosion rates.
- The CCC also agrees that the Stormwater Handbook is nicely organized but is a massive resource totaling about 860 pages that is too complex for Commissions and non-profit professionals. MassDEP should consider making the Handbook much shorter if possible, and more readable and usable for Commissions and Agents to interpret and implement.
- NOAA14+ is a great step in the right direction but does not factor in climate change. The regulations and the Handbook should at least refer to the new Energy and Environmental Affairs (EEA) ResilientMass Climate Change Projections Dashboard, which provides town-specific precipitation projections using NOAA14+.
- MassDEP should provide frequent outreach and education about the new regulations once promulgated. Dissemination of detailed and multi-faceted explanations of the new regulations and the purposes and intents behind them for Commissions and conservation professionals who implement them will be essential. The CCC encourages MassDEP to work with MSMCP, MACC, and other nonprofit organizations to disseminate this information, educate Conservation Commissions and conservation professionals, and provide guidance on how to further locate, distribute, and implement the regulations.

## **Request for 2.0 Changes:**

The CCC has received and reviewed MSMCP's draft comments regarding 2.0 revisions for the regulatory changes, and concur with the overall comments and recommendations summarized below:

- A 2.0 round of revisions will be necessary. The CCC encourages MassDEP to begin a robust process with consultants, field professionals, Conservation Agents, and Conservation Commissions to further assist MassDEP in finalizing these strong, practical, and climate resilient regulatory changes.

- MassDEP should acknowledge and specify differences between “alteration” from new development and re-development versus “alteration” from ecological restoration efforts.
- The CCC highly urges MassDEP to simplify and streamline the permitting process for wetlands restoration projects to achieve and prioritize the State’s resiliency goals by:
  - Reversing historic damage to wetlands,
  - Addressing climate change, rising sea levels, ever-increasing invasive species,
  - Allowing for salt marsh migration,
  - Promoting carbon sequestration, improved water quality, and increased biodiversity, and
  - Promoting living shorelines and other nature-based solutions.
- The CCC recommends new Minor Activities (in 310 CMR 10.02(2)(b)(2)) for routine work in Riverfront and Buffer Zone conducted by homeowners and land managers such as:
  - Cutting of certain high-risk trees, where “high-risk” should be clearly defined as an “imminent and immediate threat” either to public and/or private health and/or safety. This status should be evaluated by an appropriate certified professional (e.g., arborist).
  - Removal of invasive vegetation by hand – Mechanical and chemical removal methods may need to be further permitted, but through a streamlined process.
- The CCC recommends general protection standards for trees (live, dead, etc.), especially native and healthy trees, within all Resource Areas and Buffer Zones. The CCC acknowledges potential legal complications with this request and understand that this might just need to be general in the WPA to allow Commissions to protect trees and tree coverage within Resource Areas, which has critical protection impacts if significantly altered. Replacement recommendations or even requirements per the discretion of the Commission should be specifically stated for Resource Areas at the least, and local Bylaws can further describe what is required for Buffer Zones.
- The CCC recommends creating new Limited Projects (310 CMR 10.24 and 10.53) and other provisions to simplify trail permitting and invasives species management in wetland resources areas.
- MassDEP should work with Conservation Agents to update the Riverfront Area regulations to clarify some of the sections that are particularly difficult to interpret and lead to inconsistent implementation.
- MassDEP should work with Conservation Agents to update and greatly simplify the WPA application and permit forms.
- MassDEP should increase wetlands permitting application fees. Wetland fees do not cover the administrative costs for processing, reviewing, issuing, and mailing wetland permits.
  - However, there may be a need to develop incentives for the public and/or developing professionals as well as potentially reduced application fees specifically for ecological restoration projects and ecological restoration limited projects to encourage wetlands restoration and improve climate resiliency efforts from a local and state level. There should also be a streamlined process for reviewing these projects more quickly as well as perhaps just notifying abutters instead of also posting in the local newspaper.

- MassDEP should develop additional guidance documents for the WPA. Conservation Commissions and conservation staff would benefit from guidance documents which provide more detail about various regulatory provisions and their interpretation and implementation.
- To account for their inherent value, particularly in the face of climate change, MassDEP should consider expanding Isolated Land Subject to Flooding (ILSF) jurisdiction to include Isolated Vegetated Wetlands (IVWs) by reducing the size of ILSF in 10.57(2)(b). MassDEP should also consider a Buffer Zone for ILSF and/or IVWs.
- MassDEP should consider adding Vernal Pools as a new wetland resource area, with a 100-foot Buffer Zone, regardless of certification status.
- Several municipalities implement local Bylaws that further protect Buffer Zones or sections of them, including alteration restrictions through development and redevelopment or do not allow alteration of areas within Buffer Zones altogether without a local variance granted by Commissions. MassDEP should consider consulting with Conservation Commissions and Agents to identify patterns of additional Buffer Zone protection and decide whether those protections should also be included in the WPA.
- MassDEP should provide some discretion for local Conservation Commissions to utilize an administrative approval process for activities in the Buffer Zone which will not impact wetland functions and values. The CCC agrees that individuals who wish to undertake minor activities (such as the removal of a high-risk tree) should be able to receive local approval from their local Conservation Commission without filing for a state permit.
  - “High-risk” should be clearly defined as an “imminent and immediate threat” either to public and/or private health and/or safety.
  - The high-risk status should be evaluated by an appropriate certified professional (e.g., arborist) and an assessment provided with the request in writing. There could be additional requirements or recommendations that this assessment come from a separate party who is not removing the tree, as most tree removal companies of course will recommend removing the tree.
  - There should be a general standard that Commissions may require replacement of the tree of a similar native species and/or caliper size as necessary to ensure there will be no adverse impact to the Buffer Zone.

## **Wetlands Protection Act Comments:**

- **310 CMR 10.02(3)**
  - The proposed minor activities for Minimum Wave Action (MiWA) Zone of LSCSF should further clarify the following:
    - The fencing language should be consistent thorough CMR. For fencing activities additional sample language should be considered: “as long as the proposed fencing doesn’t impede wildlife passage, storm surge, and or stormwater runoff.” This change would make the general standard for minor fencing activities like what is proposed for Buffer Zones.
    - Conversion of lawn to another vegetated use should also list more vegetated use options, including rain gardens, bioswales, alternative lawns, native pollinator habitat, etc.



- Conversion of lawn to another vegetated use, etc. should also be included within the minor activities lists for the Buffer Zone and the Riverfront Area.
- The planting of native species of trees, shrubs, or ground cover should also be allowed as a minor activity within the Velocity (V) Zone and/or the Moderate Wave Action (MoWA) Zone. Additionally, this could be a minor activity within most Resource Areas, granted the performance standards for each respective Resource Area are followed.
  - However, if a Notice of Intent (NOI) is still required for native plantings in a Resource Area not counting Riverfront Area and MiWA, there should be a streamlined process with simplified submission requirements to encourage this work, granted the right parameters are defined for the use of chemicals, heavy machinery, and removal of invasive species.
- **310 CMR 10.02(2)(b)(2)(r)**
  - The maintenance of shared use paths should be allowed as a minor activity, but this information should be simplified further to ensure proper interpretation and implementation. For example, there should be clear “Dos and Don’ts” with this type of maintenance activity. The CCC is concerned allowing this type of activity without further clarification causes the spread of invasive species.
  - The use of herbicides for invasive species removal should not be a minor activity and should require a Notice of Intent (NOI) with a maintenance plan, whereas weed whacking and hand removal is a bit simpler to approve as a minor activity.
  - Invasive cuttings and materials shall also not be dumped in the Buffer Zone or Resource Areas and there should be a standard requiring offsite disposal.
  - Work that can be done manually with hand-held tools is preferred over the use of heavy machinery. The CCC is concerned when heavy equipment and machinery is brought into the Buffer Zones and Resource Areas, which is often left on site, not cleaned, and is sometimes parked in areas that can cause erosion, vegetation disturbance, and accidental tree damage. The use of machinery should be further clarified.
  - The replacement of existing drainage systems should not be allowed as a minor activity. This can result in both temporary and permanent alterations to the Buffer Zone and/or Resource Areas, as the work normally requires excavation, fill replacement, dewatering, and re-grading.
- **310 CMR 10.04: Definitions**
  - The definition of “Alter” should include both **temporary and permanent** changes of Resource Area conditions. Although the language includes “but not limited to,” MassDEP should consider an additional reference to all actions listed in the definition of “Activity” for further clarification.
  - The definition of “Best Management Practices (BMPs)” should include promotion of environmentally sensitive designs and/or nature-based solutions, correlating with the proposed changes to further LSCSF sections and revisions to the Stormwater Standards and Handbook.
  - The definition of “Maintenance of an Existing Public Roadway” should further specify activities that do not result in changing the existing road grading.
  - The definition of “Maintenance of an Existing Public Roadway” should not include all instances of “replacing existing drainage pipes.” Since some drainage pipes are deep

- beneath the paved surface, replacement might require extensive excavation, large spoil piles, and dewatering.
- In contrast to Impervious Surface, “Pervious Surface” should also be clearly defined in this section and in congruence with the MA Stormwater Standards and Massachusetts Small (MS4) General Permit.
  - “Previously Degraded” as it pertains to Riverfront Area and any other applicable Resource Areas should be defined in this section and further in 310 CMR 10.58 as needed.
  - Additional definitions for “Limit of Moderate Wave Action (LiMWA)” and “Scientific Research Projects” need to be included in this section, not just in 310 CMR 10.36(2).
  - MassDEP should consider including a term and definition for “Abandoned Dumping Grounds” as it pertains to 310 CMR 10.58(5) for further defining “Previously Degraded” related to redevelopment within the Riverfront Area. This definition should further specify whether the dumping grounds are solely related to public use or if private use also qualifies given the definition’s parameters. Also, the existence of “surface level trash, unless hazardous” should not be considered in the definition of “Abandoned Dumping Ground,” otherwise almost every Riverfront Area would meet this definition. Volume requirements and a thorough assessment from a Licensed Site Professional should be required to justify whether a Riverfront Area is an “Abandoned Dumping Ground.”
- **310 CMR 10.05 Procedures**
    - 310 CMR 10.05(6)(k): The CCC recommends a supplementary WPA-Stormwater Standard Guidance Checklist and/or Guidance Flow Chart or Document to accompany these changes while evaluating Notices of Intent (NOIs) to ensure proper compliance with these standards is achieved. A Stormwater Checklist only shows so much when it accompanies an NOI, and there should be more guidance on how Commissions can evaluate projects in compliance with these new changes.
  - **310 CMR 10.08 Enforcement Orders**
    - The CCC recommends a standard for enforcement when Commissions can potentially involve DEP. Often, Violators just pay the fines and refuse to comply with restoration enforcement. Any escalation procedures to DEP and to any other necessary regulatory authorities should be specified if not in the WPA, but perhaps in the DEP Enforcement Manual.
  - **310 CMR 10.12 Notice of Intent for Ecological Restoration Projects**
    - The CCC highly urges MassDEP to simplify and streamline the permitting process for wetlands restoration projects to achieve and prioritize the State’s resiliency goals by:
      - Reversing historic damage to wetlands,
      - Addressing climate change, rising sea levels, ever-increasing invasive species,
      - Allowing for salt marsh migration,
      - Promoting carbon sequestration, improved water quality, and increased biodiversity, and
      - Promoting living shorelines and other nature-based solutions.
    - The CCC sees a need to develop incentives for the public and/or developing professionals as well as potentially reduced application fees specifically for ecological restoration projects

and ecological restoration limited projects to encourage wetlands restoration and improve climate resiliency efforts from a local and state level.

- There should be a streamlined process for reviewing these projects more quickly as well as perhaps just notifying abutters instead of also posting in the local newspaper.
- Ecological Restoration Projects that just involve invasive species removal should be simplified from a permitting and filing perspective to encourage all interested parties to move forward with these projects as quickly as possible, especially when the Applicant is a non-profit conservation organization.

- **310 CMR 10.24 General Provisions**

**The CCC is highly appreciative of the option to recommend or require the restoration, enhancement, or creation of wetland Resource Areas through natural method and materials as an alternative method to coastal engineering structures to promote climate resiliency. Please see additional recommendations:**

- Subsection (b) specifies “and other available information related to shoreline change and sea level rise or similarly reliable local data acceptable to the Issuing Authority.” The CCC recommends listing other reliable sources from the state level (e.g., including, but not limited to, etc.) in addition to specifying resilientma.org.
  - The CCC would appreciate a clear definition of “natural methods and materials” for the purposes of potentially requiring this work.
  - The CCC would recommend further clarification on any types of coastal projects that may or might require restoration more than other coastal projects. For example, with dock construction, should there be a requirement to restore and/or replicate every square footage of salt marsh being altered for pier pilings? Should Applicants be required to improve existing conditions of the marsh if a dock project were to be permitted? If an existing dock is being modified under a previously issued Chapter 91 license through an Amended or new NOI, and the Height : Width (H : W) ratio is not currently designed to recommended 1.5:1 standard, should Applicants be required to further improve the structure to improve salt marsh conditions?
  - The CCC recommends further guidance either under the WPA and/or additional guidance documents on how restoration potential of a coastal resource area should be evaluated if Commissions were to require restoration, enhancement, or creating of a wetland Resource Area by natural methods. Some Resource Areas with existing degraded conditions may have lower viability of being restored than other areas.
  - See comments above on Public Shared Use Paths. Municipal or land trust paths should also be afforded the same limited project status and should be added to the definition of Public Shared Use Paths and/or specified within the minor activities list.

- **310 CMR 10.36 – Land Subject to Coastal Storm Flowage**

**The CCC is highly appreciative of the option to recommend or require the restoration, enhancement, or creation of wetland Resource Areas through natural method and materials as an alternative method to coastal engineering structures to promote climate resiliency. Please see additional recommendations:**

- Subsection (1) Preamble

- The CCC recommends including an additional description, listing protected interests, and specifying presumed adverse impacts from certain activities related to the MiWA zone. The MiWA Zone is not mentioned in the Preamble for LSCSF but is part of LSCSF.
- **Subsection (2) Definitions**
  - All the listed definitions on this section need to be also listed or at least referenced in 310 CMR 10.04 for consistency purposes.
  - Limit of Moderate Wave Action (LiMWA) needs to be listed and defined in this section.
  - “New buildings” versus “new structures” and “new impervious surfaces” should be clearly defined in this section and listed or referenced in 310 CMR 10.04. See comments for Subsection (4) below).
- **Subsection (3) Boundaries**
  - The CCC recommends some general requirement to confirm the source in NOIs and/or Site Plans of where the LSCSF boundary information was obtained. Should this information need to be obtained by a specific professional?
  - The CCC recommends including general language allowing Commissions to recommend or even require Applicants to use publicly available local publication data, LiDAR resources, local GIS maps, etc., to accurately determine the boundary of LSCSF instead of or in addition to FEMA (if applicable). The FEMA maps are often very fuzzy when shown on the property level, and often, FEMA lines can sometimes cross existing contours on Site Plans in the CCC’s experience.
- **Subsection (4) Application of Performance Standards**
  - It should be clearly listed in this section that Commissions shall have the authority to recommend or require nature-based protection measures or methods to effectively evaluate whether projects are complying with these performance standards. Otherwise, if it is not specifically mentioned in this section, it could be misconstrued as not a necessity for Applicants.
    - There should be a requirement for an Alternatives Analysis to explain why nature-based solutions are not feasible, like 310 CMR 10.58(4) and (5).
  - Specific information and/or an alternatives analysis should be required for a waiver of (a) performance standard where a new building cannot be 2’ above the 1% annual chance base flood elevation. Waiver requests can be a slippery slope easily requested by Applicants and this section should have further requirements for Commissions to property evaluate these “exceptional cases.”
    - The necessary information for waiver request from this performance standard should be at least generally specified, with the provision that the Commission may require additional information as necessary to evaluate waiver requests.
    - Exceptional cases should be defined in some way as there is no other feasible option available for a waiver request to be granted.
    - Consideration of alternatives should be required for waiver requests to show they are either not physically and/or economically feasible.
    - Waiver requests could include a general recommendation or even a requirement from Commissions to mitigate the area to offset this deviation from the performance standards.
- **Subsection (5) Adverse Effects in V-Zone and MoWA Zone**
  - The CCC recommends including additional definitions:

- Limits or restrictions to new impervious surface or certain types of new impervious surface.
  - Limits or restrictions of fill should be clearly specified, not just fill or structures that redirect or channelize flow, increase velocity, cause erosion, etc.
  - Interfering with the ability of vegetative cover... should also generally include the removal of native vegetative cover that interferes with the ability to reduce erosion, sedimentation, and pollution. “Interfering” should be more inclusive to specify “removal.”
- **Subsection (6) Activities in the V-Zone and MoWA Zone**
  - The CCC questions why “new buildings” is mostly specified versus “new structures” and/or “new impervious surfaces,” which could also include covered or uncovered decks, bridges, pools, pool houses, sheds, retaining walls, fire pits, sports courts, parking lots, etc.
    - While it is understood perhaps new coastal engineering structures might be necessary for climate resiliency, the CCC recommends further clarifying whether there should be additional performance standards and restrictions within the V-Zone, Moderate Wave Action (MoWA), and Minimal Wave Action (MiWA) Zones under these standards for new structures and impervious surfaces altogether.
    - There might need to be a general or specific definition of performance standards or limitations for coastal engineering structures such as retaining walls/sea walls/etc. Proof of no adverse impact should be required and/or there should be a recommendation or requirement from Commissions to also improve coastal Resource Areas.
    - Consider the standard of “no new pavement” instead of “limit” pavement in the V-Zone, MoWA Zone, and possibly in the MiWA Zone, except in certain circumstances (which would need to be clearly listed). Pervious options should be considered or required unless no viable design alternative exists that is cost effective.
  - The planting of species compatible with natural vegetative cover should be a minor activity within all defined zones of LSCSF. Additionally, this could be a minor activity within most Resource Areas, granted the performance standards for each respective Resource Area are followed.
    - However, if a Notice of Intent (NOI) is still required for native plantings in a Resource Area not counting Riverfront Area and MiWA, there should be a streamlined process with simplified submission requirements to encourage this work, granted the right parameters are defined for the use of chemicals, heavy machinery, and removal of invasive species.
  - Pedestrian walkways should only be impervious to comply with necessary Americans with Disabilities Act (ADA) requirements and should not have any more impervious surface than what is required per local Bylaws and/or should have vegetated buffers on both or downgradient sides within the V-Zone and MoWA Zone.
  - Any other Public Shared Use Paths not considered a Pedestrian Walkway should not be paved and pervious options should be considered or required.
  - To further clarify from Subsection 5, are new coastal engineering structures not allowed and only the maintenance of existing coastal engineering structures is allowed? The

construction of new coastal engineering structures needs to be clear in both (5) and (6) for the V and MoWA Zones.

- There should be a consideration of alternatives to repair/maintenance of existing coastal engineering structures within V and/or MoWA Zones. For example, if the coastal engineering structure is no longer efficient or is too structurally damaged where repair and/or expansion necessary for repair would adversely impact the coastal Resource Area(s), should an alternative approach at least be considered?
- **Subsection (7) Activities in the MiWA Zone**
  - The CCC recommends general limitations at the least for the addition of any fill, structures, or topographic alterations in the MiWA Zone, not just “avoiding” fill, structures, or topographic alterations which would increase velocity or redirect flow.
  - The replacement of impervious surfaces with pervious surfaces and/or vegetative cover should be specified for MiWA activities for clarify to align with other sections and/or an additional reference to the minor activities should be referenced in this section.
  - Flow Path Analysis for MiWA: The CCC understands the Guidance for Flow Path Analysis from MassDEP is currently under development but wished to provide some initial comments:
    - Will the ability for Commissions to require a flow path analysis be defined in the WPA or will this be a general “as the Commission sees fit” standard?
    - What project factors should the Commission consider for a MiWA flow path analysis? These should be specified in the WPA but not limited to etc.
    - Which professionals perform this analysis? Credential requirement should be specified in the WPA and/or in the guidance.
- **Subsection (8) Redevelopment Within Previously Developed LSCSF**
  - Regarding the language on previously developed coastal Resource Areas that have not been regulated under the applicable performance standards, the CCC recommends clarifying the following:
    - The CCC recommends strengthening the restoration language to specify “maximum extent practicable” and to also include additional language requiring restoration of the coastal Resource Area even to previously and naturally existing conditions prior to unregulated development.
    - Do illegally developed LSCSF areas “count” as “previously developed”? For example, if a property owner paves a pathway down to a private beach, do they get to take credit that the site is already previously developed, and they have the right to redevelop under 310 CMR 10.36(8) granted it’s an improvement from existing conditions?
      - The CCC recommends further defining previously developed to include “from previously permitted projects and/or regulated activities” to avoid a loophole in not applying the new development standards for LSCSF.
      - Additionally, closing this loophole should also be considered for 310 CMR 10.58(5) for redevelopment within the Riverfront Area.
  - Mitigation and/or requirements like 310 CMR 10.58(4) and (5) for the Riverfront Area should also be considered and specified in this section as additional performance standards for redevelopment projects.
  - It should be clearly listed in this section that Commissions shall have the authority to recommend or require nature-based protection measures or methods to effectively evaluate whether redevelopment projects are complying with these performance



- standards. Otherwise, if it is not specifically mentioned in this section, it could be misconstrued as not a necessity for Applicants.
- There should be a requirement for an Alternatives Analysis to explain why nature-based solutions are not feasible, like 310 CMR 10.58(4) and (5).
  - **Subsection (9) Salt Marsh or Coastal Dune Migration**
    - This section should also include restoration, enhancement, or replication requirements where salt marsh or dune migration is not feasible or where the activity would result in an adverse impact to coastal Resource Areas.
    - It should be clearly listed in this section that Commissions shall have the authority to recommend or require nature-based protection measures or methods to effectively evaluate whether salt marsh and/or coastal dune restoration is required to comply with the performance standards for LSCSF, granted there is no adverse impact to other coastal Resource Areas. Otherwise, if it is not specifically mentioned in this section, it could be misconstrued as not a necessity for Applicants.
  - **Subsection (10) Protection of Rare Species Habitat**
    - It should be clarified that “no project” also includes redevelopment projects and salt marsh or coastal dune migration projects or specified “no project within LSCSF.”
  - **310 CMR 10.53: General Provisions**
    - Please reference the CCC’s previous comments above regarding Public Shared Use Paths for this section additionally.
    - Please reference the CCC’s previous comments above regarding invasive species Ecological Restoration Limited Projects specifically for invasive species removal projects and native species planting projects for this section additionally. The CCC strongly recommends that these projects need to be incentivized, streamlined, simplified, and prioritized for proactive protection and improvement of Resource Areas to improve climate resiliency and restore biodiversity.
  - **310 CMR 10.57: Land Subject to Flooding (Bordering and Isolated Areas)**
    - Please reference the CCC’s previous comments above regarding enhanced protections for ILSF and IVWs, improved Buffer Zone protections, vernal pools, and NOAA 14+ utilization for this section additionally.
  - **310 CMR 10.58: Riverfront Area**
    - Please reference the CCC’s previous comments above regarding simplified performance standards for the Riverfront Area for new and redevelopment, enhanced protections for Riverfront Area, illegal development that was not previously permitted, and including additional definitions in the WPA for “Abandoned Dumping Grounds.”
    - The CCC also recommends developing tree protection standards specifically for this Resource Area and other applicable inland and coastal Resource Areas. While the removal of hazardous or “high-risk” trees is understandable, projects within Riverfront Area often involve a lot of tree-clearing activity, which has an adverse impact on the Resource Area. There should be requirements for tree replacement and/or mitigation, restoration, and replication for all projects within the Riverfront Area with clear restoration ratio requirements for all projects, not just for redevelopment.

- Limits and/or restrictions to new buildings, new structures, new impervious surfaces, and fill should also be considered for the Riverfront Area.
- Nature-based solutions should be required to at least be reviewed as part of the Alternatives Analysis with a provision that the Commission may recommend or require these solutions to comply with the performance standards and protect the interests of the Riverfront Area and the WPA.

### **Stormwater Standards/Handbook Comments:**

The CCC has received but unfortunately has not had enough time to review all proposed draft revisions to the Stormwater Standards and the Stormwater Handbook but appreciates MassDEP's efforts to improve these standards and resources as it pertains to climate resiliency, congruence with other State and Federal performance standards, and enhancement of measures to consider environmentally sensitive designs.

In addition to the general comments and comments also related to the WPA revisions already listed above in previous sections of this letter, the CCC has these general comments for MassDEP's consideration:

- There are ongoing concerns from the CCC regarding the creation of overflow and/or point sources from stormwater management systems. The Regulations should specify a maximum size for any infiltration system, so all residential, industrial and/or commercial site runoff does not go to a single Best Management Practice (BMP).
  - Single BMPs are not as efficient as multiple smaller ones in the CCC's terrain of shallow soils on granite. Other Towns and areas in Massachusetts may also be facing these concerns related to stormwater design from residents, downgradient neighbors, properties already within LSCAF, etc.
  - The result is conversion of natural sheet flow to single point discharge when the BMP is overwhelmed.
  - Just because the seasonal high groundwater mark is 24" below the base of a BMP does not mean it will perform as modelled.
  - The soil can be saturated to the very top of the soil profile during periods when successive storms exceed the soils capacity to store water. This can be well above any mottling and other indications of high ground water.
  - The residence time of saturation needs to be on the order of weeks or more each year for the indicators to develop so in years with high rainfall our soil evaluators are not designing for the more frequent rainfall that is impacting us for the last couple of years.
- On the same theme, the only way to truly know what a specific location for a BMP will infiltrate at some rate is to measure the rate in-situ.
  - If an assumed rate is fed into a model, it can be inaccurate if based on the generalized characteristics of a soil group.
  - Moreover, the soil group boundaries are a continuum and not mapped on the ground. The boundaries and characteristics are estimated based on widely spaced sampling and interpolation between those samples.
  - A percolation test is the only way to get an accurate number to plug into the runoff model where infiltration is estimated.

- The CCC is also concerned about Total Nitrogen removal in addition to Total Suspended Solids (TSS) and Total Phosphorous (TP) as it pertains to Standard 4 and Standard 7.
  - It is acknowledged this is a much more difficult variable to permit, standardize, and remove through stormwater management, but this should at the least be considered for Stormwater Handbook guidance and recommendations, included as a potential credit, especially in Nitrogen Sensitive Areas, Critical Areas, Wellhead Protection Areas, and other protected areas to further protect water quality and sensitive ecosystems.
- The CCC is concerned on the lack of tree and tree coverage protection within the Stormwater Standards or Stormwater Handbook, or that there is not even recommended guidance on protecting tree coverage as it pertains to the protection of water quality, soil stabilization, erosion prevention, climate resiliency. HydroCAD and the Stormwater Standards are of course silent on this, since the systems and standards do not accommodate for tree coverage other than assigning specific runoff Curve Numbers. However, trees, as most conservation stakeholders in are aware, are vital to the protection of water quality, runoff control, soil hydrology and stabilization, erosion, temperature control, air quality, planning, open space and recreation, restoration, wildlife habitat, ecosystem functions, and climate resiliency. There should be general standards in place in both the WPA and the Stormwater Standards to protect trees and tree coverage in relation to enhancement of climate resiliency measures.
  - The CCC highly recommends MassDEP investigate incorporating a general performance standard, recommendations, credits, incentives, etc. to protect tree coverage, trees of a specific caliper size, replacement requirements, native species recommendations, invasive tree, and vegetation removal, etc. in relation to the proposed revisions to the Stormwater Standards and the Handbook.
  - Larger projects requiring an EPA General Construction Permit and/or NPDES MS4 Permit should also consider protection of a specific percentage of tree coverage, or enhancement of existing tree coverage in relation to stormwater management, impervious surface increases, and tree-clearing activity for development and development.
  - Additional Site Design Credits could be specified for the planting of native trees for all projects.



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Via Email: [dep.wetlands@mass.gov](mailto:dep.wetlands@mass.gov)

April 24, 2024

**RE: Wetlands-401 Resilience Comments**

**Concord Land Conservation Trust Comments on MassDEP's Resilience 1.0 Draft  
Regulations and 2.0 Recommendations**

Dear MassDEP:

I am writing as the Chair of the Concord Land Conservation Trust, a local land trust that owns and protects over 1,000 acres in Concord, Massachusetts. All of our fee-owned land and many of the conservation restrictions that we hold are open to the public. Thank you for the opportunity to comment on the draft revisions to the Wetlands Protection Act.

Specific comments on "1.0" inland proposed modifications

The most common activity that we undertake in and near wetland resources is trail restoration and maintenance. Most of the proposed stormwater management regulations will not and we believe should not apply to our trail work. However, under **10.05 (6)(m)6**, unpaved footpaths are subject to Stormwater Management Standards to the Maximum Extent Practicable. We believe that this places an undue burden on the Land Trust for an activity that is at a much smaller scale and has fewer impacts than the other uses identified in this section; further, it is unclear how the ESSD, LID, SCMs and BMPs would actually be applied to an unpaved footpath. I support exempting unpaved pathways from this requirement by including it under **10.05(6)(l)**.

It is unlikely that the Land Trust would undertake a **Public Shared Use Path (Section 10.04)**, but if we did, it appears that the Land Trust would be considered a private entity and would need an easement that provides for public access. We believe that our ownership in itself ensures public access; we would not want to have to give an easement to some other body for that purpose. The language could say "either on public property or private property owned by a Land Trust, or otherwise permanently protected, that provides public access".

General comments for Resilience "2.0"

The most common activity that we undertake in and near wetland resources is trail restoration and maintenance. We anticipate that we will be undertaking more of these activities in the future; the more frequent, high intensity storms and higher and longer-lasting flood levels that we are experiencing are taking a toll on our recreational trail system. The

current wetlands permitting for these projects can be burdensome, and often seems to be incommensurate with their typically limited environmental impact.

For restoration and maintenance of existing trails, we would support a new section to **exempt maintenance of existing trails in use by the public under 10.02(2)(a)**. It could read: "Activities conducted to maintain, repair or replace, but not substantially change or enlarge an existing public trail, provided said work utilizes the best practical measures to avoid or minimize impacts to wetland resource areas outside the footprint of said trail". Boardwalks, waterbars, and other basic trail infrastructure need to be routinely maintained or replaced. Land managers should be able to conduct this essential maintenance work to protect wetland resource areas without having to secure a permit.

Less frequently, the Land Trust creates new trails or relocates trails. For these, we support **expanding the limited project provision in 10.53(3)(j)(a)** to allow "the construction of new public footpaths and associated boardwalks/puncheons that are constructed close to the ground provided, however, that such structures are constructed on pilings, sills, or posts so as to permit the reasonably unobstructed flowage of water." Boardwalks and other basic trail infrastructure that cannot avoid wet environments serve to protect the wetland resource areas and their functions and values. Because most boardwalks and puncheons are only elevated 4-12" above the ground for safety reasons, shading and loss of vegetation are inevitable. By allowing Conservation Commissions to approve public boardwalks and puncheons as Limited Projects, wetland replication would not be required. Larger projects could still be required to undertake wetland replication.

Similarly, for new trails in BVWs, the permitting process could be simplified by adding a **performance standard in 10.55(4)(c) that allows new trails in wetlands** if, for instance, less than 500 s.f. are altered and water flow is not obstructed. When wetland trails are properly constructed, they preserve wetland functions and values and help build a culture of appreciation and stewardship for these vital resources.

The second most common activity that our Land Trust undertakes in and near wetland resources is invasive plant management. Non-native invasive plants pose a major threat to the health and survival of our native ecosystems, and are on the rise with climate change. Removal and control of invasive plants allows for the recovery of native species diversity and wildlife habitat. Yet invasive plant control projects can require time-consuming, costly, and complex wetland permitting devised for construction projects. We support adding a **limited project provision which specifically allows small-, medium-, and large-scale invasive species removal projects** with specific regulatory review standards. Alternatively, and at a minimum, we recommend that the management of invasive exotic species in wetland resource areas be specifically **exempted from the provisions related to Ecological Restoration Projects and Ecological Restoration Limited Projects**. The application is unduly burdensome and thus discourages invasive species management; it is adequately controlled under the Notice of Intent

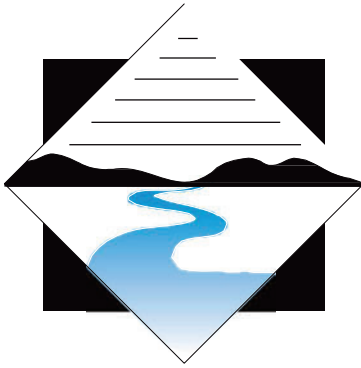
What would be helpful in the short term is updated information about changes in stormwater runoff and in flood levels that could help us as we make plans to restore or site trails that are threatened by these changes. If there is a way that information can be generated at a broader scale either similar to the NFIP mapping or with more accessible calculations, then we could potentially have a more accurate basis for designing trail improvements.

Thank you for your consideration.

Sincerely,



Polly Reeve, Chair



# CONNECTICUT RIVER

## Stormwater Committee

April 30, 2024

Ms. Lisa Rhodes

Attn: Wetlands-401 Resilience Comments

MassDEP – BWR, 100 Cambridge Street, Suite 900

Boston, MA 02114

Submitted electronically as requested to: [dep.wetlands@mass.gov](mailto:dep.wetlands@mass.gov)

Re: Wetlands-401 Resilience

Dear Ms. Rhodes,

The Connecticut River Stormwater Committee, a regional group of municipal stormwater professionals, was established by the Pioneer Valley Planning Commission (PVPC) in 2007. Today this coalition, which has grown to 20 members, including UMass-Amherst, works together to meet education and outreach requirements under the Municipal Separate Storm Sewer System (MS4) permit. When grant dollars allow, we also collaborate on other activities toward compliance, including development of an off-site mitigation handbook, nutrient source identification reporting methodology, and a design library of green infrastructure stormwater facilities suited for addressing water quality issues here in the Connecticut River basin. This regional collaboration enables us to streamline implementation of MS4 requirements and share as a community of practice on stormwater management.

We appreciate the effort that MassDEP has put into developing these draft regulation changes and commend MassDEP for focusing on ways to align with the MS4 permit requirements and advance care for our wetland resources for climate resiliency. We see many of the proposed changes to the general and inland wetland regulations as valuable steps toward increased public safety and ecological health in the face of climate change.

Members of our Stormwater Committee have provided careful review of the proposed Stormwater Regulations under 310 CMR 10.00 and the Stormwater Handbook and we offer the following comments and questions for MassDEP's consideration.

### Regulations

#### 10.04 Definitions

Highway Specific Considerations. The definition here seems to give one agency (MassDOT) special rights. Municipal DPWs often have control of roadways of similar size and undertake projects of similar scales, and so should be afforded similar allowances. *We recommend the regulations not be based on the governing agency but instead be based on the size of the roadway, the scale of the proposed project, the intended public benefits, and the potential environmental impacts.*

**Town of Agawam**

**Town of Belchertown**

**City of Chicopee**

**Town of East Longmeadow**

**City of Easthampton**

**Town of Granby**

**Town of Hadley**

**City of Holyoke**

**Town of Longmeadow**

**Town of Ludlow**

**City of Northampton**

**Town of Palmer**

**Town of South Hadley**

**Town of Southampton**

**Town of Southwick**

**City of Springfield**

**Town of West Springfield**

**City of Westfield**

**Town of Wilbraham**

**University of  
Massachusetts, Amherst**

**Pioneer Valley  
Planning Commission**



Impervious Surface. The inclusion of compacted gravel or soil roads generally is concerning in that some of these are in municipal and utility right of ways. The latter especially has minimal traffic and the unintended consequence of moving from “country drainage” to requiring more formalized stormwater management structures, especially in more rural locations could have serious cost implications.

*We recommend finding a better balance for stormwater concerns with what is needed and reasonable.*

Improvement of Existing Public Roadways. While the types of activities listed in this definition are consistent with exemptions provided in the MS4 permit for redevelopment projects, there does not appear to be any relief for such projects in the proposed MA stormwater regulations.

*We urge MassDEP’s reconsideration of these activities for some relief under the standards, especially since the intent of such projects often is to improve safety and accommodate greater shared use of roadways.*

Maintenance of an Existing Public Roadway. *We recommend eliminating this definition* and including all under Improvement definition above. Further, it is important to note that 10.05(6)(m)(7) seems to require that Maintenance of an Existing Public Roadway comply with the Stormwater Standards to the maximum extent practicable, however, 10.02(2)(b)(2)(p) appears to exempt the same roadway maintenance from review.

Impracticable and Practicable. These terms have different qualifications in their definitions. The added definition for “Impracticable” is based on physical constraints while the definition of “practicable” factors in costs, technology, proposed use, logistics, and adverse consequences. We believe this will lead to confusion. These definitions should be updated so that the criteria are consistent, such as updating the definition of “impracticable” to include all of the factors listed in the definition of “practicable.”

Maximum Extent Practicable. This definition references other parts of the regulations and is thus difficult to dig out. Would be best to include full definition here for ease of implementation and for consistency across project permits.

In addition, the definition proposed in the regulations is, “Maximum Extent Practicable, for purposes of stormwater management (310 CMR 10.05(6)(k)-(q)), is defined at 310 CMR 10.05(6)(o).”

310 CMR 10.05(6)(o) states “Project proponents seeking to demonstrate compliance with some or all of the Stormwater Management Standards to the Maximum Extent Practicable shall demonstrate that:

1. They have made all reasonable efforts to meet each of the Standards.
2. They have made a written alternatives analysis and? complete evaluation of possible stormwater management measures including Environmentally Sensitive Site Design (ESSD) and Low Impact Development (LID) Techniques or practices that minimize land disturbance and Impervious Surfaces, structural Stormwater Control Measures (SCMs), Best Management Practices (BMPs), pollution prevention, erosion and sedimentation control, and proper operation and maintenance of Stormwater Best Management Practices, physical constraints (e.g., high groundwater), **and costs;**
3. If full compliance with the standards cannot be achieved, the written alternatives analysis makes a clear showing that they are implementing the highest practicable level of stormwater management.”

The two definitions conflict with each other. Maximum Extent Practicable as defined in 310 CMR 10.05(6)(o) allows for costs to be considered as a justification for “impracticable,” but the new definition of “Impractical” specifically removes financial obligations and focuses solely on physical

constraints. *We recommend MassDEP clarify this prior to promulgation.*

Near (also related to 10.05(6)(k), this definition is problematic and vague and requires use of discretion. What are the meanings for “strong likelihood” and “significant impact”? These can be interpreted differently by consultants and commissioners alike, creating great possibility of inconsistent application.

*We recommend better language to promote ease of consistency for review from one project to the next.*

Redevelopment. As noted above, *we recommend relief for certain improvements of existing public roadways.*

## **10.05 Procedures**

10.05(4)(a) Notices of Intent. The regulations should not require such a high level of stormwater management detail for every NOI filing.

*We recommend two possible alternatives.*

- Strike the new sentence “A construction period .... Activities” and replace with “All projects must address erosion, sedimentation control, and pollution prevention with plans appropriate to and commensurate with the proposed alterations, even those projects otherwise exempt from the stormwater standards.” OR
- Strike the new sentence “A construction period .... Activities” and change the text in the general instructions for NOIs.

Please note there is a typo: “... operation and maintenance plan, and an illicit discharge compliance statement.”

10.05(6)(k)l Stormwater Management Standards. For ease of reference, *we recommend having the standards listed within their own section*, perhaps 10.06 and then number following sections sequentially from there. As it stands, the standards – a critically important element – appear buried in the procedures section.

Exemptions under 10.05(6)(l) and (m) include residential (single and multi-family) with 4 or fewer units, which does not reflect a change to current regulations. The MS4 permit, however, regulates any project disturbing one acre or more.

*We recommend alignment between these regulations and the MS4 permit.*

Standard 2. We support the use of the 100-year storm in all instances, not just “if off-site flooding,” and the use of NOAA+. *We are concerned, however, about the potential challenges for local boards/volunteers and want to underscore the need for MassDEP to help build understanding about these updates, particularly NOAA+, to minimize confusion.*

Standard 3. We understand that MassDEP is considering adjusting the recharge requirement for new development to 0.8 inch for HSG A, B, and C soils as compared to the current proposed 1.0 inch in the draft standards. While we appreciate the work to arrive at this consideration, *we are concerned about the lack of alignment this would cause with the MS4 permit requirement of 1 inch for new development and how this translates into additional challenges to local boards in the review process.*

We are also confused in this standard by the mention of “...met when underlying soils have a saturated hydraulic conductivity rate of at least 0.01 inch/hour, the recharge practice is designed to infiltrate the runoff into the ground fully within 72 hours.” *Is this rate a typo?*

For the mounding analysis required when vertical separation is less than four feet, what are some possible methodologies? Also, what are the implications in all recharge analyses of the recent research presented to the Massachusetts Water Resources Commission by UMass Amherst Professor David Boutt. See especially the projected rises in groundwater for our region here in Western MA on slide # 32 at: <https://www.mass.gov/doc/september-14-2023-wrc-presentation-massachusetts-groundwater-flooding-study/download>. *How do you suggest we account for this so that SCMs remain functional?*

Standard 4. The guidance provided by DEP and EPA to calculate the TP removal focuses on the SCMs but does not differentiate between phosphorus loading from roof runoff vs runoff from areas on a site with higher nutrient loading. Rooftop runoff is essentially clean but gets factored into calculations for TP loading reductions for projects, giving credit for cleaning water that is already clean.

*To ensure that there is appropriate attention to storm flows that carry pollutants, we recommend that MassDEP fine tune the nutrient removal requirement to focus on the areas of a site with higher nutrient loads.*

Standard 6. We appreciate the intent to protect cold water fishery resources with this updated standard, but it seems this could be written with far more clarity. *We recommend clear directions be provided to infiltrate stormflows or show that any stormwater at the point of discharge will not exceed 68 degrees F.*

Standard 7. While PVPC led development of the Off-site Stormwater Mitigation Handbook on our behalf in 2018, the document is in need of important updates to be useful at this point. *Please ensure that these updates are made so that our communities can best work with this guidance.* We also think that the Handbook update process might give renewed consideration to the option of a “payment in lieu of approach” as it was not recommended in the 2018 edition.

Standard 8. We appreciate the update in this standard that includes, “No construction period runoff may be directed to the post construction SCMs or other BMPs.” The value of this cannot be overstated. For erosion and sedimentation inspections, we recommend going beyond requiring inspections occur at least once every 7 calendar days and include an option for inspections to occur once every 14 calendar days *and* within 24 hours of a storm event of 0.25 inches or greater.

*We believe that the latter option may offer greater protection given the increasing frequency of downpours in Massachusetts. This would also create alignment with the EPA Construction General Permit.*

#### Setback requirements

*More information about the rationale for setback requirements would be helpful.* For example, is the setback requirement of 10 feet outside of Zone I and Zone A protective of drinking water supplies? Where does this come from?

## Broader questions

We would like *clarification on the definition of "Project Site,"* the limit of area to fall under requirements. We especially would like to know whether for an improvement project that involves adding a shoulder or sidewalk, whether requirements extend to the entire project or just to that drainage area within a wetlands jurisdictional area.

Soil evaluation - Will the Title 5 code need to be changed because of the setbacks to Soil Absorption Systems in the Stormwater Handbook and the new regulations?

Jurisdiction - Do Conservation Commissions have jurisdiction for the entire site for all stormwater management, even if the stormwater management system is not in a wetland resource area?

## Handbook

Standard #1: A New Stormwater Discharge is defined on Page 2-4 as "new or increased runoff directed to a resource area from new Impervious Surface or through a New Stormwater Conveyance." There are unstable pervious areas that can cause just as much water quality damage through erosion and sedimentation as impervious surfaces. *Expanding the definition outside of impervious surfaces would provide greater ability to address these areas, particularly non-point sources on redevelopment sites.*

Standard #2 Table 2-7 (Pg 2-50): Several smaller SCMs including dry wells, tree box filters, and water quality swales are noted in Table 2-7 as "Does not have the ability to partially or fully meet the specific Standard." However, all of these SCMs can be designed to provide a measure of detention, particularly on smaller sites. For example, a subdivision may have single family houses with individual dry wells and are tributary to larger treatment SCMs. Although the dry wells would only provide detention during smaller rain events, they can decrease the overall size of the downstream SCM, saving on cost and size demands. *We recommend recognizing value of these SCMs to provide some detention.*

Standard #6: In Tables 2-4b through 2-4d, the language reads "only use proprietary manufactured separators for pretreatment." This wording is potentially confusing, implying that only proprietary separators can be used for pretreatment, excluding other forms like deep sump catch basins, vegetated filters, etc. The language in Table 2-4a, "Proprietary manufactured separators may be used only for pretreatment" presents the requirement in a clearer fashion.

Standard #9: It is a step in the right direction to have a post-construction inspection of all SCMs prior to the issuance of a Certificate of Compliance. However, as written on page 2-43, this inspection would be performed either by the Conservation Commission or MassDEP. Understanding the design and signs of failure in SCMs is a technical skill that requires experience and training. *We recommend expanding the definition of inspector to include other municipal employees (e.g., town engineer) and qualified third parties, who may have additional experience with inspecting SCMs.*

Standard #11 Table 2-6 (page 2-47): Table 2-6 lists the suitability of SCMs to treat TMDL pollutants, and several SCMs including bioretention area (filtration), extended dry detention basins, sand/organic filters, wet basins, and green roofs are noted as "unlikely to provide significant reduction of target pollutant." However, these technologies are listed in Appendix F, Attachment 3 of the MS4 permit as approved

structural controls for meeting nutrient load reductions. This is a confusing contradiction between the two regulatory documents that will add to the administration and design burden when considering the selection of appropriate SCMs, particularly in retrofit scenarios. *We recommend alignment and clarification.*

#### Section 2.5.

Setback table 2-8: Several practitioners have expressed concerns with this table. How does one interpret this table if the project and the building are not in a resource area, and the infiltration area is not in a resource area – Is the Conservation Commission supposed to evaluate the project? Some think yes – others say no. In addition, are these setbacks required for all projects? The amount of slope requirement and separation distances seem difficult to comply with, especially for some smaller parcels. Table 2-8 requires that several SCMs have a  $\geq 12$ -foot access perimeter. In many cases, especially smaller applications, a smaller perimeter is sufficient for maintenance access. Having larger access could mean that additional site clearing is needed for space and grading. This could have an overall damaging effect of removing additional forest or undeveloped land that are beneficial for resource areas and for dealing with stormwater.

*We recommend the setbacks in the SW Handbook Chapter 2, Table 2-8 (page 2-54 and 2-55) be provided as general guidance where possible and necessitated by site-specific conditions. MassDEP could provide separate language saying SCM setbacks can be evaluated on a case-by-case basis with the Conservation Commission reviewer and requirements of the local jurisdiction. This would be a good use of the definition of “Nearby.”*

Note 8 states that "Structural Stormwater Management Systems (e.g., pipes, catch basins) and structural SCMs are therefore not allowed to be installed in groundwater". This standard could potentially be onerous to design around, particularly for public entities with large drainage systems located in the public way with a variety of groundwater conditions. For instance, it would be a barrier to the installation of deep sump catch basins, which are much deeper than a typical catch basin but provide a measure of water quality. It could also have the side effect of driving up design costs; test pits to identify groundwater are not a typical component in the design of a typical pipe and catch basin system. For larger systems over a wide area and a myriad of conditions, the implication is that many soil investigations, including potentially at each individual drainage structure, would need to be performed.

Section 5.3.4: For proprietary manufactured SCMs, MassDEP’s guidance for review on a case-by-case basis places tremendous burden on local boards and municipal officials. Following rules and remaining consistent in application will be extremely difficult.

*We strongly urge MassDEP to work again with UMass or another reputable entity to pursue a program of evaluating proprietary manufactured SCMs as a key means of providing essential support across the state for stormwater permitting.*

#### Section 6.2.11 (Standard 11 – Total Maximum Daily Loads):

Language states “Perform steps outlined in Section 6.2.11 to...” *We believe this should reference Section 2.3.11 instead.*

#### Section 6.3 Soil Evaluation Procedures:

Chapter 6 (page 6-72) and Chapter 1 (page viii) each indicate that a Soil Evaluator cannot be considered a competent soil professional. Although the Soil Evaluator title was developed for Title V, the training



involved is very comprehensive and includes a multi-week course (three classroom sessions, three field sessions), a written exam and a field exam; as well as annual continuing education requirements. A large part of the training to become a Soil Evaluator includes being able to clearly define soil profiles & characteristics, determine the depth of overburden above ledge, bedrock, or impervious layer(s), identify redoximorphic features, identify seasonal high groundwater elevations, and analyze ground water mounding to ensure breakouts will not occur under the recharge system. It is unclear why this specific category of professionals was excluded for evaluating soils for stormwater infiltration. Some in our group have noted that such testing for septic has been working for 50 years and that process and institutional knowledge is already in place. Further, the value of witnessing as part of the Title 5 process is very important. Having a representative on site during the test ensures we put these infiltration basins in the best locations, and that they are not an add on, or afterthought.

Language states “*All soil evaluations must be performed by a Competent Soils Professional. A Competent Soils Professional is defined as “A Competent Soils Professional is an individual with demonstrated expertise in soil science, limited to the following: a Massachusetts Registered Professional Engineer in civil or environmental engineering, Engineer in Training (EIT certificate) with a concentration in civil or environmental engineering, or Bachelor of Arts or Sciences degree or more advanced degree in Soil Science, Geology, or Groundwater Hydrology from an accredited college or university, that for purposes of stormwater management, assesses the Seasonal High Groundwater Elevation, soil texture, Saturated Hydraulic Conductivity Test, and hydrologic soil group. A soil evaluator pursuant to 310 CMR 15.017 and 15.018 is not a Competent Soil Evaluator.”*

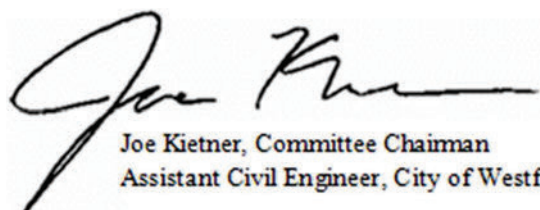
This is a similar definition from the current handbook but the reference to the Soil Evaluator pursuant to 310 CMR 15.017 and 15.018 is new. This language is confusing. Any College graduate with a degree in Civil Engineering is technically a “Competent Soils Professional” under this definition. However, as noted above, the bar to become a Title 5 Soil Evaluator is much higher than a “Competent Soils Professional.” It is likely that most Title 5 Soil Evaluators have the qualifications to be a “Competent Soils Professional”, but the definition is worded in a way that indicates they are precluded from being eligible.

*We recommend that MassDEP reconsider the value of Title 5 percolation tests and the work of Soil Evaluators in identifying best locations for SCMs.*


Consistency of Terminology. There is a great deal of referencing back and forth between the use of LID, SCMs, BMPs, ESSD etc. In some places (4-2) BMPs are not mentioned at all when defining SCMs and providing examples, while BMP is regularly used in Chapter 3. *There should be better consistency in use of these acronyms as they often seem to be referencing or meaning the same thing.*

Thank you very much for your consideration of our comments.

Sincerely,



Joe Kietner, Committee Chairman  
Assistant Civil Engineer, City of Westfield



Randal Brown, Committee Vice Chairman  
Public Works Director, Town of Southwick



April 29, 2024

Submitted via e-mail

MassDEP - BWR Wetlands Program  
Attn: *Wetlands-401 Resilience Comments*  
100 Cambridge Street, Suite 900  
Boston, MA 02114  
[dep.wetlands@mass.gov](mailto:dep.wetlands@mass.gov)

**Subject: Proposed Wetlands Resilience 1.0 Draft Regulations**

Dear Chief Rhodes and Wetlands Program Team,

Conservation Law Foundation (CLF) is pleased to submit these comments on the proposed Resilience 1.0 updates to the Massachusetts Wetlands Protection Act (WPA) regulations. We commend the Massachusetts Department of Environmental Protection (MassDEP) for advancing these much-needed updates aimed at improving resiliency across the Commonwealth. The WPA plays a critical role in the Commonwealth's ability to manage, prepare for, and adapt to the changing climate and associated impacts. Our coastal and inland wetlands and related resources are essential in protecting us from worsening impacts like floods and storms, and inappropriate activity in or near these resources will only exacerbate these risks and undermine our natural protections from them. We applaud MassDEP's intent and recognition of this within these Resilience 1.0 regulations. However, more is needed to truly advance resilience and ensure that the Commonwealth can thrive in the face of more extreme climate impacts. CLF's comments respond to the current proposed revisions to the regulations and make recommendations for what should be included in a forthcoming regulatory package.

**I. Development within Land Subject to Coastal Storm Flowage boundaries must be designed to have minimal impacts.**

MassDEP is well-aware of how critical Land Subject to Coastal Storm Flowage (LSCSF) is for Massachusetts' climate resilience, and we are pleased to see that the proposed regulations acknowledge this reality. CLF supports the proposed provisions that will appropriately limit development and ensure protective construction standards for buildings within the boundaries of LSCSF. LSCSF is one of the resource areas most vulnerable to climate change impacts, including sea level rise, and includes areas that already experience regular and severe flooding. As such, CLF fully supports the proposed prohibition on new buildings in the Velocity Zone, also known as the "V zone." Traditional residential and other development does not belong in

the V Zone given its increased risk of flooding and wave action. Prohibiting new development in these areas will help to protect and restore natural flood barriers and keep people out of harm's way. We also appreciate that the language prohibits “new buildings” rather than more broadly prohibiting other activities, like water dependent industrial uses and shoreline protection structures, which could unintentionally inhibit efforts necessary for climate resilience. It is critical that the regulations don’t prohibit – explicitly or practically – restoration efforts or the installation of nature-based solutions or other resilience infrastructure such as living shorelines.

CLF supports the exemption for water-dependent industrial uses in Designated Port Areas as included in 310 CMR 10.36(4)(d). MassDEP may consider adding a similar exemption for water-dependent activities related to research that may not be in DPAs, such as marine facilities associated with research institutions. Any exempted activities must not exacerbate flooding, displace flood waters, or otherwise adversely affect adjacent properties. The section pertaining to Redevelopment in LSCSF (310 CMR 10.36(8)) should include matching exemptions for water-dependent uses outside of DPAs.

We also recommend that language for LSCSF development standards relating to freeboard and building elevation reference the most current Massachusetts State Building Code (MSBC), rather than including specific elevations in the MassDEP regulations. For example, Section 10.36(4)(a) dictates that new construction in the MoWA Zone be elevated to two feet above the 1% annual chance base flood elevation (BFE), but the currently proposed (and likely to be adopted) Draft 10<sup>th</sup> Edition of the MSBC specifies BFE +3 feet for all construction in this zone.<sup>1</sup> The MSBC is written with the goal of protecting public safety and property and is updated more frequently than the MassDEP regulations are likely to be. Further, we contend that where the state building code’s elevation standards exceed those specified in the WPA regulations, the building code would preempt. Therefore, we recommend that any specific mention of elevation or freeboard requirements, or other construction standards, throughout the regulations be revised to read as “shall be in accordance with the most current adopted edition of the Massachusetts State Building Code.”

## **II. Land Subject to Coastal Storm Flowage boundaries must be defined to account for future climate conditions.**

A major concern that CLF has regarding the proposed LSCSF standards is that the definition and boundaries would rely on the FEMA floodplain, and therefore be insufficient in reflecting and preventing flood risk across the Commonwealth. The shortcomings of the FEMA FIRMs have been well-documented, including by FEMA itself.<sup>2</sup> FEMA has stated that they do

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<sup>1</sup> Massachusetts State Building Code Draft 10<sup>th</sup> Edition, page 92, accessed April 2024 at <https://www.mass.gov/doc/10th-edition-total-version-1213/download>. MoWA is equal to the Coastal A Zone.

<sup>2</sup> “Maps do not forecast flooding. Maps only reflect past flooding conditions and are a snapshot in time. They do not represent all hazards and do not predict future conditions,” Michael Grimm, acting deputy associate administrator of FEMA’s Federal Insurance and Mitigation Administration, as quoted in the Washington Post: Samuel Oakford, John

not factor in “any rainfall changes that might have started to take place because of climate change,”<sup>3</sup> and has also acknowledged that the “flood maps can be misleading and has warned for years that people who live outside of a designated flood zone are nonetheless susceptible to flooding.”<sup>4</sup> In part, this is because the FIRMs don’t include all current flood risks, such as pluvial flooding, nor are they based on forward-looking climate modeling that would reflect rapidly changing climate conditions.<sup>5</sup> This, combined with the fact that most of the FIRMs are drastically out-of-date, means that they severely underrepresent flood risk. The discrepancies between flood risk or occurrence and the FEMA floodplains have also been well-documented; a 2020 study by First Street Foundation found that across Massachusetts, 65 percent more properties are at risk of flooding compared to what the FEMA maps identify,<sup>6</sup> and a 2023 study by the Metropolitan Area Planning Council found that 96 percent of disaster claims from a March 2010 flood event were from outside of the FEMA 100-year floodplain.<sup>7</sup> While these studies also reflect the impact of stormwater flooding rather than solely the coastal flooding that primarily affects LSCSF, they still illustrate the degree to which FEMA’s floodplain definitions fall very short of the extent of true flooding.

We recommend that LSCSF, and boundaries for zones within LSCSF, be defined using language that specifies “according to best available, forward-looking climate data,” with the extent of the FEMA 100-year floodplain clearly stated as the absolute minimum extent. MassDEP’s Notice to Reviewers indicates that the agency recognizes the need to address and incorporate projected future conditions. Additionally, other MassDEP regulations are based on future conditions,<sup>8</sup> and CLF contends that it is not outside the agency’s purview to promulgate regulations that take into account future conditions as based on strong scientific evidence.

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Muyskens, Sarah Cahlan, and Joyce Sohyun Lee, “America Underwater: Extreme floods expose the flaws in FEMA’s flood risk maps,” Washington Post, December 6, 2022, accessed April 2024 at <https://www.washingtonpost.com/climate-environment/interactive/2022/fema-flood-risk-maps-failures/>

<sup>3</sup> Christopher Joyce, *Outdated FEMA Flood Maps Don’t Account For Climate Change*, NPR (Sept. 15, 2016, 4:37 AM), <https://www.npr.org/2016/09/15/492260099/outdated-fema-flood-maps-dont-account-for-climate-change>.

<sup>4</sup> Thomas Frank, *Almost no one in Ky. has flood insurance, hindering recovery*, E&E NEWS (Aug. 9, 2022, 6:33 AM), <https://www.eenews.net/articles/almost-no-one-in-ky-has-flood-insurance-hindering-recovery/>.

<sup>5</sup> United States Government Accountability Office, “FEMA Flood Maps: Better Planning and Analysis Needed to Address Current and Future Flood Hazards,” GAO-22-104079, October 2021, accessed April 2024 at <https://www.gao.gov/assets/gao-22-104079.pdf>

<sup>6</sup> David Abel, “Millions of homes face substantial flood risk — far more than previously predicted, study finds,” Boston Globe, July 2 2020, accessed April 2024 at <https://www.bostonglobe.com/2020/07/02/metro/millions-homes-face-substantial-risk-flooding-far-more-than-previously-predicted-study-finds/>

<sup>7</sup> Anne Herbst, Caitlin Spence, Rachel Bowers, “Water, Water, Everywhere: The Increasing Threat of Stormwater Flooding in Greater Boston,” Metropolitan Area Planning Council, April 2023, accessed April 2024 at [https://www.mapc.org/wp-content/uploads/2023/04/Final\\_Stormwater-Report\\_MAPC\\_April-2023.pdf](https://www.mapc.org/wp-content/uploads/2023/04/Final_Stormwater-Report_MAPC_April-2023.pdf)

<sup>8</sup> The simultaneously proposed amendments to 310 CMR 9.00 The Massachusetts Waterways Amendments incorporate new language aimed at planning for projected sea level rise and point to the Massachusetts Coastal Flood Risk Model (MC-FRM) rather than FEMA, such as in sections 9.15(1)(b)(2) and 9.37(1)(d).

A. Other jurisdictions base regulations on forward-looking climate data, and Massachusetts should as well.

Multiple jurisdictions, both within and outside of Massachusetts, have already successfully incorporated forward-looking data into their regulatory schemes. In Massachusetts, Cambridge’s zoning ordinance includes flood resilience standards with the goal “to promote building designs that are resilient to the impacts of flood events that are likely to become more frequent and intense due to the effects of climate change.”<sup>9</sup> Standards in this zoning ordinance “are informed by future projections and up-to-date scientific research, rather than historical occurrences of flooding, and require that long-term flood elevations must be “based on an approximately 50-year projection.”<sup>10</sup> In Arlington’s wetlands protection ordinance, the term “flood control” is defined as “the prevention or reduction of flooding and flood damage, both as currently expected to occur and as *projected to occur based on the best available data* regarding the impacts of climate change”<sup>11</sup> (emphasis added). Finally, in Boston, the zoning code requires that within certain FEMA zones, the minimum sea level rise design flood elevation must be no lower than two feet above the sea level rise base flood elevation.

Several jurisdictions outside of Massachusetts have also adopted regulatory authority incorporating forward-looking data. In Hawaii, state law requires sellers of residential real property to disclose “sea level rise exposure area as designated by the Hawaii climate change mitigation and adaptation commission or its successor,” as based on future hazard exposure.<sup>12</sup> In New York City, after Hurricane Sandy, the city conducted a review of the FEMA flood-risk maps and found them to be inadequate.<sup>13</sup> Therefore, in 2016, FEMA and the city worked on a new map that will apply the “projection of 30 inches of sea level rise by 2050.”<sup>14</sup> The New York City Department of City Planning has also developed the Flood Hazard Mapper, which provides an “overview of the coastal flood hazards,” which currently threaten New York City in addition to how the “hazards are likely to increase in the future with climate change.”<sup>15</sup> The City states that the tool was created to “enable more informed decision-making by residents, property and business owners, architects and engineers, and policy-makers.”<sup>16</sup> The New York City Administrative Code also requires the Mayor’s office to establish climate resiliency design

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<sup>9</sup> Zoning Ordinance, City of Cambridge, Massachusetts, § 22.81, *available at* [https://library.municode.com/ma/cambridge/codes/zoning\\_ordinance?nodeId=ZONING\\_ORDINANCE\\_ART22.000SUDEDE\\_22.80FLREST](https://library.municode.com/ma/cambridge/codes/zoning_ordinance?nodeId=ZONING_ORDINANCE_ART22.000SUDEDE_22.80FLREST).

<sup>10</sup> *Id.*

<sup>11</sup> Arlington Regulations for Wetlands Protection, § 4(B)(37) (March 16, 2023), *available at* <https://www.arlingtonma.gov/home/showpublisheddocument/64923/638174068252130000>.

<sup>12</sup> Haw. Rev. Stat. §§ 508D-2, 508D-15 (2023), *available at* [https://www.capitol.hawaii.gov/hrscurrent/Vol12\\_Ch0501-0588/HRS0508D/HRS\\_0508D-0015.htm](https://www.capitol.hawaii.gov/hrscurrent/Vol12_Ch0501-0588/HRS0508D/HRS_0508D-0015.htm).

<sup>13</sup> Alex Pasternack, *NYC: Few Cities Are Doing More to Map and Respond to Rising Waters*, ESRI, <https://www.esri.com/about/newsroom/blog/new-york-city-flood-mapping/>.

<sup>14</sup> *Id.*

<sup>15</sup> *NYC Flood Hazard Mapper*, NYC PLANNING, <https://www.nyc.gov/site/planning/data-maps/flood-hazard-mapper.page> (last visited April 17, 2024).

<sup>16</sup> *Id.*

guidelines and use forward-looking data, which includes using the city's Flood Hazard Mapper to assess current and future flood risk and future tidal inundation.<sup>17</sup>

Finally, the regulations must be explicit that the FEMA 100-year floodplain is the absolute minimum extent of this area, and that no state-specific rebuttal process may result in the application of LSCSF performance standards to any area less extensive than the FEMA 100-year floodplain. For example, CLF is concerned that the current draft language allowing for rebuttal opens the possibility that the boundary may be determined to be a smaller area than the 1% Annual Chance Flood. Given the knowledge that the 1% Annual Chance Flood boundary is likely an underrepresentation of flood risk, LSCSF boundaries should in no circumstance be less expansive than this area. In cases where it may truly be necessary for the LSCSF boundary to be revised so as to be less expansive than the FEMA boundary, the regulations should state that the municipality or the proponent must receive documentation from FEMA for this change, such as with a Letter of Map Amendment (LOMA). In contrast, if a municipality seeks to expand the LSCSF boundary beyond the FEMA boundary, review for this is appropriate at the local level given that municipalities are allowed to exceed the minimum requirements of the WPA.

### **III. Performance standards for LSCSF must allow for and support activity related to supporting and increasing climate resilience.**

CLF is concerned that Section 10.36(5) pertaining to “Adverse Effects in the V-Zone and MoWA Zone” and Section 10.36(7) pertaining to “Activities in the MiWA Zone” have the potential to preclude resilience or restoration activities. Exemption language should be added to these sections for nature-based solutions that have the goal of increasing climate resilience, and similarly for ecological restoration projects. For example, projects such as runneling or ditch remediation, both of which are effective restoration techniques, may be interpreted to be in conflict with the directives to avoid “fill, structures, or topographic alterations which would increase velocity or redirect flow.” Similarly, in Section 10.36(8) pertaining to Redevelopment, item (g) should include allowance for other nature-based solutions for the purposes of flood control beyond just construction of a berm, such as living shorelines or other approaches. We support the wording in this section which allows this under the purview of a public agency or the municipality's support. We also support the intent of the language relating to public access requirements under 310 CMR 9.00, but suggest that this be revised to read “The project shall meet other requirements of 310 CMR 10.36(8) and any public access requirements established under 310 CMR 9.00: Waterways; provided that compliance allows a net benefit to nearby Resource Areas and adjacent properties” instead, so as to reduce conflict between the goals of resilience, public access, and protection of Resource Areas.

We also applaud and support the provision in Section 10.36(9) allowing for salt marsh and dune migration. Allowing migration of these resources is a key component of ecological restoration and will also enhance coastal resiliency. This section does state that such efforts must

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<sup>17</sup> New York City Admin Code, § 3-131 (2021), available at <https://codelibrary.amlegal.com/codes/newyorkcity/latest/NYCAdmin/0-0-0-132739>



have “no adverse effects on any Resource Area” and we recommend that MassDEP consider clarifying this language. We are concerned that “Adverse Effects” may be construed to include the addition of fill, redirection or channelization of water, interference with vegetation, and other restoration activities that, when left open to interpretation, could be interpreted as prohibiting salt marsh and dune migration and therefore end up being in conflict with the goal of these provisions. CLF also recommends that MassDEP include salt marshes under 310 CMR 10.13 Ecological Restoration Projects rather than 310 CMR 10.24(8) Ecological Restoration Limited Projects. This recommendation is discussed in further detail later in these comments.

A. Any redevelopment in LSCSF should result in a net positive improvement for climate resilience.

The draft regulations distinguish between activities in previously undeveloped areas versus redevelopment activity, and for activity in densely developed versus less developed areas. This is a good approach. Different levels of development and historic or present activity and use will require different regulatory tactics. CLF supports the language which requires that redevelopment in LSCSF must constitute a net improvement over existing conditions, such as through removing impervious surface. This will help build resilience in heavily developed and populated areas.

CLF recommends that the language allowing for the placement of fill in the MiWA Zone for flood control purposes should prioritize ecological restoration projects and nature-based solutions projects first, wherever feasible. Such approaches will not always be possible, but consideration and evaluation of using them should be a requirement, and implementation should be required if it is determined that they are feasible and beneficial. Furthermore, this section should provide more clarity as to what constitutes “flood control” to ensure that this provision does not open up loopholes for projects that may be less beneficial.

Finally, we suggest that MassDEP consider any potential implications of these provisions for resilience improvements or routine maintenance work on public transit infrastructure such as railroads and railroad rights-of-way. Public transit is an essential component of achieving greenhouse gas emissions reduction targets and other climate goals, and climate resilience is a key component of maintaining safe and reliable service.

**IV. The regulations should be improved to better support ecological restoration and nature-based solutions projects.**

A key goal of this update to the regulations is to support nature-based solutions as climate resilience approaches. CLF fully supports this goal and the measures proposed so far in the regulations, but additional changes are needed to actually achieve this.

One change that would have substantial benefit is to expand the list of eligible Ecological Restoration Project types under 310 CMR 10.13. Specifically, we recommend the inclusion of



salt marsh and cranberry bog restoration projects as eligible projects. Research conducted by CLF and Mass Audubon showed that the permitting process in Massachusetts needs to be significantly streamlined in order to support NBS and restoration projects, and that these two project types and associated techniques would particularly benefit from inclusion in the ERP list of eligible projects (as opposed to Ecological Restoration Limited Projects). MassDEP may also consider adding a provision that would allow any other restoration project type for which there exists MassDEP-approved guidance to be eligible for this permit pathway. This would allow easier expansion of this pathway in the future, without having to go through a regulatory change process but while still ensuring appropriate department oversight. While substantial review and revision of such projects is needed, expansion of the eligible Ecological Restoration Project list is a good, effective, and potentially immediate next step, since the ERP designation is meant to speed up and streamline the permitting process for eligible projects while retaining appropriate review.

CLF supports the changes in the regulations that would require consideration of Low Impact Development (LID) and Environmentally Sensitive Site Design (ESSD) as stormwater mitigation techniques, but we urge MassDEP to strengthen this to be a standard, not just a requirement for consideration. The draft regulations say applicants “shall consider” and that an Issuing Authority “may require” such approaches but stop short of actually requiring implementation of these approaches if feasible. The efficacy of LID and ESSD project types have been well-demonstrated, and they are often preferable over traditional hard engineering or gray infrastructure when it comes to climate resilience because they can provide multiple benefits. Given the urgency of the climate crisis and the threats that climate impacts pose to Massachusetts, this is a critical matter of urgency and public safety, and these crucial interventions should not be optional. We recommend changing the proposed language to state that an Issuing Authority “shall require” such approaches where feasible.

We also note that there is no definition for “nature-based solutions” provided in the draft regulations. Presumably, the regulations would draw from the existing statutory definition for nature-based solutions at M.G.L. c.21N.<sup>18</sup> CLF is concerned that this existing statutory definition is weak because it is too broad and includes too many references to man-made engineering approaches. CLF encourages MassDEP to work to create and include in these regulations a more specific definition, working within this existing framework, so as to provide more clarity and specificity for agency staff and all working on these or related projects. We understand that MassDEP cannot unilaterally supersede a statutory definition with a regulatory one. Thus, we recommend that it create a more detailed definition that would nest within the state’s definition of nature-based solution and would be used for the purpose of determining the applicability of the WPA regulations alone. We also recognize that it will take time to craft a thoughtful and

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<sup>18</sup> This definition is: “strategies that conserve, create, restore and employ natural resources to enhance climate adaptation, resilience and mitigation to mimic natural processes or work in tandem with man-made engineering approaches to address natural hazards like flooding, erosion, drought and heat islands and to maintain healthy natural cycles to sequester and maintain carbon and other greenhouse gases.”

appropriate definition. As such, we recommend that this be addressed as part of the Resilience 2.0 updates.

Finally, we recommend revising the proposed new provision for Scientific Research Projects. While we support the provision's intent to support projects that will gather information on approaches to coastal resource management, we do not believe the language will achieve this purpose as proposed. CLF does not undertake these types of projects, but many of our partner organizations do and have voiced concern that the proposed language will be too limiting to be useful to proponents of scientific research projects. We encourage MassDEP to continue to revise these regulations in partnership with practitioners and stakeholders who are experts in this work.

**V. The proposed 1-inch recharge standard is a critically important resilience measure and should be adopted as proposed.**

CLF fully supports the proposed 1-inch recharge standard and encourages the agency to move forward with adopting this proposed standard rather than a lower one. The agency has specifically asked for feedback in determining between the proposed 1-inch recharge requirement or a lower 0.8-inch recharge requirement. As the agency notes in the preface to the proposed regulations, recharge standards are important in maintaining groundwater levels, recharging water levels of wetlands and other water bodies, removing pollutants, and managing runoff that can cause flooding, decrease water quality, and more. This is a critical component of not only climate resilience but managing water quality and sufficient water supply for both ecological and public health and safety purposes. Thus, a high, protective standard is warranted.

A recharge or capture standard of 1 inch or even more is already in use in some municipalities across the Commonwealth, demonstrating both its efficacy and achievability. Arlington requires that all projects subject to a Major Stormwater Permit retain a volume of runoff equal to 1 inch multiplied by impervious surface area,<sup>19</sup> and Boston requires that large projects retain a volume equivalent to 1.25 inches multiplied by impervious surface area.<sup>20</sup> The standard also aligns with the 2016 MS4 permit requirement, improving consistency between these frameworks and making it easier for municipalities to achieve compliance. For these reasons, CLF believes the 1-inch requirement is achievable, effective, and necessary for ongoing climate resilience and water quality and management goals of the Commonwealth.

We also support the proposed sequence of evaluation for offsite mitigation proposed for recharge at Redevelopment sites, along with MassDEP's approach of requiring onsite mitigation for new development. We acknowledge that the nature of redevelopment projects may make it more difficult to achieve required mitigation, though as the agency states in the Notice to

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<sup>19</sup> Town of Arlington Stormwater Management Rules & Regulations, Section 5(B)(1)(a), accessed April 2024 at <https://www.arlingtonma.gov/home/showpublisheddocument/60607/637850100075470000>

<sup>20</sup> Boston Planning and Development Agency, Smart Utilities Policy for Article 80 Development Review, page 6, accessed April 2024 at <https://www.bostonplans.org/getattachment/7b87a301-95da-4723-b3a9-02bfebd1b109>

Reviewers, new development projects should have enough design flexibility to achieve this. We underscore that mitigation for the impacts of any development activity should be kept as close to the site of the impacts as possible to localize impacts. Finally, we caution that impacts either of offsite mitigation projects wherever they are sited, or of redevelopment projects that have utilized offsite mitigation, must always be evaluated for their potential to impact overly burdened communities and Environmental Justice Populations.

**VI. The proposed precipitation standard and pollutant removal standard are based on sound science and will help strengthen climate resilience and improve water quality.**

CLF supports the proposed use of the NOAA 14 Plus data for stormwater precipitation standards, and the new standard for achievement of TMDLs. The TMDL standard will align with the EPA MS4 General Permit and reflects higher standards for pollutant removal than the current regulations. We support both changes and believe they will result in greater consistency and improved pollutant removal.

Regarding the use of the NOAA 14 Plus standard, we are pleased that this reflects a shift to using more current precipitation data, which will more accurately reflect the current increasing precipitation rates and more extreme storms that the region is experiencing. We caution, however, that the NOAA 14 Plus standard is still not based on future climate conditions; the data reflects “currently observed storms documented in the 2019 NOAA Atlas” and therefore will only bring the standards up to date with more recent conditions rather than the most current or future conditions.<sup>21</sup> Given that this standard is used to design and size stormwater systems and other critical planning processes, it is essential that it utilizes the most current data available and, ideally, reflects the future conditions that those stormwater systems will need to manage. Even the current NOAA 14 Plus standard will soon be outdated because of how rapidly climate impacts are increasing, meaning that this standard is likely to be insufficient in the very near future. CLF encourages MassDEP to consider relying on a data source for precipitation rates that is based on climate modeling that accounts for the rapid rate of climate change and reflects future conditions.

**VII. The Resilience 2.0 updates should incorporate future climate conditions and should improve the permitting process for nature-based resilience projects and ecological restoration projects.**

In the Notice to Reviewers, MassDEP states that the department is considering “incorporating approaches that address projected future conditions” and asks for feedback on this. As CLF has stated throughout this comment letter, we fully support and urge the use of projected climate data. Regulations that don’t rely on forward looking climate projections will quickly become outdated and therefore inaccurate, will underrepresent risk, and will mean regulatory and planning decisions that may be in place for years or decades into the future are

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<sup>21</sup> MassDEP, Wetlands Resiliency Update Notice to Reviewers, page 2

made based on insufficient information. It is a matter of climate resiliency and indeed public health and safety to be using the best available data, and Massachusetts has already developed tools that can be used to evaluate future conditions. For example, the Massachusetts Office of Coastal Zone Management has the Sea Level Affecting Marshes Model (“SLAMM”) which evaluates “the potential areal extent and distribution of coastal wetlands in Massachusetts as they respond to four different sea level rise scenarios over time.”<sup>22</sup> Models such as the Massachusetts Coastal Flood Risk Model (MC-FRM)<sup>23</sup> or the Charles River Watershed Model<sup>24</sup> also already rely on projected climate data in their modelling. Planning and regulatory decisions should be made based on flood risk information from models similar to these. Regulations may need to include a framework for decision-making that would set guidance and requirements for how to approach this, such as choosing an appropriate flooding scenario (i.e. 2030, 2050, 2070), flood depth, and probability. CLF urges MassDEP to address this in the Resilience 2.0 update.

Additionally, Resilience 2.0 updates should include revisions to better support nature-based solutions projects for climate resilience, and ecological restoration projects. The Resilience 1.0 updates have removed the Combined Application that previously combined aspects of permit applications for WPA, 401 Water Quality Permit, and Chapter 91. Conversations with practitioners and other stakeholders have indicated that, as it was previously designed, the Combined Application did not achieve the intended goal of improved or streamlined permitting processes. CLF therefore advocates that the Combined Application be replaced with a process that does achieve those intended goals. Such a process must be carefully designed so as not to allow inappropriate projects to slip past with minimal review, but should support beneficial projects that rely on tested and science-based approaches and which can help restore degraded natural ecosystems and processes, or which use NBS approaches to strengthen climate resilience.

In conclusion, CLF is enthusiastic about this first set of regulatory updates geared towards climate resilience. The WPA includes some of the most important provisions for managing critical climate resources and for impacting climate resilience across Massachusetts. These regulations must therefore rely on the best data available including forward-looking climate projections, and must support and advance interventions like nature-based solutions and ecological restoration projects, without opening loopholes for detrimental projects that could exacerbate climate impacts.

It is impossible to overstate the importance of acting as swiftly and effectively as possible in advancing these changes and the future Resilience 2.0 updates – each year brings new record setting rainstorms, hotter temperatures, and rising seas. CLF applauds MassDEP on the

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<sup>22</sup> *Sea Level Affecting Marshes Model (SLAMM)*, MASS.GOV, <https://www.mass.gov/info-details/sea-level-affecting-marshes-model-slam> (last visited April 17, 2024).

<sup>23</sup> Massachusetts Department of Coastal Zone Management, Massachusetts Sea Level Rise and Coastal Flooding Viewer, accessed April 2024 at <https://www.mass.gov/info-details/massachusetts-sea-level-rise-and-coastal-flooding-viewer>

<sup>24</sup> Charles River Watershed Association, Charles River Flood Model V2.0, accessed April 2024 at <https://www.crwa.org/watershed-model>

tremendous work required to bring about this first round of updates, and on conducting a robust public engagement process so that stakeholders have been able to adequately provide feedback on these critical amendments. We look forward to similar levels of engagement as the next round of updates is released, and urge the department to advance Resilience 2.0 as quickly as possible.

We thank you for the opportunity to comment, and look forward to continued engagement as both Resilience 1.0 and 2.0 move forward. Please direct any questions to Ali Hiple, [ahiple@clf.org](mailto:ahiple@clf.org).

Sincerely,

Ali Hiple  
Senior Policy Analyst  
Conservation Law Foundation

**From:** [Tom Cox](#)  
**To:** [DEP Wetlands \(DEP\)](#); [Waterways, DEP \(DEP\)](#)  
**Subject:** Wetlands and Waterways Resilience Comments  
**Date:** Thursday, April 25, 2024 1:58:51 PM

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[Dep.wetlands@mass.gov](mailto:Dep.wetlands@mass.gov)

[Dep.waterways@mass.gov](mailto:Dep.waterways@mass.gov)

RE: Wetlands and Waterways Resilience Comments

To Whom it May Concern:

Thank you for your concern and for bringing up climate change, rising sea levels, and resiliency for discussion. Change is inevitable and we, as a Commonwealth, must deal with it.

I would argue that this discussion should have started years ago, but better late than never.

As a past President of *Save the Harbor/Save the Bay* and also a past President of the *Massachusetts Marine Trades Association* I have a particular interest in how we address the enormous climate related challenges facing us and the next generation.

The new proposed inclusion and promotion of “managed retreat” via “nature-based planning” is commendable – but **not** to the exclusion of any other, often more viable, remedies. In some instances “managed retreat” may very well be the best option, however, there is not a “one size fits all” solution to every scenario – in some locations retreat is not an option and to ban construction in a velocity zone is both



irresponsible and short-sighted. There are so many examples of meaningful climate resiliency solutions in our own backyard and around the world that do not include “retreat”. We need look no further than the St Regis Flood Barriers in the Seaport district of Boston, or Langone Park in the North End, or Ora Seaport’s use of passive flood barriers in the Seaport area – or slightly further afield at Stuyvesant Park in Manhattan, or the San Francisco waterfront on our left coast. And we mustn’t forget our neighbors across the pond at the Thames River Barrier built in the 1980’s, or the ingenious Dutch that have been protecting the Netherlands for years and years without a large scale “retreat”. The list goes on and on – the point being, that the Commonwealth should join them and lead the way in providing solutions and not just “retreat”. If we are serious about solving these problems, we must be open to new ideas and proven remedies.

I would implore you to continue the discussion and to invite more people to the table. Stakeholders that will be most severely impacted by the proposed new regulations deserve a place at the table as you promote regulations with the potential to severely impact their lives.

As a marina owner and environmentalist that will suffer the consequences of some of the proposed changes I would like to offer a few suggestions:

1. Options allowed in DPA’s should be extended to all marinas, boatyards, and other water-dependent entities. The citizens of the Commonwealth deserve continued access to the water that is provided by marinas.
2. Water-dependent companies need to have “predictable outcomes” as it relates to DEP and other governmental regulations. Marinas need to know, with certainty, under what set of regulations they will (not “may”) be able to continue in

business.

3. Banks, investors, and insurance companies need to know that waterfront properties have guarantees that protect the very existence of water-dependent entities so that loans will be available to invest in solutions that may take years to implement.

4. Before any new regulations are implemented the Commonwealth needs to formulate a comprehensive plan to address these important climate related issues. Perhaps a new agency modeled after the MWRA could be empowered with the task.

5. The plan should include a science-based analysis, engineering options, cost benefit analysis, and societal values.

6. Many adaptation options, including, but not limited to “retreat” must be available. Adaptive building should be allowable. There should not be an absolute ban on building in velocity zones and there should not be an inflexible requirement to rebuild only on the exact same footprint.

7. Regulations must be based on objective criteria formulated by DEP and not the subjective opinions of local conservation commissions. Solutions need to be site specific and not generalized mandates.

8. Adaptation efforts should be allowed to be implemented over a reasonable time table, in some cases covering many years.

9. Distribution of the DEP’s proposed changes should always go to cities and towns in general, and not just to their conservation commissions, to make sure the knowledge and contribution is widespread.

Time is of the essence. We have wasted precious years that we cannot recover. I, along with many in my industry, would be delighted to work with the DEP going forward. Let's work on this together to make a better, safer world for us in the future.

Yours truly,

Tom Cox, CMM

Co-Owner, Constitution Marina, Boston

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4/29/2024

MassDEP - BWR Wetlands Program  
Attn: *Wetlands-401 Resilience Comments*  
100 Cambridge Street, Suite 900  
Boston, MA 02114

Comments Submitted Electronically to: [dep.wetlands@mass.gov](mailto:dep.wetlands@mass.gov)

## **RE: Wetlands-401 Resilience Comments**

Greetings,

Contech greatly appreciates the opportunity to provide feedback on the proposed updates to the Wetlands Protection Act, Massachusetts Stormwater Handbook, and newly labeled Appendix A of the Stormwater Handbook. We have assembled our comments herein and emphasize the importance of the 5 priority issues noted below for MADEP's consideration. We feel all of our comments are important and encourage MADEP to fully consider each of them before updating the impacted documents where relevant. We applaud the massive undertaking MADEP has accomplished in getting these documents ready for public review! Collectively these changes represent a major leap forward for the stormwater management program, and given how infrequently changes of this scale occur, we strongly encourage MADEP to take enough time to properly address stakeholder feedback prior to final adoption.

### ***Priority Comments:***

- 1. Proposed reliance on the now defunct TARP Tier II Field Monitoring Protocol as the sole means of evaluating and assigning pollutant removal credit to proprietary SCMs:*

MADEP's draft Wetlands Rule and Stormwater Handbook still reference the 2003 TARP Tier II Field Monitoring Protocol as the only acceptable means of collecting and submitting data for the purpose of evaluating proprietary SCMs for TSS and Total Phosphorus removal credit. However, no studies are known to have ever been completed in strict compliance with the 2003 version of TARP protocol because it was updated soon after publication by other TARP member states. The TARP studies completed while the program remained viable were executed in accordance with updated versions of the protocol in order to comply with the most current requirements. More importantly, the TARP program no longer exists in any form, and the other TARP member states have updated their guidance to reference the now industry gold standard Technology Acceptance Protocol-Ecology (TAPE), administered by the Washington State Dept. of Ecology (Ecology). Similarly, the other New England States have also updated their guidance to reference and accept studies conducted under the TAPE protocol when evaluating proprietary SCMs. It is crucial that MADEP update their guidance to reference viable programs such as TAPE rather than TARP to avoid creating a situation where there is no viable path to acceptance for proprietary SCMs.

*Key Points:*

- The TARP program no longer exists, no longer has a viable website, has been abandoned by the other TARP states, and the only record of the 2003 TARP protocol online is an archived copy hosted by MADEP
- All known TARP studies executed in the past were completed in accordance with more recent versions of the TARP protocol which were updated by other member states, most notably New Jersey, to address shortcomings in the original 2003 version
- The stormwater research community no longer utilizes the TARP protocol and instead utilizes the current gold standard TAPE protocol created and administered by the Washington State Dept. of Ecology. The TAPE protocol is very similar to the original TARP protocol in requiring long term field monitoring across multiple storm events, robust data quality objectives, and quality assurance measures. Unlike the TARP, the TAPE protocol has benefited from regular updating to incorporate evolving industry best practices and more robust statistical analysis
- Each of the other New England States (along with numerous other stormwater programs in the US, Canada, Australia, New Zealand and beyond) accept studies conducted under the TAPE protocol and maintain established lists of approved/vetted proprietary SCMs
- The TAPE protocol is going to serve as the foundation and field-testing gold standard for the soon to launch STEPP National SCM Verification Program, which both EPA Region 1 and MADEP have expressed interest in. ASTM Committee E64 (Stormwater) is in the process of creating ASTM standards utilizing the TAPE protocol that will then be referenced by the STEPP program for the purpose of evaluating SCMs in the field. Those successfully completing a field study conducted in accordance with the TAPE protocol (including those already having a current TAPE certification) will be eligible for STEPP National Verification.

**Recommended Change:** MADEP should update all references to the defunct TARP program and protocol and instead reference the TAPE Field Protocol as the acceptable source of field data for use in assigning pollutant removal credit to proprietary SCMs, specifically those classified as filters and biofilters.

Additionally, MADEP plans to allow the use of proprietary separators (hydrodynamic separators (HDS)) for pretreatment and treatment train applications. The New Jersey Dept. of Environmental Protection's MTD certification program is considered the gold standard for vetting proprietary separators for this purpose and includes essential sizing criteria to ensure separators perform as intended. We recommend

requiring NJDEP certification for proprietary separators being utilized in Massachusetts and referencing the appropriate sizing outlined in the certifications for each technology.

The language included in Chapter 11 (Starting on page 212) of the new 2024 CTDEEP Stormwater Manual is an excellent reference that includes both the TAPE and NJDEP programs which MADEP could easily adopt in place of the proposed outdated TARP language. [https://portal.ct.gov/-/media/DEEP/water/water\\_quality\\_management/Guidance/2023\\_SWM\\_8\\_11.pdf](https://portal.ct.gov/-/media/DEEP/water/water_quality_management/Guidance/2023_SWM_8_11.pdf)

2. *We do not support awarding blanket pollutant removal credit to proprietary SCMs that do not have long term TAPE field performance data and are required to be designed in accordance with the relevant sizing conditions they were tested under. MADEP proposes awarding 60% TSS and 30% TP credit to proprietary filters and allowing proprietary treebox filters (more commonly referred to as proprietary biofilters or high rate biofilters (HRBF)) to be used to meet the 90% TSS and 60% TP criteria without the submission of any performance data or applicable sizing conditions:*

There are now dozens of different proprietary filters and biofilters that have been evaluated extensively in the field and the laboratory for both pollutant removal performance and longevity. Many of these practices have shown equivalent or better performance to similar non-proprietary SCMs. However, we do not feel any proprietary practice should be assumed to perform or awarded a blanket pollutant removal credit without having first been subject to long term field testing under a protocol such as the TAPE. The performance of proprietary filter and biofilter SCMs is generally a function of the specific type and gradation of media utilized as well as the hydraulic loading rate (gpm/ft<sup>2</sup> of media surface area) the SCM is designed to operate at.

Awarding blanket pollutant removal credit to any practice deemed a filter or biofilter will result in unproven practices being utilized and failing to meet expectations as a result of improper sizing or an ineffective media. Similarly, even those practices that have been evaluated must be sized and designed in the same manner as they were tested to achieve equivalent performance.

**Recommend Solution:** Pollutant removal credit should only be awarded to proprietary SCMs that have been tested in full accordance with the TAPE protocol (NJDEP for separators seeking TSS credit). Additionally, pollutant removal credit should only apply to those proprietary SCMs that are sized to operate with the same media and at the same hydraulic loading rate at which they were successfully tested.



3. *Requiring proprietary SCMs to be vetted on a case-by-case/project by project basis adds unnecessary uncertainty and time to each project:*

Requiring that proprietary SCMs be evaluated on each project they are proposed for, regardless of available data and history of use, creates an unnecessary burden for all of the stormwater professionals involved in each project including the design engineers, property owners/developers, conservation commissions, regulated MS4s, MADEP's staff, and proprietary SCM providers. Most established stormwater programs have a pathway to acceptance for proprietary SCMs which eliminates the uncertainty and extra time required to evaluate them each time they are proposed on a project. Each of the other New England States maintain either a list of vetted and preapproved technologies or award reciprocity to those SCMs that have been vetted and accepted by WA and NJ.

**Recommended Solution:** MADEP should create a list of proprietary SCMs that have applicable performance data to justify assigning pollutant removal credit and require that those practices which have not yet been evaluated for inclusion be considered on a case base case basis. Alternatively, MADEP should award reciprocity and deem those proprietary SCMs with appropriate TAPE performance data resulting in TAPE certification acceptable for use in order to eliminate the unnecessary burden created by reviewing practices on each individual project.

4. *Create a third category of proprietary SCMs to account for the growing list of proprietary biofilters (treebox filters):*

MA DEP currently includes guidance on proprietary media filters and separators but does not include guidance on a rapidly growing list of proprietary high rate biofilter (HRBF) SCMs. Each proprietary HRBF is different and relies on different media blends and sizing conditions, so these systems should be evaluated separately rather than lumped into the generic category of "treebox filters".

**Recommended Solution:** Establish "High Rate Biofilter (HRBF) (Term used by International BMP Database) or Proprietary Biofilter" as a 3<sup>rd</sup> category of proprietary SCM and evaluate each technology individually in the same manner as proprietary media filters to ensure each different technology is suitable to meet applicable stormwater standards.

5. *Appendix A contains both outdated and inaccurate guidance on the use of both proprietary separators and proprietary media filter SCMs:*

The guidance offered in Appendix A for these two categories of proprietary SCMs appears to be a mix of the original guidance included in Volume 2 of the 2008 SW Handbook and new text that has been added without references. There are inaccurate and contradictory statements in both sections that need to be removed and/or updated. We request that MADEP modernize these chapters utilizing current information and ensure all inaccurate content is removed. Specific issues/concerns relative to the

proprietary separator and media filter SCMs sections in Appendix A have been noted in our general comments below. We encourage MADEP to obtain information on these practices from current sources and have provided a summary of useful links below for consideration. Additionally, we are not aware of anyone representing proprietary SCM providers being engaged to refine the guidance in these sections and would encourage MADEP to consult with SCM providers when updating said guidance.

*Proprietary SCM Reference Links:*

1. Washington Department of Ecology TAPE Program: <https://ecology.wa.gov/Regulations-Permits/Guidance-technical-assistance/Stormwater-permittee-guidance-resources/Emerging-stormwater-treatment-technologies>
2. NJDEP Manufactured Treatment Device Certification Program: <https://dep.nj.gov/stormwater/stormwater-manufactured-treatment-devices/>
3. Stormwater Equipment Manufacturers Association (SWEMA): <https://www.stormwaterassociation.com/>
4. Maine Dept. of Environmental Protection, Stormwater Management Manual, Appendix B: <https://www.maine.gov/dep/land/stormwater/stormwaterbmps/>
5. Virginia Stormwater BMP Clearinghouse: Manufactured Treatment Device Evaluation Process: <https://www.deq.virginia.gov/our-programs/water/stormwater/stormwater-construction/bmp-clearinghouse>

Additionally, most proprietary SCM providers maintain their own websites which house up to date information on various practices and organizations.

*Additional Comments on Draft Wetlands Protection Act Updates:*

- We encourage MADEP to consider the potential impact a substantial increase in the infiltration of stormwater runoff across the commonwealth could have with regard to interest 2 of the Wetlands Protection Act, protection of groundwater quality. More specifically, chlorides originating from road salt application pose a growing threat to groundwater supplies and there is research from various cold weather states documenting that chloride levels are rising in groundwater near urban areas. Additionally, where present, PFAS chemicals are also likely to migrate to ground water in infiltrated stormwater. How will MADEP balance the known stormwater quality benefits of infiltration with the potential risk of groundwater contamination?
- Recharge requirements: On page 63 of the draft document it states that soils must have a hydraulic conductivity of at least 0.01in/hr and infiltrate 1in of runoff within 72 hours. Meeting a 72hr drain down requirement would not be possible if the hydraulic conductivity is only 0.01in/hr. This requirement should be revised accordingly to ensure the volume retained is able to be infiltrated within the 72-hour drain down period. Additionally, allowing infiltration systems to be deployed on soils with an infiltration rate of

0.01in/hr provides virtually no factor of safety for the inevitable loss of hydraulic conductivity that will occur as pollutants migrate into and begin to clog native soils below infiltration SCMs. MADEP should revise infiltration requirements in poor soils to ensure practices will be sustainable and able to infiltrate as intended throughout their design life.

- Page 66 of the draft still defaults to the original TARP protocol as the accepted means for assigning pollutant removal credit to manufactured treatment devices. It also notes that this protocol is endorsed by the other TARP states, but the other TARP states no longer use this protocol. Update as recommended above.
- Page 67 of PDF- Credit for proprietary separators. Suggest updating to 50% TSS credit if sized not to exceed hydraulic loading rate (MTFR) certified by NJDEP during peak water quality flow.
- Page 68 of the pdf. We do not endorse issuing a minimum 60% TSS credit and 30% TP credit to proprietary filters unless long term field performance data has been provided to support this level of removal credit and the practices are sized in accordance with the tested configuration.
  - Additionally, many proprietary filters are standalone practices that are tested without pretreatment and/or have internal pretreatment, so these practices do not need to have separate pretreatment structures to function properly or as tested. The language should be updated to reflect this fact and note that proprietary practices should be designed and installed in the same configuration in which they were tested.

#### ***Additional Comments on the Draft Stormwater Handbook:***

- Page Viii -First flush definition deviates from text in the wetlands rule and the WQ event of 1.0 in. Should this be 1.2in of rainfall which is ~ equivalent to 1.0in of runoff?
- Section 2.3.3- "*0.01 inch/hour, the recharge practice is designed to infiltrate the runoff into the ground fully within 72 hours, and a volume of at least one inch of runoff times the impervious area is designed to infiltrate the runoff into the ground*" Assuming an inch of runoff the infiltration practice would not drain down in 72 hours at a rate of 0.01in/hr. Also see previous comment about loss of hydraulic conductivity over time.
  - We recommend implementing robust pretreatment requirements for infiltration practices, especially sub surface infiltration practices and systems installed on questionable soils that are likely to lose their capacity to infiltrate as sediment and other debris accumulates in them. For perspective, NJDEP requires an 80% TSS certified SCM (terminal treatment) be installed upstream of all underground infiltration facilities.
- Page 2-13- Still defaults to the obsolete TARP guidance- Needs to be updated as previously described
  - TARP is also referenced on page 5-6 in section 5.3

- Table 2-2 should be updated. Pretreatment requirements for proprietary media filters- Most proprietary media filters are tested without secondary pretreatment practices and/or include internal pretreatment elements such as sedimentation sumps. The guidance should be updated to require proprietary media filters to be installed as tested to justify pollutant removal credit.
  - 2-7 also includes pretreatment references. Suggest changing to “varies”
- Table 2-7 indicates that filtering biofiltration practices meet the ESSD standards including satisfaction of Standard 4, but the EPA performance curve indicates they fall short for TP removal. The international BMP database also shows that filtering biofiltration systems have limited effectiveness for total phosphorus. Similarly, an extended dry detention basin is assumed to meet standard 4 despite the data/curve showing otherwise. How is this deviation in water quality performance being justified?
- 5.3.2- Page 5-8 HRBF should not get a free pass for use as they are made up of different media types, media thickness, and sized for different loading rates. Credit should be conditional on credible performance data as described previously (TAPE field testing).
  - Recommend inclusion of high rate biofilter (HRBF) or proprietary biofilter as a category that is separate from proprietary media filter.
  - Recommend deeming HRBF as acceptable for GSI use especially when paired with infiltration
- 5.3 Proprietary SCMs (MTDs)- Break out guidance into three main categories (separators, media filters, and high rate or proprietary biofilters)
- The guidance on evaluating proprietary SCMs starting on page 5-9 is unacceptable given TARP obsolescence and should be updated as previously suggested (TAPE for media filters and proprietary biofilters NJDEP for separators).
- As a general comment, many of the references cited in the draft manual are >20 years old. MADEP should consider reviewing and including more updated references on the critical topics covered in the manual to ensure the underlying science is based on the most current research and best practices.
- Section 5.1- Many proprietary practices are very well suited to being utilized on retrofit sites since they can often be installed in a small footprint or under existing parking areas etc. It is likely worth mentioning them in this section.
- Section 5.3.1- Recommend expanding background on Proprietary SCMs to include High Rate Biofilters (HRBF) or proprietary biofilters- Also known as engineered biofiltration systems. There is a growing list of proprietary HRBF systems in use and long-term monitoring shows that in many cases they are equally or more effective at capturing common pollutants of concern such as metals, nutrients and solids as many of the non-proprietary SCMs described in the manual.
- Section 5.3.1- As noted in more detail under priority comments, we remain hopeful MADEP will include a process that allows for an establish listed of vetted proprietary SCMs that are acceptable for use without

having to be evaluated on every project. Requiring project specific evaluation for those practices which have a long history and proven performance creates a substantial amount of extra work for all of those involved in stormwater management that can be eliminated with a vetted list.

- Section 5.3.1 – Page 5-6 Limitations. This section states most proprietary practices can only treat small runoff volumes. This is not an accurate statement and should be removed. There are dozens of proprietary SCMs available which can be scaled/sized to treat very high flows/very large volumes as needed. Most proprietary SCMs can be scaled up to meet the needs of a given project in the same manner non-proprietary SCMs can be scaled larger.
- Page 5-7- Recommend adding HRBF to guidance on use of proprietary practices for new and redevelopment.
- Page 5-7- We recommend that language be added to allow proprietary separators equipped with an internal bypass and that have demonstrated the ability to pass high flows without resuspension (NJDEP certifications) through scour testing to be allowed online.
- 5.3.4- Evaluating Proprietary Practices- This section would be the ideal location for a vetted list of proprietary practices.
- Page 5-8 5.3.4- Would proprietary separators be deemed acceptable for terminal use on retrofit projects? We suggest clarifying. In some cases, they may be the only viable option to add stormwater quality treatment on highly constrained/urbanized sites.

#### ***Additional Comments on the Draft Stormwater Handbook- Appendix A:***

- The text description for proprietary separators (more commonly called hydrodynamic separators (HDS) starting on page A-66 appears to be incomplete as several sentences are incomplete/missing text.
- Page A-67 states that “frequent maintenance is essential” as a disadvantage to using a proprietary separator. These devices generally require maintenance no more than 1-2 times annually which is no more frequent than other types of practices. This language should be removed.
- Page A-70 indicates that proprietary separators must only be installed offline. Many of these systems include internal bypass capability and have gone through scour testing to demonstrate that scour does not occur during peak flows exceeding the water quality flow. We recommend revising this section to allow proprietary separators that have been certified by NJDEP for online use to be used as such.
- On Page A-71 it states that the bottom of proprietary separators must be placed 2ft above the seasonable high-water level. These devices are watertight systems that are not adversely impact by the presence of groundwater or being installed below the seasonal high ground water elevation. This type of restriction is typically only applicable to infiltration practices. This statement should be removed.

- Page A-71 states that proprietary separators should be sized to capture and hold the water quality volume. This is not accurate and should be removed. Separators are flow through devices that are not sized to capture and retain the water quality volume. They are sized to treat the peak water quality flow resulting from the water quality event which is also stated on the same page. They must also be sized not to exceed their rated hydraulic loading rate during the peak water quality flow to ensure they perform as intended. We recommend adding additional guidance that states each technology's certified loading rate i.e.  $\text{xxgpm/ft}^2$  of settling surface area (referred to as MTFR in NJ documents) shall not be exceeded during the peak water quality flow rate.
- Page A-190 says proprietary media filters "Require Intensive Maintenance". Like all SCMs these systems do require maintenance, but it is no more intensive than maintaining non-proprietary filters, biofilters, wet ponds, etc. This statement should be removed.
- There is a schematic of a filter system developed by Caltrans included in the proprietary media filter section on Page A-191 and A-192. This system is neither proprietary nor is it representative of a typical proprietary media filter. We recommend removing and using an image of an actual proprietary media filter in its place.
- Page A-197- There is language stating that spare media filters must be stored onsite in case they need to be replaced quickly. This is not a standard practice for proprietary filters and not something required of any other SCM, all of which are prone to failures that require replacement and/or repair to restore functionality. Additionally, most sites do not have storage facilities available to house spare stormwater filters or other components. New filter cartridges, media, or other needed components can easily be ordered and delivered from the relevant manufacturer, often much faster than replacement media can be obtained to maintain non-proprietary filters and other SCMs. This sentence/requirement should be removed from the text.
- A-197- Most of the references for proprietary media filters are outdated. We recommend reviewing and updating the references for this category. Suggest using the references provided in the priority comments as a starting point as well as engaging proprietary media filter providers to obtain accurate and up to date information.

We appreciate your careful consideration of each of the issues noted herein and I encourage you to contact me at your convenience should you have any questions or desire any additional insight on our comments or suggested edits.



Respectfully,

A handwritten signature in black ink, appearing to read 'D. Berg', with a stylized, flowing script.

**Derek M. Berg**

Director- Stormwater Regulatory Management - East

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**From:** [Daniel Roche](#)  
**To:** [DEP Wetlands \(DEP\)](#)  
**Subject:** Wetlands-401 Resilience Comments  
**Date:** Sunday, April 28, 2024 11:42:26 AM

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**CAUTION:** This email originated from a sender outside of the Commonwealth of Massachusetts mail system. Do not click on links or open attachments unless you recognize the sender and know the content is safe.

Hi,

Just a quick note to let you know that I fully support the proposed regulations.

We need to prepare now and this legislation is a big first step.

- Carefully evaluating and restricting in the highest risk areas of the coastal floodplain is needed.
- Developers and governing bodies need to know where restrictions apply and need to factor future sea level rise and predictions.
- Active engagement and management by state and local environmental bodies and approval for new coastal floodplain development.
- Reduce regulation and streamline the process for cities and towns to get permits to restore and protect wetlands from future development.

Thanks for the great work.

Dan Roche



MassDEP - BWR Wetlands Program  
Attn: Wetlands-401 Resilience Comments  
100 Cambridge Street, Suite 900  
Boston, MA 02114

Dear Wetlands Program Team,

I commend the Massachusetts Department of Environment for undergoing a thorough review of the state's Wetlands Protection Act (310 CMR 10) and 401 Water Quality Certification Regulations (314 CMR 9), and providing this opportunity for public comment. I respectfully request consideration of my recommendations to your proposed revisions.

During my 20+ years in the environmental sector, I have worked across four different states (including Massachusetts). My area of expertise is the integration of water management and land use planning; I also have significant experience in stormwater green infrastructure, wetland protection and restoration, and climate resilience. Locally I serve as a Conservation Commissioner for the Town of Hull. While the comments herein are heavily informed by my experience as a Commissioner, I am submitting these comments in my personal capacity. The comments herein have not been vetted by the town of Hull, and do not necessarily reflect the viewpoints of the Town or the rest of the Conservation Commission.

DEP staff are well aware that Massachusetts' stormwater regulations are woefully out of date, and fail to meet the needs of our changing climate. New England as a region is experiencing a significant increase in both the severity and frequency of severe storm events. Simultaneously, we are experiencing increased summer heat and more pervasive seasonal drought conditions. Protecting what remains of the region's natural green infrastructure, and reinforcing natural systems with additional green infrastructure solutions is often both the most cost effective and multiple-benefit resilience strategy available to us. In addition to aligning with the EPA Region 1 MS4 permit, the Commonwealth is in desperate need of forward-looking regulations that use nature-based approaches to proactively anticipate and adapt to the region's changing climate while supporting local resilience and protecting Massachusetts' most vulnerable community members.

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## Stormwater Regulations

### 1. Peak discharge rates (runoff)

I commend and fully support the requirement of using NOAA Plus for calculations, rather than the outdated TP40.

For new development, I commend the improvement of using the 100 year storm event in all instances (rather than only with offsite flooding) . However, I remain concerned that this may not be a sufficient change. We are seeing the estimated 1% probability storm occurring with far greater frequency. With the exponential pace of acceleration in climate change impacts, storm intensity and frequency will continue to rise in the very near future. I strongly urge DEP to consider using the 0.5% or 0.2% probability storm event, rather than the 1% probability storm, for all instances.

Further, I recommend this regulation apply to all conditions, and not be subject to waiver for land subject to coastal storm flowage.

For redevelopment, the proposed regulations are still insufficient. I strongly urge DEP to consider applying your proposed regulations for new development to redevelopment (2- and 10-year storms, and 100-year storm if offsite flooding), and applying my proposed more strict regulations above to new development. Especially in eastern Massachusetts, much of our buildable land is already developed. The only way to make significant climate resilience gains in our existing communities is by requiring more strict standards for redevelopment projects as well as new.

Further, specific and strict guidance needs to be provided for interpretation of “maximum extent practicable,” that is not limited to cost effectiveness. Too often developers present plans to permitting authorities with very little if any explanation as to why they are not fully meeting the standard (other than it reduces their overall profit for the project). We must prioritize environmental protection and climate resilience for our communities over the profit of individual private corporations! I recommend requiring a full technical analysis and review of alternatives to justify any situation in which the project is not fully meeting the standard.

## 2. Groundwater Recharge

For new development, I commend and fully support the increase of annual recharge rate for all soil types. However, I remain concerned that 1 inch is insufficient for all but Type D soils. I strongly urge DEP to consider a 1.4 or 1.5 inch requirement for soil types A through C, and 1 inch for type D soils. According to the EPA Performance Curves, significant water quality improvements can still be attained with this minimal increase in storage capacity. Bear in mind that with intense precipitation events occurring in quick succession, soils quickly become saturated, preventing further infiltration and exacerbating localized flooding. Increasing to a 3 inch requirement will help address this limitation of the currently proposed regulation.

For redevelopment, I fear DEP is missing an important opportunity to prevent flooding and enhance groundwater supplies through stormwater recharge. I urge DEP to consider a 1 inch minimum for all redevelopment projects. Further, specific and strict guidance needs to be provided for interpretation of “maximum extent practicable,” for the same reasons stated above.

### 3. Pollutant Removal

The vast majority of Massachusetts waterways are already impaired, and listed on the federal 303(d) list. In only five years (2018-2022), 224 Massachusetts waterbodies experienced new stormwater impairments. Increased clean-up, not just preventing excessive continued or future harm, is necessary to increase the climate resilience of our natural systems, and their ability to mitigate the impacts of climate change on Massachusetts communities.

For new development, I commend and strongly support the increase in TSS and TP removal. I also strongly support the prohibition of offsite mitigation for new development. We have a unique opportunity with this once in a generation regulatory update to not only align with the EPA Region 1 MS4 Permit guidelines (which are already eight years old, aside from minor modifications in more recent years), but to acknowledge the current vulnerability of our waterways, and the importance of their healthy function to ensuring our future climate resilience. I urge DEP to take proactive action by increasing this requirement to 95% TSS and 75% TP removal. Failure to protect our natural resources from human development in the past is how we have gotten ourselves into this precarious situation. We must learn from our past mistakes and ensure new development is conducted in a way that does not threaten our future resilience.

For redevelopment, I commend and strongly support DEP's decision to require projects to fully meet (rather than MEP) for TSS and TP. This is an easily attainable regulation for redevelopment projects. I support the proposed project types eligible for exemptions, as they pose little to no potential impact. I encourage DEP to remove paved bicycle paths, other paved paths for pedestrian and/or nonmotorized vehicle access, marinas and boatyards from the list of project types eligible for MEP. Other than routine maintenance, redevelopment of these types of sites should be brought up to compliance with the new standards.

### 4. Supporting Compliance with TMDLs

I commend DEP for taking steps to protect already impaired wetland Resource Areas, and strongly support the addition of new Standard 11. I urge DEP to consider the aforementioned revisions to Standards 3 and 4, which would also apply under Standard 11. Especially for redevelopment projects, if DEP does not accept my provost revisions to Standards 3 and 4, please at least uphold meeting the new development Standard 3 and 4 requirements for redevelopment projects occurring in or impacting a Resource Area with a TMDL, rather than allowing MEP for these projects.

### Land Subject to Coastal Storm Flowage (LSCSF)

The proposed regulations are long overdue and much needed. I commend DEP for taking this important step toward protecting our coastal natural resource areas, and wholeheartedly support the addition of these regulations to 310 CMR 10.

## Key Framework

With regard to Application of Performance Standards (310 CMR 10.36(4)), I strongly urge DEP to revise the framework so that any project proposed in the LSCSF must follow the *more stringent* of the performance standards, rather than simply following the “other” Resource Area performance standards.

The vast majority of Massachusetts’s unprotected and developable coastline is already developed. (With the severity of coastal storm impacts to properties within the LSCSF, it is critical that we begin applying more stringent standards to redevelopment projects. I strongly urge DEP to apply the new LSCSF Performance Standards to all significant projects in this resource area other than routine maintenance, rather than differentiating between new and redevelopment projects.

Considering nature-based shoreline protection (NBSP) is critically important, for the many reasons already identified by DEP. I commend DEP for including this consideration in the new LSCSF performance standard. However, the language to “consider” NBSP in project design is far too lenient. All too often project proponents pay lip service to important considerations in regulatory performance standards and pressure permitting authorities to approve projects that lack highly attainable community and ecological benefits. It is DEP’s responsibility to ensure these regulations hold developers accountable for fulfilling the intent, and not only the letter, of the regulations. The best way to do so is including explicit guidelines and requirements in the performance standard.

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Thank you again for all of the research and consideration that DEP has put into developing these much needed revisions to 310 CMR 10 and 314 CMR 9, as well as for providing an opportunity for the public to weigh in on this important matter. If I can be of any further assistance, please do not hesitate to contact me.

Sincerely yours,



Danielle V. Dolan  
Principal

Danielle.Dolan@gmail.com  
(508) 454-7966  
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**From:** [Karle, Darcy](#)  
**To:** [DEP Wetlands \(DEP\)](#)  
**Subject:** Wetlands-401 Resilience Comments  
**Date:** Monday, April 1, 2024 2:34:29 PM  
**Attachments:** [image001.png](#)

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**CAUTION:** This email originated from a sender outside of the Commonwealth of Massachusetts mail system. Do not click on links or open attachments unless you recognize the sender and know the content is safe.

Hello DEP,

Please see a comment/question:

There is no really “easy” way to determine LSCSF/BLSF line (that we know of). Now that we have new standards for LSCSF it’s important that commissioners and staff can figure out that line. Can you please explain?

Thank you

Darcy Karle, Conservation Administrator  
Planning & Development/Conservation Program  
Town of Barnstable | 230 South Street | Hyannis, MA 02601  
[Darcy.Karle@town.barnstable.ma.us](mailto:Darcy.Karle@town.barnstable.ma.us)

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# DARTMOUTH

## CONSERVATION COMMISSION

400 Slocum Road • P.O. BOX 79399  
Dartmouth, MA 02747



# MASSACHUSETTS

MARC GARRETT

Environmental Affairs Coordinator  
TEL: 508-910-1822 \* FAX: 508 910-1897  
<http://www.town.dartmouth.ma.us>

March 18, 2024

Massachusetts Department of Environmental Protection  
BWR – Wetlands Program  
100 Cambridge Street, Suite 900  
Boston, MA 02114

ATTN: Wetland – 401 Resiliency Comments

RE: COMMENTS ON THE DRAFT REVISIONS TO 310 CMR 10.00 (2024)

Dear BWR – Wetlands Program,

After careful review of the above referenced document, I present my comments solely as the Environmental Affairs Coordinator of the Town of Dartmouth. These comments do not or should not be taken as the opinion of any part of the Town of Dartmouth municipal government, nor of the Town of Dartmouth Conservation Commission, but sole those of their senior environmental professional.

### GENERAL COMMENTS:

As a practitioner of the Wetlands Protection Act and its implementing Regulations for nearly 40 years, previously from the private side and now as a public regulator, I find these proposed regulations, as a typical First Draft for public consumption, review, and comment, that reach beyond practicality and public support. These far exceed the current overburdening regulations that the Commonwealth currently imposes on both the private (compliance) and public (regulating) sectors. As with any regulations that evolve and morph to the ever increasing “protection” demand, these proposed regulations are far too complex for normal use and are frankly, unreadable. They are cumbersome, over burdensome, with too many acronyms, too many initials, too many criteria, and much too much cross-referencing between other regulations other reference manuals; and between the numerous sections, sub-sections, and sub sub-sections...; paragraphs, sub-paragraphs, sub sub-paragraphs, within and added.

While noble it its intent, my initial take on the overall presentation is that it is a theoretician’s view of how things should be regulated and does not consider the practical realities. First there is the “Utopian” view or “how can we achieve the perfect world?” with imperfect components (humans and technologies), as opposed to the “what do we need to reasonably or actually achieve?” viewpoint, given the limitations that we face. The greatest limitation is the economic costs of reaching “utopia” vs reaching a “sustainable condition”.

The overall presentation also speaks of “any activity” being the subject of protection(s) or regulation. The phrase “any activity” is a carryover from previous simpler iterations of 310 CMR 10.00, and is all inclusive, but now with the proposed and dramatic increases in quantitative analyses in the proposed stormwater inclusions, “any activity” means all projects large and small, that could be included to require these proposed new requirements. In this reviewer’s opinion, without project size specificity or

thresholds, this generic inclusion of “any activity” could render smaller scaled as-of-right projects, under other jurisdictions, cost prohibitive.

These proposed regulations also do not consider that these are state regulations being foisted upon local public practitioners and the private sector, as the skilled technical services personnel in both sectors are decreasing in both numbers and in actual on-the-ground skillsets. Again, as an environmental professional of 40 years, I am part of a waning generation who came of age at the time of the original environmental awareness of the mid- to late 20th century. There were exciting careers out there for the taking back then. Now with the advent and advancements in technology, no one wants to do the hard and dirty work of environmental compliance or environmental regulation. Those few that do, are losing mentors through attrition. The regulators, mostly municipal, are also part of a shrinking pool of skilled technicians capable of reviewing and evaluating the applications before them. Shrinking due to retirement, and moreover, shrinking due to reductions of qualified environmental regulatory professionals, as municipalities are forced to reduce staff caused by budgetary constraints or to refocus personnel shifts toward the more prioritized social programs of the day.

I am extremely concerned as to who is going to be available, and when, to do the work required by these proposed regulations; and at what cost, and to what practical end.

Many of the definitions procedures are technically specific to hydrologic and stormwater methodology(s) and should be solely part of the separate and referenced Stormwater Handbook and the requirement to meet the standards established in the Handbook should only be referenced in the Wetland Protection Regulations. The regulations should not be the methods manual.

## **SECTION SPECIFIC COMMENTS:**

Section 10.01(2) clearly states, “sets forth a public review and decision-making process by which activities affecting Areas Subject to Protection under M.G.L. c. 131, s.40 are to be regulated...”. Given the breath of these proposed regulations, should there not be project scale criteria established to determine the degree of analyses required for each under these proposed regulations?

In section 10.02(2)(b)(2)(k), not a proposed revision, but why is water or other public utilities not included in this section?

In section 10.03(7)(c)(2)(l) under Category 2 fees, why are Test, Scientific and Research Projects subject to a fee structure if their purpose is to better the science or to better the implementation of the Law and Regulations?

Several amendments are proposed in section 10.04 (Definitions), many of which I support but some I question that include the following:

- Under the definition of “Alter” in item (e), why is “increasing the volume of untreated stormwater runoff...” considered part of the definition when one of the overriding purposes of these proposed regulations is prohibit “untreated runoff”?
- In the definition of Dredge, the term “isolated vegetated wetland” is used. While I understand what these are, I do not believe that this term is defined, nor is it identified as being “Protectable” in these Regulations. My question is therefore, why is the term used at all?

- The term “Environmental Protection Agency Performance Removal Curve (EPA-PRC)”, an example of the aforementioned “dramatic increases in quantitative analyses,” under my General Comments, and the issue of cost effectiveness for the small-scale project. There need to be criteria established that exempt or reduce the analytical requirements of smaller scaled projects (e.g., single-family residential developments vs. institutional or highway scaled development).
- As in the previous bullet, “Hydrologic Unit Codes 10 & 11 (HUC 10 & HUC 111, respectively), are mentioned for what regulatory purpose, most of the Commonwealth’s River sub watersheds appear to be fall within these designations anyway. This appears to be another useless burdensome review requirement without any performance standard significance.
- The section defines “Near” for the purposes of stormwater management, “Near” as a regulatory term should mean the same for the entirety of 310 CMR 10.00.
- The section identifies under Seasonal High Groundwater Elevation (b), the term “redoximorphic” but does not define it. Most, if not all lay people will not know what that means.
- The section defines the very common and multi-jurisdictional term “Setback” but does not qualify the definition presented therein as being specific to 310 CMR 10.00.
- The section needs to simplify the definition of the term “Stormwater Control Measure (SCM).
- As under bullets 3 and 4, the definition of Watershed-scale Accounting Method needs to be simplified in lay terms and should be included in the Stormwater Handbook and only referenced in these proposed regulations.

It is my general opinion that Stormwater practices being required by the proposed regulations set forth in 10.05 (6 et seq), while being noble in their spirit, are in fact too complex, overburdensome to the small project type, and attempt to achieve results that are impractical. They are also very unreadable, given their complexity in implementation, should they be deemed necessary, they should be placed in the Stormwater Handbook and the handbook be referenced in these proposed regulations. A more concise summary of these requirements should also be included in the proposed regulations.

Specific comments to 10.05 (6) et seq include the following:

- In general, 10.05 (6 et seq) is overly cumbersome as a regulation and a set of “Performance Standards” that the volunteer Conservation Commissions, professional technical staffs, some local practitioners, the applicants, and the lay public may not understand; let alone review and design for. The requirements can be very “big ticket” items being foisted on limited budgets and smaller scale uses.
- I do acknowledge that the proposed regulations differentiate between “New Development” and “Redevelopment” projects. However, there is no easily identifiable differentiation between project size or scale.
- It appears that this level of stormwater analyses is required in “Orders” for all “new development”, both small and large-scale. This is specifically stated in the opening paragraph of 10.05 (6)(k) that states, “Except as expressly provided, stormwater runoff from all industrial, commercial, institutional, office, residential and transportation projects are subject to

regulation...”. Therefore, are we to assume every new proposed work requires such extensive hydrologic/hydraulic analyses and engineering practices involving those many methods and determinations made by the USEPA, USGS and MADEP, as referenced in the proposed regulations, with no exemption. There needs to be a practical categorization as to what level of project requires what level of analyses and potential mitigations. The apparent one size fits all are going to break many as-of-right projects determined under both local and statewide jurisdictions and lead to innumerable litigations, in Commonwealth courts that do not understand environmental law, and rely on the findings of the local volunteer Commissions.

- Terms like “long-term operation and maintenance plans shall be developed and implemented...” without context and clarity, may be interpreted too broadly in certain cases.
- As with many local Commissions, the understanding of the intricacies of stormwater analyses is far more complex than their understanding of the same. In many instances they must rely on third-party consultants to review and analyze those projects that qualify for stormwater review under the current regulations. The cost of which is then passed on to the applicant. Given the draconian changes proposed in 10.05 (6 et seq), the level of analyses will increase demonstratively, as will their cost, and these additional costs will further be passed on to the applicant(s). Therefore, the applicant will have to pay for the increased analyses by their own retained consultants; and then must pay for a redo by the third-party review consultant. This results in potential fatal flaws to many as-of-right projects, especially those of a smaller scale.
- In reference to Bullet 1 of this comment section, the Table that includes the MADEP SCM’s goes on for 2 ½ half pages and reference the numerous USEPA, USGS and MADEP standards and credits, as referenced in the proposed regulations. Tables are supposed to simplify and summarize detailed text in a concise manner. Even in its attempt to brief and summarize the narrative, this table is far too cumbersome and reflects the overly cumbersome nature of the regulatory text. Limit this information to the Stormwater Handbook and reference that in the proposed regulatory text.
- Are the outlined “Pollutant Removal Credits” attainable in the build-out scenario, and moreover are they cost-effectively attainable by all “new developments”.
- In the end, do the requirements of 10.05 (6 et seq) meet any reasonable Cost/Benefit scenario?
- In 10.07(12)(b)(1) should probably also include “qualified professionals in the field”, and practitioners, not theoreticians.
- In 10.07(12)(f), why are extensions on “Scientific Research Projects” limited to only one year, some projects may require more time and more data to provide more representative findings.

### **Coastal Regulations Revisions**

In general, the Coastal Regulations certainly required a revisit as these regulations have largely been consistent and unchanged over a very long period, and with the episodic climatic conditions as of late, the means to respond to these needs required regulatory adjustments and updates. I am in general agreement with the changes/additions to the 310 CMR 10.24 General Provisions updates.

I am also in general agreement with the additions presented in 310 CMR 10.36 Land Subject to Coastal Storm Flowage as this resource area protections have been non-existent resulting in over exploitation for personal and private economic gain with no regard to public and private risk. It is understood that use and



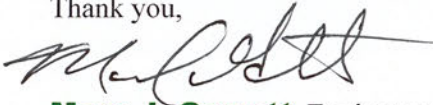
access to the immediate coast is an extremely attractive desire, but it comes with the most obvious, yet ignored risks, during episodic conditions. With failures of these expensive uses, in these areas of high risk, comes an expectation of public aid for recovery, even in private property situations, where public access and benefit are limited and/or restricted.

One area of specific concern is in 10.36(6)(c). It is my professional opinion that the construction of any type of "boating" structure along exposed shoreline (e.g., V Zones and MoWA Zones), unless necessary for public health or safety, especially in jurisdictions with protected harbor facilities, is blatantly unwise. I think that there should be at best a prohibition of such pile-supported and/or timber structures in these areas given what we all should know intuitively, and moreover, what we all know will happen. Should there be a hesitancy to prohibit such exploitive development; then very intense performance standards and professional qualifications for design, success and performance accountability should be levied by regulation to the applicant to minimize risks.

Lastly, although not part of these draft revisions of 310 CMR 10.00 et seq., it is my opinion that the current administrative requirements for "Ecological Restoration Projects" limit the desire of the private sector to engage in these types of projects on their own lands and certainly complicate the local regulators efforts to enforce certain violations for corrective or restorative efforts to improve the overall environment. The current filing requirements should be revisited immediately.

I hope that these comments are helpful to the Department as they attempt to meet a practice, beneficial and achievable outcome in the end. If you have any questions, feel free to contact me at (508) 910-1829 or at [mgarrett@town.dartmouth.ma.us](mailto:mgarrett@town.dartmouth.ma.us).

Thank you,



**Marc J. Garrett**, Environmental Affairs Coordinator  
Town of Dartmouth  
400 Slocum Road  
Dartmouth, MA 02747



**From:** [Northeast Trailworks](#)  
**To:** [DEP Wetlands \(DEP\)](#)  
**Subject:** Wetlands-401 Resilience Comments  
**Date:** Tuesday, April 30, 2024 3:04:32 PM

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April 30, 2024

Massachusetts Department of Environmental Protection  
Bureau of Water Resources -Wetlands Program  
Attention: Wetlands-401 Resilience Comments  
100 Cambridge Street, Suite 900  
Boston, MA 02114

Dear MassDEP Wetlands Program:

Thank you for the opportunity to comment on the draft Wetlands Protection Act regulations as part of MassDEP's "Climate Resilience 1.0" package. These are positive steps toward protecting our coastal resources and infrastructure, and making Massachusetts more climate resilient. I appreciate MassDEP's considerable time and effort to prepare these proposed regulations.

I've been involved with trails and open spaces in Massachusetts for many years, including being a former Conservation Commissioner in the City of Beverly, the current chair of Beverly's Open Space and Recreation Committee, and partner in Northeast Trail Works, a professional trail building company specializing in sustainable trail building practices.

One of the great things about Massachusetts is that we have an amazing inventory of woodlands, parks, and open spaces, on State land, municipal land, and private land, with hundreds of miles of trails.

Many, if not most, of these trails are legacy trails that don't really have a defined origin and were likely cut in when there was more climate stability and before the science of sustainable trail building had evolved.

Now, many of our trails are showing signs of being strained from increased use (which is great) and changing weather patterns (which is not so great). In order to protect and maintain this vital natural surface infrastructure, I strongly support streamlining the wetland regulations and Chapter 91, to acknowledge and reflect the difference between wetland "alterations" resulting from new development and wetland "alterations" resulting from ecological restoration efforts. I also support the creation of new Limited Projects (310 CMR 10.24 and 10.53) and other provisions to simplify trail permitting and invasives species management in wetland resources areas.

Applying modern best management practices, trails organizations can have a huge positive impact on reducing erosion and protecting important resource areas, but the process for making these improvements needs to be streamlined.

The current process is cumbersome, and costly, and many times trail users take \*repairs\* into their own hands and build physically or environmentally unsafe structures. I've removed pallets, plywood, and other materials from the trails many times.

I urge MassDEP to consider my comments where the regulations could be refined to help allow trail practitioners and stewards to make appropriate trail improvements.

Sincerely,

David Alden-St.Pierre



=====  
Northeast Trailworks, LLP  
ph: 978-233-1091  
[www.northeasttrailworks.com](http://www.northeasttrailworks.com)  
[@northeasttrailworks](mailto:@northeasttrailworks)



**From:** [David Ball](#)  
**To:** [DEP Wetlands \(DEP\)](#)  
**Subject:** DEP regulation changes-comments  
**Date:** Monday, April 29, 2024 9:58:05 AM

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Hello,

I just became aware of the coastal regulation changes being proposed by DEP with comments due by April 30. I don't have details on the exact changes and couldn't find them online. However, these changes need much more public input. I have not heard of any public forums being held for this topic on the South Shore. Before there is any move to implement any of these changes there must be good public input.

David Ball

**From:** [REDACTED]  
**To:** [DEP Wetlands \(DEP\); Waterways, DEP \(DEP\)](#)  
**Cc:** [Patrick O'Connor; Patrick.kearney@mahouse.gov](#)  
**Subject:** 12/22/23 DEP Proposed Changes  
**Date:** Tuesday, April 30, 2024 10:11:37 PM

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If this is read, tyvm and congratulations on your internship.

Over the past 140 years, sea levels have allegedly risen 21-24 centimeters per [www.earthobservatory.nasa.gov](http://www.earthobservatory.nasa.gov) Aug 10,2022.

Local environmental departments and insurance companies will eventually determine where to build/rebuild.

If coastal residents and businesses are to "flee" and stop building/rebuilding because of potential sea level rise, where does the new "coastal line" be redrawn.

Should residents and businesses located within known earthquake and tornado zones also flee and stop building/rebuilding ?

Perhaps we could negotiate or talk nicely with climate change, after all it's working so well with University protesters.

Sincerely,

David G Mohr Jr.

All replies are welcome.

Sent from my Verizon, Samsung Galaxy smartphone

**From:** [Dave Davignon](#)  
**To:** [DEP Wetlands \(DEP\)](#)  
**Subject:** Wetlands Regulations - Proposed Changes  
**Date:** Friday, April 19, 2024 11:28:17 AM

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Dear Sir/Madam,

I respectfully submit the following comments:

1. The definition of an Open Pile Foundation is not practical for the shorelines of Westport, Dartmouth, Fairhaven, Mattapoisett and Marion due to ledge/refusal.

The prohibition of strip or mat footings and grade beams requires Only a pile that is driven into the ground.

In most cases where a cottage is being replaced with a new structure on an open pile type foundation - the cottage remains until all permitting is concluded including the building permit, therefore test borings could only be done along the  
outside of the footprint.

What happens if a project is permitted and ledge is encountered during construction and several of the piles cannot be installed?

I suggest changing the Open Pile definition to state that the preferred method would be without grade beams and footings - where practical.

2. The prohibition of fill for a septic system is not practical. Nearly all sites along the shoreline have seasonal high groundwater elevations less than 2 ft from the surface.

If municipal sewer is not available this leaves only a Tight Tank as the last option. We stopped proposing Title Tanks 25 years ago because they tend to leak or owners created leaks to avoid pumping....

I suggest that all Septic Systems placed in a Velocity Zone be required to incorporate denitrification systems.

3. The restriction that existing cottages can be no larger than their current footprint is extremely unreasonable and not economically practical. Most cottages constructed between the 1920's and 1960's are very small and in most cases can be enlarged without any detrimental impacts to the environment.

This will have significant ramifications for a significant amount of property owners who may have no knowledge of the impact that this will result in their property values or their future plans for their properties.

I suggest striking this restriction and letting local zoning bylaws govern.

4. The prohibition of all building within a Velocity Zone along the entire coastline of Massachusetts assumes that the soil, vegetation and coastal resource areas are all the same.

We have worked on projects that are erroneously mapped by FEMA. We have worked on sites that have 1/4 mile of wooded areas between it and the coastline and properties that high up on a bluff with a seawall protecting its coastal bank

which are not the same as properties that are essentially on or a part of a coastal beach, coastal dune or salt marsh resource areas.

5. The WPA is built on the premise that all impacted abutting land owners are properly notified when a project is proposed.

None of the Land Subject to Coastal Storm - ie: Flood Zone Regulation changes should be implemented without notice to all property owners who may be impacted - are properly notified - and given the opportunity to attend a Public Hearing and have their voices heard.

Respectfully submitted,

David M. Davignon, P.E.

Please note that we have moved our office from 1 County Road to 81A County Road, Unit G, Mattapoisett

---

schneider, DAVIGNON & LEONE, INC.  
P.O. Box 480  
81A County Road  
Mattapoisett, MA 02739  
508-758-7866 ext. 203



**From:** [David White](#)  
**To:** [DEP Wetlands \(DEP\)](#)  
**Subject:** Wetlands-401 Resilience Comments  
**Date:** Tuesday, April 30, 2024 4:57:29 PM

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April 30, 2024

Massachusetts Department of Environmental Protection  
Bureau of Water Resources -Wetlands Program  
Attention: Wetlands-401 Resilience Comments  
100 Cambridge Street, Suite 900  
Boston, MA 02114

Dear MassDEP Wetlands Program:

Thank you for the opportunity to comment on the draft Wetlands Protection Act regulations as part of MassDEP's "Climate Resilience 1.0" package. These are positive steps toward protecting our coastal resources and infrastructure, and making Massachusetts more climate resilient. I appreciate MassDEP's considerable time and effort to prepare these proposed regulations.

I have been Conservation Commissioner in Arlington for more than twenty years.

Specifically, I support the following:

- establishing performance standards for Land Subject to Coastal Storm Flowage (LSCSF)
- establishing restrictions on new development in the highest risk areas
- updating precipitation calculations for stormwater designs
- using nature-based solutions

I urge MassDEP to consider my comments where the regulations should be refined:

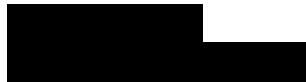
- Updated Stormwater Standards and Aligning Stormwater Requirements with MS4 Requirements. We support updating stormwater standards to include precipitation and coordinating with MS4 requirements, making compliance less burdensome for municipalities.
- Impervious Surface. Artificial turf should not be included under the definition of "Impervious Surface." Artificial turf can have a variety of permeabilities depending on the manufacturer and installer. There is a drainage layer at the base of the turf, and there are drainage holes in the top layer allowing it to drain. One manufacturer states "when properly installed, your manufactured lawn

should have drainage equivalent to or better than drainage than natural lawns” (<https://www.installitdirect.com/learn/is-artificial-grass-permeable/>). MACC recommends MassDEP develop guidance for use of Artificial Turf related to potential impacts to surface and groundwater quality, microplastic contamination, habitat impacts, and heat impacts, especially in areas of Outstanding Resource Waters (ORWs) and cold water fisheries.

I urge MassDEP to begin work on “Climate Resiliency 2.0” to continue improving the Wetland Protection Act regulations.

Sincerely,

David White

A black rectangular redaction box covering the signature area.

**From:** [Deb Hamilton](#)  
**To:** [DEP Wetlands \(DEP\)](#)  
**Cc:** [massconpros@gmail.com](mailto:massconpros@gmail.com)  
**Subject:** Wetlands-401 Resilience Comments: Streamlining trail work and invasive...  
**Date:** Tuesday, April 2, 2024 1:15:14 PM

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## **Wetlands-401 Resilience Comments: Streamlining trail work and invasive plant removal in West Newbury, MA**

TO WHOM IT MAY CONCERN,

I serve as a member of the West Newbury Planning Board, the Mill Pond Committee and was a Conservation Commissioner for 20 years. I am also Vice Chair of the Essex County Trail Association, a long-standing Trail Steward, and an equestrian user of our beautiful local trails on Town land.

The construction and maintenance of natural trails through BVW and across seasonal wet lands is vital to public enjoyment of our natural places. ECTA's Best Management Practices guidelines have been adopted and renewed here and in the 5 other North Shore Towns served by ECTA, encouraging minimal impact to create manageable stream crossings, with low boardwalks and bridges as necessary, and adjacent bridle trails as warranted. Decades of foot and hoof traffic on our non-motorized recreational trails have created very little long term erosion or degradation of water quality.

I would ask the Mass DEP to:

1. Simplify permitting and allow volunteers and professionals to construct and maintain trails in BVWs that do not obstruct water flow.
2. Grant permissions to remove invasive plants as quickly as they are recognized and before they overtake desirable natives.

Thank you for considering these simplifications to the permitting process for managing West Newbury's beautiful trails and open space.

Yours truly,  
Deborah Hamilton



Sent from my iPad

**From:** [Deirdre Pierotti](#)  
**To:** [DEP Wetlands \(DEP\)](#)  
**Subject:** Wetlands-401 Resilience Comments  
**Date:** Tuesday, April 30, 2024 3:42:00 PM

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**CAUTION:** This email originated from a sender outside of the Commonwealth of Massachusetts mail system. Do not click on links or open attachments unless you recognize the sender and know the content is safe.

I wish to submit a suggestion for consideration in the Wetlands Protection Act update. I have great concerns about the significant amount of trash and litter that is found in and near so many of our wetlands and waterways. The trash/litter problem is endemic in Massachusetts, and it is especially disturbing as there is so much wetland and water body area abutting roadways, where the litter problem is most significant. The problem is visible on all types of roadways, from small residential roads to major highways. The trash/litter is deliberately tossed from motor vehicles, is escaped from trucks and vehicles, blown from receptacles and collection points, and sometimes is just deliberately dumped. It is clear that litter is inundating our wetland habitats and contributing to their damage.

I am requesting consideration of where this issue might be addressed in the WPA revisions, in the hope that there could be some prohibitions added. Massachusetts lacks a cohesive program or policy around litter prevention and dumping of trash, which could help to educate the public and prevent some offenses. The clean-up that is needed is overwhelming, and we should at least attempt to reduce the amount of new trash that is consistently assaulting our wetland areas.

I hope this issue can be considered in your important work to protect and preserve our precious wetland areas.

Thank you for the opportunity to comment,  
Deirdre Pierotti

**From:** [Dionne Bennett](#)  
**To:** [Waterways, DEP \(DEP\)](#); [DEP Wetlands \(DEP\)](#)  
**Subject:** Waterways Resilience Comments  
**Date:** Tuesday, April 30, 2024 6:39:10 PM

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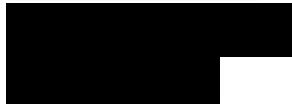
CAUTION: This email originated from a sender outside of the Commonwealth of Massachusetts mail system. Do not click on links or open attachments unless you recognize the sender and know the content is safe.

Good Evening,

I am a costal resident. I just heard about the proposed regulations and I have many concerns. It would be catastrophic if implemented as I understand them.

Thank you,

Dionne Bennett





**DOVER CONSERVATION COMMISSION**  
**5 Springdale Avenue, Dover, MA 02030**

April 28, 2024

Commissioner Bonnie Heiple  
Mass. Department of Environmental Protection  
100 Cambridge Street  
Boston, MA 02114

Sent Via Email: [dep.wetlands@mass.gov](mailto:dep.wetlands@mass.gov)

**Subject Line: Wetlands- 401 Resilience Comments**

**RE: Dover Conservation Commission's Comments on MassDEP'S Wetlands Resilience 1.0 Draft Regulations and 2.0 Recommendations**

Dear Commissioner Heiple:

We sincerely appreciate the effort that went into developing these draft regulations and commend MassDEP for focusing on ways to make Massachusetts and its wetland resources more resilient to climate change. We appreciate the great strides made to maximize protection of wetland resource areas and are eager to see the new regulations promulgated as soon as possible in order to provide:

- Supporting greater use of nature-based solutions.
- Safeguarding our waterways from flooding and stormwater pollution through the development of Land Subject to Coastal Storm Flowage performance standards and prohibiting new development in the highest risk coastal flood zone and requiring other development to be more resilient and protective of nature.
- Including sea level rise in the revisions to the Massachusetts Waterfront Regulations. Updating the precipitation calculations for stormwater designs.
- Allowing Scientific Research Projects in coastal wetland resource areas.

Below, we provide some suggestions for improving the proposed "1.0" changes and suggestions for the forthcoming "Resilience 2.0" changes.

**General Recommendations for 1.0 Changes**

Some of the proposed regulation changes will be challenging to implement and/or will lead to unintended detrimental consequences and should be refined and revised as outlined below prior to promulgation:

- MassDEP should engage with day-to-day practitioners in their regulatory revision efforts: conservation agents, conservation commissioners, and other professional non-profit staff – the people responsible for interpretation and consistent implementation of these regulations.
- The regulations should provide performance standards that protect wetland functions and values and not specific methods and means of achieving those performance standards. Methods and means should be addressed in guidance documents.

- The revised regulations provide some excellent detail, but must strike a reasonable balance between scientific precision and overly complex or burdensome requirements that render them too difficult for a majority of volunteer conservation commissions and applicants to implement. The proposed stormwater requirements, for example, exceed the review capabilities of most conservation commissions.
- Although we agree that the current Stormwater Handbook has much room for improvement, and although the new Stormwater Handbook is nicely organized, the new 860-page behemoth is far too complex to: (1) be usable by most conservation agents or commissions; and (2) facilitate efficient review and permitting. Many of the new details of stormwater management should be removed from the regulations to facilitate future updates.
- Although we agree that referencing the NOAA14+ precipitation data is a great step in the right direction, it does not factor in climate change. The Handbook could at least refer to the new EEA Climate change projections dashboard (part of Climate Resilient Mass) which provides town-specific precipitation projections using NOAA 14+).
- Provide frequent outreach and education about the new regulations once promulgated. Dissemination of detailed and multi-faceted explanations of these new regulations and the purposes and intents behind them for the Conservation Commissions and conservation professionals who will implement them will be essential.

## Requests for 2.0 Changes

As we all know, the 1.0 draft regulation changes alone will not achieve our goal of true resilience. We appreciate that MassDEP has said that it is already working on regulatory reform package “2.0.” We have identified a number of issues that should be addressed in the next regulatory reform package. Many of these suggested revisions are straightforward. Some of these suggestions warrant additional discussion. We implement the wetland regulations on a daily basis and know what works well and what is challenging. We have a lot to offer to help make 2.0 a real success. **We urge MassDEP to begin a robust process of stakeholder engagement with consultants, field professionals, and conservation agents so that we may help you develop practical, strong, climate resilient regulations.** Here we provide some suggestions to begin the conversation.

- In the wetland regulations and Chapter 91, DEP must acknowledge and reflect the difference between wetland “alterations” resulting from new development and wetland “alterations” resulting from ecological restoration efforts and must streamline permitting for wetlands restoration projects to achieve the state’s resiliency goals by:
  - Reversing historic damage to our wetlands;
  - Addressing climate change, rising sea levels, ever-increasing invasive species;
  - Allowing for salt marsh migration;
  - Promoting carbon sequestration, improved water quality, and increased biodiversity, and
  - Promoting living shorelines and other nature-based solutions.

- Create new Minor Activities (in 310 CMR 10.02(2)(b)(2)) for routine work in Riverfront and Buffer Zone conducted by homeowners and land managers such as:
  - Cutting of certain high-risk trees.
  - Removal of invasive vegetation.
- Create new Limited Projects (310 CMR 10.24 and 10.53) and other provisions to simplify trail permitting and invasives species management in wetland resources areas.
- Work with Conservation Agents to update the Riverfront Area regulations to clarify some of the sections that are particularly difficult to interpret and lead to inconsistent implementation.
- Work with Conservation Agents to update and simplify the WPA application and permit forms.
- Increase application fees. Wetland Fees do not cover the administrative costs for processing, reviewing, issuing, and mailing wetland permits.
- Develop guidance documents. Conservation commissions and conservation staff would benefit from guidance documents which provide more detail about various regulatory provisions.
- To account for their inherent value, particularly in the face of climate change, consider expanding Isolated Land Subject to Flooding (ILSF) jurisdiction to include small isolated wetlands by reducing the size of ILSF in 10.57(2)(b).
- Consider adding vernal pools as a new wetland resource area, with a 100-foot Buffer Zone.
- Provide some discretion for local conservation commissions to utilize an administrative approval process for activities in the buffer zone which will not impact wetland functions and values. We feel strongly that individuals who wish to undertake minor activities (such as the removal of a high-risk tree) should be able to receive local approval from their local Conservation Commission without filing for a state permit.

Thank you for the opportunity to share our comments. As partners in the implementation of the Wetland Regulations, we deeply appreciate your efforts to engage with us and are excited to continue this very important conversation as the 1.0 changes are finalized and as the 2.0 changes begin to be fleshed out.

Sincerely,

*Janet Hartke Bowser*

Janet Hartke Bowser

Dover Conservation Agent



April 26<sup>th</sup>, 2024

Massachusetts Department of Environmental Protection –  
Bureau of Water Resources Program  
100 Cambridge Street, Suite 900  
Boston, MA 02114

**TO:** Bonnie Heiple, Commissioner, Massachusetts Department of Environmental Protection  
Lisa Rhodes, Wetlands Program Chief, Massachusetts Department of Environmental Protection  
Daniel J. Padien, Waterways Program Chief, Massachusetts Department of Environmental Protection

**RE:** 401 Water Quality Certification (314 CMR 9.00) Proposed Regulations

Ducks Unlimited, Inc. (DU) appreciates the commitment of the Healey Administration to protect and restore wetlands across the Commonwealth of Massachusetts. We are grateful for the opportunity to provide comments on the proposed regulatory changes to the 401 Water Quality Certification (314 CMR 9.00) regulations as it directly aligns with one of DU's top priorities - the protection and restoration of Massachusetts' coastal salt marsh wetlands. There is an urgent need to streamline permitting for salt marshes and other wetland restoration projects both within the regulatory program and for more coordinated interagency review and permitting across programs.

Ducks Unlimited is the world leader in wetlands and waterfowl conservation, and our mission to “conserve, restore, and manage wetlands and associated habitats for the continent's waterfowl, other wildlife, and people” is the cornerstone of our work. Founded in 1937, DU has conserved more than 18 million acres of wetland habitat throughout North America, including more than 40,500 acres in New England. In Massachusetts, we are currently leading or partnering on four coastal wetland restoration projects that are anticipated to restore an additional 2,500 acres in the next four years. This work simultaneously addresses climate change adaptation and fish and wildlife habitat loss.

Climate change is already impacting Massachusetts by accelerating rates of sea level rise and more intense storms. Our coastal wetlands, including salt marshes and the coastal floodplain, provide essential functions and values for resilience by protecting our communities from storm damage and flooding, preventing pollution, and providing habitat for many species of fish and wildlife. Salt marshes are among the most productive ecosystems globally, sequestering and storing more carbon per acre than most other habitats.

Many of Massachusetts' 45,000 acres of salt marshes are severely degraded by thousands of historically installed ditches and agricultural embankments that are causing subsidence, drowning marsh vegetation, and restricting natural tidal flows and sediment deposition. Reversing this damage within the next few years is vital to extend the life of these marshes. Currently, there are more than a dozen salt marsh restoration projects across thousands of acres planned by nonprofit organizations and government agencies. It is essential that permitting for these projects proceed expeditiously.

The comments below are intended to address issues in the regulatory process and clarify the proposed language to support wetland protections and environmentally beneficial projects.

### **Wetlands 310 CMR 10.00 Proposed Changes**

1. 310 CMR 10.05 (12) – This section adds language to support scientific research projects. However, these projects are limited to no more than 1,000 sq ft, with a project duration of no longer than 1 year. While this addition could theoretically streamline the process for certain research projects, this does not address the vast majority of beneficial wetlands projects that need to occur throughout the Commonwealth. Specifically, coastal wetlands, which are most at risk to the ravages of climate change and are some of the largest scale projects in the state, would not be covered. The footprint (~0.02 acres) and time scale limitations are also impractical for research projects, as these types of studies typically require spatial and temporal replication, which would not be feasible under these rules.

2. 310 CMR 10.24(7)(B)(4) – This section addresses spoil materials created from trenches in salt marshes. Under this rule the spoil materials, as part of utility installations, are to be removed from the site, and the trenches are to be backfilled with sand or other material. This directly conflicts with normal marsh restoration techniques. During a normal salt marsh restoration, partners often excavate material and then beneficially reuse the material to support marsh elevation enhancement. The ability to beneficially reuse excavated material is critical to a successful marsh restoration and ensures the restored area will function into the future. We propose that the excavated material remain in the marsh and may be used to backfill trenches. If the material would be higher than the existing grade, the excess would be used beneficially within the marsh.
3. Sec 10:01 – For this section, we ask that you consider the inclusion of a new purpose for wetland restoration, enhancement and maintenance. Specifically, adding language to “Increase wetland restoration of lost, altered or degraded wetlands, and enhancement and maintenance of existing wetlands”. This language will help ensure that positive wetland projects are defined and can proceed efficiently to address wetland loss while also maintaining the rigorous permitting and regulatory requirements for projects that result in overall negative impacts to wetlands.

### General Considerations

1. There is a need to redefine ecological restoration so that Voluntary Wetland Restoration (VWR) projects are viewed under a separate regulatory lens that focuses on a net-gain in wetland functions and services. Currently, these types of projects are viewed with the same lens as development projects that result in net-negative outcomes, and must follow the same avoidance, minimization, and mitigation parameters. As VWR projects would work in altered, degraded, and lost wetland habitats, and can document net gains in wetland functions and services, there should be a separate, streamlined process for permitting, no required mitigation, and minimal fees. Because the outcomes of wetland restoration projects are net-positive, the process to engage in them should be different than ones with net-negative outcomes.
2. There should be distinct definitions for habitat restoration, rehabilitation, enhancement, maintenance, and management that are tied to the VWR program, along with acceptable activities needed to restore wetland habitats to their former pre-disturbance conditions, or to emulate as close as feasible, their previous healthy condition.

While we believe some of the proposed changes are beneficial, there are many that can be improved on to ensure that wetland restorations throughout Massachusetts are done quickly, efficiently, and effectively. Please feel free to contact us if we can provide further information. Thank you again for the opportunity to comment and for working diligently to protection and restore wetlands throughout the Commonwealth.

Sincerely,



Sarah Fleming  
Director of Conservation Programs, Atlantic Region  
Ducks Unlimited



Bri Benvenuti  
Regional Biologist, New England  
Ducks Unlimited



**TOWN OF EASTON**  
**Conservation Commission**  
**Department of Planning & Economic Development**  
136 Elm Street, Easton, Massachusetts 02356  
Tel: (508) 230-0630 Website: [www.conservationcommission.org](http://www.conservationcommission.org)



April 30, 2024

MassDEP

Sent via [dep.wetlands@mass.gov](mailto:dep.wetlands@mass.gov)

Subject Line: **Wetlands-401 Resilience Comments**

**RE: Easton Conservation Commission Comments on MassDEP'S Resilience 1.0 Draft Regulations and 2.0 Recommendations**

Dear MassDEP:

The Easton Conservation Commission appreciates the opportunity to provide comments on the Resiliency package 1.0 including changes to the Wetland Regulations and Stormwater Handbook. These long awaited changes will improve the processes for how commissions can act, simplifying the permitting process and improving the Commonwealth's ability to respond to our changing climate. The proposed Resiliency package is a culmination of many years of collaboration between state, local and private conservation organizations. We applaud DEP for improving our partnerships and strongly urge this collaboration to continue. We thank the many, many individuals who have worked so hard to bring this package to public comment and urge a thoughtful review of received comments and speedy adoption.

To summarize our comments, the Easton Conservation Commission fully supports the Resilience 1.0 package including the:

- requirement for the use of the most recent rainfall data through the NOAA Atlas;
- requirement for nature-based solutions;
- alignment of the Stormwater requirements with the EPA MS4 permit;
- inclusion of shared use paths as a minor project in the Buffer Zone; and
- adoption of performance standards for the last remaining resource area without them, Land Subject to Coastal Storm Flowage.

We do; however, have some concerns and requested edits to the following:

**310 CMR 10.02(2)(b)2r- minor project for shared use path (sup).**

- Six feet (6') beyond the shoulder on both sides of the SUP seems excessive and may push the clearing of vegetation right up to the edge of a wetland. Easton Conservation requests removing the additional 6' of clearing and requiring a minimum 10' vegetated buffer to a wetland and 25' to a vernal pool.



- **310 CMR 10.02(2)(b)2r.iv.** Regarding.....”To prevent the possible export of invasive plants, cut vegetation may be chipped and evenly spread on the Project Site; provided that the chips are spread outside the jurisdictional areas, and raked to a depth not to exceed three inches, clear of all drainage ways, or alternatively, all cuttings and slash shall be removed from the Project Site and properly disposed.” This states the activity is exempt but then not allowed in a jurisdictional area. This is confusing. Why allow stockpiling of wood chips somewhere else on the locus that likely already has native vegetation on it?
- There is just too much detail in this one, making it applicable in fewer situations. We request that this section be simplified further.

### **310 CMR 10.04 definitions**

- Effective Impervious Cover Reduction – Tree canopy enhancement and rainbarrels/cisterns are not practical. There is also a question of how to enhance existing tree canopy? Is this replanting and using the new tree canopy at the time of planting? Or is the full canopy of the tree 50 years from now assumed? Most residents move to a new house and immediately remove the trees. Similarly, rain barrels last about a year or so and then homeowners stop using them. They cannot be reliably used for stormwater purposes and we request that they be removed and not receive credit. Green roofs are acceptable options in this definition.
- Improvement of Existing Public Roadways - Proposed work at intersections requiring wetland permits are typically submitted as a “substandard intersection” requiring compliance with stormwater standards to the maximum extent practicable for most of the 11 standards. DOT has their own design handbook but does not appear to incorporate the design standards into their permitting plans and appears to significantly increase the rate and volume to wetland resource areas, all without notification to abutters. It should be made clearer that DOT cannot alter wetlands, regardless of the number of exemptions that continue to be written into the wetland regulations. DEP should not continue to exempt so many of DOT’s activities that commissions lose the ability to adequately protect the resource areas from alterations. DOT projects should be reviewed the same as any other roadway project. We request DEP carefully reconsider this and collaborate with conservation staff on workable revisions.
- Maintenance of Existing Public Roadways should not include full depth reclamation or replacement of existing culverts that are undersized, not maintained or within a bordering vegetated wetland or bank, where improvements to stormwater should be made. This should be added to the definition so that it is clear, that improvements should be made if they improve resilience (e.g. updating undersized culverts) even if that requires filing a new permit application. Outfalls and culverts that have not been maintained should be addressed during the permitting phase. Too often commissions are told the outfall that is falling apart or full of sediment cannot be addressed because it is not part of the proposed project or another maintenance division handles that. DOT, in particular, should be

required to provide this maintenance and improvement as part of this climate resilience package.

### **310 CMR 10.05(6)(l and m)**

- The eligibility of four units has always been confusing. The existing Regulations state that stormwater management standards apply fully for project with *four or more* units, and in the next section state they apply to maximum extent practicable (MEP) for *four or fewer* units. This is an opportunity to clarify the confusion with respect to four units. Easton Conservation requests rewriting the eligibility to apply fully with *four* or more units and to MEP for *three* or fewer units. Changes should be made in all applicable locations in WPA Regs and Handbook.
- Why does DEP need to specify that stormwater standards don't apply to emergency repairs to *gardens not containing greenhouses*?

### **310 CMR 10.05(6)(q)**

- Including the minimum setbacks of stormwater management components to resource areas is important and clearer in the proposed changes, particularly in the specification that the measurement begins with the outermost edge of a SCM. This has been contested for a long time with engineers. The clarification will simplify stormwater reviews.
- However, there should be a setback to BLSF, due to the fact that a 10% increase in impervious surfaces (or upstream development) changes the watershed and causes impacts to banks and streams, presumably also changing the floodplain. BLSF should also be afforded a minimum 10' setback to SCMs. Protecting floodplain is a well established method of providing climate resilience.

**310 CMR 10.57(2)(a)6.- BLSF** Easton Conservation requests rewriting as shown below:  
310 CMR 10.57(2)(a)6. The boundary of a certified or uncertified vernal pool shall be based on field observations of the maximum extent of flooding and delineated by a competent source meeting the criteria in 310 CMR 10.60(1)(b). Vernal pool habitat shall include the area within 100 feet of the boundary of the vernal pool itself, insofar as such area is contained within the boundaries of this Resource Area.

- DFW does not certify the boundary of vernal pools so we suggest removing those references. The NOI application should be submitted with the applicant's representative delineating the vernal pool boundary and the Conservation Commission, as the issuing authority, verifying that delineation. Also, Conservation Commissions and DEP staff may meet the requirements under 10.60 but they may not; simply listing the reference to 10.60 would be adequate here.

**310 CMR 10.57(2)(b)3.** No changes proposed to ILSF section but ISLF calculations currently refer to BLSF. BLSF changes to 10.57(2)(a)(3)a-c change to require a more comprehensive software to be used in the BLSF calculations, and reference NOAA Atlas 14. Easton Conservation requests changing all references to "listed in the National Oceanic and

Atmospheric Administration (NOAA) Atlas 14 Volume 10 (version 3.0 or later version are permissible)” and any such references to using NOAA 14 throughout the proposed Wetland Protection Act Regulatory changes and Stormwater Handbook to “listed in the most recent National Oceanic and Atmospheric Administration (NOAA) Atlas”.

- Using the most recent rainfall data available through NOAA promotes climate resilience and avoids the necessity to update the Regulations in the future. NOAA 15 is already in development so there is no need to restrict using best scientific evidence when it is available.

**310 CMR 10.58(6)** Easton Conservation applauds the removal of the term “grandfathering” to demonstrate a commitment to equity and inclusion.

### **DEP Staff**

The circuit rider position in Southeast Region has been vacant for months. This is a resource that is valuable to many municipalities and one which many commissions rallied to support in the state budget. The hiring freeze should not include the Circuit Rider position and we request that this position be immediately advertised and filled.

### **Regulatory Reform Package 2.0**

Easton Conservation requests that DEP conduct more outreach to conservation commissions who administer these regulations on a daily basis. While DEP reviewers may have an understanding of the regulations, they do not appear to have the same relationship with residents, engineers, contractors and wetland professionals. Conservation staff have the boots on the ground and the first review of a project. While communication has improved over the past few years, more can be done to engage and partner with Conservation staff while developing the 2.0 package. Easton Conservation strongly encourages DEP to engage in regular discussions with more representatives of the conservation permitting community, like MSMCP.

In advance of further discussion on additional climate resilient packages, **we offer the following recommendations:**

**10.02(2)(b)(e) Conversion of lawn to uses accessory to residential structures such as decks, sheds, patios, pools.** Easton Conservation requests DEP revise this to be more specific to above-ground pools. In-ground pools are not appropriate for exemptions due to the removal of large amounts of soil and land alteration.

### **Other minor exemptions under 10.02(2)**

- Easton Conservation requests DEP add an exemption for removal of a certain number of high risk trees adjacent to structures. Residents contact commissions daily concerned about storm events and wanting to remove trees. Most residents are also receiving letters from their insurance companies requiring that they remove the trees immediately or they won’t be covered for damage. This has caused a panicked and knee-jerk reaction to immediately remove trees without permits. Most of these can be approved with a site inspection and some directions to the homeowner from the Conservation staff as effectively as if they did have to be delayed 2 months to obtain a permit.

- Easton Conservation requests DEP add an exemption for removal of exotic, invasive plants, provided that the methods and removal follow industry standards. We suggest allowing invasive plant removal up to the wetland boundary and replacement with native species if the invasives are that pervasive. It does not benefit us to stop at an arbitrary line 50' away from a wetland when the invasive species will still produce seeds or continue to propagate. DEP regulations can reference an acceptable and effective resource rather than write a prescriptive revision.
- Recognize that land trusts and others do provide publicly available walking paths.

**Please clarify the rights of way management sections regarding herbicide and manual vegetation removal.** Utility companies continue to assert an exemption for manual vegetation removal that is not cited in the regulations.

### **Vernal Pools and Isolated Land Subject to Flooding**

Better protection of these two areas is long overdue, particularly with the state of the federal government and lack of protection throughout the rest of the country. MA has been a leader in natural resource protection and needs to continue that standard for these two resources. Easton Conservation requests adding Vernal Pools (certified or uncertified) as a resource area, with a presumption that they are significant to the interests of providing flood control, prevention of pollution and wildlife habitat, at a minimum. We request that **DEP engage in active and robust discussions with conservation professionals on the revisions to the definitions and proposed performance standards including adding buffer zones based on best scientific evidence available.** DEP can look toward other New England states like Maine and Vermont or Ohio for performance standards. The vast majority of municipalities have adopted bylaws for the specific purpose of protecting these two resources that are lacking adequate protection under the current state law. DEP should confer with the Vernal Pool Association, MSMCP and other professionals well versed in the identification and functions and values of vernal pools and isolated land subject to flooding.

### **Limited projects**

Easton Conservation recommends that 310 CRM 10.53(3) be revised to better explain the eligibility requirements. Limited projects are supposed to be available to applicants if the project proposes above-threshold alterations or if performance standards cannot be met AND if the project is listed as a potential limited project. The first portion of the eligibility requirement has been lost in the reading of the section. If a project is under the allowable alteration thresholds and the applicant CAN meet the performance standards, they are required to do so, regardless of whether their project is listed as a potential limited project type.

Easton Conservation requests DEP **add limited project provisions** for:

- the removal of invasive species; and
- construction of boardwalks, puncheon, and other structures on existing walking paths to prevent people from widening the trails when they get wet and have to walk around them, causing more damage to resources.

### **Riverfront Area**

Easton Conservation requests DEP work to clarify the very confusing sections regarding alternatives analysis and redevelopment.

**DEP forms**

Revisions to the application and permit forms has been an ongoing project with DEP, MACC and MSMCP. Easton Conservation requests that DEP engage more closely with these organizations to provide a more user-friendly form that contains more accurate documentation of the project and guides applicants through the regulations to ensure that all performance standards are being met.

In addition, we request that DEP begin working with municipal online permitting software companies to ensure a uniform application of the DEP forms appears on municipal websites. This would allow applicants to simply print the online forms that are being submitted through municipal systems rather than require applicants duplicate their time and efforts completing official DEP forms and municipal online permitting requirements.

Communicating to commissions and the software companies of form changes is also important and should be part of a standard operating procedure.

**Coordination**

DEP will presumably receive a large volume of comment letters on the regulatory reform package. Easton Conservation requests that DEP coordinate the review of these letters with a team of conservation professionals to the impacts of adopting certain revisions and to ascertain which comments can be immediately incorporated into the final 1.0 package. This team can further begin discussion of regulatory reform package 2.0 topics and coordinate partners.

The Easton Conservation Commission acknowledges the amount of work and coordination it took to prepare and release the Resiliency 1.0 package. And we are grateful to all of those involved. This certainly was an arduous task. Well done for accomplishing so much of what has been presented to the conservation community. Please do not hesitate to reach out to the Easton Conservation Commission with questions about these requests, to assist in any working subgroups or to provide further review.

Thank you.

Sincerely,

Benjamin Carroll  
Chair, Easton Conservation Commission



247 Station Drive  
Westwood, MA 02090

**Matthew A. Waldrip**  
Manager, Licensing & Permitting  
matthew.waldrip@eversource.com  
781-441-8247

**April 25, 2024**

MassDEP - BWR Wetlands Program  
Attn: Wetlands-401 Resilience Comments  
100 Cambridge Street, Suite 900  
Boston, MA 02114

Re: Comments on Proposed Modifications to MassDEP Regulations

To Whom it May Concern:

Eversource Energy Service Company ("Eversource") appreciates the opportunity to submit comments in response to the proposed modifications to 310 CMR 10.00 (Wetlands Protection), 314 CMR 9.00 (401 Water Quality Certification), and 310 CMR 9.00 (Waterways) ("Regulations"). Eversource is New England's largest energy delivery company with approximately 4 million electric and natural gas customers in Massachusetts, Connecticut, and New Hampshire and is dedicated to and values its role as an environmental steward in connection with providing reliable energy delivery.

In order to meet our obligation to provide vital public services, Eversource must conduct its capital and maintenance projects to ensure reliability and safety are in compliance with national, regional, and industry standards and regulatory policies. It also is critical that our approach to operating and maintaining our system fully supports and enables the electrification required to support efforts to mitigate climate change. In furtherance of the Commonwealth's clean energy objectives, Eversource must proceed in a timely manner with its projects to ensure its system can safely handle increased electrical loading as well as support proliferation of renewable generation and storage that is becoming an increasing part of the modern electrical grid.

Under the current MassDEP regulations, Eversource has maintained compliance with the applicable performance standards while meeting project deadlines and providing reliable service at reasonable costs to our customers. As detailed below, however, Eversource believes that some of the proposed modifications to the Regulations will negatively impact Eversource's ability to meet our obligations. Additionally, we expect that some of the additional engineering and design requirements in the proposed revisions will impede our ability to support the implementation of the Commonwealth's very aggressive clean energy transition. The discussion below identifies specific modifications to the amended regulations that would facilitate clean energy infrastructure development and maintenance in line with the recommendations made by Governor Maura Healey's Commission on Energy Infrastructure Siting and Permitting, while continuing to ensure protection of wetland resources.



### **10.02(2) Activities Subject to Regulation**

We propose that the activities currently listed as exempt in 10.02(2)(b)(1) and (2)(h) through (m) for work within Buffer Zone should also be made exempt from regulation within Land Subject to Flooding and Land Subject to Coastal Storm Flowage. Eversource recommends that this additional exemption can be based on a standard requiring that the work is conducted in a manner so as to avoid any adverse impacts to the interests protected by these resource areas during construction, and with post-construction measures implemented to stabilize and restore any disturbed areas so there is no adverse impact to the interests protected by these resource areas.

### **10.04 Definitions**

First, Eversource believes that the new definition for **Compacted Gravel or Soil** should distinguish between gravel and uniform crushed stone, such as that used in utility substations, which is porous by nature and designed to drain and dry as quickly as possible to reduce electric current conductivity. The definition should explicitly clarify that “Compacted Gravel or Soil” does not include uniform crushed stone.

We also note that soil strength and compaction are not necessarily representative of permeability/impermeability. Rather than soil strength, hydraulic conductivity should be used to determine whether a crushed stone, compacted gravel or soil area is classified as impervious, to align better with the EPA definition, which includes any surface that prevents or significantly impedes infiltration into underlying soils. Hydraulic conductivity can also be easily tested utilizing the same equipment being used for the required in-situ permeability testing, rather than introducing another test for soil strength. In addition, it is not clear how the recharge rate of 0.01 inch/hour could correspond to a full infiltration design rate of 72 hours, as stated in the new language in Standard 3. A more reasonable minimum saturated hydraulic conductivity rate should be used in lieu of 0.01 inch/hour.

Second, Eversource notes that the Department is proposing to add a new definition for “Improvement of an Existing Public Roadway.” We propose (1) that the Department also add a new definition (set out below) for “Improvement of an Existing Utility Access Road” and (2) include that defined term in the definition of “Redevelopment.”

**Improvement of an Existing Utility Access Road** means, for the purposes of Redevelopment stormwater management in 310 CMR 10.05(6)(k)7., activities undertaken to an existing utility access road that substantially change or enlarge the existing utility access road in a manner that increases impervious area. Improvement of an Existing Utility Access Road may include New Stormwater Discharges.

With this additional definition included, both segments of the definition of **Redevelopment** should be amended to include “Improvement of an Existing Utility Access Road” for purposes of governing work within Riverfront Area and Land Subject to Coastal Storm Flowage, as well as for the purposes of the Stormwater Management Standards.

Third, Eversource believes that the proposed new definition for **Impracticable**, which is applied as the standard for determining when an alternative to ESSD and LID may be used, is inappropriate and conflicts with the existing definition of Practicable, which is defined to take “into consideration costs, existing technology, proposed use, logistics and potential adverse consequences.” As written, the new definition would mean that costs, logistics, and potential consequences are no longer valid factors in identifying the best stormwater management solutions. In fact, this seems to be acknowledged in the new language for Standard 4 that allows other SCMs and related stormwater Best Management Practices to be used to meet those portions of the TSS/TP removal Standard that cannot be fully met by ESSD and LID. Accordingly, either the Impracticable definition should be amended to correlate with the existing definition of Practicable, or Standard 4 should be restored under 10.05(6)(k)7 as being met to the MEP for Redevelopment projects.

### 10.05(6)(k) through (q) Stormwater Management

As currently proposed, section 10.05(6)(k)4 (“Standard 4”) now references the undefined term “new development,” and requires that the new standard of 90% TSS removal must be met using ESSD or LID unless demonstrated to be Impracticable, and must be met “on the Project Site.” Unless the definition of “Impracticable” is modified as proposed above, the changes to this standard will impose unreasonable requirements on Eversource for any new or modified utility access roads.

The new section 10.05(6)(k)7.c requires that Standard 4 be met “on the Project Site,” or else Offsite Mitigation **must** be implemented (emphasis added). Along long linear corridors such as Eversource’s rights-of-way, offsite mitigation would be challenging or impossible to achieve, would result in significant delays and increased costs in order to seek rights from other landowners, and would jeopardize Eversource’s ability to meet its projects’ in-service dates. To address this, Eversource recommends that “must” should be revised to “may” for new utility access roads and for Improvements to Existing Utility Access Roads to allow for flexibility and creativity in achieving compliance with this standard within constrained rights-of-way.

With respect to on-site, it is important to note that the majority of Eversource’s ROWs are established where Eversource does not own the property and may have limited easement rights. Therefore, if the amended regulations require new infrastructure for stormwater management on the Project site, Eversource could face challenges to its ability to construct any permanent stormwater BMPs on its ROW without having to negotiate new easement rights with the owner of the underlying property. This is particularly true where the underlying landowner has retained rights to undertake additional activities within the ROW.

The draft regulations in 10.05(6)(q) also propose new minimum setbacks for components of a Stormwater Management System. In the constrained linear corridors of Eversource’s rights-of-way, where there are often existing wetland resource areas, Priority Habitat, and other utility infrastructure within a utility easement, it will be often infeasible to meet Stormwater Standards 2, 3, 4, and 6, while maintaining the setbacks identified. To ameliorate the potentially unreasonable burden of the restrictive

setbacks in these situations, we recommend that the regulations be revised to include a provision that allows siting of Stormwater Control Measures with reduced setbacks in utility rights-of-way where it is demonstrated for that particular project that the design will not result in a significant adverse impact to any resource area.

### 10.23 Additional Definitions for 310 CMR 10.21 through 10.37

The proposed regulations for Land Subject to Coastal Storm Flowage frequently refer to “**buildings**,” which are currently defined in this section to include “a large, substantial structure such as a utility tower.” While this is not a new definition, its applicability to the new Land Subject to Coastal Storm Flowage regulations raises questions regarding the regulation of utility structures in LSCSF. In all instances where the word building is used in the new LSCSF regulations, it should be made clearer that the intent is not to include typical electric distribution or transmission structures. In Land Subject to Coastal Storm Flowage, these utility structures do not act as an obstruction, cause refraction, diffraction, or reflection of waves, or force wave energy and moving water onto adjacent properties. Furthermore, because direct-embedded utility poles already function as open piles, which are allowed within the MoWA Zone, confusion will arise as to how these structures are being regulated. Eversource recommends that the second sentence of the definition of “buildings” in 10.23 should be deleted or otherwise amended to remove the phrase “such as a utility tower.”

### Stormwater Handbook

One of the criteria for **Environmentally Sensitive Site Design** states that the “total impervious cover footprint must be less than 15% of the base lot area.” There is no definition of “base lot,” and the concept of a “lot” does not apply to a substantial portion of Eversource’s rights-of-way, which are long and linear, and do not represent smaller, connected areas for drainage. Eversource recommends clarifying the definition of **Project Locus** for linear corridors such as utility rights-of-way, to be defined as an area of land owned in-fee or held in easement within the municipality in which Alteration is proposed. With that change, Eversource also recommends that the ESSD Credit 1 criterion be clarified to reference 15% of the “Project Locus” rather than 15% of the “base lot area.”

### 10.36 Land Subject to Coastal Storm Flowage

Under 10.36(6), Eversource recommends that a provision be added to explicitly allow for **Improvement of an Existing Utility Access Road** (using the new definition as proposed above). In addition, we recommend that a provision be added under 10.36(8) to explicitly allow for **Improvement of an Existing Utility Access Road**, given that activities to improve utility access roads have no effect on the ability of Land Subject to Coastal Storm Flowage to provide storm damage prevention or flood control.

### 10.24 and 10.53 Limited Projects

The relationship of limited projects to the Stormwater Management Standards is currently unclear in the regulations at 10.24 and 10.53, which refer only to the provisions of 10.25 through 10.36 and 10.54

through 10.58 and 10.60 respectively. Eversource recommends that the regulations in both 10.24(7) and 10.53(3) be clarified to include the provisions of 10.05(6)(k) through (q). Without this clarification, utility projects that qualify as limited projects could be forced to comply with the Stormwater Management Standards to the full extent, and as noted above, there are many challenges to meeting the Standards as drafted without requiring a Variance.

In closing, Eversource requests and appreciates the Department's full and careful consideration of these comments and looks forward to continued cooperation with the Department on these matters.

Sincerely,

A handwritten signature in black ink, appearing to read "Matthew A. Waldrip", with a stylized flourish at the end.

Matthew A. Waldrip  
Manager, Licensing & Permitting - Massachusetts

**From:** [Flyer's Boat Rentals](#)  
**To:** [DEP Wetlands \(DEP\)](#)  
**Subject:** Wetlands and Waterways Resilience Comments  
**Date:** Monday, April 29, 2024 8:20:27 PM

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Dear MassDEP Waterways, Wetlands, and Other Interested Parties,

I am writing to express my concerns about the proposed amendments to the current regulations that affect water-dependent businesses like mine. My name is Noah Santos, and I am the third-generation owner of Flyer's Boat Shop and Flyer's Boat Rental Inc. in Provincetown, which was established by my grandfather in 1944. We are a vital part of the local maritime community, operating a large mooring field, the only boat shop and boat storage facility in town, and a diverse fleet of sail and power boats.

While I acknowledge the severity of climate change and the need to prepare for its impact on our shoreline, I believe that the proposed amendments are not the optimal solution and may have significant negative effects on businesses like mine.

One of my primary concerns is the Stormwater/Water Quality Certification requirement. Our property, mandated to have a public access walkway per our Chapter 91 license, faces challenges with pollution beyond our control, such as pet waste, cigarette butts, and stormwater runoff from the surrounding watershed area. It is concerning that water's edge businesses are burdened with managing stormwater runoff from a wide area and are then expected to bear the costs of monitoring, treatment, and removal to standards exceeding drinking water quality.

In addition to the water runoff regulations, I am concerned about the lack of clarity in 310 CMR 10. Specifically, the proposed regulations imply that development/re-development exceptions "may" be allowed for water-dependent businesses in the V-Zone. This ambiguity poses immediate challenges for us, as lenders will certainly hesitate to finance projects uncertain of future regulatory approval. Structural upkeep of our current buildings is essential to our business as a whole, and the need to erect additional or replacement structures in the future seems inevitable. Without some sort of exemption for all water-dependent operations, of which there are only so many in the state, we all risk being forced out of business.

I urge a reevaluation of these regulations before they are finalized. It is crucial to find a balanced approach that addresses environmental concerns while ensuring the viability of businesses reliant on waterfront locations.

Thank you for considering my perspective and the concerns of water-dependent businesses in your decision-making process.

Sincerely, Noah Santos Owner, Flyer's Boat Shop and Flyer's Boat Rental Inc.

--

Marianna Kennedy  
Flyers Boat Rental Inc.  
[flyersboatrentals@gmail.com](mailto:flyersboatrentals@gmail.com)  
(508) 487-0898 ext. 1



**From:** [Frank Schellenger](#)  
**To:** [DEP Wetlands \(DEP\)](#)  
**Subject:** Wetlands-401 Resilience Comments  
**Date:** Monday, April 29, 2024 1:45:20 PM

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Thank you for the opportunity to comment. Here are two:

1. The revised regulations should address how to deal with farm ditches after there is no more farm. The exemptions should include cleaning them, to allow continued drainage.
2. The revised Storm Water Handbook, Note 76 should not be a note – the requirement should be elaborated in the text. Apparently, some engineers do not read (or ignore) notes.

Dr. Frank Schellenger  
Conservation Agent  
Town of Hanson  
781 294-4119

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**From:** [Francis Sennott](#)  
**To:** [DEP Wetlands \(DEP\)](#); [Waterways, DEP \(DEP\)](#)  
**Cc:** [Patrick.kearney@mahouse.gov](mailto:Patrick.kearney@mahouse.gov); [Paul.McMurtry@mahouse.gov](mailto:Paul.McMurtry@mahouse.gov)  
**Subject:** Wetlands and Waterways Resilience Comments  
**Date:** Monday, April 29, 2024 11:41:44 AM

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I am a Westwood, MA resident with a summer home on the water in Scituate, MA. I only just heard about the proposed regulatory changes under the Wetlands Protection Act and the Massachusetts Public Waterfront Act. I understand that the proposed rules were released on December 22 of 2023 and public comments close on April 30, 2024. The short timeframe for commenting seems very unfair to communities such as Scituate where many residents and business owners make their living near or on the water. As I understand these regulations, they will limit new building, the reconstruction and redevelopment of older buildings, and put unprecedented power into the hands of local conservation committees. The regulations will make it difficult to obtain financing, sell property, and invest in current structures. The objective seems clear – to eventually close down the coastal economy. This will have a dramatic effect on many communities in the Commonwealth and most residents in these communities have no idea this is in the works. I urge you to delay approval of these regulations and to conduct many more public hearings in the waterfront communities until they have had a chance to provide informed input.

Sincerely,

Frank Sennott

**Francis J. Sennott**

A large black rectangular redaction box covers the signature area, obscuring the name and any handwritten notes or dates that might have been present.

April 30, 2024

MassDEP - BWR Wetlands Program  
Attn: Wetlands-401 Resilience Comments  
100 Cambridge Street, Suite 900  
Boston, MA 02114

*Submitted electronically to: [dep.wetlands@mass.gov](mailto:dep.wetlands@mass.gov)*

**Re: Comments on MassDEP'S Resilience 1.0 Draft Regulations and 2.0 Recommendations**

Dear MassDEP BWR Wetlands Program,

The Franklin Regional Council of Governments (FRCOG) is a regional & municipal service organization and the regional planning agency serving the 26 municipalities of Franklin County. We advocate on behalf of our communities and the county at the federal, state and regional levels. We provide planning technical assistance to our member towns for projects related to climate change resiliency, natural resource protection, land use, and transportation planning.

Together with Pioneer Valley Planning Commission (PVPC) and Berkshire Regional Planning Coalition (BRPC), FRCOG is submitting a letter with comments specific to unpaved rural roads. This separate letter focuses on additional comments on general and inland wetland regulations. It provides FRCOG's additional comments on the proposed "1.0" changes and suggestions for the forthcoming "2.0" regulatory change package.

**Climate Resilience 1.0 Comments**

We appreciate MassDEP's proposals to make important progress toward reducing the risks to development and infrastructure from climate impacts from increasing storm intensities. We offer the following suggestions for further improvements in the final regulations.

1. **General comments.** Franklin County's towns have small populations, and most of our Conservation Commissions have no staff support.<sup>1</sup> Each time the regulations get longer and more complicated, our towns are potentially vulnerable to errors and lawsuits. At the same time, implementation costs for environmentally beneficial projects increase with increased requirements. Our towns need very clear regulations and definitions and associated instructions, trainings, and handbooks. Our communities rely on MassDEP's Western Regional Office (WERO) Circuit Rider, who serves over 100 communities in western MA. Our understanding is that the WERO Wetlands Circuit Rider is not a permanent and benefited MassDEP position. If that is still the case, we support the Circuit Rider position being a permanent, benefited MassDEP position. As MassDEP contemplates the rollout of these regulatory changes, we encourage DEP to fully support Massachusetts rural communities by investing in adequate staff.

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<sup>1</sup> Only four out of our 26 municipalities have populations over 5,000.

2. **Definitions under 310 CMR 10.04, Highway Specific Considerations.** This definition gives one agency (MassDOT) special rights. Municipal Departments of Public Works (DPWs) or Highway Departments often have control of roadways of similar size and undertake projects of similar scales, and those should have similar allowances. It would make more sense to base the regulations on the size of the roadway, the scale of the proposed project, the intended public benefits, and the potential environmental impacts, rather than the agency responsible for the project.
3. **Definitions under 310 CMR 10.04, Impracticable and practicable.** FRCOG agrees with comments submitted by the Massachusetts Association of Conservation Commissioners (MACC) that these definitions will lead to confusion, and should be updated to include consistent criteria.
4. **Procedures under 310 CMR 10.05.** Section 10.05(6)(m)(6) requiring unpaved footpaths in natural areas to comply with the Stormwater Management Standards seems unreasonable. Adding regulatory burdens to trail-making will mean added costs for municipalities and nonprofit organization looking to increase outdoor recreational options. MassDEP should include unpaved footpaths in natural areas as exempt activities under the Stormwater Management Standards 10.05(6)(l).
5. **Notices of Intent under 310 CMR 10.05(4).** The proposed changes require a registered professional engineer (PE) to stamp a Stormwater Checklist for projects subject to the Stormwater Management Standards. FRCOG agrees with MACC's suggestion that, if projects are minimal and include removal of impervious surfaces, PE stamps may not be necessary for projects when there are no changes in impervious surfaces and no changes in grade or topography.

More generally (perhaps during the 2.0 process), MassDEP should reconsider which parts of projects truly need a PE stamp, because each time this is needed, it often increases the costs of projects. We are under the impression that other states allow a wider array of projects to happen without a PE stamp.
6. **Stormwater Handbook, Section 5.6 Shared-Use Path provisions.** It is not clear whether this section applies only to paths on converted railroad beds or not. Shared Use Paths do not generate pollutants like many other development activities, and perhaps this section could be clarified.

### **Climate Resilience 2.0 Regulations**

We appreciate the fact that MassDEP recognizes the need for additional regulatory reforms to achieve the Commonwealth's climate resiliency goals. Over the last decade, FRCOG has been working with our communities through 604b, 319, and MVP grants to conduct fluvial geomorphology studies and recommend projects along rivers to improve resilience and stream habitat, and reduce impacts from flooding. Our region was hit especially hard during Tropical Storm Irene in 2011 and flash flooding in July, 2023, in addition to other large storms. Unfortunately, it has been extremely difficult to implement recommended projects, often because of major permitting hurdles. Through a project funded by the Long Island Sound Futures Fund, FRCOG has been convening a Blue Ribbon Panel and a team of consultants to provide "design typicals" for a set of nature based solutions on rivers, to allow for a smoother permitting pathway for projects like this. We greatly appreciate MassDEP's participation on the Blue Ribbon panel. We may have more detailed recommendations after this project is complete later this year, but offer the following recommendation below.

7. **Permit Streamlining – Aim for Single Application Coordinated Review:** We request that the 2.0 process include additional permit programs and agencies, with a goal of integrating and streamlining permitting for wetlands restoration projects across all applicable state environmental laws and regulations. The goal should be a single permit application, managed by a single agency that coordinates across all other agencies and with the project proponent, resulting in a single combined permit issued quickly, preferably within 90 days of submission of a complete application. Some of this could be done outside of regulatory changes. We suggest looking to the State of Vermont as a neighboring state that offers a set of simpler procedures for environmentally beneficial projects, along with a single agency point of contact to help shepherd the project along the way, or identify fatal flaws early in the process.

We appreciate the opportunity to comment on regulatory changes affecting Franklin County's wetlands and waterways.

Sincerely,



Linda Dunlavy  
Executive Director



FUSS & O'NEILL

April 30, 2024

Massachusetts Department of Environmental Protection  
Bureau of Water Resources -Wetlands Program  
Attention: Wetlands-401 Resilience Comments  
100 Cambridge Street, Suite 900  
Boston, MA 02114

RE: Wetlands-401 Resilience Comments  
Fuss & O'Neill Comments

Dear MassDEP Wetlands Program:

Thank you for the opportunity to comment on the draft Wetlands Protection Act regulations and 401 Water Quality Certification regulations as part of MassDEP's "Climate Resilience 1.0" package. These are positive steps toward protecting our coastal resources and infrastructure and making Massachusetts more climate resilient.

I appreciate MassDEP's considerable time and effort to prepare these proposed regulations. As a Professional Wetland Scientist, Vice Chair of my Conservation Commission, and an Environmental Consultant, I have a breadth of knowledge of wetland science and its application through the regulatory framework for multiple types of projects across Massachusetts.

My comments provided below are intended to encourage opportunities to streamline permitting for Ecological Restoration Projects and to clarify portions of the regulations. I urge MassDEP to consider my comments on where the regulations should be refined. Initial comments are grouped into categories and are provided in plain font and followed with justification in italic font.

### **310 CMR 10.00 Wetlands Protection**

#### **Ecological Restoration**

- 1) Add additional full ecological restoration project types listed in 310 CMR 10.13. Examples include, but are not limited to:
  - Stream Crossing Removal
  - Cranberry Bog Restoration
    - Includes conversion of active or retired Cranberry Bogs to a wetland, open water body, and/or stream system.
    - May include public access or recreational features.
  - Fish Passage Enhancements
    - Projects include installation of fish ladders, full or partial dam breaches.

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Updates\2024\Fuss&O'Neill\_Comments\A.Doroski\_Comment Letter\_ClimateResilience1.0.docx

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Wetlands-401 Resilience Comments

April 30, 2024

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- Wetland and Floodplain Historic Fill Removal
  - Historical fill is considered as fill placed prior to enactment of the MA Wetlands Protection Act
  - May include floodplain reconnection projects
  - Projects required to provide compensatory mitigation for permanent Boring Vegetation Wetland (BVW) or fill in floodplain shall not be considered Ecological Restoration under this project type
- Stream and riparian corridor re-naturalization
  - May include re-meandering an artificially straightened channel
  - Requires field data collection and review of available historical aerial imagery on stream alignment to support the proposed alignment of stream.
- Native Planting Installation
  - Project proposing native planting installation only with no other ground disturbance and conducted entirely with hand tools
- In-Stream Large Wood Installations
  - Specify a preferred guidance or manual to follow for design, permeability (i.e., semi-permeable), and permanence (i.e., semi-permanent) of features.
  - This may include chop and drop or beaver dam analogs
  - May include bank stabilization with nature-based materials

*There are additional project types that provide an overwhelming net ecological benefit and meet the definition of an Ecological Restoration Project, but are not listed as an Ecological Restoration Project type per 310 CMR 10.13(2) through (7). Because projects are not listed as an Ecological Restoration Project type per 310 CMR 10.13(2) through (7), they cannot be considered an Ecological Restoration Project. Although these projects may fit in the Ecological Restoration Limited Project category, and therefore receive some relief from regulatory requirements, providing the designation of these projects as a full Ecological Restoration Project allows for a more streamlined permitting process, lower permitting costs, and an expedited permitting timeline. Lower permitting costs can free up funding to be spent towards additional efforts to enhance ecological restoration including ecological data collection, expansion of the limits of restoration, implementation of a more comprehensive invasive species program, or increased frequency of monitoring. Designation of more full Ecological Restoration Project types would greatly enhance the ability of projects whose primary purpose is to restore or otherwise improve the natural capacity of a Resource Area to come to fruition faster and more cost-effectively.*

- 2) Specify information required as part of NHESP written preliminary determination as required per 310 CMR 10.11.

## Wetlands-401 Resilience Comments

April 30, 2024

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*We recommend coordinating with NHESP on expectations for providing a preliminary determination. For a recent Ecological Restoration Project, NHESP email correspondence with a preliminary assessment was not considered a preliminary written determination. The final determination in response to the MESA Review Checklist was considered the preliminary determination. We recommend updating 310 CMR 10.11 to refer to the 'written response from NHESP on the MESA Review Checklist' if that is the expectation of the preliminary determination.*

### Definitions

- 3) Ecological Restoration Project: allow inclusion of secondary elements to provide public access to the restored area to be permitted as part of an Ecological Restoration Project where the primary project purpose would otherwise meet the criteria for an Ecological Restoration Project.

*Projects funded through the Municipal Vulnerability Preparedness (MVP) program, like the Little River Dam Removal and River Restoration Project in Haverhill, Massachusetts, often include ecological restoration alongside elements to enhance public access. Inclusion of public access within the Ecological Restoration Project definition would help streamline permitting for these projects with both elements, while still protecting the interests of the Act. For the Little River Dam Removal project, we were advised by MassDEP to submit two NOIs because the proposed public access improvements (i.e., pedestrian path, canoe/kayak launch, pedestrian bridge over the river, fishing platform, and river overlook) could not be included in an Ecological Restoration NOI. Submittal of two NOIs did not result in increased protection of the Interests of the Act, but did result in increased permitting effort, time, and cost.*

- 4) Coastal Storm: Add definition for Coastal Storm.

*It is unclear the parameters to define the limits of what is considered a Coastal Storm for Land Subject to Coastal Storm Flowage when only a Zone A or AE is present. Specifying a geographic extent (e.g., Coastal Zone), tidal influence, or other parameter to define a coastal storm would help clarify where Land Subject to Coastal Storm Flowage ends and where Bordering Land Subject to Flooding begins.*

### **314 CMR 9.00 401 Water Quality Certification**

#### Ecological Restoration

- 5) If a project which results in any discharge in Outstanding Resource Waters is not considered exempt per 314 CMR 9.03(8), add language specifying that.

*The Ecological Restoration provision at 314 CMR 9.03(8) specifically cites Ecological Restoration Projects that include activities that result in dredging greater than 100 cubic yards (314 CMR 9.04(12)) as still requiring a 401*

Wetlands-401 Resilience Comments

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*Water Quality Certification Application. There is no reference that Ecological Restoration projects that include any discharge to an Outstanding Resource Water (314 CMR 9.04(2)) require an application, although the regulations have been applied in that way.*

Definitions:

- 6) Discharge of Dredged or Fill Material: Specify if tree clearing or vegetation removal is considered a Discharge of Dredged or Fill Material

*I have received conflicting interpretations about tree removal in wetlands being considered as discharge of dredged material. Please clarify if a tree is felled and removed from the wetland or felled and left in a wetland is considered a discharge of fill material.*

- 7) Loss of Waters of the United States (US): Add definition of Loss of Waters of the US.

*314 CMR 9.04(1) is a commonly exceeded threshold which references loss of more than 5,000 square feet of bordering and isolated vegetated wetlands and land under water. Loss could be interpreted as permanent and/or temporary impacts. According to the definition of Loss of Waters of the US Department of the Army General Permits for the Commonwealth of Massachusetts (MA GP) effective June 2, 2023, temporary dewatering would not be considered a loss although dewatering has been interpreted that way under 314 CMR 9.00. I highly recommend defining Loss of Waters of the US in 314 CMR 9.00 to align with the MA GP to promote consistency of applicability of the Clean Water Act.*

General/Jurisdiction

- 8) Provide a guidance document to clarify MassDEP jurisdiction over isolated vegetated wetlands.

*With the revised definition of Waters of the US, the jurisdiction of MassDEP over isolated vegetated wetlands is unclear.*

We greatly appreciate the opportunity to provide comments. I urge MassDEP to begin work on "Climate Resiliency 2.0" to continue improving the Wetland Protection Act regulations.

Sincerely,



April Doroski, PWS, CPSS

Water Resources and Climate Resilience Specialist

**From:** [Geoffrey Gorman](#)  
**To:** [DEP Wetlands \(DEP\)](#)  
**Cc:** [Geoffrey Gorman](#); ["william straus"](#); [Marc Pacheco](#)  
**Subject:** Waterways Resilience Comments / Wetlands-401 Resilience Comments  
**Date:** Monday, April 29, 2024 9:08:06 AM

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Department of Environmental Protection Team,

Please see the list of comments below regarding the proposed waterways and wetlands regulations. These are general in nature and proposed to present a different prospective on how these regulation changes can affect small coastal communities within the Commonwealth. To clarify, I attended or reviewed all public hearing and office hours. I do not present this information from a vacuum. Comment are as follows:

1. DISSPROPORTIONATE AFFECT - These regulation changes are not general nor do they affect the cities and towns of the Commonwealth equally. They will DISPPRAPORTIONATELY affect small coastal towns with economic and stability impacts that have not been discussed in any presentation, office hour or public speaking engagement over the last 6 months.
2. ECONOMIC DEVELOPMENT IMPACT - Small, rural coastal towns rely heavily on residential tax base to support citizen services. What little industry and harbor/coastal facing development is available will be negatively affected by these regulation changes particularly the permitting process that will remove stability and long-term sustainability of these industries and threaten the ability to financing, transfer of ownership, generational transfer or new growth. I brought this subject up with Secretary Hao and she stated that she HAS NOT been involved in discussions about the potential economic impact of coastal communities. This is a complete lack of due diligence and in direct conflict with the Governor's communicated goals and priority policies.
3. ACCELERATED COASTAL RETREAT – Continuing to overregulate coastal communities with penalties against growth is a complete violation of the tenets of the Administration, particularly with Affordable Housing. These regulations will accelerate coastal retreat, decrease property values, and increase gentrification of the small parcels of affordable land left within our types of communities. These shifts will make it even more difficult to support affordable housing mandates, continue our push to create equitable housing stock and further erode our revenue tax base as discussed in number 1 and 2. The combinations of these first three issues will only mitigate the work being done at the local level to create a climate resilient community. This is also in direct conflict with the Governor's communicated goals and priority policies.

4. **PENALTIES VICE INCENTIVES** – These regulation changes are primarily negative in that they strive to penalize (carrot / stick) the coastal resource users, vice incentivize them to make the proper choices. I realize that it could be said that permit extension or granting can be incentive, but it will not be perceived that way, and it is a failure of critical thinking.
5. **VIOLATION OF HOME RULE INTENT** – We (and most small coastal communities) are very aware of our marine and coastal resources and how important they are to the long-term sustainability of our towns. In the spirit of Comment #4, please allow individual towns to manage this issue. We are on the ground, understand our unique constraints and restraints and have been authorized by our residents to make the decisions are that in the best interest of the town, its resources and citizens.
6. **TECHNICAL EXPERTISE NOT REGULATION** – And finally, to summarize all 5 points, please step back and become the technical experts for the towns, not the regulators. Provide us the guidelines and resources to support long-term climate resiliency and allow us the leeway to implement those guidelines. Only the residents, volunteers, elected and appointed officials have a true understanding of the needs of their towns and this includes our coastal and marine resources. This is not a one size fits all issue and should not be treated as such.

Best,

Geoff Gorman

**Geoffrey Gorman**

Town Administrator

Town of Marion  
2 Spring Street  
Marion, MA 02738  
Phone: 508-748-3520 | Email: [ggorman@marionma.gov](mailto:ggorman@marionma.gov)

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**From:** [Gerry Lohnes](#)  
**To:** [DEP Wetlands \(DEP\)](#)  
**Subject:** Wetlands-401 Resilience Comments  
**Date:** Monday, April 29, 2024 9:13:19 PM

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Good day all,

My name is Gerry Lohnes and I am currently a Conservation Commissioner in the city of Woburn. Firstly I would like to thank all at DEP who put in the time and effort to propose changes to the current regulations. I also appreciate the opportunity all stakeholders have been given to comment and the extra time given to review the changes.

I have reviewed MACC's comments and am in general agreement with what they have provided. I know all will be seriously considered but I have several which I believe should be incorporated.

I will list them as noted in the MACC comments.

1.43, 1.52, 1.57, 1.84 and 1.88. The Riverfront Alternatives Analysis is of particular interest to me as we see too many times alternatives that are not truly an alternative. Guidance on potential alternatives in addition to unacceptable ones would be very helpful.

Thank you for your consideration.

Gerry Lohnes



**From:** [Peter Duclos](#)  
**To:** [DEP Wetlands \(DEP\)](#); [depwaterways@mass.gov](mailto:depwaterways@mass.gov)  
**Subject:** Wetlands-401 and Waterways Resilience Comments  
**Date:** Monday, April 29, 2024 1:33:18 PM  
**Attachments:** [MMTA Combined Comment Letter.pdf](#)

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Gladding-Hearn Shipbuilding, Duclos Corp. is a commercial shipbuilder located in Somerset, MA since 1955. We specialize in small-medium size aluminum and steel commercial vessels such as ferries, pilot boats, patrol boats, tugs and more recently offshore wind farm Crew Transfer Vessels (CTV's). We are members of Massachusetts Marine Trades Association(MMTA). Attached is a February 13, 2024 MMTA letter concerning the December 22, 2023 proposed regulatory changes "Resilience from Coastal and Inland Flooding". Gladding-Hearn fully supports the comments in the attached MMTA letter.

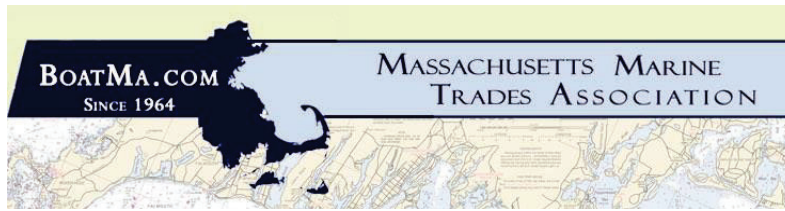
Regards,

Peter J. Duclos  
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Duclos Corporation, Gladding-Hearn Shipbuilding is an equal opportunity employer and federal contractor or subcontractor. Consequently, the parties agree that, as applicable, they will abide by the requirements of 41 CFR 60-1.4(a), 41 CFR 60-300.5(a) and 41 CFR 60-741.5(a) and that these laws are incorporated herein by reference. These regulations prohibit discrimination against qualified individuals based on their status as protected veterans or individuals with disabilities, and prohibit discrimination against all individuals based on their race, color, religion, sex, or national origin. These regulations require that covered prime contractors and subcontractors take affirmative action to employ and advance in employment individuals without regard to race, color, religion, sex, national origin, protected veteran status or disability. The parties also agree that, as applicable, they will abide by the requirements of Executive Order 13496 (29 CFR Part 471, Appendix A to Subpart A), relating to the notice of employee rights under federal labor laws.



*Industry growth through Collaboration, Communication and Education*

February 13, 2024

**Via Emails (copy to each):** [dep.wetlands@mass.gov](mailto:dep.wetlands@mass.gov), must include Wetlands-401 Resilience Comments in the subject line; [dep.waterways@mass.gov](mailto:dep.waterways@mass.gov), must include Waterways Resilience Comments in the subject line

Dear MassDEP Waterways, Wetlands and Other Interested Parties:

On behalf of the Massachusetts Marine Trades Association (MMTA), we thank you for the opportunity to comment on four different yet related proposed regulatory changes all released December 22, 2024 concerning “Resilience from Coastal and Inland Flooding.”. We note the effort to address some water dependent uses in some ways, for which we are grateful, especially to the managers and staff who tried to help us educate our members quickly in January. We also appreciate the extension of the comment period until April 30, 2024, and may submit additional comments after participating in the newly scheduled working informational meetings.

**Collectively, these proposed regulations if enacted “as is” would more than likely make recreational boating facilities unfinanceable overnight, due to the uncertainty of being allowed to continue to operate in future years, even without any new buildings, docks or piers, and especially with them. The absence of reliable permit requirements would also impact insurability of existing facilities and operations.**

These comments are combined because the Waterways regulations import the Wetlands regulations by requiring a Wetlands Order of Conditions before any Waterways application will be considered a ‘complete application.’ They are also combined because the Gubernatorial press release addressed all the proposed changes as a package, and we fear all may be advanced in one premature package.<sup>1</sup>

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<sup>1</sup> Announced Proposals December 22, 2023 Gubernatorial Press Release: [Healey-Driscoll Administration Proposes Regulations to Strengthen Resilience from Coastal and Inland Flooding | Mass.gov](https://www.mass.gov/news/healey-driscoll-administration-proposes-regulations-to-strengthen-resilience-from-coastal-and-inland-flooding)

**BOSTON** — The Massachusetts Department of Environmental Protection (MassDEP) today issued draft regulations to strengthen wetlands and stormwater resilience by providing flood control and preventing storm damage to shorelines and infrastructure from the impacts of climate change. The proposed regulations will help protect areas vulnerable to sea-level rise and storm surge, promote nature-based solutions to flooding, streamline certain permitting processes, and use updated precipitation data to inform decision-making...The regulations are proposed under the Wetlands Protection Act and the Massachusetts Public Waterfront Act. MassDEP will accept comments on the draft regulations until March 1, 2024. ...“Data tells us that inland and coastal flooding are two of the biggest threats to Massachusetts. The storms we saw this summer showed us that there is no time to waste,” **said Energy and Environmental Affairs Secretary Rebecca Tepper**. “These updates strike a balance to preserve and protect development along our waterways. These changes also present Massachusetts with another opportunity to lead – we’re promoting the most cutting-edge nature-based solutions along our coastlines.” ...“We cannot continue a ‘business-as-usual’ approach if we want to build more resilient communities,” **said MassDEP Commissioner Bonnie Heiple**. “With these regulations, we’ve integrated the latest science and green infrastructure techniques to mitigate climate change impacts and protect residents, municipalities, and businesses from costly rebuilding efforts. MassDEP is grateful for the engagement of stakeholders and agencies in developing this proposal and looks forward to continued feedback on

**P.O. BOX 325, FOXBORO, MA 02035**

**Tel: 774-404-8005 | Email: [info@boatma.com](mailto:info@boatma.com) | Web: [boatMA.com](http://boatMA.com)**

## **About MMTA and Our Perspective**

*Established in 1964, MMTA is the statewide, non-profit, representative body for over 1,000 marine trades businesses in the Commonwealth. Our businesses employ just under 20,000 men and women and generate over \$5 billion in direct and indirect annual economic activity for Massachusetts. MMTA's mission is to provide the framework for furthering the interests of the marine trades and the boating public through the promotion of boating, participation in legislation and workforce development programs.*

The recreational boating/marine industry contributes positively and significantly to the economic strength and quality of life enjoyed in Massachusetts. The 'business of boating' provides jobs, economic opportunity, public access to our precious waterways, improves aesthetics of inland and coastal waters and supports environmental stewardship while promoting a family-friendly form of recreation and tourism. One of the Massachusetts Marine Trades Association's top priorities is to stem the exodus of recreational boating businesses from the Commonwealth and the loss of waters-edge usage for recreational boating purposes. We actualize the Public Trust Rights to navigate the waterways, and our jobs and our industry of recreational boating generates over \$5 billion in direct and indirect revenue for the Commonwealth. Boating gives families without the resources to purchase waterfront property the opportunity to exercise their public trust rights and enjoy the Massachusetts coast and harbors. While doing so, Massachusetts boaters and those transiting through our waters substantially invest in their destination ports by patronizing shops, restaurants, retailers, fuel sellers and often hotels and resorts. In fact, every \$1 spent on dockage equates to close to \$4 to the local community where those boaters are visiting. The waterfront communities are dependent upon the annual financial boost boaters bring to their local economies.

It is also our perspective that it is dangerous and serious when an element of the government proposes to ban and prohibit what people want to do for themselves and are capable of doing safely. Setting safety standards and engineering requirements and building codes is an entirely rational governmental function. Banning and prohibiting due to the preference or policy of some with government power but without adequate foundation in science is not rational and not a sustainable approach in a democracy. A small but essential portion of these proposed regulations must change or they will fall into this dangerous category. The Wetlands Protection Act already has protections for nature in the resource areas of salt marsh, coastal beach, bank, dune, etc. The Federal Emergency Management Agency already has protections and standards regarding flooding and buildings. It is not helping nature to prohibit sound, adaptive buildings; it is only harming people. It is notable that the photos used in the public information sessions are of old and flimsy structures, not built to withstand wind or water. No photos were used of the

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these regulations." ...The proposed Wetlands regulations will promote resilience by creating performance standards to protect the natural buffering function of wetlands and floodplains and help prevent damage to both the natural and built environment. The standards will require elevation of new development in areas of the coastal floodplain where most storm damage occurs and minimize new development in the most vulnerable area of the coastal floodplain where waves are higher than three feet. The regulations encourage nature-based approaches to improve resilience, such as restoration of salt marshes, coastal dunes, and barrier beaches on the coast, as well as inland wetlands. Updated stormwater management standards will reduce stormwater pollution to water bodies throughout the state, helping to improve the water quality of our rivers and streams. The Waterways regulations allow modifications to licenses for identified smaller structures (primarily small docks and piers) to account for sea-level rise and maintaining public water access.

innumerable buildings around the state and the nation and the world which have been built adaptively and are both safe and protective of nature.

People have lived and worked in inhospitable environments for eons, from the arctic to the desert, adapting their structural designs ingeniously to survive and thrive (and without harming the nature around them). Prohibitions on buildings do not reflect the skills, materials and technologies available now and in the future. Please, modernize these proposed regulations to require adaptive structures, not banned buildings.

## Chapter 91

1. Mass DEP states that the Engineering and Construction Standards at 310 CMR 9.37(1)(d) are proposed to be revised to take projected sea level rise into account. The proposed language introduces the phrase “adequately consider” projected sea level rise, with respect to any new licenses and the renewal of any existing licenses.

**Comments: MMTA agrees that considering projected sea level rise and tidal surge is both sensible and technologically attainable, with an accredited, licensed attestation as to the accuracy of the data being used for the projections. It is our understanding MassDEP anticipates using a website of some data, and to accept any other site-specific or accredited data. Please make this so. There is so much debate over policy-driven data on climate change, rather than facts, it is important to accept that of licensed experts.**

**Regarding implementation, we who work in the water and at the water’s edge know it will be quite expensive to elevate and otherwise modify water and waterfront facilities in the decades and half-century to come. Please find a way to make clear in the proposed regulations that it is not necessary for all facilities to have fully actualized all projected sea level rise all at once, and write in the ability to do “rolling” capital project improvements. It would be deadly if existing water dependent users all had to replace all their facilities at once, at time of Chapter 91 license renewal, in order to obtain a renewed license. Without this flexibility to adjust to changes in sea level rise over time, there simply isn’t enough money in operating water dependent uses to finance a complete retrofit all at once.**

**We also seek more clarity on what “adequately consider” sea level rise actually means. Must one go through MEPA for public comment from any interested party anywhere in the state regarding what ‘adequately consider’ means? Must one always use the maximum available technology and materials or will this decision of “adequate consideration” be a more traditional reliance on the professional stamp of a licensed engineer attesting to the plan’s adequacy for projected impacts? Can one obtain a Chapter 91 license for the usual necessary period of three decades and build in the assumption of using new materials and technologies when they become available?**

2. MassDEP states that the regulations propose exempting from the height restriction at 310 CMR 9.51 moving mechanicals and other elements to the top floor or roof.

Thank you, this is sensible. While the height limits do not apply to Water Dependent Uses anyway, many predominantly water dependent sites also have non-water dependent uses on site and may need this exemption.

3. MassDEP states that there is a minor technical revision to replace the term "grandfather" with the term "exempt" in the section on Private Recreational Boating Facilities at 310 CMR 9.38(2).

Many will not understand this change. Perhaps it would help to explain it in the preamble to the proposed changes. It is our understanding that the term "grandfather" is being eliminated in keeping with the appellate court case authored by Judge Jim Milkey, requiring the removal of the term "grandfather" in land use matters due to social justice reasons, because the term originated with efforts to prevent voting by people of color.

### **310 CMR 10.00/ Wetlands Proposed Regulatory Changes**

#### **General Comments:**

**1. We wish there were the usual Frequently Asked Questions to assist in understanding the proposed changes with examples. No FAQ's have been published and hundreds and hundreds of people came onto the informational calls without getting answers, mainly asking questions central to the proposed changes. All would benefit from FAQ's, meaning the proponent agencies and the regulated entities and areas. Some of these most impactful changes have been under discussion for over 10 years within MassDEP and the Office of Coastal Zone Management without external consultation with practicing non-governmental waterfront experts with actual application experience. We list some of our outstanding questions below.**

**2. We respectfully request the State reach vastly more people and businesses and experts and affirmatively consult with the most impacted and knowledgeable people and businesses and licensed engineers and waterfront project managers. Please, before promulgating these regulations spend time out on the water, at its edge and be there to ask, listen and learn.**

**3. These proposed changes are currently being labeled by the Commonwealth's representatives as "managed retreat" and "nature-based solutions" yet proposed as though they are for the purpose of climate change adaptation and resiliency. We disagree. They are neither. Retreating from nature at the water's edge is not a rational way to adapt to climate change or to accomplish climate resilience. Nature is changing in ways which preclude giving up and backing away and expecting nature to create solutions on its own for absorbing more tidal flow and dissipating more wind and tidal energy. Nature on its own will not provide solutions which protect people and businesses and public access to the waterways. Banning and prohibiting buildings will not provide solutions, it only bans and prohibits the new money needed to pay for solutions. It also irrationally invites nature to keep coming further and further inland where more and more bans and prohibitions ever**

**onward will be need to be imposed if this “managed retreat” approach is taken rather than standards based in building codes, engineering and technology.**

**The Wetlands Protection Act and Regulations are already among the most protective in the nation, with detailed, extensive protections for salt marsh, coastal bank, coastal beach, coastal dune and buffer zones to same. It is not as though nature will have no protections unless today’s MassDEP adds more bans and prohibitions, added to those of the WPA currently and those of FEMA and the Building Code. We also note that all images of damaged buildings– every single image—used by MassDEP in its public sessions in January and on its website are of old and poorly maintained structures. Not a single one is of modern engineering and design.**

**These proposed regulatory changes should be revised to include the use of modern technology, engineering, and design to protect people from nature as well as nature from people. It can be done, as it has been all over the world and for eons, in inhospitable climates from the arctic to the dessert to right here, such as with the permitted and even Commonwealth-prioritized construction of wind turbines in high velocity zones out in the ocean. We have the technology. Let us use it.**

4. We note that MassDEP states that the performance standards for Land Subject to Coastal Storm Flowage do not apply to Water-Dependent Industrial Uses in Designated Port Areas (310 CMR10.36(4)(d)).

**MMTA supports this exemption. We also seek exemption for all Water Dependent Uses, and particularly marine industrial uses such as vessel servicing, for substantive and rationality reasons. It is illogical and irrational to not apply a new performance standard just in Designated Port Areas. All Water Dependent Uses need to adapt to the sea whether or not the state 40 years ago made a DPA designation decision on criteria unrelated to the Wetlands Protection Act. The DPA’s were originally designated to achieve eligibility geographically for federal marine infrastructure grants, The DPA’s were not calibrated or linked in any way to the Wetlands Protection Act. In addition, the prohibition against having any uses other than marine industrial ones in DPA’s was a much later regulatory choice by the Commonwealth, to preserve land/water area for marine industrial uses only, again unrelated to WPA matters. Please exempt all Water Dependent Uses for the new performance standard for Land Subject to Coastal Storm Flowage. This action alone would save the disastrous impact of the current proposed regulatory changes on the business of recreational boating.**

5. MassDEP tells us Public and commercial boat launching facilities, open rack elevated boat storage, navigational aids, piers, docks, wharves, and dolphins are proposed to be allowed in the V-zone and MoWA zones (310 CMR 10.36(6)(c)). The construction of new buildings in the V-zone is not allowed; reconstruction or redevelopment of buildings in the V-zone is governed by Redevelopment provisions (310 CMR 10.36(8)).

Here is where the regulatory proposals are devastating immediately upon passage for water dependent uses. The term used in the actual proposed regulation is not “allowed” it is “may” be



approved, which also means may not be approved, with no standards specified as to what does or does not result in approval. No lender will finance now on the basis of something “may” be approved later, including existing facilities in need of money to pay for climate adaptations now.

**This prohibition of new buildings in the V-zone prohibits even the water dependent buildings needed to operate a marina or a boatyard, such as the vessel servicing buildings and the indoor marina facilities.**

**This prohibition then ties into being approved for a renewed Chapter 91 license, because the Chapter 91 license can only be issued **after** the Wetlands Protection Act approval has been issued. The Chapter 91 license application even for a renewal isn’t considered “complete” without it. So, the prohibition on new buildings in the velocity zone under the wetlands regulations is profoundly problematic, devastating to water dependent uses, even with the exemption for docks and piers and racked boat storage (which is often indoors in a building so the vessels can be worked on off-season). Will even reconfigurations in the zones already approved by Chapter 91 Waterways be denied by the Conservation Commissions?**

**There is also a lack of clarity on the applicability of the new proposed standards to sites which have both developed and undeveloped areas on the same site.**

6. The new proposal is to prohibit reconstruction or redevelopment, unless on the exact same footprint and elevated. Many of our members work on or own property with mixed areas of previous construction and open areas used for boat storage or work zones. There is no rational purpose under the Wetlands Protection Act to limiting reconstruction to the exact same footprint. Substantively, redesign to adapt to climate change is the ostensible purpose of the regulations – it is not rational to prevent whatever new adaptation is viable rather than artificially restricting the reconstruction to the exact same footprint. And of course, there is the problem of what pays for the reconstruction if the result is exactly the same but elevated?

7. We note MassDEP says maintenance and repair of existing coastal engineering structures is allowed in the V-zone and MoWA zones (310 CMR 10.36(6)(d)).

**This is good because repair and maintenance are essential, nature is not going to respect and take care of structures. People have to respect and take care of the impact of nature on existing structures. Technology and design are available and are documented to work in these zones. These proposed regulations should be changed to allow for modifications of the existing engineering structures to make them higher and use different materials to improve the structural integrity in planning for projected sea level rise. And, per the comment above, please make the language explicit that such work is allowed, without the risk of absence of approval, so long as engineering and building code and existing WPA standards have been met regarding resource areas already heavily regulated.**

**8. We note MassDEP says for Land Subject to Coastal Storm Flowage and all other coastal resource areas, a new limited project has been proposed for relocation or reconfiguration of water-dependent uses where necessary to avoid flooding or coastal storm damage (310 CMR 10.24(7)(c)9).**

**This seems to be something between an encouragement and a mandate to relocate, when many if not most property owners do not have anywhere to relocate to much less the funds. This is not really an exemption. It is an unclear and important issue overlapping with both who owns what property and what new standard would apply. Does a limited project mean if one is relocating floats, or docks to make them more secure? Buildings? In or out of velocity zones? It is unclear. Does a limited project mean if one is relocating floats, or docks to make them more secure or a building to make it more secure qualifies as a limited project which shall be approved or is it again a discretionary decision in the hands of hundreds of different volunteer Conservation Commissions?**

8. MassDEP writes that [f] or Land Subject to Coastal Storm Flowage and all other coastal resource areas, the new limited project also allows the construction, reconstruction, or reconfiguration of water-dependent use projects determined to “e "functionally dependent" (see reference in the proposed provision) which applies to certain docking and port facilities. This provision was included specifically to provide consistency with FEMA and building code requirements that also have a special provision for these facilities (310 CMR 10.24(7)(c)9).

**This is a very promising limited project. We look forward to more clarity with examples including for water dependent buildings as well as docks and piers. Thank you very much.**

To summarize, our primary concerns are:

1. the absence of expert non-governmental voices in the drafting process, particularly technical advisors working every day in the geographic areas which are the subject of the revised regulations. **Please invite and listen to expert marine engineers and architects and contractors and water dependent businesses and users.**
2. Do not ban and prohibit. Instead require building code and technology certification from licensed engineers for adaptive, sustainable building.
3. Allow reconstruction and adaptation on altered footprints, not the exact same ones.
4. Make explicit the allowed water dependent uses and do not leave to the undefined discretion of hundreds of volunteer Conservation Commissions whether existing buildings, piers and docks and floats can be renewed, reconfigured or expanded or newly installed, no matter how adaptive and sound the proposal. We seek “water dependent facilities are allowed in LSCSF” and remain subject to the other performance standards for other resource areas.
5. Please make it express that pre-existing water dependent facilities shall receive Chapter 91 license renewals absent persuasive evidence of inadequate consideration of sea level rise and climate change. And allow for rolling investment in the capital projects needed, not making them all required at the same time as license renewal.
6. Make the exemption for marine industrial uses in Designated Port Areas an exemption for all Water Dependent Uses. This change alone would make these proposed regulatory changes not deadly to the business of providing boating of the waterways in the Commonwealth.

## **Questions:**

- What type of submission is anticipated for a complete application under the proposed Waterways requirement to “adequately consider” sea level rise and climate change, and what data can be relied upon?
- What would be the standard to apply for a Waterways license to be granted or renewed if these proposed regulations are enacted?
- What would the standard be for Conservation Commissions to apply in debating whether docks, piers and floats “may” be approved in Land Subject to Coastal Storm Flowage?
- How would the new proposed standards for Land Subject to Coastal Storm Flowage be imposed on sites which have both developed and undeveloped areas on the same site?
- What exactly is the newly proposed limited project exception for relocating Water Dependent Uses and what is the standard of review?

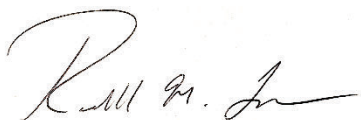
## **Stormwater / Water Quality Certification**

We have not heard enough yet from our membership to comment on all the technical details of these two aspects of the proposed regulatory package. For now, we note two things:

*1) Massachusetts is one of the two most costly places by far to attempt to permit a water dependent facility. The other is California. The primary reason is the extraordinary overlap of multiple regulatory programs and imposition of requirements not imposed anywhere else in New England or beyond.*

*2) Massachusetts is the only state in the nation which requires treatment of stormwater runoff to below drinking water standards. It is well beyond problematic and deep into unproductive inequity that water's edge businesses are forced to take on storm water runoff from all over the watershed area and then pay for monitoring, treatment and removal from storm water runoff to standards below drinking water quality. These regulations should not be promulgated until they stop imposing everyone's runoff concerns onto water's edge facilities.*

MMTA respects the hard work of those who worked for ten years discussing and considering climate change and sea level rise. On behalf of the Massachusetts Marine Trades Association, the 20,000 marine trades workers and with respect to the over 140,000 boaters in Massachusetts, we thank you for your time and consideration of our comments. Both I and MMTA's Government Relations and Legal Representative, Jamy Buchanan Madeja from Buchanan and Associates are available to discuss this and any other matters related to the business of boating. Please feel free to contact either of us. My contact information is below and you can reach Jamy at 617-256-9491 or [jmadeja@buchananassociates.com](mailto:jmadeja@buchananassociates.com). Thank you in advance for your consideration,



**Randall M. Lyons, CMM**  
Executive Director  
Massachusetts Marine Trades Association  
[randall@boatma.com](mailto:randall@boatma.com) or 774-404-8005



# *Grafton Conservation Commission*

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April 30, 2024

Massachusetts Department of Environmental Protection  
Bureau of Water Resources -Wetlands Program  
Attention: Wetlands-401 Resilience Comments  
100 Cambridge Street, Suite 900  
Boston, MA 02114

Dear MassDEP Wetlands Program:

Thank you for the opportunity to comment on the draft Wetlands Protection Act regulations as part of MassDEP's "Climate Resilience 1.0" package. These are positive steps toward protecting our coastal resources and infrastructure and making Massachusetts more climate resilient. We appreciate MassDEP's considerable time and effort to prepare these proposed regulations.

As a Commission, we have had the opportunity to review comment letters at our April 9 & April 23, 2024 meetings from the following stakeholder groups:

- The Massachusetts Association of Conservation Commissions (MACC)
- The Massachusetts Society of Municipal Conservation Professionals (MSMCP)
- VHB, as the Town's consultant for MS4 permit compliance

Since the first two letters are still being finalized for submission, they have not been included as attachments here for reference, but the Commission trusts that the finalized versions will not differ substantially from those drafts that were reviewed. We would like to express our endorsement of these two letters on the whole.

Comments that the Commission is in agreement with from VHB's letter are incorporated as follows:

- The proposed regulations require 1-inch of recharge across soil types (excluding Hydrologic Soils Group D soils). The natural soil infiltration rates greatly impact the quantity of annual recharge at a site, and matching annual recharge is the goal of Standard 3. Requiring 1-inch of recharge on all sites would require large and costly structural SCMs, the opposite of what low impact development promotes. Grafton already frequently receives complaints from property owners experiencing home and basement flooding due to high groundwater levels. We are concerned that requiring 1-inch recharge on all sites, regardless of existing hydrogeologic conditions, could worsen this problem, as well as be infeasible to meet in certain soils. We request that the recharge volume requirements be set based on the soil types and existing seasonal high groundwater levels of the site and not be universal for all sites.
- The proposed revisions to the regulations state a goal of better aligning with the EPA NPDES MS4 Permit. In attempts to align with the MS4 Permit, the Stormwater Standards have continued to create differences between the two regulations, which could create further confusion as engineers and developers seek to comply with both approaches.



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- "Redevelopment" projects are defined to include "improvement" projects that widen less than a single lane (including adding shoulders, correcting substandard intersections, and improving existing drainage systems). Under current regulations, Redevelopment projects must meet water quality requirements (Standard 4) to the maximum extent practicable (MEP), but the proposed changes to the regulations will require full water quality compliance for Redevelopment projects (Standard 7) including treating the entire project's impervious footprint. This change is inconsistent with the EPA MS4 permit, which requires improvement projects to provide water quality treatment to the MEP, as opposed to requiring full compliance. MassDEP's proposed change will increase project timelines, costs, and complexity, likely disincentivizing important small redevelopment projects (e.g., focused on safety, mobility). Requiring improvement projects to fully meet water quality treatment requirements under Standard 4 will significantly impact roadway improvement projects (sidewalks, intersection safety, ADA improvements, etc.) that have relatively small environmental impact but are needed for safety, accessibility, sustainability, etc. We request that MassDEP maintain the current requirement for these projects to meet water quality requirements to the MEP (included in 310 CMR 10.05(6)(m)).
- The new regulations miss an opportunity to streamline and simplify the permitting process for stand-alone stormwater retrofit projects. With more of these mitigation and restoration projects being required by the MS4 permit, we request DEP create a simple permitting path to encourage these projects and lessen the burden on both the permittee and local Conservation Commissions. We request that the updated regulations allow for projects that meet the definition of Retrofit Projects to be listed under 310 CMR 10.05(6)(l), projects for which the Stormwater Management Standards do not apply.
- The proposed regulations require 1-inch of recharge under Standard 3. In contrast, the MS4 permit allows the 1-inch recharge as an option for how to meet the post-construction treatment requirements. Under the MS4 permit, the designer may choose to use the EPA Best Management Practice (BMP) performance curves for meeting the treatment requirements in lieu of demonstrating recharge. For example, an infiltration trench in soils with an infiltration rate of 2.4 in/hr reduces 60% Total Phosphorus (TP) load at a 0.25-inch treatment depth. Requiring 1-inch treatment for this same stormwater control measures (SCM) because infiltration rates are greater than 2.4 in/hr increases costs and results in a larger stormwater management system, when the intent of this Standard can be met with a smaller control. By providing options, designers are allowed more flexibility to provide the right type of treatment for the site and to maximize the areas which can provide treatment. The proposed revisions to this standard are not in alignment with the MS4 permit.
- The Town of Grafton completes critical maintenance work for assets including roadways, drainage systems, stormwater control measures, and culverts. In the proposed regulations, these assets require varying degrees of compliance. For example, activities defined as Maintenance of an Existing Public Roadway (e.g. resurfacing and repaving) are required to meet the Stormwater Standards to the MEP, requiring extensive permitting and documentation for basic every-day activities needed to maintain the integrity of built assets. Requiring permitting to maintain existing SCMs and culverts disincentivizes and unnecessarily complicates this critical work that supports water quality and flood control.



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Overall, our main concern is regarding the burden placed on volunteer Commissions, staff, and peer reviewers to understand the new technical requirements and implement them on the ground.

We also urge MassDEP to begin work on "Climate Resiliency 2.0" to continue improving the Wetlands Protection Act regulations, particularly with respect to the ideas laid out by MSMCP.

Sincerely,

Leah Cameron

Conservation Agent, on behalf of the Grafton Conservation Commission



**From:** [Greg McCarthy](#)  
**To:** [DEP Wetlands \(DEP\)](#); [Waterways, DEP \(DEP\)](#)  
**Cc:** [Patrick O'Connor](#); [Patrick.kearney@mahouse.gov](mailto:Patrick.kearney@mahouse.gov)  
**Subject:** Nature-based Planning new regulatory proposals  
**Date:** Tuesday, April 30, 2024 2:12:27 PM

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**CAUTION:** This email originated from a sender outside of the Commonwealth of Massachusetts mail system. Do not click on links or open attachments unless you recognize the sender and know the content is safe.

My name is Greg McCarthy. I live at [REDACTED] Scituate. I am very much opposed to the proposed new regulatory proposals and could write for a great deal on each facet. But since I know you're receiving many emails today, please allow me to make only two comments:

1. If regulations essentially announce that we intend to sacrifice this land, then I believe the property taxes of those homeowners should be adjusted immediately. I currently pay \$9500/ yr for a 1500 sq.ft. parcel of land over half of which is underwater during high tide. I'm happy to do that now, but if you completely eliminate my resale value with these laws, then what should I pay taxes for? I'd want the town to change my tax assessment to that of someone with a 1500 sq.ft plot well inland. Add up the number of houses in Scituate who should expect the same treatment. (Including Congressman Kearney's family [REDACTED].)
2. Local Conservation Commissions are rarely filled by people with enough scientific knowledge and even less so economic knowledge. And in many cases there can be personal disagreements which can effect opinions. Please do not let local commissioners be exclusive arbiters of disputes in these matters. Certainly they should play a major part, but please make sure that state and even federal agencies have a say. Think about the pandemic, where we all saw local officials make terrible decisions which varied greatly from town to town, and were in many cases based on no scientific or economic sense whatsoever. I believe that could happen again here.

Thank you for your time to read this. in general my request is to allow technology and a good sense of economics to have the greater control of this process instead of unspecified and potentially under-informed government officials.

Sincerely,  
Greg McCarthy

[REDACTED]  
[REDACTED]

[REDACTED]

[REDACTED]



HALEY & ALDRICH, INC.  
465 Medford St.  
Suite 2200  
Boston, MA 02129  
617.886.7400

30 April 2024

Massachusetts Department of Environmental Protection  
BWR Wetlands Program  
100 Cambridge Street, Suite 900  
Boston, MA 02114  
[dep.wetlands@mass.gov](mailto:dep.wetlands@mass.gov)

Subject: Wetlands-401 Resilience Comments

Haley & Aldrich, Inc. provides the following questions regarding the proposed draft amendment to regulations for the subject document 310 CMR 10.0 Wetlands Protection Act Regulations.

Comments:

1. Based on our review of the redline/strikeout draft Appendix A SCM Specifications for the Massachusetts Stormwater Handbook, there is no reference to Rawls rates for infiltration. Please confirm that the Department will no longer accept infiltration values based on the Rawls rates exclusively.
2. Moving forward, if Rawls-based infiltration rates are no longer accepted as the exclusive basis for system design, field testing may be required for any stormwater infiltration system in the Commonwealth. This is a prudent and conservative approach for sites where infiltration is critical to the performance of the stormwater control systems in controlling peak flows during design storms; however, it is overly restrictive for sites where the system is constructed with an overflow (to accommodate storms greater than 1 inch typically) such that operating variations from design infiltration rates are of minimal consequence.
3. For such systems in urban areas, particularly, field testing represents an exorbitant expense, considering access constraints and the need for re-routing pedestrian or vehicular traffic to accommodate explorations and testing. Haley & Aldrich urges the Department to consider conditional approval of Rawls-based infiltration rates for systems in which: 1.) the sizing and design of the project stormwater management structures are not predicated on achieving specific infiltration volumes during the design storm duration; and 2.) a system overflow, built to accommodate volumes exceeding the design storm, ensures the system will operate without issue (i.e., daylighting of water that fails to infiltrate) if operating infiltration rates vary from the design rates.
4. Estimating hydraulic conductivity based on soil gradation have been available and used widely in the geotechnical community for over a century. In our experience these methods have proven to be reliable predictors of hydraulic conductivity based on experience at multiple wastewater disposal and stormwater recharge sites in the Commonwealth, where gradation-based

estimates have compared favorably with field testing results. We urge the Department to include a provision for using site-specific soil samples and gradation-based methodologies to develop infiltration design values for stormwater systems. These methods offer a cost-effective and reliable alternative to field testing at sites where access or schedule constraints would render explorations and field testing impractical.

Thank you for considering these comments and feel free to contact the undersigned if you wish to discuss the proposed revisions.

Sincerely yours,  
**HALEY & ALDRICH, INC.**

A handwritten signature in black ink, appearing to read 'JK', is positioned above the printed name and title of the signatory.

John R. Kastrinos, P.G. (PA), LSP  
Senior Associate | Hydrogeology

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# HANCOCK ASSOCIATES

Surveyors | Engineers | Scientists

February 8, 2024

MassDEP - BWR Wetlands Program  
Attn: Wetlands-401 Resilience Comments  
100 Cambridge Street, Suite 900  
Boston, MA 02114  
Bonnie Heiple, Commissioner

Executive Office of Housing and Livable Communities  
100 Cambridge Street,  
Boston, MA 02114  
Edward M. Augustus, Housing Secretary

Subject: Wetlands-401 Resilience Comments

Dear Commissioner Heiple and Secretary Augustus:

Thank you for the opportunity to comment on the recently proposed Wetlands Protection Act regulations (310 CMR 10.0). As professional engineers with extensive statewide experience we are concerned that the proposed regulations would needlessly reduce the potential for new housing development at a time when housing supply is among the most critical issues facing the Commonwealth. Those concerns are laid out in more detail below.

Hancock Associates' twenty-five civil engineers, including thirteen Profession Engineers in the Commonwealth of Massachusetts have performed an initial review of the Wetlands Protection Act Regulation revisions currently proposed.

For the past forty-five years Hancock has provided engineering design services to the private development community. We have developed expertise in the design, permitting and construction of medium to high density multi-family residential. Our clients range from multi-national apartment community developers to small not for profit affordable housing providers across the Commonwealth.

We fully understand the need to address climate change and to align stormwater regulations with the Federal EPA's Municipal Separate Storm Sewer System (MS4) requirements. We do not however understand the need for the sweeping changes to the approach to the design of stormwater management systems and hope to alert the MassDEP, EOHLC and all housing stakeholders in the Commonwealth to the unintended consequences these changes will have on the production of much needed housing in the state.

In our review, we have looked at the impact to previously permitted projects to understand the impact of these changes. We have requested permission from the project developers to use their projects in the crafting of this letter. We would like to thank these housing developers for their willingness to share.

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We have separated our comments by categories of topics found within the proposed regulations and revised stormwater handbook. These categories include:

1. **Environmental Sensitive Site Design** - Green Site Design, which uses natural solutions – like trees and buffer zones – to manage stormwater, instead of more expensive detention basins and other traditional infrastructure.
2. **Mounding Analysis** – A mathematical analysis of the impact of concentrating the discharge of stormwater into the ground through an infiltration basin, subsurface infiltration system or other stormwater system.
3. **Redevelopment Standard** – Redevelopment as defined by the regulations as the replacement, rehabilitation or expansion of existing structures.
4. **Setbacks** – Are the distance of a structure, impervious surface or other developed feature from a wetland resource area or other feature.

## Environmental Sensitive Site Design (ESSD) Mandate

The proposed language of 310 CMR 10.05(6)(k) mandates Environmental Sensitive Site Design and Low Impact Development techniques to attenuate pollutants unless Impracticable.

The new definition of Impracticable in 310 CMR 10.04 for use in 310 CMR 10.05 (6)(k)(q) for purposes of stormwater management means *impossible on practice to do or carry out solely based on physical constraints*.

This definition poses a challenge to engineers. I often use the example of the Hoover Dam. Many people thought such an engineering feat to be impossible due to physical constraints. Did engineers do the impossible? No, but they had neither budgetary nor time constraints to get the job done.

Such a draconian definition fails to appreciate the non-technical considerations of engineering design such as cost, logistics, available technology, and the project's overall goal. The problem with this approach is in the actual implementation of ESSD and LID techniques per the revised stormwater handbook. In Section 4 of the revised Stormwater Handbook, ESSD Credit 1 requires the total impervious cover to be less than 15% of the base lot area. The base lot area is defined as non-wetland areas on site.

We have not been involved in a high-density residential development that does not exceed 15% impervious cover under this definition. The narrowness of the definition of impracticable, is it always possible to do less development, but this does not appreciate the cost of land in Massachusetts and the need to make project's financial feasible.

This is only one example of the functional problem with the proposed ESSD and LID mandated approach in the revised regulations. We need more time to fully understand MassDEP's approach to assess the full impact of this mandate.

Hancock has been designing conventional stormwater management systems for decades and are not aware of any failures of these systems to function as designed, protect the environment and adjoining property owners. We do not see this as a change addressing climate change,



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resiliency or aligning with EPA's MS4 requirements as purported by MassDEP to be the goal of the revisions.

## Mounding Analysis

The revision to 310 CMR 10.05(6)(k)3 requires a mounding analysis to demonstrate that the seasonal high groundwater does not elevate the water surface of any Resource Area over a 72-hour period in reaction to a proposed stormwater infiltration system. Stormwater discharged to the ground in stormwater management systems travels through the soil vertically and horizontally. The water table rises in the center of these systems during rain events. This mound dissipates as travels horizontally away from the system. Engineers and hydrogeologist study this mounding effect to make sure there are no detrimental impacts to neighboring properties and sensitive resource areas.

This proposed revised requirement to have no elevation of the surface water at the Resource Area wetland edge fails to recognize that mounding analysis methods employed by engineers and hydrogeologists mathematically never reach zero. Thus, the request to have no temporary elevation rise of the water surface is mathematically unachievable. The degraded mound away from the system is usually as small as 0.1 to 0.2 feet but can be maintained to that rise 300 to 400 feet away.

This would eliminate a developer from utilizing larger subsurface infiltration systems on projects. Subsurface infiltration systems are the most common stormwater system in use today on medium and high-density residential projects as developers can dually use land area for stormwater with parking over.

MassDEP should offer a solid rationale for this requirement or revise the requirement to acknowledge that a certain small amount of theoretical elevation gain is acceptable.

## Redevelopment Standard

The revision to the redevelopment standards per 310 CMR 10.05(6)(k)5 will now require treatment of stormwater on redevelopment sites to meet at least 80% Total Suspended Solids (TSS) removal and 50% of Total Phosphorus (TP) load.

Phosphorus is most efficiently treated using infiltration practices. Infiltration systems need to be located above seasonal high groundwater. Hancock has experienced high seasonal groundwater at many redevelopment sites precluding the use of infiltration. Many of these sites are also subject to the performance standards of Bordering Land Subject to Flooding (BLSF) or floodplain precluding designs from raising sites to allow installation of infiltration systems. These sites will have to then implement expensive proprietary filtration devices to treat phosphorus.

A 2011 study performed by Horsely Whitten Group estimated the cost of phosphorus treatment at \$118,000 per acre (\$174,000 in today's dollars). The study looked at a range of treatment including on site infiltration basins. On sites precluded from using infiltration, proprietary filter treatment devices would need to be employed on these redevelopment sites. We estimate the cost to be significantly more on these sites with both high seasonal groundwater and floodplain constraints.

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Surveyors | Engineers | Scientists

Redevelopment of existing highly impervious sites has been extremely beneficial in addressing the state's housing crisis. The use of the Maximum Extent Practicable approach has made vast improvements to the stormwater quality on these sites. We do not understand why redevelopment should be hampered by this change.

## Setbacks

The proposed addition of 310 CMR 10.05(6)(q) mandates setbacks from any Stormwater Management System. The proposed regulation establishes almost 200 setbacks with the full force of regulation. Local Conservation Commissions will not have the authority to waive these setbacks. Many of these setbacks were taken from the pages of the original MassDEP Stormwater Handbook (1996). It is important to note that the handbook was created as a guidance document. Information presented was amassed from various sources across the country without necessarily vetting every recommendation. Have all of these setbacks been fully vetted with scientific backup to justify their elevation to regulation?

The engineering community has designed projects for the past 30 years implementing the recommended setbacks from the handbook. We have had the flexibility to provide creative designs that may not meet the recommended setbacks but meet the intent of these setbacks. We have successfully justified to Conservation Commissions and third-party peer review engineers where setbacks can be relaxed. Does MassDEP have examples of where nonadherence to setbacks has resulted in failure of systems to function and protect the environment?

The impacts on the creation of medium and high-density residential development from the imposition of these setbacks cannot be understated. Hancock has reviewed several projects and the impact ranges from a 30-35% reduction in unit yield to wiping out entire projects.

MassDEP must be required to first justify the need for elevating these setbacks to absolute requirements. We also strongly suggest that MassDEP perform a comprehensive analysis to study the actual impact on medium to high density residential development in the Commonwealth. We understand the Department engaged a private engineering firm to study the cost impact of the regulation change on residential development. While helpful to the development community, that study falls short of answering the true impact.

## **Real Word Examples of Housing Projects**

Hancock has reviewed four projects that have recently been permitted through M.G.L. Chapter 40B and the Massachusetts Wetlands Protection Regulations to review the impacts to the number of residential units realized.

1. Princeton at North Wilmington Station, Wilmington – Princeton Development
2. The Devon at Weiss Farm Stoneham – JM Corcoran
3. Fountain Hill Square Roxbury – Oxbow partners
4. Bobcat Hollow Southampton

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## Princeton at North Wilmington Station

This is a 108-unit residential apartment development located in Wilmington less than 100 feet from the North Wilmington MBTA Commuter Rail Station. The site is located along Lubbers Brook. The project received a Comprehensive Permit from the Wilmington ZBA and an Order of Conditions from the Conservation Commission. The Order of Conditions was appealed by a group of ten citizens and subsequently received a Superseding Order and upon resolution of an adjudicatory appeal a Final Order of Conditions from MassDEP. The project also was part of a Mass Works Grant that replaced an aging culvert under Middlesex Road and provided a municipal sewer pump station to the area. The grants totaled \$2.89M with all work completed by the town. We have received permission from Princeton Properties to use this project in the crafting of this letter.

While the project did implement the use of porous pavement, the project would not meet the following required ESSD credit requirements under the new regulations:

1. 15% impervious area exceeded. Credit 1 not possible.
2. The site contains urban fill. Credit 1 not possible.
3. Porous pavement is not setback from wetland resource area 100 feet. Credit 4 not possible.
4. Offset to groundwater is less than 2 feet. Credit 4 not possible.

The project features a portion of the site not considered redevelopment. The development in this area fails to meet the following proposed stormwater setbacks:

1. 100-feet from slopes exceeding 20% (vertical retaining wall) to a subsurface infiltration system for Building B wipes out all but a very small area in front of building insufficient to address stormwater. No alternative possible.
2. Set back to porous pavement for Building A no alternative given grades and seasonal high groundwater.
3. Setback infiltration systems to Resource Areas
4. Mounding analysis fails to demonstrate no temporary elevation rise at Resource Area for both Building A porous pavement and Building B infiltration system.

**The net result of the new regulations would be a loss of all 108 units.**

## The Devon at Weiss Farm

This is a 259-unit residential apartment development located at 168 Franklin Street in Stoneham. The project was permitted through M.G.L. Chapter 40B and the Massachusetts Wetlands Protection Regulations. The Stoneham Zoning Board issued a Comprehensive Permit and a Superseding Order of Conditions from MassDEP after an appeal of the Conservation Commission's local decision. We have received permission from J.M. Corcoran to use this project in the crafting of this letter.

While the project did implement the use of some porous surfaces, the project would not meet the following required ESSD credit requirements under the new regulations:

1. 15% impervious area exceeded. Credit 1 not possible

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2. Soils on site have groundwater within 2-feet of the land surface. Credit 1 not possible.

The development in this area fails to meet the following proposed stormwater setbacks:

1. 100-feet from slopes exceeding 20% (vertical retaining wall) to a subsurface infiltration system requiring relocation of all subsurface infiltration areas to center of site impacting one 64-unit building and three townhomes.
2. Setback infiltration systems to Resource Areas. Same result as above.
3. Mounding analysis fails to demonstrate no temporary elevation in groundwater at the Resource Area. The mounding analysis for this exercise was not revisited. This could push subsurface infiltration systems greater than 100 feet away from the Resource Area having a large impact to unit yield.

**The net result of the regulations would be a loss of at least 67 units from the 259-unit project.**

## Fountain Hill Square Roxbury

This is a 40-unit affordable housing development located on Fountain Hill Street in Roxbury with excellent access to public transportation. The project was subject to the City of Boston's permitting process through the Boston Planning and Development Agency (BPDA) and required Boston Water and Sewer Commission (BWSC) approval for proposed site utilities and site stormwater management system. The BWSC and BPDA require proposed development projects to provide on-site stormwater infiltration, with the BWSC providing review and approval of the stormwater design for compliance with City requirements.

This important affordable housing project would not meet the following ESSD credit requirements under the new regulations:

1. 15% impervious area is exceeded. Credit 1 not possible.
2. Portions of the site, as with many of the sites in the City of Boston, contain urban fill.

In addition, this project would not meet the following stormwater setback under the new regulations:

1. 100-feet from slopes exceeding 20% (vertical retaining wall) to a subsurface infiltration system. Boston Water and Sewer Commission (BWSC) requires on site recharge. Without a suitable area the project would not be possible at the current configuration and unit count.

**The net result could be the loss of enough units to make the project infeasible.**

## Bobcat Hollow

This is a 33-lot subdivision in Southampton, MA. The deep-sump, hooded catch basins and most of the stormwater pipes are within the seasonal high groundwater (SHGW) which would not be allowed under the proposed regulations. The Infiltration basins as well as the road and other infrastructure would need to be raised by at least 2 feet or more in most cases. The road

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length is approximately 3,500 linear feet. This increase in fill to be brought in would have many impacts through this site and would have reduced the allowable housing lots.

The impacts would require more fill to be brought in for the road and infrastructure, which has an impact on the number of vehicle trips to the site during construction as well as more material excavated from other sources, limiting its availability elsewhere that could be used closer to the source. This issue on a larger scale would cause most rural and suburban housing projects to have a domino effect by causing developers to chase and seek out more selective soil sites (glacial outwash vs. glacial till) that are more rural and/or wooded and undeveloped in upland areas.

The new setbacks and regulatory changes will contribute more to new urban sprawl as opposed to smart growth and urban renewal and infill projects or transit-oriented developments and redevelopment. In this particular example, there would be more environmental impact and less housing available.

The above scenario forced by the stricter regulations seems contradictory to the mission of protecting the environment and sound environmental stewardship. We should be focusing on resiliency and sustainability of the infrastructure and environment with the space and tools that we have available, not by limiting housing through stricter regulations.

**The net result of the new regulations on this site would be a loss of approximately 1/3 of the units or about 11 lots.**

Hancock strongly believes the promulgation of the stormwater revisions to 310 CMR 10.00 be delayed affording a further investigation into the justifications for many of the changes. We also suggest the following changes be considered:

1. Remove the setback table from the regulations and return them back to Appendix A individual BMP sections as recommendations. If MassDEP could provide solid evidence of the need for certain setbacks to resource area or areas of critical concern, those setbacks could be elevated to regulation.
2. Reconsider the Environmentally Sensitive Site Design (EESD) mandate or at least revise the definition of Impractical to mirror the Practicable and Substantially Equivalent Economic Alternatives analysis per 310 CMR 10.57 in use since 1996. This definition allows the use of consideration of costs, existing technology, proposed use, and logistics, in light of overall project purposes.
3. Allow the use of the Hantush Method for completing mounding analysis and add a consideration to the no elevation rise provision in consideration of the nuisance of the method with regard to ever reaching zero mound.
4. Revisit the call for mandated Total Suspended Solids (TSS) and Total Phosphorus (TP) for redevelopment projects. The Maximum Extent Practicable approach has resulted in the successful redevelopment of many aging, blighted and underutilized sites in the Commonwealth with dramatic improvement in stormwater quality. The Department might consider better defining Maximum Extent Practicable similar to the Substantially Equivalent Economic Alternatives analysis mentioned above.

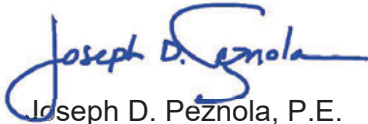
# HANCOCK ASSOCIATES

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5. Remove the requirement that drainage piping and the sumps of deep sump hooded catch basins be elevated above seasonal high groundwater. Deep sumps are required to be four feet deep. This puts an undue burden on site development dealing with existing site constraints. There are times stormwater BMPs need to be placed below seasonal high groundwater. In these instances, the structures can be sealed against groundwater intrusion. This is also a common practice in the design of sewer systems where the impact of either flow into or out of the sewer system is of a much higher concern to the environment but can be effectively handled through making structures and pipes watertight.

These are not the only suggestions we may offer as our review of the regulation and handbook revisions continue ahead of the current March 1, 2024 deadline for public comment. We hope we will be given more time for review as the impact to residential housing production is in serious risk from these changes.

Sincerely,  
Hancock Associates

A handwritten signature in blue ink, reading "Joseph D. Peznola".

Joseph D. Peznola, P.E.  
Director of Engineering



**From:** [Harry Klebanoff](#)  
**To:** [DEP Wetlands \(DEP\)](#); [Wong, David W \(DEP\)](#)  
**Subject:** Wetlands-401 resilience comments  
**Date:** Monday, April 29, 2024 12:43:55 PM

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Ms Rhodes, Mass DEP Wetlands Program, and David

I wanted to add some concerns/comments re the draft of the Wetlands Protection act as part of the climate resilience 1.0 package. David, I included you on this email because we have spoken previously and I sent you a detailed letter on Jan. 24th , 2024 related to all the research/consultation our local group in Marshfield has done over two years to protect the coastal wetlands from development. Our community group is now about 130 families residing around the local salt marshes. We are united in our concern for a world of rising sea levels, more intense storms , flooding all over the country, and more loss/risk of losing not only our homes but nature's ecosystems to development. The importance of protecting forests, wetlands, and especially coastal salt marshes is critical. As Leslie Fields , a coastal geologist from Woods Hole accented in her presentations to Marshfield and Duxbury, " wetlands act as nature's sponge---absorbing flood waters and sea level rise. They should be protected and restored!" Quite the opposite of continued development which threatens the fragile ecosystems! The importance of both forests and wetlands in storing blue carbon was detailed in a study by the Federal EPA using heat sensors. Both mitigate climate change.

John Aber from the Yale School of Environment(Less Heat More Light, 2023) accented the risks of climate change and detailed the variables which could increase the speed of the global impact. His book and consultations to the UN Panel on Climate Change are quite powerful. He consulted with us pointing out that the coastal wetlands need to be protected.

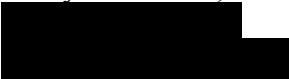
Our history is filled with developers chasing dollars and destroying the land and nature's creations. Species loss, more intense flooding, and loss of homes/lives has been the result. A film by David Abel, The Inundation District, details the development of Boston's Seaport District. Created by filling in parts of the harbor from landfills, building all of this at current sea levels without regard to warnings from climate scientists, the seaport is already flooding significantly from the recent storms! The developer has made his money, and in fact continues development there. There is no viable plan to save the seaport---even 30 billion dollar estimates and 30 yr plans will be too late, but also ineffective. This remains a perfect example of development without regard for the impact of climate change. Sea level rise and the intensity of future storms needs to be in the plans. This is not only for the future---it is happening now!!

Without more strict state and federal regulations on development, we depend on local governments to enforce existing wetlands regulations, and unfortunately the lure of dollars often leads to sacrificing nature and potentially our futures.

We will continue our community efforts, but the need for all of us to work together in protecting nature remains critical for our future, and likely for the planet's future.

Thanks for your time and attention

Harry Klebanoff, Ph.D.



**From:** [REDACTED]  
**To:** [DEP Wetlands \(DEP\)](#)  
**Subject:** Wetlands-401 Resilience Comments  
**Date:** Friday, April 19, 2024 8:01:35 AM

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Hello -

As a long-time Mass. resident, I am writing to express my support for the recent regulatory changes under review focused on public and private waterways with the goal of strengthening coastal resilience. There are far too many structures built in unsustainable locations and in serious need of updated regulations, given the increasing effects of climate change and continuously rising sea levels. Attention is also needed on preserving spaces for wildlife, including a number of threatened species, also being affected by the coastal flooding and higher tides, and having to compete with humans for the remaining suitable living spaces,

As part of a nature-based solution approach, there needs to be particular emphasis on preserving the vegetation in coastal areas. While I did not see it called out in the proposal, obviously any structures built in flood zones will also be affecting their natural surroundings. Having lived in a seaside community, I have seen firsthand the effects of too many eco-unfriendly lawns, with excessive mowing, fertilizing, and cutting of trees and other plants for "appearance" purposes but detrimental to natural coastal areas. Town conservation departments need increased funding and personnel to be able to effectively monitor what is happening in their communities and prevent such abuse.

Thanks for your time.

Sincerely,

Helen Lozoraitis

Mattapoisett, MA

**From:** [Henry Herrmann](#)  
**To:** [DEP Wetlands \(DEP\)](#)  
**Subject:** Wetlands-401 Resilience Comments  
**Date:** Sunday, April 28, 2024 8:33:17 AM

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Dear DEP,

As a resident of Hull, I am acutely aware of the coastal changes due to sea level rise. Four more feet and my first floor will be underwater every king tide.

I am writing to comment on the draft Wetlands Protection Act regulations as part of MassDEP's "Climate Resilience 1.0" package. Please draw your maps using the most pessimistic predictions of medium term sea level rise. It does not make sense to me to have to go through another process of public comment, etc, in order to draw new maps a few short years now.

Thank you for the opportunity to comment.

Sincerely,

Henry J. Herrmann





Town of Hingham  
CONSERVATION COMMISSION

210 Central Street, Hingham, MA 02043-2758 ♦ (781) 741-1445  
[www.hingham-ma.gov/289/Conservation-Commission](http://www.hingham-ma.gov/289/Conservation-Commission)

April 30, 2024

MA Department of Environmental Protection  
Bureau of Water Resources -Wetlands Program  
Attention: Wetlands-401 Resilience Comments  
100 Cambridge Street, Suite 900  
Boston, MA 02114

Via email to [dep.wetlands@mass.gov](mailto:dep.wetlands@mass.gov) on April 30, 2024

Dear MassDEP Wetlands Program,

Thank you for the opportunity to comment on the draft Wetlands Protection Act regulations as part of MassDEP's "Climate Resilience 1.0" package. These are positive steps toward protecting our coastal resources and infrastructure, and making Massachusetts more climate resilient.

It is clear DEP has expended considerable effort into drafting these proposed revisions which will greatly benefit wetlands as well as public resources and infrastructure in the face of climate change. As Conservation Officer for the Town of Hingham, it is my responsibility to review all wetland permit applications for projects in coastal and wetland resource areas and buffer zones. The following comments relate to specific changes which, based on my 17 years of conservation experience, will be difficult to implement without further refinement or clarification.

1. New subsection 10.02(2)(a)3.: Minor activities allowed in LSCSF "provided that such minor activities are located outside any other resource areas subject to protection specified in 310 CMR 10.02(1)...and any Buffer Zone.:" The addition of "Buffer Zone" in this subsection seems to contradict allowable uses under the following subsection 10.02(2)(b) which allows certain minor activities in the Buffer Zone.
2. Please clarify "50% opening" for fencing under new section 10.02(2)(a)3.a.
3. For consistency could DEP consider adding the exemption for "sheds less than 100 square feet in size" to 10.02(2)(b)?
4. Under 10.05(6)(k)2.the Commission may waive the post-development peak discharge rate standard for discharges to coastal Resource Areas unless "the discharge is to a coastal Resource Area located up-gradient of an existing or proposed stream crossing, culvert or bridge." Please provide more guidance/clarification on what is considered "up-gradient" and "proposed". This may pose difficulties for a Commission when considering whether this standard can be waived, as a "proposed" project may or may not get approved and may or may not be built.
5. The new verbiage for alternative analyses under 10.05(6)(o)2 is confusing and could benefit from being reworded. The alternative analysis presumably should include an evaluation of LID and ESSD but not "erosion and sedimentation controls" and "proper operation of and maintenance of stormwater BMPs".

The section also now cites “physical constraints and costs” however in the definitions section, impracticable for purposes of stormwater management “means impossible in practice to do or carry out based solely on physical constraints”. Therefore, costs should not be included.

6. It would be helpful if the definition of “Impracticable” included examples of physical constraints (i.e. high groundwater) as done in Section 10.05(6)(o)2.
7. New section 10.36(8) Redevelopment within Previously Developed Land Subject to Coast Storm Flowage is difficult to follow. To help Commissions better interpret the provisions for redevelopment, it would be beneficial to reorganize this section and separate the general criteria for allowable work in LSCSF (e.g. subsections (a) improvement over existing conditions, (b) stormwater, and (d) mitigation) from the prohibitions/restrictions on work found in subsections (c), (e), (f) and (g). It would also be very helpful to include additional subsections for what is allowed in the specific areas within the LSCSF (V Zone, MoWA and MiWA Zones).
8. Section 10.36(8)(c) is very confusing due to wording and reference to new buildings which are already prohibited under 10.36(6). It would be helpful if this section clearly and specifically stated what “reconstruction” is allowed in the V Zone (and MoWA Zone) and based on what criteria (as is done for redevelopment in the RA). For example, I recommend restating paragraph c as follows...  
  
*(c) Reconstruction of a previously existing structure located within the V Zone that has been substantially damaged or is undergoing substantial improvement, may be allowed by the issuing authority when the work conforms to following criteria:*
  1. *No portion of the reconstructed building is located more seaward than the previous building's location in the MoWA Zone.*
  2. *The reconstructed building is elevated on Open Piles as specified in 310 CMR 10.36(4)(a)*
  3. *The reconstructed building is not larger than the building it replaces so as not to increase the overall building footprint on the site.*
  4. *The existing building was constructed and received an Occupancy Permit prior to the effective date of this regulation.*
9. Section 10.36(8)(c) states “A building in the V Zone that has been substantially damaged or is undergoing substantial improvement may be reconstructed...” It may be helpful to add a definition of substantial damage and substantial improvement in the regulations for Commissions to interpret.
10. Section 10.36(8) defines redevelopment within previously developed LSCSF as “the replacement, rehabilitation, or expansion of existing structures...” Under Section (c) “no reconstructed building may be larger than the building it replaces”. It would be helpful if the language clearly distinguished between what redevelopment (replacement, expansion, or rehabilitation of buildings) is allowed in the different areas of LSCSF. Also, for consistency with the prior section and the definition of “redevelopment”, under section (c), substitute “reconstructed” building with “replacement” or vice versa. (Reconstructed is not used once in the definition of redevelopment.)
12. Section 10.36(8)(e) requires additional elevation for certain work in the MoWA and MiWA Zones based on a determination by the Building Official. Procedurally, this will be difficult for Commissions to implement as generally this determination is only made upon submittal of a Building Permit and review of construction costs. Including as a condition in the OOC is not practical as any modifications based on the Building Official’s determination requiring additional elevation in the MoWA or MiWA zones would potentially require a new NOI.

13. Please provide additional guidance for implementing Section 10.36(9) which requires Commissions to “encourage the migration of Salt Marsh and Coastal Dune”.
14. Section 10.57(2)(a)5 and 6 is confusing and the language is inconsistent regarding vernal pools and vernal pool habitat. Additional clarification would be very helpful to further explain how vernal pool boundaries should be established in the event of a conflict of opinion or lack of boundary delineation. The proposed language allows applicants to submit “evidence that would be sufficient to certify a pool if submitted to the Division of Fish and Wildlife”, however DFW does not establish physical boundaries based on the vernal pool certification forms submitted.

Additionally, I fully endorse the following comments provided in MSMCP’s comment letter:

- The revised regulations provide some excellent detail but must strike a reasonable balance between scientific precision and overly complex or burdensome requirements that render them too difficult for a majority of volunteer conservation commissions and applicants to implement. The proposed stormwater requirements, for example, exceed the review capabilities of most conservation commissions.
- Although we agree that the current Stormwater Handbook has much room for improvement, and although the new Stormwater Handbook is nicely organized, the new 860-page handbook is far too complex to: (1) be usable by most conservation agents or commissions; and (2) facilitate efficient review and permitting. Many of the new details of stormwater management should be removed from the regulations to facilitate future updates.
- Regulation revisions must strive to create greater consistency of thresholds, exemptions/allowances, and requirements based on existing wetland functions and values and the potential impacts (or benefits) on those wetland functions and values of proposed projects, not on the user groups conducting the activity.

I also urge MassDEP to begin work on “Climate Resiliency 2.0” to continue improving the Wetlands Protection Act Regulations. Thank you for your consideration.

Sincerely,

*Shannon Palmer*

Shannon Palmer  
Conservation Officer  
Town of Hingham





## Housatonic Valley Association

150 Kent Road  
PO Box 28  
Cornwall Bridge, CT 06754  
T: (860) 672-6678

Merwin House  
14 Main Street  
PO Box 496  
Stockbridge, MA 01262  
T: (413) 298-7024

37 Furnace Bank Road  
PO Box 315  
Wassaic, NY 12592  
T: (845) 442-1039



April 24, 2024

Lisa Rhodes  
Attn: Wetlands-401 Resilience Comments  
Mass DEP – BWR  
100 Cambridge Street, Suite 900  
Boston, MA 02114  
[dep.wetlands@mass.gov](mailto:dep.wetlands@mass.gov)

Dear Ms. Rhodes,

My name is Erik Reardon, and I am the Berkshire Watershed Director with the Housatonic Valley Association based in Western Massachusetts. The Housatonic Valley Association (HVA) works across the entire 2,000 square-mile Housatonic Watershed with the goal of conserving the region's natural character and environmental health and protecting and restoring its land and waters. In the Berkshires portion of the watershed, we are particularly focused on both increasing the pace and scale of ecological restoration and climate resiliency, which is why I appreciate this opportunity to comment on the proposed "Resilience 1.0" updates to wetlands protection regulations (310 CMR 10.00).

HVA is very grateful to MassDEP for the years of work that went into these draft regulations and shares MassDEP's commitment to preparing the commonwealth for the impacts of climate change. We are also pleased that MassDEP considers this a first draft within an ongoing process of regulatory updates.

HVA fully supports the following draft regulations:

- Including "artificial turf" under the definition of Impervious Surface. The chemicals found in artificial turf have long degraded public health and water quality.
- The increased 1-inch recharge requirement for all new soil types in new development under Standard 3, especially using the static sizing method.
- Expanding Low Impact Design/Environmentally Sensitive Site Design credits.
- Exempting basic Shared Use Path maintenance from WPA permitting requirements.
- Aligning the Wetland Protection Act's conditions to coordinate with the Municipal Small Sewer System permit, making compliance less burdensome for municipalities.
- Clarifying that culvert replacements that meet (MA Stream Crossing Standards) are exempt from Chapter 91 permit to speed up restoration projects.

HVA would also like to see the next draft regulations enable us to increase the pace of ecological restoration projects by:

- Streamlining permitting for restoration projects and requiring interagency coordination so these projects (dam removals, salt marsh restoration, culvert upgrades) can happen as quickly as possible to achieve our carbon sequestration, water quality, and biodiversity goals. There must be a (simpler) replacement for the Combined Application/Combined Permit process between Chapter 91 and the Wetlands Protection Act
- Granting special conditions to dam removal projects under 310 CMR 9.00. The regulations already provide for culvert replacements to be exempted from a Chapter 91 license, recognizing that those projects do not impede navigation and instead increase the resilience of the site. MassDEP's public summary of the proposed changes state that these projects are exempt "when such projects do not reduce the space available for navigation, facilitating the implementation of certain measures designed to address climate vulnerability related to increased precipitation."
- Creating an expedited permitting process for dam removals, categorizing them as an Ecological Restoration Limited Project under Wetlands Protection Act regulations; Chapter 91 should do the same by exempting them from obtaining a permit. There are 3,000 dams across the Commonwealth, 300 of which are considered "high hazard" by the Office of Dam Safety.

On behalf of HVA, thank you for your work and for your commitment to protecting and enhancing the commonwealth's environmental health and natural resources. HVA looks forward to continuing to work with MassDEP to secure safe and healthy environments for today and future generations.

Sincerely,

A handwritten signature in black ink, appearing to read "Erik Reardon". The signature is fluid and cursive, with the first name "Erik" written in a larger, more prominent script than the last name "Reardon".

Erik Reardon  
Berkshire Watershed Director

**From:** [Kasandra Merlino](#)  
**To:** [DEP Wetlands \(DEP\)](#)  
**Subject:** Wetlands and Waterways Resilience Comments  
**Date:** Tuesday, April 30, 2024 3:53:59 PM

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April 30<sup>th</sup>, 2024

Hyannis Marina Inc. has been providing marine services to Cape Cod and the Island for almost 50 years. Additionally, our marina has a number of full time and seasonal employees who rely on our marina for their livelihood.

Climate change is an important issue, arguably the most pressing issue facing the Commonwealth of Massachusetts. MassDEP has spent a considerable amount of time working on the proposal and we acknowledge the input of MassDEP, other Mass government offices and agencies. Thank you for the extension for comments to April 30<sup>th</sup>, 2024 yet that is still not enough time to involve people and entities directly impacted by these regulations. Coastal communities where homeowners and businesses especially marina operations need to have more voice in this matter. Private, commercial and industrial property owners have largely been left out the process.

Consideration to build with adaptive, resilient design and technology must be included in the future of the Massachusetts coast. The prohibition to build, rebuild, replace and renovate in high wind and wave areas fails to take into consideration the eventual detriment to the coastal communities where private property owners and commercial property owners might be prohibited from using many new, innovative and resilient measures to adapt to sea level rise and high wind. A nature based, managed retreat is not the only answer.

Open up discussion, look at what's happening already on the Massachusetts coast and other states for that matter. The economic health of cities and towns on the coast is significantly tied to waterfront communities with private, commercial and industrial uses.

Lastly, the exemption afforded to Designated Port Areas in the proposed regulations should be granted to all marinas, boatyards and water dependent entities.

Sincerely yours,

Dockside Marina



Via Email to [dep.waterways@mass.gov](mailto:dep.waterways@mass.gov)

April 30, 2024

MassDEP-BWR  
Attn: Wetlands-401 Resilience Comments  
100 Cambridge Street, Suite 900  
Boston, Massachusetts 02114

**RE: 310 CMR 10.00 Proposed Revisions  
Land Subject to Coastal Storm Flowage**

Dear MassDEP:

We are writing to comment on the recently-released MassDEP "Regulatory Resiliency Package 1.0," and the proposed changes to Massachusetts Wetlands Regulations (310 CMR 10.00) (the "Regulations") as they relate to the regulation of Land Subject to Coastal Storm Flowage ("LSCSF"). We understand the updates are being undertaken in furtherance of efforts to achieve the Commonwealth's resiliency goals and we recognize and applaud the efforts into drafting proposed changes to the Regulations, and particularly appreciates the thoughtful way in which MassDEP has solicited, heard, and begun to incorporate stakeholder feedback.

We note that our comments regarding the Regulations are informed by our work on the Suffolk Downs project, a large, phased redevelopment project that has completed an extensive and lengthy public review and permitting process and for which initial construction is underway. This public process included broad engagement with a wide range of residents and other stakeholders, including from various state agencies and governmental bodies, resulting in permits and approvals for a project with many important public benefits, some of which are identified for reference on Exhibit A to this letter.

The Suffolk Downs project has received various approvals from governmental authorities, including the Commonwealth of Massachusetts Executive Office of Energy and Environmental Affairs ("EOEEA") following Massachusetts Environmental Policy Act ("MEPA") review, and approvals from the Boston Planning and Development Agency ("BPDA") following Article 80 PDA and Large Project Review. These approvals require various mitigation measures intended to maximize flood protection both on and off site, which have been incorporated into the project's approval and permitting documents. We note that it is our understanding that projects like the Suffolk Downs redevelopment, which have completed MEPA review, are exempt from the proposed amendments to Regulations related to LSCSF per language in proposed 310 CMR 10.10(15), and that this would apply irrespective of any future Notice(s) of Project Change under MEPA as long as the change is found to be insignificant or the significance is unrelated to LSCSF.

While the LSCSF Regulations are inapplicable to Suffolk Downs, our experience with the project informs the comments below, which we urge be considered in light of the application of the Regulations to other future large, phased projects:

1. **The Regulations Should Seek to Avoid a One-Size-Fits-All Approach, and Allow for Innovation.** We urge MassDEP to consider changes that allow the identification of performance standards to protect the functions the Act and Regulations are meant to address, while avoiding prescriptive means and methods for achieving these standards. Similarly, wholesale prohibitions should be avoided whenever possible.

As written, the Regulations can be read to preclude projects that eliminate floodplain, since eliminating floodplain would necessarily impact the capacity of a project site to serve the interests of the Act. We urge flexibility around these issues. Often, placing fill within the coastal floodplain (i.e. eliminating/reducing the extent of LSCSF) is the most appropriate path to protecting shoreline and adjacent upland areas. It is important for the regulations to recognize that LSCSF is an atypical resource area, where the interests it protects can at times be better served through other resiliency measures that may eliminate/reduce the resource area.

In fact, this is the case with the redevelopment of Suffolk Downs, where some of the planned resiliency measures (including fill and berms) are expected to reduce the extent of floodplain area, but vastly improve both the site's and neighboring area's resiliency by reducing flooding.

Other sections of the regulations that can be read as prescriptive include: 10.36(7)(a) through (g) and 310 CMR 10.36(8)(a) through (g), in each case because they provide little flexibility as to the stated standards. Similarly, subsection 10.36(8)(f) could be read to effectively limit redevelopment activities to urban settings such as downtown Boston and the Seaport, because it seems to require that a site already be largely impervious to qualify for certain treatment.

We encourage MassDEP to review the Regulations and comments from stakeholders with this in mind, focusing on protected interests (storm damage prevention and flood control), in a manner that does not preclude flexibility by requiring specific approaches to resiliency. Climate adaptation efforts designed to protect public and private property, and human health and safety, should be allowed.

2. **Focus on Prior Alteration Rather Than Development.** 310 CMR 10.36(8) states, *"Activities shall conform to the standards specified in 310 CMR 10.36(4) through (7) when a site was previously developed but is not currently developed."* For clarity as well as relevance to the functions of LSCSF, we suggest instead using the term "Previously Altered Area" (to replace all instances of "Previously Developed Area") and defining in 310 CMR 10.04 as "an area that is not in a natural, previously undisturbed state as a result of human activity including any change in grade from

naturally occurring grade or placement of structures. Previously Altered Areas for the purposes of LSCSF may contain pavement or other impervious surfaces, structures or portions of structures, or construction debris, or may have been filled or excavated. Areas historically disturbed by human activities that have reverted to such a natural state so as to be indistinguishable from undisturbed natural areas are not previously developed."

We hope the comments above are helpful and that we can continue to be part of discussions regarding the Regulations. We share MassDEP's goals, but hope that it will take into consideration the concerns and suggestions identified above.

We look forward to participating in continued dialogue on both these Phase 1.0 Resiliency Regulations, as well as the future 2.0 regulatory update that MassDEP is anticipating.

Sincerely,



Douglas J. Manz  
Chief Investment Officer, Partner



EXHIBIT A  
KEY SUFFOLK DOWNS PROJECT BENEFITS

The extensive public review process for Suffolk Downs has resulted in a project with many important public benefits in addition to benefits related specifically to resiliency, including:

- Producing approximately 1,430 new affordable housing units – the greatest number created by a single project in the history of Massachusetts, and adding a total of approximately 10,000 new dwelling units, helping to address our region’s critical housing shortage.
- The project, built on an unused racetrack site near mass transit, will displace zero residents.
- It creates approximately 14,000 construction jobs and 25,000 new permanent jobs.
- It will fund \$1 million toward apprenticeship preparation training and child care programs through the Building Pathways program for low-income area residents seeking to work in the trade unions, with a portion of the funds to be used for child care to support a new initiative for implementation of a child care program to support working mothers, and funds an additional \$1 million for workforce training initiatives for local residents.
- It funds all costs of building and maintaining (in perpetuity) a new approximately 40-acre network of publicly accessible open space across the Boston and Revere portions of the site, including active and passive recreation areas, as well as wetland and natural areas.
- The project will contribute \$20 million to the MBTA for Blue Line and bus public transit improvements, plus \$3.15 million more to subsidize MBTA operations.
- It will fund an approximately \$41 million comprehensive package of offsite improvements to local and regional transportation infrastructure and services, and more than \$170 million for onsite roadways, sidewalks, bicycle and pedestrian paths, water, sewer and storm drainage facilities.
- The project will fund sewer and water (I/I) payments to the Boston Water and Sewer Commission and the City of Revere of approximately \$26.7 million, and construct new water transmission and wastewater bypass lines and new pump station improvements.
- The project is expected to generate significant new tax revenues, including approximately \$59.5 million in real estate tax revenues (with anticipated net revenue of approximately \$33.7 million after accounting for increased municipal services) for the City of Boston.



Via Email to [dep.waterways@mass.gov](mailto:dep.waterways@mass.gov)

April 30, 2024

MassDEP-BWR  
Attn: Wetlands-401 Resilience Comments  
100 Cambridge Street, Suite 900  
Boston, Massachusetts 02114

**RE: Wetlands-401 Resilience Comments**

Dear MassDEP BWR Wetlands Program:

We are writing to comment on the recently-released MassDEP "Regulatory Resiliency Package 1.0," and the proposed changes to Massachusetts Wetlands and 401 Regulations (310 CMR 10.00 and 314 CMR 9.00) (the "Regulations"). We understand the updates are being undertaken in furtherance of efforts to achieve the Commonwealth's resiliency goals, including comprehensive updates to improve stormwater management design based on contemporary data, specifying performance standards for our coastal floodplains, and other important considerations such as streamlining wetlands restoration.

We recognize the effort that went into drafting proposed changes to the Regulations, and particularly appreciate the thoughtful way in which MassDEP has solicited, heard, and begun to incorporate stakeholder feedback. We support the effort to have appropriate resiliency measures applicable to development projects, roadways, infrastructure and other improvements within the Commonwealth, and very much appreciate the opportunity to provide comments on the proposed regulations.

Our concerns regarding the Regulations are informed by our work on the Suffolk Downs project, which is a very large multi-phase project that has completed an extensive and lengthy public review and permitting process and for which the initial phase of construction is ongoing. This process included broad engagement with a wide range of residents and other stakeholders, including from various state agencies and other governmental bodies reviewing the project from various perspectives, including the perspective of resiliency issues. This very inclusive process resulted in permits and approvals for a project with an unprecedented scope of important public benefits. To give some perspective on this issue, a number of key public benefits and mitigation measures, above and beyond the project's planned resiliency improvements, are identified on Exhibit A to this letter.

The Suffolk Downs project has received approvals from various governmental authorities, including the Commonwealth of Massachusetts Executive Office of Energy and Environmental Affairs ("EOEEA") following Massachusetts Environmental Policy Act ("MEPA") review and approvals from the Boston Planning and Development Agency ("BPDA") following

The Suffolk Downs project has received approvals from various governmental authorities, including the Commonwealth of Massachusetts Executive Office of Energy and Environmental Affairs ("EOEEA") following Massachusetts Environmental Policy Act ("MEPA") review and approvals from the Boston Planning and Development Agency ("BPDA") following Article 80 PDA and Large Project Review. These approvals require various mitigation measures intended to maximize flood protection both on and off the project site, which have been incorporated into the project's approval and permitting documents.

The draft changes to the Regulations include several provisions that create uncertainty in various respects, potentially undermining large master planned projects like Suffolk Downs. A number of specific concerns are identified below. We respectfully request that MassDEP consider incorporating changes respecting the Regulations in light of these comments.

1. **Critical Concern Regarding Applicability of Regulation Changes to Large Master Plan Projects That Have Previously Completed MEPA Review.** Regarding applicability to pipeline projects, Section 10.10 (15) of the proposed Regulations states:

*"The amendments to 310 CMR 10.00 concerning Stormwater Management at 310 CMR 10.04; 10.05(6)(k)-(q); and 10.58 shall apply to Notices of Intent filed more than six months after [the effective date of these regulations] ... Any Notice of Intent submitted to the Department prior to six months after [the effective date] shall be considered under the standards and criteria in effect prior to [the effective date]."*

While this language allows a 6-month delay in applicability, it is inadequate for larger scale projects, like Suffolk Downs, where MEPA review has been completed, investments made, and mitigation and planning determined in many respects, with significant prior investments into detailed design, planning and other work. Such projects, because their buildout will take years, and because they reflect significant up-front investments into infrastructure and mitigation, with permitting of project components and construction to be on a phased basis, should not be subject to newly-enacted requirements and new more stringent design requirements that undermine years of prior master planning and permitting work.

We propose an alternative approach be adopted, taking the lead from the approach planned new regulations as to Land Subject to Coastal Storm Flowage, and regulations for Riverfront Area, where changes have been made inapplicable to projects that have already undergone and completed MEPA review under prior standards. Here, updated stormwater Regulations should similarly be inapplicable to projects that have completed MEPA review prior to the effective date of the revised Regulations, including in the event of a future Notice of Project Change (NPC) under MEPA.

Without such a legacy provision, the potential ramifications for projects like Suffolk Downs could be devastating and could make it difficult or impossible for the project to be implement in accordance with the approved master plan. Indeed, strict compliance with the proposed changes to the Regulations may not even be possible based on existing site conditions, which include poor soil quality the presence of high groundwater. If the Suffolk Downs project is held to the new stormwater regulations, there will be a significant reduction in building footprints and gross floor area that puts the entire project at risk.

Green-roofs need to be 10-ft from building foundations: A clarification as to how this is measured would be helpful. E.g., does this mean an interior off-set from the building foundation?

More importantly, green roofs can moderate the heat island effect, reduce energy use, help manage stormwater, provide habitat, reduce noise pollution, and improve air quality. Therefore, the ability to maximize green roof area should not be constrained, and we recommend that this setback be eliminated.

- a. Tree-box filters are to be 10-ft from building foundations: With a typical sidewalk width and orientation of street trees this will be difficult to accommodate. We request that this off-set be reconsidered to allow for tree box filters to be employed for street trees in proximity to building foundations.

2. **Technical Comment Re Discharge Increases.** Section 0.05(6)(k), Stormwater Management Standard No. 2 dictates that the post-development peak discharge not exceed pre-development peak discharge rates "...at each point of discharge." For many post-development discharge points there is likely zero flow in the pre-development existing condition making this requirement impossible to achieve. We understand that MassDEP has provided initial feedback that this is not the intent of the Regulation; however, this remains a concerning issue that should be clarified in the regulations.
3. **Technical Comment Re Water Treatment.** Section 10.05(6)(k), Stormwater Management Standard No. 4 references requirements for water quality treatment. The Massachusetts Stormwater Management Handbook definition of "*First Flush*" notes 1.25" of treatment. This quantity is not referenced in the regulations. It would be helpful if this discrepancy were corrected in the Handbook to reflect the regulations.
4. **Technical Comment Re Precipitation Measurements.** Section 10.57(2)(a)3.a modifies the precipitation frequencies to be consistent with the National Oceanic and Atmospheric Administration (NOAA) Atlas 14. This section further states that the NOAA Atlas 14 upper confidence level values be multiplied by 0.9. NOAA Atlas 14 values already represent a 90% confidence level in the particular storm event. Increased design storms will result in larger stormwater management footprints, resulting in less developable area.

We hope the comments above are helpful and that we can continue to be part of discussions regarding the Regulations. We share MassDEP's goals, but hope that it will take into consideration the concerns and suggestions identified above. We support the intent of the draft regulatory update to advance resiliency in the Commonwealth as it applies to new projects or those that have not yet completed large-scale review process. As noted above, however, we think it is important that the new Regulations not apply to larger pipeline projects like Suffolk Downs.

We look forward to participating in continued dialogue on both these Phase 1.0 Resiliency Regulations, as well as the future 2.0 regulatory update that MassDEP is anticipating.

Sincerely,

A handwritten signature in blue ink, appearing to read 'DJM', with a long horizontal flourish extending to the right.

Douglas J. Manz  
Chief Investment Officer, Partner

## EXHIBIT A KEY SUFFOLK DOWNS PROJECT BENEFITS

The extensive public review process for Suffolk Downs has resulted in a project with many important public benefits in addition to benefits related specifically to resiliency, including:

- Producing approximately 1,430 new affordable housing units - the greatest number created by a single project in the history of Massachusetts, and adding a total of approximately 10,000 new dwelling units, helping to address our region's critical housing shortage.
- The project, built on an unused racetrack site near mass transit, will displace zero residents.
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- The project is expected to generate significant new tax revenues, including approximately \$59.5 million in real estate tax revenues (with anticipated net revenue of approximately \$33.7 million after accounting for increased municipal services) for the City of Boston.





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508-843-7981

April 30, 2024

Massachusetts Department of Environmental Protection  
Bureaus of Water Resources  
100 Cambridge Street, Suite 900  
Boston, MA 02114

[Dep.wetlands@mass.gov](mailto:Dep.wetlands@mass.gov)

Re: Wetlands-401 Resilience Comments

Dear MassDEP:

I have reviewed the proposed revisions to the Massachusetts Wetlands Protection Act (WPA) regulations (310 CMR 10.00) and have the following comments and suggestions. I have been a professional wetland scientist in the state of Massachusetts for over 35 years and have extensive delineation and permitting experience. I have also spent over five years as a member of two different local conservation commissions.

**Bolded text** below refers to the text of the proposed revisions and/or location of the regulation revisions

## USE OF THE WORD NATURAL

The use of the words natural and unnatural or the phrase naturally-occurring is used in the existing and proposed regulations and should be used cautiously and deliberately. There is very little in our landscape that is natural as most of the land and hydrologic features have been artificially altered. I recommend that the language in the existing and proposed regulations be reviewed carefully to make sure that the use of natural, unnatural, and naturally-occurring is appropriate. Here are some examples where text revisions may be needed [underlines provided for emphasis]:

- **310 CMR 10.36(5)(b) “Causing unnatural redirection, refraction, diffraction, and/or reflection of coastal flood waters that cause or exacerbate storm damage from erosion, scour, and backrush”** What is an unnatural redirection of flood waters? Recommend removing the word “unnatural” from this regulation unless additional guidance is provided of what is considered unnatural or natural redirection.
- **310 CMR 10.36(6)(f) “Alterations shall be minimized to the extent practicable and designed to preserve or restore the natural topography and vegetative cover.”** How far back in time does an Applicant need to go to determine what the natural topography of the land was? Recommend removing the word “natural” from this regulation.
- **310 CMR 10.36(8)(f) “where impervious surfaces have predominantly replaced the natural coastal floodplain”** When did the natural floodplain exist? How does an Applicant identify what the natural floodplain was? Perhaps historically the placement of an impervious surface may

have resulted in the creation of additional floodplain; in this scenario, what would be considered natural. Recommend removing the word “natural” from this regulation.

## **PREFACE FOR REVIEWERS TO THE 2023 REVISIONS TO THE WETLANDS PROTECTION ACT REGULATIONS FOR LAND SUBJECT TO COASTAL STORM FLOWAGE**

[Second paragraph] **The regulations for Land Subject to Coastal Storm Flowage are based on FEMA's maps, which depict the information necessary for permitting activities in this Resource Area. Applicants are also encouraged to supplement the required evaluations by consulting the Massachusetts Coast Flood Risk Model Maps, referenced in the Massachusetts State Hazard Mitigation and Climate Adaptation Plan, which show probability and depth of inundation under projected future conditions for various scenarios of sea level rise and changing climate conditions.**

While this preface above states that “Applicants are also encouraged [emphasis added]...”, to use the Massachusetts Coastal Flood Risk Model (MC-FRM) for predicting sea level rise, 310 CMR 10.24 states “Applicants shall [emphasis added] consult the resilientma.org website for the most current mapping and other available information related to shoreline change and sea level rise...”. There is a big difference and conflict between “encourage” and “shall consult” resulting in confusion. I recommend that the wording be made consistent in the preface and the regulations.

I support the state’s effort to deal with climate change issues such as sea level rise. Nonetheless, the ResilientMass website provides mapping using only the MC-FRM for predicting sea level rise which is proving to be problematic<sup>1</sup>. I recommend the wording be revised so that it states predicting sea level rise may be analyzed based on best available science from a reputable government source and eliminate the requirement of using the MC-FRM. Without an effective way to identify the predicted sea level rise boundaries through an acceptable model, there cannot be effective protection of this resource area and, as such, there cannot be enforcement of the regulations. To resolve this issue, there needs to be more analysis by the engineering and scientific community on the appropriate model to be used.

As noted in the attached letter, the differences of predicted sea level rise between the National Oceanic and Atmospheric Administration (NOAA) model and the MC-FRM model is significant. When planning and designing for shoreline protection projects, the type of design proposed and the associated costs may vary greatly depending on if the model predicted 1.5 or 6 feet of sea level rise. Based on research to date, the MC-FRM model is extremely conservative which will likely result in shoreline protection projects being over designed and with increased costs to local economies. Or resilience projects may be abandoned altogether due to the costs. Therefore, the model used to design a project has significant consequences that can work opposite to providing for resilience. I recommend the wording be revised as noted above so that it states predicting sea level rise may be analyzed based on best available science from a reputable government source and eliminate the requirement of using the MC-FRM.

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<sup>1</sup> For more information on the concerns of using the MC-FRM model, please see my attached comment letter for the Chapter 91 Waterways regulations revisions dated April 30, 2024 (see attached).

### CONFUSION OF WHEN PREDICTED SEA LEVEL RISE MODEL IS TO BE USED

There appears to be much confusion how the sea level rise model is to be used. Based on my review of the proposed regulation revisions, the only location where the predicted sea level rise is required to be applied to projects is at 310 CMR 10.24(1)(b) specifically for shoreline protection projects. Therefore, it is unclear why the requirement for using a predictive sea level rise model is located in 310 CMR 10.24 instead of the LSCSF regulations (310 CMR 10.36). The use of a model is only applicable to work in LSCSF, not on coastal dunes, etc. I recommend guidance on this issue be provided by MassDEP otherwise, this requirement placed in the General Provisions section will result in confusion to not only consultants but also to local Conservation Commissions.

The presence of (at least) two different predicted sea level rise models, with widely varying results, will result in unnecessarily complicated permitting, analysis, costly consultant reviews by Conservation Commissions, contradictory outcomes, and appeals on local and state levels. Determining a “standard of practice” will help to resolve this issue. Please note that this may take longer to figure out than the time it will take for this proposed revisions to be publicly reviewed and formally approved and issued. Therefore, I recommend the revised wording that predicting sea level rise may be analyzed based on best available science from a reputable government source and eliminate the requirement of using the MC-FRM. This will allow time for the engineering and scientific community to fully vet which model is appropriate.

### 310 CMR 10.05 PROCEDURES

**310 CMR 10.05(6)(k)** [proposed to be eliminated from the regulations] **No Area Subject to Protection under M.G.L. c. 131, § 40 other than bordering land subject to flooding, isolated land subject to flooding, land subject to coastal storm flowage, or riverfront area may be altered or filled for the impoundment or detention of stormwater, the control of sedimentation or the attenuation of pollutants in stormwater discharges, and the applicable performance standards shall apply to any such alteration or fill.**

The text noted above is proposed to be eliminated. This is very concerning as stormwater management should be located in areas lower in the landscape in order to function properly. Stormwater management in floodplains and riverfront areas was always envisioned especially when the riverfront area regulations were promulgated. Please provide an explanation of why this text is proposed to be removed and the impact it will have on proposed stormwater management in the resource areas noted in this text. Will removal of this text prohibit stormwater management in all floodplains and lands subject to flooding? I recommend keeping this text intact.

### COMPENSATORY STORAGE IN LSCSF

The concept of LSCSF providing flood storage has been introduced in two locations in the proposed regulation revisions:

- **310 CMR 10.24(8)(c) “Compensatory flood storage shall be provided for all flood storage volume that will be lost within the Special Flood Hazard Area within any portion of a wetland Resource Area...”**
- **310 CMR 10.36(8)(a) “Existing conditions may be improved by topographical alterations to provide flood storage...”**

Compensatory flood storage in the coastal floodplain makes no scientific sense when filling in the coastal floodplain is likened to a drop in a bucket (as compared to inland flooding where compensatory storage is required). I recommend that the two bullets noted above either be deleted entirely or include language already proposed elsewhere in the regulations which states that compensatory flood storage is only required if it is determined that the project will increase “flood elevations within a topographic depressions or confined basin where a manmade or natural features significantly impedes or prevents the return flow of coastal flood waters.”

### **310 CMR 10.24 GENERAL PROVISIONS (FOR COASTAL WETLAND RESOURCE AREAS)**

**310 CMR 10.24(1)(b) [first sentence] For work in any coastal Resource Area or Buffer Zone along the shoreline, the Applicant shall consider, and the Issuing Authority may require, the restoration, enhancement, or creation of wetland Resource Areas through natural methods and materials as an alternative to coastal engineering structures to promote resiliency along the shoreline.**

This language is too general and does not provide any clear performance standards or guidance. If this sentence is specific to projects that propose coastal engineering structures then it should be rewritten to state “For work projects involving coastal engineering structures in any coastal Resource Area or Buffer Zone along the shoreline, the Applicant shall consider, and the Issuing Authority may require, the restoration, enhancement, or creation of wetland Resource Areas through natural methods and materials as an alternative to coastal engineering structures to promote resiliency along the shoreline.” Otherwise, as written, this text could be interpreted to apply to any work proposed where a coastal engineering structure exists, and, as a result, restoration may be unnecessarily required.

**310 CMR 10.24(1)(b) [second sentence] In planning shoreline protection projects, Applicants shall consult the resilientma.org website for the most current mapping and other available information related to shoreline change and sea level rise or similarly reliable local data acceptable to the Issuing Authority.**

The ResilientMass website address provided is incorrect. The website is resilient.mass.gov.

As stated before in this letter, ResilientMass provides mapping using only the MC-FRM for predicting sea level rise which is proving to be problematic. I recommend that MassDEP revise this language as follows: “In planning shoreline protection projects, predicting sea level rise shall be analyzed based on best available science from a reputable government source. Applicants ~~shall~~ may consult the ResilientMass resilientma.org website for the most current mapping and other available information related to shoreline change and sea level rise.”

In addition, as this text is specific to shoreline protection projects, I recommend that a “shoreline protection project” definition be added to the coastal regulations definitions (310 CMR 10.23) in order to inform Applicants if their project falls under this definition.

### **310 CMR 10.36(2) DEFINITIONS [FOR LSCSF]**

Eleven new definitions have been added to this section which now adds a third area to check for definitions in addition to 310 CMR 10.04 (Definitions) and 310 CMR 10.23 (Additional Definitions for 310 CMR 10.21 through 10.37). Why are these definitions not included in 310 CMR 10.23? There is also no definition for Limit of Moderate Wave Activity (LiMWA). Although LiMWA is only noted once in the regulations, for consistency, I recommend it be added as a separate definition.

Certain definitions are included which refer back to the State Building Code definitions such as substantial damage and substantial improvement. Why is Historic Structure included as a separate definition and not the definition provided in the State Building Code? Are there substantial differences and/or the reason why the State Building Code definition not used here?

### **310 CMR 10.36(3) BOUNDARIES**

**These [FEMA floodplain] boundaries shall be presumed accurate. This presumption is rebuttable and, to show flood zones are more landward or expansive, may be overcome by credible evidence from a competent source...**

This new regulation only allows for rebuttable evidence to be provided if the floodplain is more landward or expansive but does not allow for evidence to be provided if the floodplain is more seaward or less expansive. For permitting purposes, Applicants should be provided with the opportunity to provide evidence based on their project if the floodplain is less expansive. The Applicant always has the opportunity to apply for a FEMA Letter of Map Revision (LOMR) process for insurance purposes. I recommend either deleting this text or revising the text as follows: “These boundaries shall be presumed accurate. This presumption is rebuttable and, ~~to show flood zones are more landward or expansive,~~ may be overcome by credible evidence from a competent source...”

### **310 CMR 10.36(8)(f), (g) REDEVELOPMENT IN HIGHLY DEVELOPED AREAS**

During one of the MassDEP public meetings on the proposed revisions to the regulations, a chart was provided which noted “Redevelopment in Highly Developed Areas” yet the term “highly developed” does not appear in the proposed or existing regulations. The revised regulations appear to describe a highly developed area as “where impervious surfaces have predominantly replaced the natural coastal floodplain”. I recommend that this phrasing be deleted from any future training slides prepared by MassDEP or incorporated by definition into the revised regulations.

Redevelopment 310 CMR 10.36(8)	<ul style="list-style-type: none"> <li>• Must improve existing conditions - Reduce pavement, remove restrictions, provide storage</li> <li>• No reconstruction seaward on site, no increase in building footprint</li> <li>• V zone – No new buildings; Damage reconstruction or substantial improvement on open piles</li> <li>• Elevation on open piles for certain work in any zone (e.g., new foundation). Historic structures exempt.</li> </ul>
Redevelopment in Highly Developed Areas – Flood Control 310 CMR 10.36(8)(f) and (g)	<ul style="list-style-type: none"> <li>• Areas where impervious surfaces predominate</li> <li>• Placement of fill for flood control allowed in MiWA.</li> <li>• Elevation of existing seawalls or construction of berms for flood control allowed in V or MoWA zones as part of flood control conducted or supported by public agency.</li> <li>• No redirection of wave energy or flood waters to other properties.</li> </ul>

### 310 CMR 10.36(8) REDEVELOPMENT WITHIN PREVIOUSLY DEVELOPED LSCSF

**(a) Where a previously developed coastal Resource Area has not been regulated under the applicable performance standards to protect the interests of flood control and storm damage prevention, the proposed work shall restore those interests to the extent practicable**

This performance standard is unclear. Is this referring to work performed before the WPA was enacted or in violation of the existing WPA? Does this apply to work performed that may have been exempt from previous regulation? Does this refer to enforcement issues? What if the work was performed 20 years ago, would it still be subject to restoration? I recommend that this performance standard be deleted in its entirety due to lack of clarity how and why this should be applied to proposed projects.

**(c) No portion of any proposed new building may be located within the V-Zone**

I do not agree with a complete prohibition of new construction in the V-Zone as there may be unforeseen circumstances where water-dependent uses would require building construction in the V-Zone. One example would be the construction of support buildings on existing or new piers and wharves which supply critical infrastructure to towns and cities. There are likely other examples of water-dependent buildings such as those needed for emergency response, marina use, and marine and industrial use. I recommend that a provision or exemption be created for this performance standard which would allow new construction V-Zones under limited circumstances.

**(c) No reconstructed building may be larger than the building it replaces, so that the overall building footprint on the site is not increased**

This limitation on reconstruction of building footprints should be eliminated as there may be unanticipated circumstances where a building needs to be enlarged due to use specifications, improved design and structural best management practices, etc. I recommend that this performance standard be



deleted in its entirety or a standard be developed which allows for minor improvements to building footprints.

## OTHER INTERESTS NOT ADDRESSED

In previous iterations of draft LSCSF regulations over the past 30 years, wildlife habitat and prevention of pollution were two additional interests recognized as being provided by the coastal floodplain. While these recent revisions have been primarily drafted for resilience purposes, it is unfortunate that these two additional interests were not addressed.

## CONCLUSION

In summary, I recommend the following revisions to the WPA regulations as described more fully in this letter. I also recommend that a new set of proposed regulations be issued to the public for additional comment including a document showing responses to comments before they are formally approved and issued as there are many unresolved issues.

- Language in the existing and proposed regulations be reviewed carefully to make sure that the use of natural, unnatural, and naturally-occurring is appropriate
- Wording, such as encouraged vs. shall consult, be made consistent whether in the preface or the regulations.
- Revise wording that predicting sea level rise may be analyzed based on best available science from a reputable government source and eliminate the requirement of using the MC-FRM.
- Provide guidance on why the use of a predictive sea level rise model (specific to work in LSCSF) be placed in the General Provisions section and not 310 CMR 10.36 as it will result in confusion to not only consultants but also to local Conservation Commissions.
- Determining a “standard of practice” will help to resolve which sea level rise model to use in the future. Please note that this may take longer to figure out than the time it will take for the proposed revisions to be publicly reviewed and formally approved and issued. Therefore, I recommend revised wording that predicting sea level rise may be analyzed based on best available science from a reputable government source and eliminate the requirement of using the MC-FRM. This will allow time for the engineering and scientific community to fully vet which model is appropriate.
- Keep the text at 310 CMR 10.05(6)(k) which allows for stormwater management to be proposed in riverfront areas and lands subject to flooding.
- Eliminate the requirement for compensatory storage in LSCSF [310 CMR 10.24(8)(c); 10.36(8)(a)] or provide for projects that will increase “flood elevations within a topographic depressions or confined basin where a manmade or natural feature significantly impedes or prevents the return flow of coastal flood waters.”
- Clarify the text in 310 CMR 10.24(1)(b) as the text as written could be misinterpreted. “For ~~work~~ projects involving coastal engineering structures in any coastal Resource Area or Buffer Zone along the shoreline, the Applicant shall consider, and the Issuing Authority may require, the restoration, enhancement, or creation of wetland Resource Areas through natural methods and materials as an alternative to coastal engineering structures to promote resiliency along the shoreline.”

- Revised wording at 310 CMR 10.24(1)(b) “In planning shoreline protection projects, predicting sea level rise shall be analyzed based on best available science from a reputable government source. Applicants ~~shall~~ may consult the ResilientMass resilientma.org website for ~~the most current mapping and other available~~ information related to shoreline change and sea level rise.”
- Correct the ResilientMass website address which is resilient.mass.gov. [310 CMR 10.24(1)(b)]
- Add “shoreline protection project” and LiMWA definitions to the coastal regulations definitions (310 CMR 10.23).
- Clarify why definitions are added to LSCSF (310 CMR 10.36) and not 310 CMR 10.23.
- Refer to historic structure definition in the State Building Code.
- Delete or revise text at 310 CMR 10.36(3) “These boundaries shall be presumed accurate. This presumption is rebuttable and, ~~to show flood zones are more landward or expansive,~~ may be overcome by credible evidence from a competent source...”
- Delete the use of “highly developed areas” or incorporate by adding a new definition [310 CMR 10.36(8)(f), (g)].
- Delete text at 310 CMR 10.36(8)(a) its entirety due to lack of clarity how and why this should be applied to proposed projects.
- Add a provision or exemption at 310 CMR 10.36(8)(c) to allow new construction V-Zones and enlarged building footprints under limited circumstances.
- Address wildlife habitat and prevention of pollution as interests for LSCSF.

Thank you for this opportunity to submit comments. Should you have any questions, please do not hesitate to contact me.

*Kate Barnicle*

Kathryn S. Barnicle  
Senior Wetland Scientist  
ILEX Environmental, Inc.

Cc: Chapter 91 Waterways Comment Letter by ILEX Environmental, Inc. dated April 30, 2024

**From:** [Mary Lester](#)  
**To:** [DEP Wetlands \(DEP\)](#)  
**Subject:** Wetlands-401 Resilience Comments  
**Date:** Tuesday, April 30, 2024 3:39:57 PM  
**Attachments:** [image001.png](#)  
[image002.png](#)  
[image003.png](#)

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Dear MassDEP Wetlands Program:

Thank you for the opportunity to comment on the draft Wetlands Protection Act regulations as part of MassDEP's "Climate Resilience 1.0" package. These are positive steps toward protecting our coastal resources and infrastructure, and making Massachusetts more climate resilient. We appreciate MassDEP's considerable time and effort to prepare these proposed regulations.

As a coastal commission, the Ipswich Conservation Commission is specifically supportive of the following:

- the prohibition on new structures in velocity zones and design requirements for development in other parts of the floodplain
- updated stormwater standards including updated precipitation data (NOAA Atlas 14+) and alignment with MS4 requirements

I urge MassDEP to consider our comments where the regulations should be refined:

- Stronger language requiring Environmentally Sensitive Site Design (ESSD) and Low Impact Development (LID) (the term impracticable has not resulted in more LID in our limited applications of our stormwater bylaw and regulations)
- Modify the LSCSF regulations to include consideration of future sea level rise/climate conditions

I urge MassDEP to begin work on "Climate Resiliency 2.0" to continue improving the Wetland Protection Act regulations.

Sincerely,

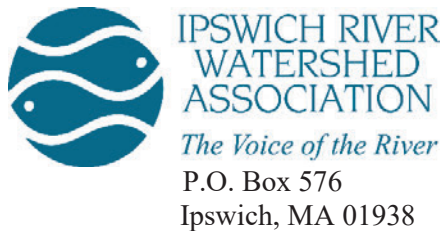
Mary Lester

Conservation Agent on behalf of the Ipswich Conservation Commission

Mary Lester, CPG  
Conservation Agent  
Department of Planning and Development  
Town of Ipswich  
978-356-6661

Follow us at





April 30, 2024

Massachusetts Department of Environmental Protection  
Bureau of Water Resources Wetlands Program  
Attention: Wetlands-401 Resilience Comments  
100 Cambridge Street, 9th Floor  
Boston, MA 02114

Dear Ms. Rhodes and the MassDEP Wetlands Program,

Thank you for the opportunity to comment on the draft Wetlands Protection Act regulations as part of MassDEP's "Climate Resilience" 1.0 package.

The Ipswich River Watershed Association's (IRWA) mission is to protect and restore the Ipswich River and its watershed, now and for future generations. Founded in 1977, IRWA serves the 160,000+ people who live in our watershed, as well as more than 350,000 people and businesses who get their water from the Ipswich River, from the river's start in Burlington to its confluence with the ocean in Ipswich.

We are pleased to see that these regulations work to advance climate resilience, marking essential progress towards ecological restoration, public safety, and preparation for climate change impacts. We strongly support many of the proposed revisions, and acknowledge the years of work MassDEP has dedicated to this effort. We would like to thank MassDEP's commitment to public engagement during this process, and hope for a similar level of support for education and awareness on the final set of regulations.

**We support the following provisions:**

- The new requirement for nature-based improvements to be incorporated into coastal projects. (310 CMR 10.24 (1)(b))
- Protecting migrating salt marshes and coastal dunes. This provision will be crucial as our coasts change. Allowing these ecosystems to migrate will support wildlife habitat, but also buffer coastal infrastructure from storms and flooding. For many of our partners who work in the Great Marsh Area of Critical Environmental Concern (ACEC), we hope these changes help further efforts to protect, preserve, and enhance this rare and valuable ecosystem. (310 CMR 10.36 (9))
- Including "artificial turf" under the definition of Impervious Surface. The chemicals found in artificial turf have long degraded public health and water quality, and our standard practice thus far has been to treat artificial turf as impervious surface for the purposes of stormwater analysis when

providing development review comments for these projects in our watershed.

- The definition of Impracticable, which sets a high standard based solely on physical constraints which applicants must meet in order to qualify for off-site mitigation measures for stormwater management. (310 CMR 10.05(6)(k)-(q))
- Expanding Low Impact Design/Environmentally Sensitive Site Design credits.
- The increased 1-inch recharge requirement for all new soil types in new development under Standard 3 of the Stormwater Handbook.
- Allowing for scientific research projects, as long as they are performed by an environmental NGO, academic institution, or government agency with limited impacts, duration, and restoration required. Long term, this process could be streamlined even more, although we acknowledge the need for balance between increased permitting flexibility with monitoring and reporting methodologies is necessary to ensure Resource Areas are protected. (310 CMR 10.05 (12))
- Aligning the Wetland Protection Act's conditions to coordinate with the Municipal Small Sewer System permit, making compliance less burdensome for municipalities.

**We have concerns about the following proposed changes and/or have recommendations for improvement:**

- MassDEP has proposed to strike out the "Combined Application" option for the Wetlands Protection Act, Waterways, and Section 401 Water Quality Certifications, without proposing an alternative. To accelerate the pace of restoration projects, we need a simplified permitting process that provides combined permitting and approval options for applicants pursuing environmentally beneficial projects. (310 CMR 10.04)
- The nature-based resilience requirement for coastal projects is non-binding. Having applicants merely "consider" these measures does not mean they will implement them. While the provision states that "the Issuing Authority may require" natural methods and materials, it is not clear under what circumstances MassDEP would do so. We recommend that MassDEP clarify this provision.
- The updated data (NOAA14+) that MassDEP is proposing be tied to the Wetland Protection Act regulations is likely to become outdated soon. We encourage MassDEP to consider using dynamic, forward-looking projections for precipitation that will protect our communities as climate change advances and consider language that allows for updated data to be utilized without requiring a legislative or regulatory change.
- We are concerned that the "Maximum Extent Practicable" recharge standard for all soil types in redevelopment will be too easy for applicants to maneuver around, resulting in insufficient recharge in many sites. MassDEP should consider a more stringent standard than MEP to truly meet the climate resilience intentions of these regulations.



- We are supportive of the allowance for adaptive Resource Area conversion for work in any Coastal Resource Area or Buffer Zone to promote resiliency and restoration programs, however we wanted to note that the language proposed will create issues with implementation. The portion reads: “The Issuing Authority shall confirm that the project will not cause an increase in flood velocity, volume, or elevation on other properties...” Many of the wetland restoration projects suggested in this provision would increase the volume, velocity, and sometimes elevation of water on other properties (though, importantly, without adversely impacting neighboring infrastructure). For example, replacing an undersized pipe culvert with an open bottom culvert that meets Stream Crossing Standards will allow more water to pass underneath; the same is true for dam removals, and some salt marsh restoration projects. We recommend that MassDEP refine this language to clarify what is allowable in order for resilience-based coastal restoration projects to be implemented under this regulation. (310 CMR 10.24 (1)(b))
- We wanted to generally note that, in many cases, long-term maintenance of stormwater BMPs and LID techniques is inadequate at best in practice. While local boards and commissions work diligently to establish conditions for the lifetime of a project, it is often the case that long-term ownership of BMPs is unclear, information on the Operations & Maintenance Plan is not adequately passed from developer to property owner, and/or there is not enough local staff capacity for the type of oversight and management required to ensure that these proprietary systems are functioning properly, leading to additional burdens in both maintenance and financial costs to the municipality. In supporting commissions, boards, and municipal departments through these regulation updates, MassDEP should provide additional tools and resources to assist them in properly assessing these techniques and providing the legal framework to ensure continuing compliance.

We are encouraged by the direction the “Resilience 1.0” regulations are taking, and strongly support MassDEP to begin the “2.0” process to continue improving Wetlands Protection Act regulations without delay. Our communities already experience effects of the climate crisis, and swift action to update our regulatory approach to development is crucial to assisting them in mitigation, adaptation, and long-term resilience.

**In the 2.0 regulations, we hope to see the following:**

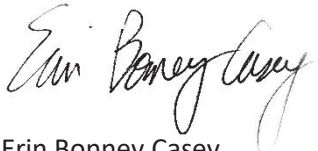
- Additional information and clarification regarding Mean Annual High Water (MAHW), especially as it pertains to low-gradient, wetland rivers like the Ipswich River. Correctly delineating MAHW is critical for determining Riverfront Area. As conditions in our rivers and streams change, especially in response to climate change, making this process clear for applicants and Commission members is essential to ensuring that critical resource areas are protected from negative impacts of development.
- Removal of swimming pools as a minor exempt activity in the buffer zone. These projects have an impact on stormwater runoff, generally increase impervious surface, and can contribute to

excessive use or overuse of water, all of which can impact adjacent Resource Areas.

- Adding certain invasive species removal projects as exempt in the Buffer Zone and Riverfront Area to encourage and assist in expediting smaller restoration projects. Responding to invasive species often requires quick action at the first sign of threat, and classifying specific projects as exempt will enable a more swift response from local conservation commissions and practitioners.

Thank you for the time and effort the agency has invested in these draft regulations so far. We look forward to continuing to work with MassDEP to protect, enhance, and restore the Ipswich River Watershed for generations to come.

Sincerely,

A handwritten signature in black ink, reading "Erin Bonney Casey". The signature is fluid and cursive, with the first name "Erin" being the most prominent.

Erin Bonney Casey  
Resiliency Program Director  
Ipswich River Watershed Association  
[ebcasey@ipswichriver.org](mailto:ebcasey@ipswichriver.org)

**From:** [Isabel Tourkantonis](#)  
**To:** [DEP Wetlands \(DEP\)](#)  
**Cc:** [Isabel Tourkantonis](#)  
**Subject:** Wetlands-401 Resilience Comments  
**Date:** Tuesday, April 30, 2024 5:02:16 PM  
**Importance:** High

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April 30, 2024

Massachusetts Department of Environmental Protection  
Bureau of Water Resources -Wetlands Program  
Attention: Wetlands-401 Resilience Comments  
100 Cambridge Street, Suite 900  
Boston, MA 02114

Sent via [dep.wetlands@mass.gov](mailto:dep.wetlands@mass.gov)

**Subject Line: Wetlands – 401 Resilience Comments**

Dear MassDEP Wetlands Program,

On behalf of the Billerica Conservation Commission, the Conservation Department submits this letter in support of the review letters prepared by the MA Society of Municipal Conservation Professionals, see attached MSMCP's Comments on the MassDEP's Resilience 1.0 Draft Regulations and 2.0 Recommendations – letter dated April 26, 2024.

Thank you for the opportunity to review and comment on the draft Wetlands Protection Act regulations as part of MassDEP's "Climate Resilience 1.0" package. These are positive steps toward protecting our coastal resources and infrastructure and making Massachusetts more climate resilient. We appreciate MassDEP's considerable time and effort to prepare these proposed regulations. We urge MassDEP to begin work on "Climate Resiliency 2.0" to continue improving the Wetland Protection Act regulations.

For the Commission,

Isabel S. Tourkantonis, PWS  
Director of Environmental Affairs

**From:** [J. Jeremiah Breen](#)  
**To:** [DEP Wetlands \(DEP\)](#)  
**Cc:** [CISMA](#)  
**Subject:** "Wetlands-401 Resilience Comments"  
**Date:** Thursday, April 18, 2024 8:45:55 PM

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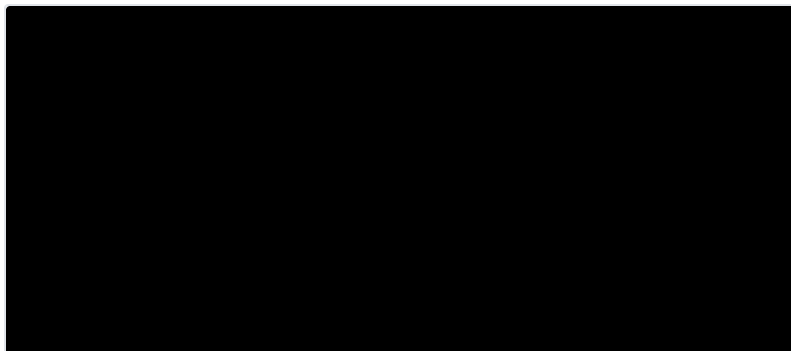
"Encourage MassDEP to begin to engage stakeholders in the "Resilience 2.0" planning process.

"Currently unpaved pedestrian walkways (i.e., trails) located within buffer zone or Riverfront Area and **less than 3' wide** for public access on "Conservation Property" are exempt from wetland permitting." *Board Members of the MA Society of Municipal Conservation Professionals (March 2024)*. Highlight added. Author agrees otherwise with all.

Suggest that trails be 3 feet, 3 inch, or less wide  
as less than 3' allows ticks to grab a ride.

J Breen, president

[Middlesex Canal Association, Inc](#)



**Middlesex Canal Association**

Middlesex Canal Association

To whom it may concern,

The recently proposed regulations are sorely needed, and I would like to commend you all for getting these this far. Our state very much needs the new LSCSF regulations as well. However, it has been noted by many in the industry that all of these regulations are difficult to enforce, given some language lacking in section 10.05(9). People simply do not bother to close out orders, and there is no incentive or penalty for them to do so. Many projects go into the ether and we simply do not know what happened with them, and they are forgotten. I would respectfully suggest the following:

Language that provides:

- Penalty or incentive to apply for the certificate of compliance within 3 years.
- The ability of the issuing authority to close out without any action from the applicant.

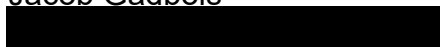
I have added an example here below in red. This is not different than section f, which gives the power to the issuing authority to file CoC with the registry of deeds. The first three lines do appear to require such filings at completion of the work, but it is not enforced.

10.05(9)(a)

Upon completion of the work described in a Final Order of Conditions, but not later than the three year term of an Order of Resource Area Delineation or any extension thereunder, the applicant shall request in writing the issuance of a Certificate of Compliance stating that the work has been satisfactorily completed. **If the applicant takes no action by the completion of said work or expiration of the Order, whichever is sooner, to apply for Certificate of Compliance, the issuing Authority shall file for compliance on behalf of the applicant.** Upon written request by the applicant **or issuing authority**, a Certificate of Compliance shall be issued by the issuing authority within 21 days of receipt thereof, and shall certify on Form 8 that the activity or portions thereof described in the Notice of Intent and plans has been completed in compliance with the Order. If issued by the Conservation Commission, the Certificate of Compliance shall be signed by a majority of the commission. A copy of the Certificate of Compliance shall be sent to the conservation commission or the Department, whichever is appropriate, by the issuing authority.

(c) If the issuing authority determines, after review and inspection, that the work has not been done in compliance with the Order, it may refuse to issue a Certificate of Compliance. Such refusal shall be issued within 21 days of receipt of a request for a Certificate of Compliance, shall be in writing and shall specify the reasons for denial. **The applicant shall rectify the compliance issues within 90 days of the refusal or the expiration of the Order of Conditions, whichever is greater.**

Respectfully,  
Jacob Gadbois



**From:** [JAMES McKay](#)  
**To:** [DEP Wetlands \(DEP\)](#); [Waterways, DEP \(DEP\)](#)  
**Subject:** Proposed regulatory changes by MA Dept of Environmental Protection  
**Date:** Monday, April 29, 2024 9:57:01 PM

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To all of those above,

We are writing with deep concern and objection to the proposed regulations by the MA Dept of Environmental Protection that would severely affect the Massachusetts coastline. We have only recently become aware of these proposals and there has been no prior public information provided, nor has any public input been sought. If implemented, as I understand them, these proposed changes could have a severe impact on home/ business owners along the whole Massachusetts coastline.

Such drastic regulations require extensive research and public discussion. They should not be hastily implemented without consideration for the entire coastal community.

James and Victoria McKay





**From:** [James Corry](#)  
**To:** [DEP Wetlands \(DEP\)](#)  
**Subject:** Wetlands and waterways resiliency regs  
**Date:** Tuesday, April 30, 2024 1:57:26 PM

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I've just learned about the proposed regs for our waterways and as a costal resident, I'm very concerned. I believe these regulations would destroy the value of my home and community and essentially strip me of my rights.

James Corry, Ph.D.  
Marshfield Massachusetts.

**From:** [Farrell, Jay](#)  
**To:** [DEP Wetlands \(DEP\)](#)  
**Cc:** [Patrick O'Connor](#); [Patrick.kearney@mahouse.gov](mailto:Patrick.kearney@mahouse.gov)  
**Subject:** Regulation changes that affect coast home and business owners!  
**Date:** Sunday, April 28, 2024 4:36:08 PM

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Dear Sir or Madam,

I was just made aware of some proposed regulation changes that will directly affect my home and community.

I don't have the regulation name/number, but it seems to that it may prohibit coastal reconstruction (along with other things).

Since I live directly on the coast, the threat of storm damage is real to me and my neighbors.

It would be great if this regulation was not passed, at least until further review/revisions/Public debate as well as sharing the implications to all who live/work on the coast.

Jay Farrell

[REDACTED]  
[REDACTED]

Jay Farrell

Principal Engineer, Technical Support | Primary Storage Integrated Software Support  
Dell Technologies | ISG Support Services

[REDACTED]  
[REDACTED]  
[REDACTED]

My work schedule is 9:00am - 5:00pm ET, Monday - Friday

Need assistance outside of my working hours?

[1-800-945-3355](tel:1-800-945-3355)

<https://www.dell.com/support/incidents-online/en-us/contactus/dynamic>

How am I doing? Contact my manager!

[REDACTED]

**From:** [Jennifer Murphy](#)  
**To:** [DEP Wetlands \(DEP\)](#)  
**Subject:** Public Comment to Proposed Wetlands Regulations  
**Date:** Sunday, April 21, 2024 10:18:00 AM

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Hello,

In response to the proposed wetlands regulations impacting properties along the coast, I respectfully submit the following comments:

1. I learned about the DEPs proposed changes to regulations by chance. I have a friend in construction who mentioned it to me in passing. As a property owner who would be significantly impacted, I am deeply concerned that there was no notification from the DEP. IMO, I should have received a letter via certified mail that included an invitation to a public comments meeting. The property we purchased is our retirement plan and our children's and grand-children's inheritance. I find it completely unacceptable that the DEP feels no obligation to engage in dialog with those directly impacted. My scenario is very common in my neighborhood. Older homeowners with properties that they intend to leave to their children.

2. A larger, more elevated home, with stronger materials would have a better chance of surviving a 100 year storm than the current 1960s kit house "cottage". The restriction that a new construction can not be larger than the existing structure is unreasonable. My current cottage is 750 sq feet. Rebuilding something this small would not make economic sense and if I tried to resell the property with this restriction, I would get pennies on the dollar, at best. This is an unreasonable burden to put on homeowners, many of whom, as I mentioned, are leaving these properties to their children as their sole inheritance. It is difficult for me to understand what problem the DEP is trying to solve with these proposed changes. Our current seasonal cottage is on a substantially sound piece of land (not sand, dunes or any environmentally sensitive area) with a sea wall. The current structure is just a cottage built in 1960 and has stood the test of time. We purchased the property, marketed as a land deal, with 100% intent of rebuilding a more solid structure - meeting all local zoning, conservation and set back regulations. I argue that if your goal is to prevent destruction of homes along the coast, allowing current property owners to rebuild a more secure home (adhering to local regulations) is more likely to achieve that goal than implementing such strict regulations as you propose that make it impossible for me to do anything as planned. Therefore I would just leave my 1960s cottage as is, which is more likely to become damaged beyond repair than any new structure I would build. Homeowners should need to adhere to local regulations only.

3. The DEPs definition of an Open Pile Foundation is not practical for the coastal areas in my town due to ledge. What do I do if I hit ledge partway through my project?

4. As I mentioned above, our cottage sits on 1/3 acre of land surrounded by trees, bushes etc. We are not on sand or sand dunes. Why should my property need to adhere to the same regulation as a property built on sand? A one size fits all approach does not make sense. This is another reason why I suggest you delete that proposal and instead let each

local municipality govern as appropriate for each situation.

5. As homeowners, I have begged to be hooked up to Town sewer for years. But it has not happened yet. Therefore, I am forced to maintain my septic. Not allowing fill for a new septic system is not practical. I would predict that most homes in my neighborhood have high groundwater elevations less than 2 ft from the surface and would therefore be impacted by this proposal. If Town sewer is not provided, then what option am I left with? An antiquated tight tank?

Thank you.

Jennifer Murphy





# City of Newton, Massachusetts

## Conservation Commission

1000 Commonwealth Avenue Newton, Massachusetts 02459

Telephone  
(617) 796-1120  
Telefax  
(617) 796-1142  
TDD/TTY  
(617) 796-1089  
[www.newtonma.gov](http://www.newtonma.gov)

Ruthanne Fuller  
Mayor

Barney S. Heath  
Director

April 26, 2024

### RE: Comments on MassDEP'S Resilience 1.0 Draft Regulations and 2.0 Recommendations

Via email: [dep.wetlands@mass.gov](mailto:dep.wetlands@mass.gov) ("Wetlands-401 Resilience Comments")

Dear MassDEP:

I am writing to you as the Conservation Agent for the City of Newton, MSMCP Board member, and ex-MACC Board member. I have been working for the last several months with my colleagues to develop this letter. It has been carefully crafted with tremendous input from a wide variety of practitioners. I am optimistic that if MassDEP will continue the dialog that this review process has initiated, we can develop a truly excellent package of regulations that will serve the Commonwealth for many years.

## Introduction and Appreciation

MSMCP is a body of municipal conservation professionals representing over 100 member municipalities and reaching hundreds of individual professionals. Our mission is to support one another through a robust offering of educational and networking events.

MSMCP members focus on implementation and permitting under the Wetland Protection Act (WPA) Regulations (the Regulations). Our comments are from the perspective of those who daily engage with consultants, residents, and municipal officials and the Regulations and permit processes in efforts to protect and enhance remarkably diverse wetland ecosystems in these challenging times of climate change. Our board alone has over 150 combined years of experience implementing these regulations across the Commonwealth.

MSMCP has been working closely with MACC, Mass Audubon, Mass Rivers Alliance, AMWS, and other technical experts to review, assess, and comment on the proposed Resilience 1.0 Draft Regulations. While MSMCP has been focused on general and inland wetland regulations, our partners have focused on the proposed changes to Chapter 91, Section 401, the Stormwater Handbook, Coastal Resources, and Restoration. We hope that MassDEP gives careful consideration to their comments and recommendations.

This letter focuses on the general and inland wetland regulations. It provides MSMCP's suggested modifications of the proposed "1.0" changes and our suggestions for the forthcoming "2.0" reg change package. Throughout the letter, underlining indicates topics and **bold-face indicates specific requests**.

We sincerely appreciate the effort that MassDEP put into creating these draft regulation changes and commend MassDEP for focusing on ways to make Massachusetts and its wetland resources more resilient to climate change. We see many of the proposed changes to the general and inland wetland regulations as valuable steps towards increased public safety and ecological health in the face of climate change. **All the proposed changes to the general and inland wetland regulations on which we (and our colleagues) have not commented, we endorse and encourage you to promulgate swiftly.**

## Overarching Concerns

We feel that some of the proposed changes will be very challenging to implement and/or could lead to unintended detrimental consequences and so should be refined prior to promulgation. Many of our detailed comments can be summarized under four overarching concerns.

- The revised regulations must strike a reasonable balance between scientific precision and overly burdensome requirements that render them too difficult for a majority of volunteer conservation commissions and applicants to implement. In other words, they must be readily practicable.
- Regulations should provide performance standards that protect wetland functions and values and not specific methods and means of achieving those performance standards. Methods and means should be addressed in guidance documents.
- In the face of climate change and invasive species, the revised regulations must acknowledge and reflect the difference between “alterations” resulting from new development and “alterations” resulting from ecological restoration. Ecological restoration projects should be considered projects that support “public health and safety”, as mosquito control projects are.
- Regulation revisions must strive to create greater consistency of thresholds, exemptions/allowances, and requirements based on existing wetland functions and values and the potential impacts (or benefits) on those wetland functions and values of proposed projects, not on the user groups conducting the activity.
- MassDEP should **immediately engage day-to-day practitioners in the “Resilience 2.0” planning process.** Regulatory changes should be borne of **early and close coordination** with conservation commissions, conservation staff, and professional non-profit staff, **the people responsible for day-to-day interpretation and consistent implementation of these regulations.**

## Recommendations for the Proposed “1.0” Inland Regulations

As a large group of daily implementers of the wetland regulations, MSMCP urges MassDEP to give careful consideration to our detailed comments (and those of our colleagues), reach out with questions or for assistance, and make the necessary changes prior to promulgation.



### 310 CMR 10.02(2)(b) Minor Exemptions

- 10.02(2)(b)(2)(r). We agree that maintenance of shared use paths should be allowed without the need for permitting, so this new minor activity is appropriate, but it has too many details about means and methods and creates too narrow a management opportunity. We suggest the following revisions:
  - 10.02(2)(b)r.iv. The draft language is too detailed. The language as proposed creates implementation challenges since the means and methods are site-specific. We are concerned that the allowance of cutting shrubs and branches, and chipping and spreading this material in place may result in the unintended localized spread of invasive species. We recognize that the proposed language mirrors existing language in 10.02(2)(b)(2)n. (vegetation cutting for road safety maintenance). **We recommend deleting the language under 10.02(2)(b)4.iv. between “To prevent the possible export (...) disposed” and creating a guidance document or policy instead. We recommend that this type of specificity be removed from existing language under 10.02(2)(b)(2)n for similar reasons.**
  - 10.02(2)(b)r.v. We question why the language incorporates the provision that “(...) no work on any component of a Stormwater Management System is performed, including but not limited to drainage swales” occurs under this minor activity provision. This is contradictory to activities that are already exempt as maintenance of stormwater systems. **We are in favor of the new minor activity but request that the following proposed language be deleted: “(...) no work on any component of a Stormwater Management System is performed, including but not limited to drainage swales.”**
- 10.02(2)(b)n.iv. We recognize that MassDEP’s proposed language immediately above comes from this passage (10.02(2)(b)n.iv. Vegetation cutting for road safety maintenance), however, as noted above, we believe that the allowance for cutting and chipping in place of vegetation could lead to unintended consequences of spreading invasive species. **We urge MassDEP to revise this language through guidance on best management practices rather than keeping these details in the regulations.**

### 310 CMR 10.04 Definitions

- Highway Specific Considerations. This gives one agency (MassDOT) special rights. Municipal DPWs often have control of roadways of similar size and undertake projects of similar scales, and so should be afforded similar allowances. **The regulations should not be based on the governing agency, but should be based on the size of the roadway, the scale of the proposed project, the intended public benefits, and the potential environmental impacts.**
- Impervious surface. Since solar arrays are often sited in fields and other entirely pervious areas, **there should be opportunities for applicants to utilize site-specific**

information on pre- and post-construction land cover and infiltration capacities to determine the need for stormwater management systems.

- Maintenance of an Existing Public Roadway. **This definition should not include all instances of “replacing existing drainage pipes”.** Since some drainage pipes are deep beneath the paved surface, replacement might require extensive excavation, large spoil piles, and dewatering.
- Maintenance of an Existing Public Roadway. This new term adds confusion because of language in 10.02(2)(b)(2) and 10.53(3)(f).
- Public Shared Use Paths. The new definition in 10.04 states that the Path must be on “public property or on private property pursuant to an easement that provides for public access”. **MassDEP should afford all owners of publicly accessible land with Public Shared Use Paths the same allowances and requirements under the regulations.** This could include land trust and other permanently protected public or private property with public access.
- The proposed definition of Zone A references 310 CMR 22 (Drinking Water), but the text does not match. The draft wetland regs use the term "surface water" where Drinking Water (22.00) uses the term "surface water source", which is defined therein as a public water supply. Surface water is not defined as a public water supply.
- Many New Terms or Definitions have been introduced and incorporated throughout the redline version (e.g., the multiple new definitions introduced in 10.36(2)). **All terms should have an entry in 10.04 with either a standalone definition or a reference to the section where the term is defined and used.** Examples of new terms include:
  - Limit of Moderate Wave Action (LiMWA)
  - Scientific Research Projects

### 310 CMR 10.05 Procedures

- 10.05(4)(a) Notices of Intent. The regulations should not require such a high level of stormwater management detail for every NOI filing. We recommend two possible alternatives.
  - **Strike the new sentence “A construction period .... Activities” and replace with “All projects must address erosion, sedimentation control, and pollution prevention with plans appropriate to and commensurate with the proposed alterations, even those projects otherwise exempt from the stormwater standards.” OR**
  - **Strike the new sentence “A construction period .... Activities” and change the text in the general instructions for NOIs.**
  - **Please note there is a typo: “... operation and maintenance plan, and an illicit discharge compliance statement.”**

- 10.05(6)(m)(6): Requiring unpaved footpaths in natural areas to comply with the Stormwater Management Standards seems unreasonable. Trails generally rely on country drainage and so do not “fit” the intentions of the Standards. **We ask MassDEP to include unpaved footpaths in natural areas as exempt activity under the Stormwater Management Standards 10.05(6)(l).**
- 10.05(6)(m)(7): This new provision now requires that Maintenance of an Existing Public Roadway comply with the Stormwater Standards to the maximum extent practicable, however, 10.02(2)(b)(2)(p) appears to exempt the same roadway maintenance from review.

### **310 CMR 10.12 Notice of Intent for an Ecological Restoration Project**

- (2) **The numbering underlined below needs to be fixed because the original (2) was stricken.** “Notwithstanding the provisions of 310 CMR 10.54(4)(a)5., 10.56(4)(a)4., and 10.60, a person submitting a Notice of Intent for an Ecological Restoration Project that meets the requirements of 310 CMR 10.12(1) and (2) is exempt ...”

### **310 CMR 10.13 Eligibility Criteria for Restoration Order of Conditions**

- (f) **We suggest using the word “evidence” in place of the word “demonstration”.** “If the project will involve the dredging of 100 cubic yards of sediment or more or dredging of any amount in an Outstanding Resource Water, the Notice of Intent includes a demonstration that an application ...”

### **310 CMR 10.53 and 10.24 Limited Project Provisions**

- 10.53(u)8. & 10.24 (7)(c)(8) Public Shared Use Paths
  - **Delete the statement that a separate NOI may be filed either concurrently to the filing of the NOI for the project, or after the OOC is issued, for vegetation management and other activities as defined in 310 CMR 10.02(2)(b)2.r.i.-v. in wetland Resource Areas.** Applicants are always welcome to file NOIs.
  - **Delete “abandoned railbed” in first line.** “Public Shared Use Path” is already defined in 10.04. MassDEP should consider more broadly defining a Public Shared Use Path in this limited project provision. Municipal or land trust paths should be afforded the same limited project status.
- 10.53(4)(e)5. **Typo: The letter “r” is missing from the word “through” in “...set forth in 310 CMR 10.53(4)(a) though (d)...”**

### **Additional Miscellaneous Suggestions**

- **Include a list of common acronyms,** particularly for new definitions. This could be incorporated in Section 10.04.
- **Provide frequent outreach and education about the new regulations once promulgated.** Dissemination of detailed and multi-faceted explanations of these new

regulations and the purposes and intents behind them for the Conservation Commissions and conservation professionals who will implement them will be essential. MSMCP welcomes the opportunity to assist MassDEP in these efforts.

- **Provide headers at the top of every page of the new regulations with the complete section and subsection reference** to facilitate navigation through the numerous lengthy sections that comprise many pages.
  - **Make sure the new version of the regulations is formatted with headers so that the pdf will have internal hyperlinks allowing users to “jump” to specific sections.**
- 

## 2. Coordinate on the Development of Regulatory Reform Package 2.0

As we all know, these draft regulation changes alone will not achieve our goal of true resilience. We appreciate that MassDEP has said that it is already working on regulatory reform package “2.0.” MSMCP has identified a number of issues that should be addressed in the next regulatory reform package. Many of these suggested revisions are straightforward. Some of these suggestions warrant additional discussion. We implement the wetland regulations on a daily basis and know what works well and what is challenging. We have a lot to offer to help make 2.0 a real success. **We urge MassDEP to begin a robust process of stakeholder engagement with consultants, field professionals, and conservation agents so that we may help you develop practical, strong, climate resilient regulations.** Here we provide some suggestions to begin the conversation.

### 310 CMR 10.02(2)(a) Activities Within the Areas Subject to Protection ...

- Trail Maintenance. **We ask MassDEP to create a new section to exempt Maintenance of Existing Trails in use by the public.** This could be done by adding a new section “10.02(2)(a)3. Maintenance activities on trails that traverse Areas Subject to Protection under M.G.L. c. 131, § 40” which reads: “Activities conducted to maintain, repair or replace, but not substantially change or enlarge an existing public trail, provided said work utilizes the best practical measures to avoid or minimize impacts to wetland resource areas outside the footprint of said trail”. Boardwalks, puncheons, waterbars, and other basic trail infrastructure need to be routinely maintained or replaced. Land managers should be able to conduct this essential maintenance work to protect wetland resource areas without having to secure a permit.

### 310 CMR 10.02(2)(b) Minor Exemptions

- 10.02(2)(b)(a) Unpaved pedestrian walkways. **We ask Mass MassDEP to define Conservation Property to include all these types of natural land onto which the public is invited.** Currently, unpaved pedestrian walkways (trails) less than 3 feet wide for public access on “Conservation Property” are exempt from the regulations. However, many trails traverse general municipal land, land trust properties, and private property with conservation restrictions affording public access. **Additionally, we urge MassDEP**

to consider increasing the 3-foot width to 4 feet because the state's own guidance on [accessible trails](#) encourages trails are "at least 36" wide, and usually wider" (emphasis added).

- 10.02(2)(b)(e) Conversion of lawn to uses accessory to residential structures such as decks, sheds, patios, pools. **We ask MassDEP to remove inground swimming pools from this minor activity.** Construction of inground swimming pools involve significant excavation, large impervious areas around the pool, fencing, and often involves discharge of chlorinated water. Having no Conservation Commission oversight of these projects has often led to after-the-fact permitting due to erosion or other problems which have impacted wetland resource areas. Tree cutting and grading has occurred in concert with some pool projects when landowners misunderstood these activities were not part of the minor activity provision. As an exempt activity, there is no requirement for an O&M plan to ensure that chlorinated water is not discharged to wetland resources areas without first being dechlorinated. Requiring a wetland permit and preconstruction review of all inground pool projects in the buffer zone and Riverfront Area will result in better oversight and reduce the non-compliance we see problematic with exempting some inground pools from wetland permitting.
- 10.02(2)(b)(n) Vegetation cutting for road safety maintenance.
  - **We ask MassDEP to update the AASHTO 2011 Policy to "7th edition, 2018 or most current".**
  - **10.02(2)(b)(n)(iv), We ask MassDEP to remove the detailed language: "To prevent the possible export .... Chipping, disposal method and spreading chips..."** This language is too detailed (means and methods are site-specific and creates some implementation challenges). We suggest working with a stakeholder group and creating a guidance document on appropriate vegetation cutting BMPs that could be applicable to this and other minor activities that involve vegetation cutting.
- Cutting of certain high-risk trees. **We ask MassDEP to add a new minor activity: allowing landowners to remove up to 5 unsafe trees over 6 inches that are in the buffer zone or riverfront area and are threatening structures or human safety.** Trees are suffering from the effects of climate change. Invasive pests like wooly adelgid and emerald ash borer are decimating many of our native hemlocks and ashes. Increases in the number and severity of storms have resulted in more damaged trees. We recognize that certain parameters need to be codified and suggest a guidance document could be created to define and address thresholds associated with minor land management activities and requirements for Conservation Commission notification for certain activities (e.g., giving the Commission 30 days to comment but not necessarily require a permit, akin to forest cutting plans).
- Removal of invasive vegetation. **We ask MassDEP to add a new minor activity to 310 CMR 10.02(2)(b)(2) which reads: "Removal of turf lawn and/or non-native invasive**

herbs, vines, and shrubs, provided: (1) the activity is located more than 50 feet from the mean annual high water line within Riverfront Area or from BVW, whichever is farther and (2) provided erosion and sedimentation controls are implemented until the area is stabilized with 75% coverage of native species". Invasive plants are one of the biggest threats to our native habitats. Quick and effective management of invasives is essential in controlling the spread of invasive plants.

### **310 CMR 10.03(6)(b), 10.04 (Alter), 10.05(3)(2)(b), and 10.58(6) Application of Herbicides and Cutting in Rail Rights-of-Way**

- Regulation of herbicides and cutting in railway rights-of-way. **We ask that MassDEP clarify the requirements for permitting the use of herbicides and cutting to control vegetation in rail rights-of-way in Buffer Zones and Riverfront Area.** MBTA and Keolis routinely claim exemptions that do not seem to exist and many cases are now in litigation.

### **310 CMR 10.04 Definitions**

- "Activity" and "Alter". **We ask MassDEP to consider clarifying that "vegetation" used in the definitions of "Activity" and "Alter" applies only to NATIVE vegetation.** See the explanation below.
- Definitions for "Vernal Pool" and "Vernal Pool Habitat". **We ask MassDEP to create new definitions for "Vernal Pool" and "Vernal Pool Habitat".** Currently, Vernal pool habitat includes the definition of both the depression and the 100' jurisdictional area. **We also ask that MassDEP extend the jurisdiction to provide a 100-foot Buffer Zone to vernal pools, regardless of whether it falls within a resource area.** Suggested changes:
  - "Vernal Pool" is a basin or depression that typically holds water for at least two continuous months through the spring and is free of adult, reproducing fish populations. Vernal pools are essential breeding habitat for a variety of amphibian species such as Wood Frog (*Lithobates sylvaticus*) and the Spotted Salamander (*Ambystoma maculatum*) and provide other extremely important wildlife habitat functions during the non-breeding season for these species. Vernal pools are important habitat for other wildlife species. The boundary of a vernal pool is the maximum water level in such a basin or depression and is identified by direct observation or by field indicators of the maximum extent of flooding.
  - "Vernal Pool Habitat" is the area between the boundary of a vernal pool and the boundary of a jurisdictional resource area that contains the vernal pool, or 100 feet from the edge of the vernal pool boundary, whichever distance is greater.

### **310 CMR 10.05: Procedures**

- **We ask MassDEP to add the following sentence in 10.05(8) "If requesting an ORAD Extension, the Applicant must submit written confirmation by a professional with**



**relevant expertise that the resource area delineations remain accurate**". This language appears in 10.05(6)(d) however most Commissions and conservation professionals are unaware of this language since it appears in the wrong section in the regulations (it's placed in the Order of Conditions section and not the Extensions section).

- **We ask MassDEP to clarify which projects are subject to stormwater management.** Currently, any activity other than the 4 listed categories appear to be subject to stormwater management regulations, however, small projects (e.g., restoration, foot paths) appear to require stormwater management.
- **10.05(8) We ask MassDEP to: (1) move mention of rules associated with extensions from 10.05(6)(d) to 10.05(8); and (2) within 10.05(8) to allow 5-year extensions for any appropriate project** (i.e., "where special circumstances warrant and where those special circumstances are set forth in the Order.")

### **310 CMR 10.06: Emergencies**

- **We ask MassDEP to add new text 10.06(6): "An Emergency Certification issued by a conservation commission shall be signed by a majority of the commission. It may also be signed by a single member or agent of the commission, if said Certification is ratified by a majority of members at the next scheduled meeting of the Commission",** similar to language provided for Enforcement Orders.

### **310 CMR 10.24 Limited Projects**

- 10.24(1)(b). The nature-based resiliency requirement is non-binding. Having applicants merely "consider" these measures does not mean they will implement them. **MassDEP should consider stricter requirements for these measures.**
- 10.24(7)(c). Limited Projects in Coastal Areas at Risk from Sea Level Rise. Allowing the relocation of roads and railroads to avoid the impacts of sea level rise could result in damage to other ecosystems. **We ask MassDEP to postpone this proposed modification until completion of the Resilient Coasts plan.**

### **310 CMR 10.53 Limited Projects**

- **We ask MassDEP to expand the Limited Project provisions to simplify permitting requirements for routine land management projects necessary to address the impacts of climate change.**
  - **We ask MassDEP to expand the Limited Project provisions to facilitate large scale invasive species work in wetland resource areas with specific regulatory review standards.** Some invasive species removal projects extend into wetlands and cover >5,000 s.f. There should be a simplified way of allowing landowners and other organizations to tackle invasive species removal projects without triggering complicated permitting processes.

- **We ask MassDEP to add a limited project provision which specifically allows small- and medium-scale invasive species removal projects with specific regulatory review standards.** Non-native invasive plants pose a major threat to the health and survival of our native ecosystems, and are on the rise with climate change. Currently, invasive plant control work requires time-consuming, costly, and complex wetland permitting devised for construction projects. Quick identification and removal of invasive plants minimizes the dramatic negative effects of these plants and allows for the recovery of native species diversity and native wildlife habitat, a recognized wetland value.
- **We ask MassDEP to expand the limited project provision in 10.53(j)(a) to allow: “The construction of new public footpaths and associated boardwalks/ puncheons that are constructed close to the ground provided, however, that such structures are constructed on pilings, sills, or posts so as to permit the reasonably unobstructed flowage of water.”** Boardwalks and other basic trail infrastructure that cannot avoid wet environments serve to protect the wetland resource areas and their functions and values. Because most boardwalks and puncheons are only elevated 4-12” above the ground for safety reasons, shading is inevitable, and because many boardwalks and puncheons are built on sills, loss of vegetation under the sills is inevitable. Therefore, under the current regulations, all boardwalk and puncheon construction in BVW requires wetland replication. Our proposed minor modification (above) would allow Conservation Commissions to approve public boardwalks and puncheons as Limited Projects. This would reduce the need for inland wetland replication which generally results in the destruction of forested buffer zones in protected public open spaces. Larger public boardwalk/puncheon projects could still be required to undertake wetland replication based on the size, scope, and nature of the project and the opportunity for less impactful alternatives. Below in this letter are recommendations for a Guidance Document of Best Trail Management Practices (BTMPs) to ensure the health of wetland resource areas.

### **310 CMR 10.55 Bordering Vegetated Wetland Performance Standards**

- **10.55(2). We ask that MassDEP modify the definition of BVW and how the boundary of a BVW is defined, to reflect the 2022 “Massachusetts Handbook for Delineation of Bordering Vegetated Wetlands” that was released in March 2023.**
- **10.55(4)(c). We ask that MassDEP simplify the permitting process for trail construction projects by adding to the Bordering Vegetated Wetland regulations a new section in 10.55(4)(c)(4) allowing Commissions to permit new trails in wetlands when: “said work involves the creation of a public trail for non-motorized use (i.e., hiking, skiing, mountain biking, etc.) which will alter less than 500 s.f. of BVW, provided alternatives that attempted to avoid and minimize impacts were considered and that the trail will permit the reasonably unobstructed flowage of water.”** Wetland trail construction should be subject to review under the WPA, but that review should be

simplified. Narrow unpaved pedestrian walkways in publicly accessible open space often traverse wetlands. When wetland trails are properly constructed, they preserve wetland functions and values and help build a culture of appreciation and stewardship for these vital resources. (Note: Allowance for ADA compliance and motorized mobility devices must be considered.)

### **310 CMR 10.57 Land Subject To Flooding (Bordering and Isolated Areas)**

- 10.57(2)(a)5. Vernal Pool Habitat should not necessarily need to be certified by DFW in order to be afforded protection. **We ask that MassDEP consider allowing field-based evidence submitted to the Conservation Commission by competent professionals as acceptable proof of vernal pool habitat.**
- 10.57(2)(a)6. Vernal pools. **We ask that MassDEP revise the language to read: “The boundary of a certified or uncertified vernal pool shall be based on field observations of the maximum extent of flooding and delineated by a competent source meeting the criteria in 310 CMR 10.60(1)(b). Vernal pool habitat shall include the area within 100 feet of the boundary of the vernal pool itself.”** DFW does not certify the boundary of vernal pools, so we suggest removing those references. The application would be submitted with the applicant’s representative delineating the vernal pool boundary and the Conservation Commission or MassDEP, as the issuing authority, verifying that delineation. Conservation Commissions and MassDEP staff may meet the requirements under 10.60 but they may not; simply listing the reference to 10.60 would be adequate here.
- 10.57(2)(a)3. **We ask MassDEP to change references from the software-based BLSF calculations to “listed in the National Oceanic and Atmospheric Administration (NOAA) Atlas 14 Volume 10 (version 3.0 or later version are permissible)” and any such references to using NOAA 14 throughout the proposed Wetland Protection Act Regulatory changes and Stormwater Handbook to “listed in the most recent “National Oceanic and Atmospheric Administration (NOAA) Atlas”. No changes have been proposed to the ILSF section, but ILSF calculations currently refer to BLSF. Changes to 10.57(2)(a)(3)a-c change to require a more comprehensive software to be used in the BLSF calculations, and reference NOAA Atlas 14. Using the most recent rainfall data available through NOAA promotes climate resilience and avoids the necessity to update the Regulations in the future. NOAA 15 is already in development.**

### **10.57(2)(b) Isolated Land Subject to flooding**

- **We ask MassDEP to consider expanding the jurisdiction over small isolated wetlands by reducing the size of ILSF to account for loss of isolated wetland protections as a result of the Sackett Decision.**
- **We ask that MassDEP consider adding vernal pools as its own dedicated wetland resource area, with a 100-foot Buffer Zone.** Vernal pools truly are a vital wetland resource subject to flooding, as identified in the Act: “No person shall remove, fill,

dredge or alter any bank, riverfront area, fresh water wetland, coastal wetland, beach, dune, flat, marsh, meadow or swamp bordering on the ocean or on any estuary, creek, river, stream, pond, or lake, or any land under said waters or any land subject to tidal action, coastal storm flowage, or flooding, other than in the course of maintaining..." (emphasis added).

### **310 CMR 10.58: Riverfront Area Regulation Revisions**

- Many Conservation Commissions and Conservation Agents find it difficult to interpret many sections of the Riverfront Area sections. We are grateful for the hard work of the working groups who helped develop the regulations which were promulgated in 1996, however, after almost 30 years of implementing these regulations, we have discovered a number of challenges. We welcome discussions with MassDEP as the areas of concern are too complex to detail here. **We ask that MassDEP work with MSMCP and MACC to address the following areas of concern.**
  - **Defining Mean Annual High Water**
  - **Interpreting "practical and economically equivalent"**
  - **Interpreting the Redevelopment requirements for mitigation/restoration for "non-compliance" of more than one performance standard**
  - **Clarifying the distinction, if any, between 310 CMR 10.58(5)(c) and (d)**
  - **Requiring an Alternatives Analysis for Redevelopment projects**
  - **How the regulations apply to large sites with small amounts of pre-existing development**

### **WPA Forms**

Since MassDEP has recently requested MACC and MSMCP to provide comments on the WPA application and permit forms, following we share just a few of our most pressing requests. **We ask that MassDEP work closely with MSMCP and MACC to update the application and permit forms.**

- General Comments.
  - **Application forms should mirror permit forms.**
  - **Application forms and permit forms should reflect the regulations.**
  - **Forms should list the date, project, site, and owner/applicant information on the first page.**
  - **Forms should rely on "appendices" for site or project specific information (such as coastal resource areas, rare species, and stormwater).**
  - **There should be forms that are tailored for purely inland municipalities.**
  - **The language of the forms should be made intelligible to laypeople.**
  - **Wetland Fees do not cover the administrative costs for processing, reviewing, issuing, and mailing wetland permits. We ask MassDEP to increase application fees.**

- Comments regarding the NOI form.
  - The NOI should be greatly simplified and shortened.
  - Much of the NOI is not relevant to a majority of projects; the use of appendices would greatly simplify the application for many applicants.
  - The NOI form (under C.7.) should add categories of projects to which the stormwater standards do not apply (i.e., not “industrial, commercial, institutional, office, residential and transportation projects”).
  - The NOI form should reflect the regulations and ask the applicant to confirm **they have met the relevant performance standards**. For example, although applicants are required to check off whether a project qualifies as redevelopment in Riverfront Area, this doesn’t require confirmation how the applicant has met the standards for 310 CMR 10.58(5).
- Comments regarding the OOC form.
  - The OOC should be modifiable, to allow for routine additions such as longer lists of approved plans, the Commission’s findings, and the Commission’s site-specific conditions.
  - The OOC should be more succinct and tailored so that the information is pertinent and homeowners and contractors will read it.
  - The OOC should not ask for data that is not supplied by the applicant, e.g., the closest distance from work to wetlands.
  - Clarification should be given for whether the “work” in the “closest distance from work to wetlands” includes restoration work which may happen 0 feet from the wetlands edge or the closest new construction which may be 25 or 50 feet away.
  - The OOC Riverfront Area fields should be simplified and clarified to ensure **consistency of information**. For example, how commissions define and fill out areas of alteration and replication fields is highly inconsistent. (How does one “replace” riverfront area?)
- Comments regarding the Determination of Applicability form.
  - Conservation Commissions need to have more latitude to issue negative determinations of applicability or general permits for small-scale or low-impact projects (such as the hand-pulling of aquatic invasives). The full-scale NOI/OOC permitting process is an enormous disincentive to ecological restoration and management. After all, it is the invasive plants that are creating the alteration and violating the Act, not the efforts to remove them. ;-)
- Comments regarding the ORAD (Form 4B)
  - The ORAD form should be revised to correct an inconsistency. **The Recording Block on Page 1 and the Recording Information on Page 7 should be removed.** MassDEP Circuit Riders have confirmed that ORADs do not need to be

recorded, yet Form 4B (last revised 4/22/2020) indicated that said Form must be recorded. ORADs are simply confirming a wetland boundary for 3 years; no work is associated with ORADs. When applicants record this document, it creates a cloud on a title. Although a landowner can Request a Certificate of Compliance (Form 8A) - that form does not include language appropriate for closing out an ORAD.

- The ORAD form should be revised to reiterate an important regulatory requirement. **DEP should add a regulatory note on ORADs which states “If requesting an Extension, the Applicant must submit written confirmation by a professional with relevant expertise that the resource area delineations remain accurate, per 310 CMR 10.05(6)(d).”** Most Commissions and conservation professionals are unaware of this language since it is difficult to find in the regulations.

## Develop Guidance Documents

Conservation commissions and conservation staff would benefit from guidance documents which provide more detail about various regulatory provisions.

- Herbicides and cutting in rail rights-of-way. **We ask DEP to issue a guidance document outlining not only the exemptions afforded to railroads but permitting requirements and the recommended material to be submitted to each commission should railroads wish to conduct other activities which are not exempt.** That way, Commissions can properly review the request and fully understand what is being asked of them. It does not appear that railroads are a qualifying structure which meets the exemptions of 310 CMR 10.02(2)(a)(2) or 310 CMR 10.03(6). In addition, mechanical removal is not included in 310 CMR 10.05(3)(2)(b); this only applies to herbicide removal.
  - MBTA and Keolis have claimed exemptions which don't exist (i.e. MBTA claims to be exempt from filing a Notice of Intent for mechanical vegetation removal).
  - In 2020, Keolis, on behalf of MBTA, filed RDAs in 99 communities for the review of the wetlands maps in each community as part of the renewal of the 5-year Vegetative Management Plan (VMP). In the “work description” Keolis stated that “This work includes both chemical and mechanical controls as represented within the VMP available for viewing at [fdccerailroadvegetation.com](http://fdccerailroadvegetation.com)”. In the submission, Keolis suggested the Commission consider issuing a Negative #2 determination (indicating the work is within an area subject to protection but will not remove, fill, dredge, or alter that area...) or issue a Number Negative 5 determination, citing as exemption 310 CMR 10.02(2)(a)(2). Twenty-two Commissions disagreed with Keolis' interpretation of the Regulations and denied the mechanical work under the RDA. MassDEP issued an SDA concurring with those decisions, which MBTA/Keolis appealed and the case is now in adjudicatory hearing with OADR. Unless mechanical cutting is an exempt activity expressly given to railroads, it seems prudent that Railroads be required



to submit detailed plans when they wish to cut vegetation or trees within Resource Areas and Buffer Zones.

- Land management activities. **We Ask MassDEP to Issue Guidance Documents clarifying and simplifying wetland permitting on essential land management activities.** Best Management Practices surrounding high-risk tree removal, trail maintenance and construction, and invasive species management are well documented. Finding ways which allow landowners to manage their open space while ensuring best practices are adhered to is critical. MSMCP and other organizations welcome future discussions with MassDEP on devising guidance documents which simplifies the wetland permitting process and helps landowners conduct more climate resilience land management activities. For example, a guidance document regarding habitat restoration could set regulatory review standards based on the scope, scale, and size of restoration projects.
- Puncheons and Boardwalks. **As an alternative to our recommendation to allow boardwalks and puncheons on publicly accessible trails to be permitted as Limited Projects (as described on page 11), we Ask MassDEP to Issue a Guidance Document clarifying thresholds of negligible impact of boardwalks and/or puncheons on BVW functions and values as a result of shade and loss.** MassDEP has required replication for small publicly accessible puncheons (because of shading and wetland loss) and elevated boardwalks (because of helical piers). A Guidance Document identifying Best trail management practices (BTMPs) to create and maintain stable trail surfaces and limit improper widening of the footbed and trampling of vegetation by hikers seeking to avoid wet areas should be promoted. Such BTMPs are evermore important as climate change intensifies storms and worsens flooding.

## Miscellaneous

Our membership has suggested the following additional miscellaneous changes.

- Update the 401 Water Quality Certification regulations regarding Outstanding Resources Waters (ORWs). **We ask that MassDEP make practical allowances for minor incursions into ORWs for small projects that are responding to climate change and restoration needs.** Currently, there is no provision in the Surface Water Regulations that allows even a negligible amount of fill to be introduced into an ORW. Even building a small boardwalk or puncheon on a walking path is considered ‘fill’ and requires filing for a major Water Quality Certification. Obviously, work in ORWs must be carefully regulated, however, prohibiting even a single puncheon on a wetland trail within an ORW is unreasonable.
- 10.05(3)(a)(1). **To use consistent, defined terms, we ask that MassDEP change the language to read: “Any person who desires a determination as to whether M.G.L. c. 131, § 40 applies to land or to work that may alter an Area Subject to Protection under M.G.L. c. 131, § 40, may submit to the conservation commission a Request for a Determination of Applicability, Form 1.”**

- 10.05(3)(a)(2). Currently, an RDA or NOI is required for any activity in the buffer zone. **We encourage MassDEP to provide some discretion for local conservation commissions to utilize an administrative approval process for activities in the buffer zone which will not impact wetland functions and values.** We feel strongly that individuals who wish to undertake minor activities (such as the removal of a high-risk tree) should be able to receive local approval from their local Conservation Commission without filing for a state permit.
- Amending an OOC. **We ask that MassDEP include a specific provision in the regulations that clarifies how an Order of Conditions can be amended. MassDEP should consider allowing Amended Orders that include minimal increases in resource area impacts, instead of requiring a new NOI to be filed. We also ask that MassDEP clarify whether an amendment to an Ecological Restoration OOC needs to be re-advertised in the Environmental Monitor.**

Yours with appreciation and a genuine eagerness to roll up my sleeves and work with you,

*Jennifer Steel*

Jennifer Steel, Chief Environmental Planner

**From:** [Joseph Buckley](#)  
**To:** [DEP Wetlands \(DEP\)](#)  
**Subject:** Wetlands401 Resilience comments  
**Date:** Tuesday, April 30, 2024 9:53:48 PM

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Hi,

I missed the 5: 00 PM deadline but as I have been thinking about a response for over a month now I figured I would write anyway. I have worked as an engineer in Massachusetts in public works and stormwater for many years. I remember being at some of the first MA stormwater handbook presentations in the mid 1990s and worked on municipal compliance as early as 1999. I have reviewed a good deal of the proposed document(s) and applaud many of proposed updates, namely precipitation design data updates and TMDL focus. Like much of the previous Massachusetts stormwater regulations (Handbooks) the focus is always new and redevelopment.

Being a municipal manager we often work with a lot of old infrastructure, built with institutional knowledge, using styles we would not use today, like road side ditches, undersized cross culverts, undersized drains, stormwater outfalls with no treatment, culverted waterways, and similar. So much of this style of infrastructure, is in a resource area or part of(in) a wetland system. The Handbooks don't speak to these, I have always thought people believed they would go away over time through redevelopment and compliance measures, but in reality it can be 50-60 percent or more of a municipal system, and capital plans to address these are limited. Often maintenance of these systems (MS4) is behind. Additionally increased more intense storms have made the limitations of this infrastructure more apparent. Combined with land uses and structures where basically they would not build today. With more intense and frequent precipitation and knowing these systems are out there, and knowing that they will need to function for some time; will DEP give NPDES permitted authorities more latitude in addressing these locations in emergencies, like flooding and extreme weather. Relying on emergency certifications from local conservation commissions can put the public at risk and really is simply passing a key DEP tasks on to volunteers. The proposed regulations reflect heavy more intense rains but disregard the effect on these older systems, that may be online for years to come.

Massachusetts being a non-delegated State and simple highway departments being unprepared, DPWs have had to grow to meet the compliance challenge, leading to stormwater utility enterprise funds and bigger DPW budgets. Still maintenance of these systems can often be limited, and budgets for this work regularly cut. Much of the DEP guidance or training seems focused on compliance with the WPA/WQC regulations for local officials, minimal adjustments for older infrastructure, that may not always help. It overburdens these budgets with analysis and compliance tasks to a level where updates and major repairs are regularly put off. As the effects of climate change continue, for Massachusetts to remain that much more resilient some latitude or technical assistance will need to be made available, especially for drainage, not compliance, more what do we need to do to fix this approach. Give some thought to helping towns mitigate existing localized flooding often laden with pollution, not worry so much about an NOI. The gap seems to be the slow replacement of pre 1995 municipal infrastructure, probably because we can't pay for it. If this is the biggest source of

non point source pollution, for cities and towns incentives and guidance, not regulation need to be more present.

Thanks for listening

Joe Buckley  
Amesbury DPW

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Notice: Please be aware the Massachusetts Secretary of State has determined that most emails to and from the City of Amesbury are public records and therefore cannot be kept confidential.  
[MGL: Chpt.66, Sec.10 Public Records Law.](#)

**From:** [REDACTED]  
**To:** [DEP Wetlands \(DEP\)](#)  
**Cc:** [Patrick O'Connor](#); [Patrick.kearney@mahouse.gov](mailto:Patrick.kearney@mahouse.gov)  
**Subject:** Wetlands and Waterways Resilience Comments  
**Date:** Saturday, April 27, 2024 4:03:20 PM

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Good afternoon,

I was just made aware of a Massachusetts proposal to implement stringent coastal restrictions. As a coastal resident, the proposed regulations would be catastrophic if implemented as you understand them. There are already many restrictions in place that provide for both environmental and property protections and the new proposed regulations would have a extreme negative economic impact.

Regards,

John Harrington  
Scituate, MA

**From:** [Jonathan DeKock](#)  
**To:** [DEP Wetlands \(DEP\)](#)  
**Subject:** Wetlands-401 Resilience Comments  
**Date:** Friday, April 12, 2024 9:24:30 AM

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Dear Department of Environmental Protection,

I am writing today to ask you to create a carve-out for maintenance level management of invasive species within the jurisdiction of the Wetlands Protection Act for individuals and small organizations willing to volunteer their time for this critical work. As you know, invasive species negatively harm our environment in numerous ways. Enabling citizens to help with this cause is a clear win for the environment as there are far more of us at much less expense than running a small number of large projects to address the biggest issues. Further, by enabling individuals you can prevent small issues from ballooning into major problems.

I will tell you a story of what I am currently going through so you can understand what I mean.

Last summer I attended an event hosted by the Organization for the Assabet, Sudbury, and Concord Rivers (OARS) in which they trained us to recognize the invasive Water Chestnut in the Concord River watershed, explained the harm it causes the environment and how fast it spreads, detailed for us how to hand pull it from a canoe or kayak with minimal disturbance to the sediment and the other plants in the river, and how to dispose of it by composting above the high water line. We then proceeded to work on an area that had been overrun with Water Chestnut so we could have actual experience in doing the work.

I subsequently surveyed the Concord River along the Carlisle section and found 25 small infestations, which I reported to OARS. I estimated they could easily be handled by a single person in a kayak in an afternoon. On the advice of OARS, I contacted my local Conservation Administrator to find out what permission was necessary. She in turn contacted Alicia Geilen of the DEP who sent two very long presentations detailing the necessary procedures to file a Notice of Intent for Ecological Restoration as a Limited Project.

Not to be deterred, I thought I would simply comply with the rules and file the necessary paperwork. Only to find out that I'm not allowed to do so. Only the entity who owns the

Concord River is allowed to sign the Notice of Intent. To make matters more absurd, the local Conservation Commission is required to attach an Order of Conditions to the Deed for the Concord River so that the Concord River can't be sold before the work is complete and they issue a Certificate of Compliance. When I mentioned this to individuals in the Department of Conservation and Recreation, they said they faced the same thing with the Charles River some years ago and first had to hire lawyers to create Deed(s) for the Charles River so that there would be a place for the Conservation Commission(s) to hang the Order of Conditions.

I'm sure you can see how absurd this is: An afternoon's maintenance level work helping the environment by a single individual is held up by having to first hire lawyers to file a Deed for the Concord River.

To make matters even worse, this process has to be repeated every 3-5 years despite the fact that Water Chestnut is never going to go away. It will require constant maintenance to keep it at bay. The alternative is to let it run amok and severely damage our environment.

To compound the issue, this is just the work in the little town of Carlisle. There are 35 towns in the Watershed of the Concord River. Each of them likely has some Water Chestnut and needs to go through this same onerous process.

Clearly this is not helping the environment.

I can understand a need to ask for permission from the local Conservation Commission so they can ensure that best practices are being followed and the environment is not being harmed by the people doing this work. And it is perfectly reasonable to require that permission to be regranted on a frequent basis so that progress and environmental impacts can be actively monitored by the Conservation Commission. It is also even perfectly reasonable that each local jurisdiction be the ones to grant permission as they know their local problems best and are likely the most responsive to individuals and small groups willing to do the work.

Where it runs amok is applying a one-size-fits-all regulation to maintenance level invasive management done by individuals or small groups hand pulling the plants following best practices as if it were the same as a large scale dredging operation, drawdown, use of a mechanical harvester, spreading a herbicide over a wide area, or other major operation that will significantly alter the wetland.



So, I'm asking you to create some sort of carve-out that allows for hand pulling of invasive species following best practices for the purpose of maintenance (as opposed to large scale removal) that can be accommodated by something more along the lines of a Request for Determination. Such a regulation will help the environment by enabling the residents of the Commonwealth to help address the problems before they balloon into major crises requiring much more significant efforts and substantially greater expenses to correct in ways that will undoubtedly do more aggregate harm to the environment.

Thanks,

Jonathan DeKock

[REDACTED]  
[REDACTED]  
[REDACTED]

**From:** [JOE GATELY](#)  
**To:** [DEP Wetlands \(DEP\)](#); [Waterways, DEP \(DEP\)](#)  
**Cc:** [Patrick O'Connor](#); [patrick.kearney@mahouse.gov](mailto:patrick.kearney@mahouse.gov)  
**Subject:** Wetlands and Waterways Resilience Comments  
**Date:** Tuesday, April 30, 2024 8:31:01 AM

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Hi,

We were just advised today about the proposed DEP regulations that could be very damaging to the coastal community that I am a resident of — Marshfield and Humarock Beach, Scituate, MA.

I am asking that these proposed changes do not be approved as they could be catastrophic to our home town. Thank you for your consideration.

Joseph Gately

[REDACTED]

[REDACTED]

**From:** [Joe Johnson](#)  
**To:** [DEP Wetlands \(DEP\)](#)  
**Subject:** Wetlands-401 Resilience Comments  
**Date:** Thursday, April 25, 2024 4:20:11 PM

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To Whom It May Concern,

I am an organizer of volunteer projects for invasive plant management. I am contacting you today to inquire if there is any way to streamline permitting and permissions, reduce fees, and simplify the process of carrying out the current regulations.

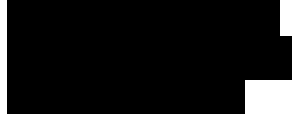
I believe the current regulations make it harder to manage invasive plants effectively. From my experience, the current policy contributes to the problem rather than being part of the solution.

I feel that the current policy is hindering our progress. Therefore, I urge you to consider simplifying the permitting process or offering assistance in any way that you can.

Thank you for your time and consideration.

Since

Joseph Johnson



<https://www.facebook.com/groups/invasivebioo>

**From:** [Josh Philibert](#)  
**To:** [DEP Wetlands \(DEP\)](#)  
**Subject:** "Wetlands-401 Resilience Comments"  
**Date:** Monday, April 29, 2024 11:25:00 AM  
**Attachments:** [image001.png](#)

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Hello MassDEP,

I have reviewed the proposed changes to the Wetlands Protection Act regulations. I have also reviewed the MACC's "Preliminary Draft Comments 4/26/24," and I would like to add my support to their comments. Of particular interest is the proposed change to the treatment of gravel roads. I share the MACC's concerns that classifying gravel roads as impervious surfaces will encourage the construction of paved roads, which are more impactful to wildlife and the environment. This will also likely require construction of stormwater management systems for gravel roads, which may have unintended consequences in rural settings including removal of mature trees and other native vegetation. Low impact designs such as vegetated swales should be preferred for gravel roads, especially in rural settings.

Thank you,

Josh Philibert



**Josh Philibert | Conservation Administrator**

Town of Sharon  
219 Massapoag Ave.  
Sharon, MA 02067  
781.784.1500 x1703

<https://www.townofsharon.net/conservation-commission>

Please refer to the following links for Conservation Department information:

[General Conservation Information Pamphlet](#)

[Wetland Protection Bylaws and Regulations | Town of Sharon MA](#)

[Wetland Permit Forms & Documents | Town of Sharon MA](#)

April 30, 2024

Lisa Rhodes  
Massachusetts Department of Environmental Protection  
100 Cambridge Street Suite 900  
Boston, MA 02114

**Re: Proposed 2023 Draft Revisions to the Wetlands Protection Act and Water Quality Certification for Stormwater Management**

Dear Ms. Rhodes,

Thank you for the opportunity to comment on the proposed revisions to the Wetlands Protection Act (WPA) regulations (310 CMR 10.00) and Water Quality Certification (WQC) regulations (314 CMR 9.00) issued December 2023. I have worked closely with many state agencies throughout the last decade on promoting resilience and instituting best practices to adapt to the impacts of climate change. I specialize in using a risk-based approach to integrate climate projections into civil design practices and navigating the intersection of policy and engineered solutions. In addition to serving as the consultant project manager for the ResilientMass Action Team (RMAT) Statewide Climate Resilience Design Standards Tool (RMAT Tool), I have also supported many resilience design projects from concept through construction.

I enthusiastically support the mission of the draft regulations to promote resilience through coastal floodplain standards and stormwater management standards, but based on my expertise working as a climate resilience professional and professional engineer, I am concerned that the regulations may not be effective in achieving these goals and result in significant unintended consequences.

I offer the following comments and recommendations to promote reasonable means to achieve the Massachusetts Department of Environmental Protection (MassDEP)'s goals of promoting resilience and safeguarding our environment without unintended consequences to the environment, economy, equity, and public safety.

**Definition of Key Terms:** There are several terms in the draft regulations that have not been defined that create ambiguity, as well as terms that I recommend be amended to reduce the likelihood of variances. They are listed below in order of appearance in the WPA.

- Resilience: There are several instances where “promoting” or “improve” or “increase” climate resilience is referenced. Resilience or resiliency itself is not defined. I recommend including the definition of resilience per the Bipartisan Infrastructure Law (BIL), which amended Section 101(a) of Title 23, United States Code. This definition is being used throughout the country on resilient infrastructure projects.
- Fully stabilized: This term is used in Section 10.02(2)(b)(v). Fully stabilized typically means vegetative growth, which is not possible in 72 hours. I recommend revising “fully” to “sufficiently” or “appropriately” or defining the term in this section.

- Alter: In the additional clause in Section 10.04 for this term, I recommend replacing “directed” with “discharged directly” to be more similar to language in the stormwater management standard one (SMS 1).
- Effective Impervious Cover: Effective impervious cover reduction is defined as a reduction on a project site in Section 10.04; however, the macro-approach allows highway work to implement stormwater control measures within the project locus instead of just the project site. I recommend updating the definition from “on a Project Site for purposes of stormwater management (310 CMR 10.05(6)(k)-(q))” to be “on a Project Site for purposes of stormwater management (310 CMR 10.05(6)(k)-(q)) or Project Locus for projects meeting stormwater management standards through a Macro-Approach”
- Impracticable: This newly defined term does not allow for considerations of cost or equity (e.g. the need to take property from others to meet the standards). I recommend removing this definition and changing “impracticable” references to “not practicable” to appropriately be the inverse definition of practicable.
- Improvement of an existing Public Roadway: I recommend changing “sidewalks” to “sidewalks or shared use paths” in this definition in Section 10.04.
- Maintenance of an existing Public Roadway: I recommend including a provision for this to be a “minor activity” given the definition in Section 10.04. There is not a distinction in requirements for meeting standards between improvement and maintenance activities. Demonstrating that maintenance activities meet the stormwater standards to the maximum extent practicable and/or meet the Land Subject to Coastal Storm Flowage (LSCSF) standards is unreasonable for projects with limited scopes of work as defined in Section 10.04.
- Near means, for purposes of stormwater management: The provision in Section 10.04 that “Issuing authorities may use their discretion to determine if a discharge is Near” creates opportunities for enforcement to vary greatly from community to community. I recommend issuing guidelines and providing training for Issuing Authorities to make this determination if the language is to remain. This recommendation extends to anywhere the regulations leave determination to the Issuing Authorities judgement.
- Completely protected: The term “completely protected” only appears in Section 10.05(5) and is not defined. The provision now requires complete protection for all land uses with Higher Potential Pollutant Loads. I recommend reverting back to the original language that allows maximum extent practicable.
- Shoreline protection & adaptive capacity: These terms only show up in Section 10.24(1)(b), but they are the basis for general provisions for work in a coastal resource area or buffer area. I recommend defining these terms to reduce ambiguity and improve comprehension for the Issuing Authorities and Applicants alike.
- Width of the roadway surface is the same as the existing roadway surface: This provision in Section 10.27(7)(c)(1)(a) limits the ability to improve multimodal access (e.g. add sidewalks, bike lanes), promote safety (e.g. correct substandard intersections), and design resilient roadways (e.g. in accordance with FHWA HEC-25 Highways in the Coastal Environment). I recommend rewording as “the vehicular capacity of the roadway surface is the same as the existing roadway surface.”



- Definition of AO Zone: I recommend updating the current definition in Section 10.36(2) to include the definition presented in FEMA Shallow Flooding Analyses and Mapping, Guidance Document 84, December 2020 (Page 5) – “Areas of shallow flooding with average depths between 1.0 and 1.5 feet are designated as Zone AO (DEPTH 1’); between 1.5 and 2.5 feet, Zone AO (DEPTH 2’); between 2.5 and 3.0 feet, Zone AO (DEPTH 3’).”
- Practical Width: The provisions in Section 10.53(3)(u) for “practical width” are not defined. I recommend this include an allowance for meeting design standards within the right of way, rather than limiting to footprint of existing railbed.

**Use of NOAA Atlas 14 Plus for Stormwater Management Standards:** This approach has not been technically reviewed by others outside of the Executive Office of Energy and Environmental Affairs (EEA) to validate how it does or does not address extreme event risk and/or non-stationary climate conditions. The RMA Tool does not recommend use of the NOAA Atlas 14 Plus method for design storms greater than the 50-year (2%) event, and MassDEP is proposing attenuation of peak runoff from the 100-year (1%) event using this method. I strongly recommend that the Commonwealth’s newly appointed Climate Advisory Panel and representatives from the National Oceanic and Atmospheric Administration (NOAA) Office of Water Prediction peer review the NOAA Atlas 14 Plus prior to its integration into regulations. Until a formal technical review can be performed and published for comment, I recommend that MassDEP adopt precipitation frequency estimates published in the most recent NOAA Precipitation Frequency Atlas (currently NOAA Atlas 14, Volume 10, Version 3.0). I recommend referencing consideration of the rainfall projections available on ResilientMass to encourage applicants to look at a range of possible scenarios in their designs.

**Coastal Floodplain Standards:** The proposed regulations for work within LSCSF includes significant new requirements that greatly impacts the ability to improve safety as part of resilience projects, increases the cost associated with doing any work (including maintenance) in the coastal zone, and eliminates the ability for communities in the Commonwealth to use open space (e.g. predominately pervious areas) for coastal flood protection projects. I strongly recommend that MassDEP engages a diverse group of practitioners to assess the impacts of these proposed regulations through case studies, and that MassDEP engage with coastal resilience subject matter experts to undergo a formal technical review of how the regulations relate to industry best practices. Until a formal technical review can be performed and published for public comment, I recommend omitting the regulations for LSCSF in this “1.0 Resilience” version of the regulation updates, as MassDEP has expressed in public meetings that future resilience revisions are intended. This would include removal of Section 10.24(1)(b), 10.24(7)(c)(1)(a through d), and 10.36.

**Conflicting approach with Federal Flood Risk Management Standard (FFRMS):** Proposed revisions to Title 44 Part 9 of the Code of Federal Regulations (CFR): Floodplain Management and Protection of Wetlands were published in 2023 with the goal of implementing the FFRMS. The FFRMS provides three approaches to establish the flood elevation and corresponding flood hazard area: (1) Climate Informed Science Approach (CISA); (2) Freeboard Value Approach (FVA); or (3) 500-year floodplain. MassDEP has explicitly said that “NOAA 14 Plus is not a projection of future extreme storms” in the 2022 Memorandum “MassDEP NOAA14 Plus – Summary of Technical Review.” This implies that use of NOAA Atlas 14 Plus to establish the boundary of Eordering Land Subject to Flooding (ELSF) where the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRMs) are not published may not be accepted



for federally funded projects that require use of FFRMs. I recommend that MassDEP engage with representatives from the Massachusetts Emergency Management Authority (MEMA), FEMA, NOAA, and the US Department of Housing and Urban Development (HUD) to assess potential risk of conflicting approaches.

**Impact to Federal Funding:** Current federal grants funded through the Infrastructure Investment and Jobs Act (IIJA) provide substantial opportunities for the Commonwealth to improve resilience and mitigation. As of 2023, the USDOT has provided nearly \$9 Billion in funding for climate resilience projects to protect infrastructure from extreme weather. While the federal funding available through IIJA may not be enough to transform the whole of Massachusetts' infrastructure to be resilient, we need to secure as much funding as we can. These programs have specific requirements for funding projects. I recommend a formal analysis of the impact to funding from including NOAA Atlas 14 Plus in the stormwater standards; This should be led by the Governor's Transportation Funding Task Force, in coordination with the Climate Office, the Director of Federal Funds and Infrastructure, Executive Office for Administration and Finance (A&F), MassDOT, FHWA, and others seeking funding through IIJA for resilience.

**Impacts to Projects Across the Commonwealth—Economic, Environmental, and Equity Costs:** Massachusetts is not the only state that is evaluating stormwater needs with climate change. The 2023 Minnesota report, "Climate Change Adaptation of Urban Stormwater Infrastructure," presented analyses of historical (TP-40), current (NOAA Atlas 14), and future predicted storm events—similar to the comparative analyses already performed by the RMAT and referenced by MassDEP. Their analyses went a step further to evaluate stormwater infrastructure adaptation strategies and their cost-effectiveness at reducing flood depth and duration for the different storm events in three different watersheds. The study found that conventional design philosophy (infiltration basins, ponds, and upsizing pipes) were costly yet had limited effect on a watershed scale in urban areas. The results identified that the percent of the entire watershed—not just the impervious surface—required to store runoff within Infiltration Basins and prevent flooding with the 100-yr NOAA Atlas 14 event ranged from ~25% to ~30%. The results from the study were used to develop an approach that embraces the idea that flooding may become more frequent, and to mitigate the risk to the public and damages to infrastructure. They also recommended improving soil health to reduce runoff wherever possible, similar to what MassDEP is proposing with Environmentally Sensitive Site Design (ESSD) and Low Impact Development (LID).

The Sept. 22, 2020 MassDEP presentation to the Stormwater Advisory Council included a comparative assessment of the potential impact of stormwater detention sizes based on precipitation frequency estimates. These were based on soil group type "C" soil, and utilizing NRCS soil group A or B soils would have produced larger detention volumes. The feasibility of designing solutions to meet the increase in volumes will have significant impacts on engineering and permitting costs for larger projects that are not reflected in the limited examples provided with the draft regulations. There are considerable potential equity impacts as a result of this regulatory requirement. It will be much more difficult to increase stormwater basin sizes in densely developed urban areas, such as Chelsea and Everett. There are also possible environmental impacts as a result of the new requirements, with potential increases in embodied carbon associated with larger construction footprints, unsuitable soil management and disposal, and oversized structures (more concrete and steel).

The 2023 “Recommendations of the Climate Chief” identified a “lack of comprehensive economic analysis of total cost of achieving ... necessary resilience investments over the next two decades.” It is unknown how practicable meeting the regulatory requirements will be for any individual project. MassDEP has only provided one assessment of impact to stormwater infrastructure capital costs from increased rainfall requirements. I recommend a formal analysis of stormwater infrastructure adaptation strategies and cost effectiveness to meet proposed stormwater requirements at scale. This study should be inclusive of costs beyond capital and led by EEA in coordination with entities that have developed watershed models (e.g. Deerfield, Neponset, Mystic, and Charles) with specific focus on impact to environmental justice and priority populations.

In addition to the comments I have summarized above, I have also attached some specific comments associated with sections of the proposed WPA and WQC regulations as Table 1. Please note page numbers reference the PDF versions of the redline edits made available to the public.

In summary, I am grateful for MassDEP’s continued leadership working towards making our environment resilient, sustainable, and healthy for generations to come. I appreciate the opportunity to provide comments based on my expertise, and welcome future opportunities to collaborate on the recommendations provided by me and others in the industry.

Please feel free to reach out to if you have any questions about my response.

Sincerely,

Julie Eaton Ernst, PE (MA)  
Pronouns: she/hers



**Table 1. Additional specific comments on proposed revisions to WPA and WQC regulations**

Regulation	Page Number	Citation	Comment / Question / Concerns
WPA - 310 CMR	5	Preface	"to protect the interests of the Act when proposed work sited there could affect its capacity to contribute to flood control and storm damage prevention." What are the required evaluations?
WPA - 310 CMR	6	Preface	Requires an improvement in existing conditions as part of any Redevelopment. how feasible is this? Should this be to the maximum extent practicable?
WPA - 310 CMR	11	310 CMR 10.02 (2)(a)(3)	Recommend adding maintenance of existing roadways to minor activities.

Regulation	Page Number	Citation	Comment / Question / Concerns
WPA - 310 CMR	37	310 CMR 10.04 (definitions)	Is the reference to 310 CMR 22.20B(2) focused on just the types of land uses or does it also consider the land use and its location within a public water system. Similar with 22.20C(2) within protection zones? Does this apply to temporary land uses related to construction (temp fuel storage for construction equipment). Is there a size restriction on storage of liquid hazardous waste? (portable ASTs vs generators around the site).
WPA - 310 CMR	39	310 CMR 10.04 (definitions)	Should sidewalks be included in this category? Sidewalks shouldn't need to fully comply with SMS if they don't increase impervious area car/oil/diesel runoff concerns aren't an issue. Does the proposed definition capture retrofitting catch basins?
WPA - 310 CMR	44	310 CMR 10.04 (definitions)	Assuming "increased stormwater discharge" refers to pre- vs post- comparison but should this be specified similar to the definition of New Stormwater Discharge (which notes Increased runoff means additional stormwater volume or higher discharge rate than currently exists)?
WPA - 310 CMR	45	310 CMR 10.04 (definitions)	Is the project locus also considered to be offsite? How does offsite differ from the project locus vs project site
WPA - 310 CMR	56	310 CMR 10.05(4)(a)	Recommend the CP/PP be a draft or allow this to be a post-application/pre-construction submittal. The CP/PP needs input and buy-in from the contractor who will be performing the work and the contractor is not always known at the time of application. As the contractor refines their means and methods leading up to the start of construction, there could be significant changes to the Plan which results in additional work for both the preparers and the reviewers
WPA - 310 CMR	57	310 CMR 10.05(4)(a)	Recommend the O&M Plan, and possibly the LTPPP plan, be recognized as draft submittals. Changes frequently occur in construction that can result in modifications to these plans.
WPA - 310 CMR	62	310 CMR 10.05(5)	Does this apply to temporary land uses such as construction? Land Uses with a Higher Potential Pollutant Load includes stockpiling/storage of snow or ice, exterior fleet storage, and the removal of soil, loam, sand, gravel, etc. within 4 ft. of historical high GW table. It will be difficult to completely protect these types of land uses during construction.



Regulation	Page Number	Citation	Comment / Question / Concerns
WPA - 310 CMR	62	310 CMR 10.05(6)(k)2	Is meeting this standard on the project site at point of discharge practicable? What if discharge is barely over discharge limit at property line or what if it is over limit at property line and meets the limit at an off-site location but before discharge into a coastal resource area upgradient to a stream crossing, culvert, or bridge?
WPA - 310 CMR	63	310 CMR 10.05(6)(k)3	Suggest changing to "not practicable" as the definition of practicable allows for consideration of cost.
WPA - 310 CMR	64	310 CMR 10.05(6)(k)4	Seems very late for first time review of an alternatives analysis. Is there a method to front load Con Comm/DEP buy-in before 75% design / NOI submittal? What level of documentation is necessary to demonstrate "impracticable"?
WPA - 310 CMR	64	310 CMR 10.05(6)(k)(4)(a)	Recognize the LTPPP submitted with the Notice of Intent is draft and could change based on plan/design changes that occur during construction
WPA - 310 CMR	71	310 CMR 10.05(6)(k)(8)	Similar to the CGP, is there a timeframe on how soon corrective actions need to be initiated? How long do inspection, maintenance and corrective action reports need to be maintained?
WPA - 310 CMR	71	310 CMR 10.05(6)(k)(8)	Recommend the CP/PP be a draft or allow this to be a post-application/pre-construction submittal. The CP/PP needs input and buy-in from the contractor who will be performing the work and the contractor is not always known at the time of application. As the contractor refines their means and methods leading up to the start of construction, there could be significant changes to the Plan which results in additional work for both the preparers and the reviewers
WPA - 310 CMR	73	310 CMR 10.05(6)(o)	What level of documentation is required to support the alternatives analysis (i.e. plans specifically identifying physical constraints, narrative saying corridor too constrained or too costly?) Suggest MassDEP issue guidance and training on this to support applicants and Issuing Authorities (Conservation Commissions).
WPA - 310 CMR	73	310 CMR 10.05(6)(m)7	Suggest expanding to include maintenance of existing railroad tracks/bridges.
WPA - 310 CMR	108	310 CMR 10.24(7)c.1.c	How do you elevate a roadway while maintaining existing hydrology on both sides? Hydrology will be changed by nature of elevating.

Regulation	Page Number	Citation	Comment / Question / Concerns
WPA - 310 CMR	104	310 CMR 10.24 (1) (b)	Significant new requirements for work within coastal resource area. MassDEP has the power to require restoration, enhancement, or creation of WRA for projects within coastal zone, including maintenance. How will these need to be documented (as part of existing conditions)? Will we need to demonstrate changes in characteristics based on design? (ex. wave energy reduction)? What level of analyses are required?
WPA - 310 CMR	104	310 CMR 10.24 (1) (b)	Very general language for any coastal resource area. Requires taking into account tidal range, wave energy, bathymetry, erosion rate--what if the project is further inland and not on coast, but still in LSCSF? This could potentially require significant coastal modelling for any project in the LSCSF to confirm the general requirements. The bar to prove no impacts to adjacent properties is too vague -- what constitutes adjacent? No impacts can vary greatly with LSCSF characteristics as defined in draft.
WPA - 310 CMR	111	310 CMR 10.24(9)	Recommend deleting "scheduled". This should be based on actual completion of the work since schedules change based on field conditions
WPA - 310 CMR	106	310 CMR 10.24(7)	Resource areas listed do not include LSCSF -- is this an oversight or intentional?
WPA - 310 CMR	107	310 CMR 10.24(7)(a)(6)	Does not allow coastal engineering structures to protect other structures (energy generating related) on LSCSF. This is a significant public health and safety risk.
WPA - 310 CMR	108	310 CMR 10.24 (7)(c)	This will still need to comply with the stringent new requirements in 10.24(1). Does this mean that any maintenance and/or improvement of existing public roadways will need to meet 10.24(1)(b)?
WPA - 310 CMR	108	310 CMR 10.24 (7)(c)(1)(a)	Does this mean that improvements for complete streets, safety, and enhanced mobility that may require roadway surface to be widened cannot be permitted at the same time as elevation efforts under a limited project? the width of the roadway may need to be increased to allow for construction of nature-based solutions to reduce storm damage, as well as maintaining road functions.
WPA - 310 CMR	108	310 CMR 10.24 (7)(c)(1)(c)	Elevating the road will inherently restrict flow (impervious surface and elevation). If the road floods at high tide now, will culverts/bridges need to be created to allow the inland area that is flooding to still flood? even if the road doesn't flood?

Regulation	Page Number	Citation	Comment / Question / Concerns
WPA - 310 CMR	108	310 CMR 10.24 (7)(c)(1)(c)	Improvements to existing hydrology required for roadway project if salt marsh is "not adequately sustained"? Who determines adequacy? How reasonable is it to require this for a maintenance project?
WPA - 310 CMR	109	310 CMR 10.24 (7)(c)(1)(c)	adverse flooding impacts -- does that definition align with "adverse impacts"? what will need to be provided for this determination?
WPA - 310 CMR	110	310 CMR 10.24(7)(c)(8)(e)	Given that the work area must be cleaned up prior to a COC issuance, how is this enforceable or in the interest of the Act? What does it accomplish?
WPA - 310 CMR	116	310 CMR 10.36 (1)	If even one of these characteristics is changed -- would this trigger "adverse effect" ruling from MassDEP?
WPA - 310 CMR	119	310 CMR 10.36(7)	Judgment of the Issuing Authority -- not technical expertise -- what guidance do they have to make that determination?
WPA - 310 CMR	120	310 CMR 10.36(8)	Improvement of an Existing Public Roadway is classified as a limited project pursuant to 10.24(7)(c) -- why does it have to also meet these performance standards?
WPA - 310 CMR	120	310 CMR 10.36(8)	Given that this is a new standard for LSCSF, how are they defining MEP? Is an alternatives analysis going to be required? Is cost a consideration for not meeting a standard?
WPA - 310 CMR	120	310 CMR 10.36 (8)(a)	Are these the only alternatives to improving existing condition capacity for storm damage prevention and flood control?
WPA - 310 CMR	121	310 CMR 10.36(8)(g)	Private property owners can't protect their own property if the municipality doesn't support it? This will likely result in lawsuits.
WPA - 310 CMR	121	310 CMR 10.38(8)(e)	Judgment of the Issuing Authority -- not technical -- how are they able to assess wave energy significance? What guidance do they have to make that determination?
WPA - 310 CMR	121	310 CMR 10.36 (8)(d)	What mitigation is required?
WPA - 310 CMR	121	310 CMR 10.36(8)(a)	Requires restoring previously developed coastal areas to extent practicable -- how does this work with seawalls?
WPA - 310 CMR	121	310 CMR 10.36(8)(f)	How would this work with open space flood control projects that are providing regional flood protection? Currently that area is not predominately impervious.
WPA - 310 CMR	121	310 CMR 10.36(8)(f)	So performance standards for new development (10.36(7)) are required to fill in MiWa Zone? Even if redevelopment project.



Regulation	Page Number	Citation	Comment / Question / Concerns
WPA - 310 CMR	121	310 CMR 10.38(8)(g)	How would this impact initiatives, like the Wharf District Council resilience plan?
WPA - 310 CMR	122	310 CMR 10.36 (8)(g)	Adverse effects for LSCSF would mean water isn't able to spread laterally.... doesn't this mean that no coastal barrier project would ever be permissible without a tide gate? Unless a barrier is able to raise grades behind it without having a lower inland portion (limited case).
WPA - 310 CMR	129	310 CMR 10.57(2)(a)(3)(a)	If no NFIP data and "conflict" over highest observed lateral extent, now need to model to identify a resource area boundary? How will the extent of the model be determined? Will it have to meet FEMA FIRM model standards? Who determines "in event of conflict"?
WPA - 310 CMR	129	310 CMR 10.57(2)(a)(4)	
WPA - 310 CMR	110 - 111	310 CMR 10.24(7)(g) 310 CMR 10.24(8)(d)	Are construction techniques like timber mats and work platforms not allowed assuming impacts have been approved?
WPA - 310 CMR	111	310 CMR 10.24(8); 310 CMR 10.25(3)(a)	What would be the expectation around the existing rail bed if a different alignment is approved. Would it be left in place or is there an expectation to remove the material and restore? This language seems in conflict with the intent of DEP's Best Management Practices for Controlling Exposure to Soil During the Development of Rail Trails, which recognizes it may not be in the best interest to perform extensive testing and remove the "typical" chemical residues found within the corridor. Landfill space is limited for this type of material. Further, one of the Goals of DEP's BMP for rail-trails is to prevent/minimize exposures to those utilizing the path
WQC - 314 CMR	1	314 CMR 9.13	Currently there are no provisions for permit extensions
WQC - 314 CMR	2	314 CMR 9.02	They have removed "that may serve as a Notice of Intent pursuant to 310 CMR 10.00" Wetlands Protection." Does this mean that Orders of Conditions can no longer be used in place of 401 WQC apps? Will they both have to be filed going forward?
WQC - 314 CMR	7	314 CMR 9.02 - Impracticable definition	Practicable is already defined. Impracticable should be the inverse of that definition, not additional constraints.
WQC - 314 CMR	10	314 CMR 9.02 - New Stormwater	The resources listed are not subject to jurisdiction under 401 Most discharges will be in low points on the landscape and within areas subject to jurisdiction. this definition would allow issuing



Regulation	Page Number	Citation	Comment / Question / Concerns
		Conveyance definitions	authorities to expand jurisdiction beyond the Buffer Zone, Land subject to flooding and Riverfront Area
WQC - 314 CMR	10	314 CMR 9.02 - Near Definition	"Issuing authorities may use their discretion to determine if a discharge is Near a Critical Area except that Near always includes any untreated or increased stormwater discharge within a Buffer Zone, Riverfront Area, or Bordering Land Subject to Flooding." These are not regulated resources under 401.
WQC - 314 CMR	12	314 CMR 9.02 Definitions	Can other wells aside from just USGS observation wells be utilized? For example, project installed wells that have been monitored for a number of years or utilized well gauging data from nearby MCP sites.
WQC - 314 CMR	33	314 CMR 9.06(8)	Within what time frame should corrective actions be initiated and for how long should reports be maintained?
WQC - 314 CMR	33	314 CMR 9.06(6)(a)	Does this mean that SWPPPs have to be submitted with 401 apps now?
WQC - 314 CMR	33	314 CMR 9.06(8)	Recommend the CP/PP be a draft or allow this to be a post-application/pre-construction submittal. The CP/PP needs input and buy-in from the contractor who will be performing the work and the contractor is not always known at the time of application. As the contractor refines their means and methods leading up to the start of construction, there could be significant changes to the Plan, which results in additional work for both the preparers and the reviewers.
WQC - 314 CMR	35	314 CMR 9.06(6)(c)(7) - Maintenance of Roadways & Stormwater Standards	This is defined as activities that do not increase impervious area, such as grinding, scarifying, repaving, resurfacing, replacing existing drainage pipes, or resetting curbs or catch basin frames. Demonstrating that maintenance activities meet the Stormwater Standards to the maximum extent practicable is unreasonable for projects with this limited scope of work.
WQC - 314 CMR	37	314 CMR 9.06(6)(g)	Some of these will be very problematic for treating stormwater from existing infrastructure

**From:** [Kathleen Graney](#)  
**To:** [DEP Wetlands \(DEP\)](#)  
**Subject:** Wetlands and waterways  
**Date:** Sunday, April 28, 2024 11:00:22 AM

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I am a coastal resident in Marshfield and just became aware of the proposed changes and rules for coastal areas. I do not think they are fair and necessary and could be disastrous.

Kathleen Graney

[REDACTED]

Marshfield

[Sent from Yahoo Mail for iPhone](#)

**From:** [Waterways, DEP \(DEP\)](#)  
**To:** [DEP Wetlands \(DEP\)](#)  
**Subject:** Fw: Waterways Resilience Comments  
**Date:** Tuesday, April 30, 2024 6:20:30 PM  
**Attachments:** [image002.png](#)

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## Chapter 91 Waterways Program

Massachusetts Department of Environmental Protection 100 Cambridge Street, 9<sup>th</sup> Floor | Boston, MA 02114 • 617-292-5929 | Email - [DEP.Waterways@mass.gov](mailto:DEP.Waterways@mass.gov)

Waterways Regulation Program Email: [DEP.Waterways@mass.gov](mailto:DEP.Waterways@mass.gov)

Review Current Applications: [Search EEA Projects \(state.ma.us\)](https://search.eea.state.ma.us/)

Chapter 91 Application and Filing Forms and Instructions: <https://www.mass.gov/lists/chapter-91-forms>

Visit MassDEP Waterways Regulation Program on the Web: <https://www.mass.gov/waterways-program-chapter-91>

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**From:** Kyle Johnson <KJohnson@kleinfelder.com>  
**Sent:** Tuesday, April 30, 2024 6:19 PM  
**To:** Waterways, DEP (DEP) <dep.waterways@mass.gov>  
**Subject:** Waterways Resilience Comments

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To whom it concerns,

Please consider below public comment related to the Waterways (Chapter 91) Resilience 1.0 Draft Regulations:

With respect to Coastal Areas at Risk from Sea Level Rise - "Limited Projects" (310 CMR 10.24(7)), the proposed performance standards for "Limited Projects" are potentially too restrictive and in some cases may be maladaptive to sea level rise impacts. For example, stipulations that allow Road Relocation or Road Elevation (and perhaps some roadway widening actions) that are well-designed and in combination with well-engineered living shorelines that allow future salt marsh advancement may be a better outcome than "no alteration to hydrology of salt marsh" outright. The intent to protect threatened salt marsh resources is understood, here, but the long term viability of these habitats will likely require future assistance beyond limiting direct-impact or adjacent activities.

A language clarification can perhaps be made here to stipulate "no net adverse impacts to the hydrology of salt marsh (at a larger site or HUC12 level)," rather than "no alteration to

hydrology of salt marsh."

The "no alteration to hydrology of salt marsh" performance standard (i.e., protecting these resources as-is, without assisting future migration of these Resource Areas with long-term sea level rise) may not be the best long-term outcome, especially as there may be cases where threatened salt marshes may be degraded in their current state.

Limiting paired solutions also restricts the use of 'Adaptation Pathways'-based design approaches (which are increasingly common with design practitioners), or other phased "salt marsh advancement" strategies, which may have some negative impacts in the near-term, but are more forward-thinking in the long term in that they consider the tremendous uphill battle that salt marsh resources will have in keeping up with projected sea level rise without further interventions (such as thin-layer placement, runneling, living shorelines, etc.)

I recommend these standards should be revised, or at least held for now and revisited during a more robust Climate Resilience 2.0 process.

Respectfully,  
Kyle Johnson, WEDG  
Climate Resilience Practice Lead  
Kleinfelder

Thanks,  
Kyle Johnson, WEDG  
Climate Resiliency Practice Lead,  
Kleinfelder East Division  
m: 773.614.3449



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**From:** [Kyle Johnson](#)  
**To:** [DEP Wetlands \(DEP\)](#)  
**Subject:** Wetlands-401 Resilience Comments  
**Date:** Tuesday, April 30, 2024 7:15:56 PM  
**Attachments:** [image001.png](#)

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With respect to Proposed Updates to the Massachusetts Wetlands (310 CMR 10.00) regulations, I hope the following public comment may be considered:

As proposed, there is a large gap between FEMA mapping and future conditions (using the Massachusetts Coast Flood Risk Model, or even First Street Foundation's FloodFactor mapping). This discrepancy in potential flood zones that are not currently within the LSCSF (as currently defined) is too large a discrepancy to be ignored while calling this a "Climate Resilience" update of regulations. To simply defer to FEMA historical Special Flood Hazard Area (SFHA) and Flood Insurance Rate Map (FIRM) delineations will mean potential threats to wetland and other Resource Areas from development practices occurring just outside the LSCSF (as currently defined), even in the 2030-2050 timeframe when the majority of projected sea level rise is yet to be observed (beyond 2070).

While the MC-FRM coastal mapping was not fully completed for the entire coastline at the start of this draft regulation process, that data for the entire coastline has since been completed. It is now publicly available, and is already used in state's ResilientMA Action Team (RMAT) guidance and within tools required for screening projects for funding via the state's grant programs like Municipal Vulnerability Preparedness grants.

To forgo the use of forward-looking climate projections and defer to existing FEMA products, it is somewhat disingenuous to call this regulatory update a "Climate Resilience" update of regulations and performance standards. Perhaps it can be called a general "Flood Resilience" update, with some climate considerations (with already-observed sea level rise as an 'Other Factor' that results in some additional freeboard performance standard above FEMA Base Flood Elevations).

In general, I would suggest that the proposed Wetlands regulations be more consistent with the proposed Waterways regulations (i.e., *requiring* future sea level rise projections to be considered). This should be a requirement at least for siting purposes for new development and redevelopment in near term zones vulnerable to sea level rise, but not yet in FEMA products like FIRM maps. As often stated, FEMA FIRM maps were not ever meant for planning and non-insurance regulatory purposes, but are often used for such. FIRM maps were developed for purposes other than flood risk management (these were developed for insurance purposes and making sure insurance is right more times than its wrong over large areas). The update of FIRM maps is a slow process, and subject to FEMA's funding availability for these mapping updates. And while FEMA's consideration of sea level rise in recent

mapping has been piloted in New York City following Sandy, it is still not yet common practice.

Knowing that the MC-FRM model is very robust, and largely accepted for climate adaptation and resiliency planning by other MA state agencies and offices (as well as by FEMA itself in some cases, like the Fort Point Channel project in Boston), I would recommend broadening the delineation of the LSCSF\* to factor near-term (to mid-term) sea level rise more explicitly using the MC-FRM data, and fitting performance standards to new areas that are then included in the LSCSF\*.

For example, “if siting new or redeveloped structure in an MC-FRM 2030 1% flood exceedance probability zone, apply the proposed MoWA standards for new development/(re)development as a minimum”. Or “if the site is in a 2050 1% flood exceedance probability zone, apply proposed MiWA standards for new development/(re)development as a minimum”.

Simply encouraging entities to “consider” ResilientMA projections is akin to “voluntary” or “maximum extent practicable” language that has plagued local enforcement of stormwater/WQ regulations in the past, as this has left significant room for interpretation/enforcement gaps.

Thanks for your consideration,  
Kyle Johnson, WEDG  
Climate Resiliency Practice Lead,  
Kleinfelder East Division  
m: 773.614.3449



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**From:** [Kyle Johnson](#)  
**To:** [DEP Wetlands \(DEP\)](#)  
**Subject:** Wetlands-401 Resilience Comments  
**Date:** Tuesday, April 30, 2024 6:37:16 PM  
**Attachments:** [image001.png](#)

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With respect to Proposed Stormwater Updates to the Massachusetts Wetlands and 401 Regulations (310 CMR 10.00 and 314 CMR 9.00), and Stormwater Management Handbook and Memo on NOAA 14 PLUS,

I hope the following public comment may be considered:

With respect to the 401Q Water Quality Certification, Stormwater Management Handbook and Memo on NOAA 14 PLUS, I believe the move to NOAA PLUS (NOAA 14+) is a great step in right direction, but its methodology does not inherently account for climate change impacts on precipitation extremes.

The NOAA PLUS process is still based on historical data, i.e., widening statistical interpretation of the same historic datasets and simply using the 90% upper confidence intervals published in NOAA Atlas 14, Volume 10, but not using any forward-looking precipitation projections.

The State's Executive Office of Energy and Environmental Affairs (EEA) has already made available a Climate Change Projections Dashboard that includes a Precipitation-Frequency with projections of extreme precipitation frequency estimates (design storm values) using downscaled climate modeling for Massachusetts at the HUC 8 watershed scale:

<https://www.arcgis.com/apps/dashboards/2e8534bc2a7849b0aa6f64d0f79a8937>

The EEA-Resilient Massachusetts Action Team (RMAT) Climate Resilience Design Standards report section on Precipitation also had great analysis (i.e., Table 4 and Appendix B) which compare NOAA PLUS and Cornell University climate projections for different jurisdictions:

[https://eea-nescaum-dataservices-assets-prd.s3.amazonaws.com/cms/GUIDELINES/V1.2\\_SECTION\\_4.pdf](https://eea-nescaum-dataservices-assets-prd.s3.amazonaws.com/cms/GUIDELINES/V1.2_SECTION_4.pdf)

In addition to the climate projections that informed values in this dashboard tool (which was led by EEA in partnership with Cornell University, U.S. Geological Survey and Tufts University), EEA's Climate and Hydrologic Risk project (often referred to shorthand as "Cornell" projections) also produced future precipitation frequency estimates by applying future warming scenarios to NOAA's Atlas 14 rainfall dataset for intensity-duration-frequency (IDF) point data across Massachusetts.

In setting statewide standards, there is certainly a balance as to what communities may be comfortable with. Some forward-looking communities have already adopted NOAA PLUS, Cornell projections, or other locally-downscaled climate projections (such as the City of



Cambridge's locally-downscaled projections used for its climate change vulnerability assessment and *ResilientCambridge* citywide climate resilience plan). To ensure the baseline new performance standard more directly account for climate change impacts on precipitation extremes, but also does not supersede local communities' standards (where more stringent than NOAA PLUS),

I would recommend MassDEP explore a flexible standard approach similar to that of the Federal Flood Risk Management Standard (FFRMS).

The FFRMS gives flexibility and allows for applicants to achieve one of multiple accepted approaches. In the context of MassDEP's Water Quality Certification and Stormwater Handbook, this could mean communities can achieve a baseline performance standard by utilizing values from:

- (a) NOAA PLUS;
- (b) EEA's Climate Change Projections Dashboard tool ("Cornell projections");
- (c) locally-downscaled extreme precipitation values, if values are higher than (a) or (b);
- (d) most recent version of NOAA precipitation atlas (such as forthcoming NOAA Atlas 15)

At a bare minimum, acknowledging that NOAA Atlas 15 is already in the works, I would encourage MassDEP to include "...or most recent version" language following any NOAA PLUS (or NOAA 14+) references in the new guidance.

Respectfully,  
Kyle Johnson  
Climate Resiliency Practice Lead  
Kleinfelder

Kyle Johnson, WEDG  
Climate Resiliency Practice Lead,  
Kleinfelder East Division  
m: 773.614.3449



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**From:** [Kyle Johnson](#)  
**To:** [DEP Wetlands \(DEP\)](#)  
**Subject:** Wetlands-401 Resilience Comments  
**Date:** Tuesday, April 30, 2024 6:31:16 PM  
**Attachments:** [image003.png](#)

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With respect to General Requirement for Nature-Based Resiliency, 310 CMR 10.24(1)(b), I hope the following public comment may be considered:

The proposed guidance calls for consideration of “nature-based shoreline protections,” however there is no good singular reference material as to what MassDEP sees as qualifying nature-based shoreline protections. Similar to how the Stormwater Handbook provides a crosswalk of stormwater control measures, MassDEP should develop and promulgate a reference crosswalk of nature-based shoreline protection types to help guide local conservation agents, industry practitioners, landowners and other stakeholders.

I see this as an issue as nature-based solutions (NbS) are not a panacea, and not one-size-fits all. Coastal NbS in particular have variable performance and are not fit for all purposes. For instance, while there are plenty of evidence and study of living shorelines in mitigating localized shoreline erosion and (some levels of) coastal inundation as sea levels rise, there are far fewer studies that have demonstrated the performance of NbS for coastal storm risk reduction (i.e., performance during coastal storms and storm surge). There are major feasibility and suitability siting concerns that further limit some of these NbS to areas that are tidal/estuarine waterfronts, as opposed to exposed ocean shoreline.

I would recommend that a crosswalk guidance for nature-based shoreline protections be further refined to clarify the primary type of benefits for which specific protections should be considered.

For example, it would be good to differentiate sub-categories of NbS, including:

- Nature based solutions for mitigating shoreline erosion and chronic inundation (i.e., for areas primarily characterized by tidal flow and/or within the MiWa zone and not subject to major wave action).
  - Ex. - rock sills, living shorelines, cobble berms, etc.
- Nature based solutions for wave mitigation, coastal storm risk reduction, (within V Zone, MoWA, and ocean-facing shoreline)
  - Ex. - living seawalls, living reefs / oyster breakwaters, etc.
- Nature-based solutions for long-term sea level rise adaptation
  - Ex. – thin-layer placement

I would encourage MassDEP provide and maintain a resource list / crosswalk of accepted Nature-based Strategies (this can be a living document, and perhaps can further designate

some for “Research Projects” if there are few or no precedents in MA).

Respectfully,  
Kyle Johnson, WEDG  
Climate Resiliency Practice Lead  
Kleinfelder

Kyle Johnson, WEDG  
Climate Resiliency Practice Lead,  
Kleinfelder East Division  
m: 773.614.3449



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**From:** [Kyle Johnson](#)  
**To:** [DEP Wetlands \(DEP\)](#)  
**Subject:** Wetlands-401 Resilience Comments  
**Date:** Tuesday, April 30, 2024 7:22:59 PM  
**Attachments:** [image001.png](#)

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With respect to Proposed Stormwater Updates to the Massachusetts Wetlands and 401 Regulations (310 CMR 10.00 and 314 CMR 9.00), and Stormwater Management Handbook and Memo on NOAA 14 PLUS,

I hope the following public comment may be considered:

Massachusetts, like other states in the Northeast, are seeing more high-intensity, short-duration storm events (i.e., “cloudbursts,” or flash flood events). These events can cause localized flooding, scour and erosion (and subsequent TSS and debris pollution conveyed with overland floodwaters), and other impacts to wetlands and other Resource Areas. Such risks are increasingly tied to limitations associated aging infrastructure and past sizing of existing conveyance infrastructure (e.g., catch basins, inlets, pipe sizes), which rely on different design parameters than detention/storage/treatment capacity and sizing of structural stormwater control measures (also often referred to stormwater best management practices or “structural BMPs”).

While structural stormwater control measures themselves are typically sized using 24-hour duration storms (say, the 10-year *24-hour* storm), flash flooding events are different in nature in that they (like Hurricane Ida) can bring multiple inches of rain in a short timeframe, resulting in stormwater runoff bypassing surface openings/structures (e.g., inlets, catch basins), or conveyance pipes that can become surcharged even while the stormwater control measure itself still has unused storage/treatment capacity. The later can also result in system bypass and result in untreated stormwater conveyed downstream at the surface level.

In areas characterized predominantly by impervious surfaces (i.e., where natural floodplain function and Resource Areas have already been altered), I would encourage MassDEP to consider a performance standard that targets a high-intensity, short-duration storm event, and preferably one that factors climate change impacts on precipitation extremes. Given the useful lifespan of this built infrastructure is often 50+ years, it would be important to factor climate change impacts to 2050 or 2070. To this end, I would recommend MassDEP consider developing an additional performance standard specific to conveyance infrastructure and short-duration storms. For example, this standard could consider a 2070 2-year 2-hour recurrence event volume when sizing inlets, catch basins, pipes. This standard can be added in conjunction with the standard 24-hour duration storm events that are already specified, so that both total storm precipitation volume (say, from 24-hour duration storms) and the peak intensity volumes from high-intensity short-duration (say, the 2-hour “cloudburst”) could be used to design a more robust and overall climate-resilient system.

For further reference/consideration, the State's Executive Office of Energy and Environmental Affairs (EEA) has already made available a Climate Change Projections Dashboard that includes a Precipitation-Frequency with projections of extreme precipitation frequency estimates (design storm values, including for event "Duration(s)" as small as 5-minute increments) using downscaled climate modeling for Massachusetts at the HUC 8 watershed scale:

<https://www.arcgis.com/apps/dashboards/2e8534bc2a7849b0aa6f64d0f79a8937>

Overall, it is important that design practitioners consider climate change impacts to both peak rainfall intensity (i.e., limitations to stormwater *conveyance* systems) and total precipitation volume (i.e., limitations to sizing of stormwater storage/detention/treatment control measures).

Respectfully,  
Kyle Johnson  
Climate Resiliency Practice Lead  
Kleinfelder

Kyle Johnson, WEDG  
Climate Resiliency Practice Lead,  
Kleinfelder East Division  
m: 773.614.3449



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**From:** [Leah Basbanes](#)  
**To:** [DEP Wetlands \(DEP\)](#)  
**Subject:** Wetlands-401 Resilience Comments  
**Date:** Wednesday, April 24, 2024 9:42:04 AM

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Hello, I would like to express my support for the proposed changes in both Revision Packages 1.0 and 2.0. In particular, creating vernal pools with 100' buffer zone as resource area, the additional minor buffer zone activities for invasive removal and hazardous tree removal, allowing administrative approval for some buffer zone activities, and simplifying the permit forms.

Sincerely,

Leah Basbanes  
Dunstable Conservation Commission.



## LINCOLN CONSERVATION COMMISSION

CONSERVATION DEPARTMENT  
16 LINCOLN ROAD  
LINCOLN CENTER, MA 01773  
781-259-2612  
CONSERVATION@LINCOLNTOWN.ORG

April 25, 2024

MassDEP

Sent via [dep.wetlands@mass.gov](mailto:dep.wetlands@mass.gov)

Subject Line: **Wetlands-401 Resilience Comments**

**RE: Comments on MassDEP'S Resilience 1.0 Draft Regulations and 2.0 Recommendations**

Dear MassDEP:

I sincerely appreciate the effort that went into creating these draft regulations and commend MassDEP for focusing on ways to make Massachusetts and its wetland resources more resilient to climate change. We appreciate the great strides made in the following areas and are eager to see the following new regulations promulgated right away.

- Supporting greater use of nature-based solutions.
- Safeguarding our coasts and waterways from flooding and stormwater pollution through the development of Land Subject to Coastal Storm Flowage performance standards and prohibiting new development in the highest risk coastal flood zone and requiring other development to be more resilient and protective of nature.
- Including sea level rise in the revisions to the Massachusetts Waterfront Regulations.
- Updating the precipitation calculations for stormwater designs.
- Allowing Scientific Research Projects in coastal wetland resource areas.

Below, I am providing some suggestions for improving the proposed "1.0" changes and suggestions for the forthcoming "Resilience 2.0" changes.

### **General Recommendations for 1.0 Changes**

Some of the proposed regulation changes will be challenging to implement and/or will lead to unintended detrimental consequences and so should be refined prior to promulgation.

- MassDEP should engage with day-to-day practitioners in their regulatory revision efforts: conservation agents, conservation commissioners, and other professional non-profit staff – the people responsible for interpretation and consistent implementation of these regulations.



- The regulations should provide performance standards that protect wetland functions and values and not specific methods and means of achieving those performance standards. Methods and means should be addressed in guidance documents.
- The revised regulations provide some excellent detail, but must strike a reasonable balance between scientific precision and overly complex or burdensome requirements that render them too difficult for a majority of volunteer conservation commissions and applicants to implement. The proposed stormwater requirements, for example, exceed the review capabilities of most conservation commissions.
- With the new LSCSF regulations DEP has taken a positive step to address flooding from sea level rise, but it must do more to ensure that nature can thrive and to protect our communities from flooding and water pollution. Prohibiting new structures in the highest risk areas and providing standards for development and redevelopment throughout the coastal floodplain are appropriate and appreciated. The maps for where restrictions apply should, however, take the most up-to-date data on sea level rise and erosion rates into consideration.
- Although we agree that the current Stormwater Handbook has much room for improvement, and although the new Stormwater Handbook is nicely organized, the new 860-page behemoth is far too complex to: (1) be usable by most conservation agents or commissions; and (2) facilitate efficient review and permitting. Many of the new details of stormwater management should be removed from the regulations to facilitate future updates.
- Although we agree that referencing the NOAA14+ precipitation data is a great step in the right direction, it does not factor in climate change. The Handbook could at least refer to the new EEA Climate change projections dashboard (part of Climate Resilient Mass) which provides town-specific precipitation projections using NOAA 14+).
- Provide frequent outreach and education about the new regulations once promulgated. Dissemination of detailed and multi-faceted explanations of these new regulations and the purposes and intents behind them for the Conservation Commissions and conservation professionals who will implement them will be essential.

## Requests for 2.0 Changes

As we all know, the 1.0 draft regulation changes alone will not achieve our goal of true resilience. I understand that MassDEP is already working on regulatory reform package “2.0.” Several of my colleagues and I have identified a number of issues that should be addressed in the next regulatory reform package. Many of these suggested revisions are straightforward. Some of these suggestions warrant additional discussion. **I urge MassDEP to begin a robust process of stakeholder engagement with consultants, field professionals, and conservation agents so that we may help you develop practical, strong, climate resilient regulations.** Here are some suggestions to begin the conversation.

- In the wetland regulations and Chapter 91, DEP must acknowledge and reflect the difference between wetland “alterations” resulting from new development and wetland “alterations” resulting from ecological restoration efforts and must streamline permitting for wetlands restoration projects to achieve the state’s resiliency goals by:
  - Reversing historic damage to our wetlands,
  - Addressing the ever-increasing problem with invasive species,
  - Allowing for salt marsh migration,
  - Promoting carbon sequestration, improved water quality, and increased biodiversity, and
  - Promoting living shorelines and other nature-based solutions.

- Create a new section to exempt Maintenance of Existing Trails in use by the public. This could be done by adding a new section “10.02(2)(a)3. Maintenance activities on trails that traverse Areas Subject to Protection under M.G.L. c. 131, § 40” which reads: “Activities conducted to maintain, repair or replace, but not substantially change or enlarge an existing public trail, provided said work utilizes the best practical measures to avoid or minimize impacts to wetland resource areas outside the footprint of said trail”. Boardwalks, puncheons, waterbars, and other basic trail infrastructure need to be routinely maintained or replaced. Land managers should be able to conduct this essential maintenance work to protect wetland resource areas without having to secure a permit.
- 10.02(2)(b)(a) Unpaved pedestrian walkways. The term “Conservation Property” should include all types of natural land onto which the public is invited. Currently, unpaved pedestrian walkways (trails) less than 3 feet wide for public access on “Conservation Property” are exempt from the regulations. However, many trails traverse general municipal land, land trust properties, and private property with conservation restrictions affording public access. Additionally, I ask that MassDEP to consider increasing the 3-foot width to 4 feet because the state’s own guidance on accessible trails encourages trails are “at least 36” wide, and usually wider”.
- Create new Minor Activities (in 310 CMR 10.02(2)(b)(2)) for routine work in Riverfront and Buffer Zone conducted by homeowners and land managers such as:
  - Cutting of certain high-risk trees.
  - Removal of invasive vegetation.
- Create new Limited Projects (310 CMR 10.24 and 10.53) and other provisions to simplify trail permitting and invasives species management in wetland resources areas.
- Simplify the permitting process for trail construction projects by adding to the Bordering Vegetated Wetland regulations a new section in 10.55(4)(c)(4) allowing commissions to permit new trails in BVW when: "said work involves the creation of a public trail for non-motorized use (i.e., hiking, skiing, mountain biking, etc.) which will alter less than 500 s.f. of BVW, provided alternatives that attempted to avoid and minimize impacts were considered and that the trail will permit the reasonably unobstructed flowage of water." Wetland trail construction should be subject to review under the WPA, but that review should be simplified. Narrow unpaved pedestrian walkways in publicly accessible open space often traverse wetlands. When wetland trails are properly constructed, they preserve wetland functions and values and help build a culture of appreciation and stewardship for these vital resources. Therefore, wetland replication should not be required in these circumstances.
- Work with Conservation Agents to update the Riverfront Area regulations to clarify some of the sections that are particularly difficult to interpret and lead to inconsistent implementation.
- Work with Conservation Agents to update and greatly simplify the WPA application and permit forms.
- Increase application fees. Wetland Fees do not cover the administrative costs for processing, reviewing, issuing, and mailing wetland permits.
- Develop guidance documents. Conservation commissions and conservation staff would benefit from guidance documents which provide more detail about various regulatory provisions.
- To account for their inherent value, particularly in the face of climate change, consider expanding Isolated Land Subject to Flooding (ILSF) jurisdiction to include small, isolated wetlands by reducing the size of ILSF in 10.57(2)(b).
- Consider adding vernal pools as a new wetland resource area, with a 100-foot Buffer Zone.

- Provide some discretion for local conservation commissions to utilize an administrative approval process for activities in the buffer zone and wetland resources areas which will not impact wetland functions and values. I feel strongly that individuals who wish to undertake minor activities (such as the removal of a high-risk tree or invasive plants) should be able to receive local approval from their local Conservation Commission without filing for a state permit.

Thank you for the opportunity to share my comments. I look forward to continuing this very important conversation as the 1.0 changes are finalized and as the 2.0 changes begin to be fleshed out.

Sincerely,

*Michele Grzenda*

Michele Grzenda  
Lincoln Conservation Director

**From:** [Linda M. DiLorenzo](#)  
**To:** [DEP Wetlands \(DEP\)](#); [Waterways, DEP \(DEP\)](#)  
**Cc:** [Patrick O'Connor](#); [patrick.kearney@mahouse.gov](mailto:patrick.kearney@mahouse.gov)  
**Subject:** Wetlands and Waterways Resilience Comments  
**Date:** Sunday, April 28, 2024 8:44:14 AM

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**CAUTION:** This email originated from a sender outside of the Commonwealth of Massachusetts mail system. Do not click on links or open attachments unless you recognize the sender and know the content is safe.

We were just advised today about the proposed DEP regulations that could be very damaging to the coastal community that I am a resident of -- Humarock Beach, Scituate, MA.

I am asking that these proposed changes do not be approved as they could be catastrophic to our home town. Thank you for your consideration.

Linda DiLorenzo

[REDACTED]

[REDACTED]



Massachusetts Society of Municipal  
Conservation Professionals  
c/o Conservation Office  
1000 Commonwealth Ave.  
Newton, MA 02459

April 26, 2024

MassDEP

Sent via [dep.wetlands@mass.gov](mailto:dep.wetlands@mass.gov)

Subject Line: **Wetlands-401 Resilience Comments**

**RE: MSMCP's Comments on MassDEP'S Resilience 1.0 Draft Regulations and 2.0 Recommendations**

Dear MassDEP:

## Introduction and Appreciation

MA Society of Municipal Conservation Professionals (MSMCP) is a body of municipal conservation professionals representing over 100 member municipalities and reaching hundreds of individual professionals. Our mission is to support one another through a robust offering of educational and networking events.

MSMCP members focus on implementation and permitting under the Wetland Protection Act (WPA) Regulations (the Regulations). Our comments are from the perspective of those who daily engage with consultants, residents, and municipal officials and the Regulations and permit processes in efforts to protect and enhance remarkably diverse wetland ecosystems in these challenging times of climate change. Our board alone has over 150 combined years of experience implementing these regulations across the Commonwealth.

MSMCP has been working closely with MACC, Mass Audubon, Mass Rivers Alliance, AMWS, and other technical experts to review, assess, and comment on the proposed Resilience 1.0 Draft Regulations. While MSMCP has been focused on general and inland wetland regulations, our partners have focused on the proposed changes to Chapter 91, Section 401, the Stormwater Regulations & Handbook, Coastal Resources, and Restoration. We hope that MassDEP gives careful consideration to their comments and recommendations.

This letter focuses on the general and inland wetland regulations. It provides MSMCP's suggested modifications of the proposed "1.0" changes and our suggestions for the forthcoming "2.0" reg change package. Throughout the letter, underlining indicates topics and **bold-face indicates specific requests**.

We sincerely appreciate the effort that MassDEP put into creating these draft regulation changes and commend MassDEP for focusing on ways to make Massachusetts and its wetland resources more resilient to climate change. We see many of the proposed changes to the general and inland wetland regulations as valuable steps towards increased public safety and ecological health in the face of climate change. **All the proposed changes to the general and inland wetland regulations on which we (and our colleagues) have not commented, we endorse and encourage you to promulgate swiftly, including:**

- Supporting greater use of nature-based solutions.
- Safeguarding our coasts and waterways from flooding and stormwater pollution through the development of Land Subject to Coastal Storm Flowage performance standards and prohibiting new

development in the highest risk coastal flood zone and requiring other development to be more resilient and protective of nature.

- Including sea level rise in the revisions to the Massachusetts Waterfront Regulations.
- Updating the precipitation calculations for stormwater designs.
- Allowing Scientific Research Projects in coastal wetland resource areas.

## Overarching Concerns

We feel that some of the proposed changes will be very challenging to implement and/or could lead to unintended detrimental consequences and so should be refined prior to promulgation. Many of our detailed comments can be summarized under four overarching concerns.

- MassDEP should engage with day-to-day practitioners in their current and future regulatory revision efforts: conservation agents, conservation commissioners, and other professional non-profit staff – the people responsible for day-to-day interpretation and consistent implementation of these regulations.
- Provide frequent outreach and education about the new regulations once promulgated. Dissemination of detailed and multi-faceted explanations of these new regulations and the purposes and intents behind them for the Conservation Commissions and conservation professionals who will implement them will be essential. MSMCP welcomes the opportunity to assist MassDEP in these efforts.
- The revised regulations provide some excellent detail but must strike a reasonable balance between scientific precision and overly complex or burdensome requirements that render them too difficult for a majority of volunteer conservation commissions and applicants to implement. The proposed stormwater requirements, for example, exceed the review capabilities of most conservation commissions.
- Regulations should provide performance standards that protect wetland functions and values and not specific methods and means of achieving those performance standards. Methods and means should be addressed in guidance documents.
- In the face of climate change, the revised WPA and Chapter 91 regulations must acknowledge and reflect the difference between wetland “alterations” resulting from new development and “alterations” resulting from ecological restoration. Ecological restoration projects should be considered beneficial and afforded streamlined permitting to help achieve the state’s resiliency goals by:
  - Reversing historic damage to our wetlands,
  - Addressing invasive species,
  - Allowing for salt marsh migration,
  - Promoting carbon sequestration, improved water quality, and increased biodiversity, and
  - Promoting living shorelines and other nature-based solutions.
- Although we agree that the current Stormwater Handbook has much room for improvement, and although the new Stormwater Handbook is nicely organized, the new 860-page handbook is far too complex to: (1) be usable by most conservation agents or commissions; and (2) facilitate efficient review and permitting. Many of the new details of stormwater management should be removed from the regulations to facilitate future updates.

- Although we agree that referencing the NOAA14+ precipitation data is a great step in the right direction, it does not factor in climate change. The Handbook could at least refer to the new EEA Climate change projections dashboard (part of Climate Resilient Mass) which provides town-specific precipitation projections using NOAA 14+).
- With the new LSCSF regulations MassDEP has taken a positive step to address flooding from sea level rise, but it must do more to ensure that nature can thrive and to protect our communities from flooding and water pollution. Prohibiting new structures in the highest risk areas and providing standards for development and redevelopment throughout the coastal floodplain are appropriate and appreciated. The maps for where restrictions apply should, however, take the most up-to-date data on sea level rise and erosion rates into consideration.
- Regulation revisions must strive to create greater consistency of thresholds, exemptions/allowances, and requirements based on existing wetland functions and values and the potential impacts (or benefits) on those wetland functions and values of proposed projects, not on the user groups conducting the activity.

## Recommendations for the Proposed “1.0” Inland Regulations

As a large group of daily implementers of the wetland regulations, MSMCP urges MassDEP to give careful consideration to our detailed comments (and those of our colleagues), reach out with questions or for assistance, and make the necessary changes prior to promulgation.

### 310 CMR 10.02(2)(b) Minor Exemptions

- 10.02(2)(b)(2)(r). We agree that maintenance of shared use paths should be allowed without the need for permitting, so this new minor activity is appropriate, but it has too many details about means and methods and creates too narrow a management opportunity. We suggest the following revisions:
  - 10.02(2)(b)r.iv. The draft language is too detailed. The language as proposed creates implementation challenges since the means and methods are site-specific. We are concerned that the allowance of cutting shrubs and branches, and chipping and spreading this material in place may result in the unintended localized spread of invasive species. We recognize that the proposed language mirrors existing language in 10.02(2)(b)(2)n. (vegetation cutting for road safety maintenance). **We recommend deleting the language under 10.02(2)(b)4.iv. between “To prevent the possible export (...) disposed” and creating a guidance document or policy instead. We recommend that this type of specificity be removed from existing language under 10.02(2)(b)(2)n for similar reasons.**
  - 10.02(2)(b)r.v. We question why the language incorporates the provision that “(...) no work on any component of a Stormwater Management System is performed, including but not limited to drainage swales” occurs under this minor activity provision. This is contradictory to activities that are already exempt as maintenance of stormwater systems. **We are in favor of the new minor activity but request that the following proposed language be deleted: “(...) no work on any component of a Stormwater Management System is performed, including but not limited to drainage swales.”**
- 10.02(2)(b)n.iv. We recognize that MassDEP’s proposed language immediately above comes from this passage (10.02(2)(b)n.iv. Vegetation cutting for road safety maintenance), however, as noted above, we believe that the allowance for cutting and chipping in place of vegetation could lead to unintended



consequences of spreading invasive species. **We urge MassDEP to revise this language through guidance on best management practices rather than keeping these details in the regulations.**

### 310 CMR 10.04 Definitions

- Highway Specific Considerations. This gives one agency (MassDOT) special rights. Municipal DPWs often have control of roadways of similar size and undertake projects of similar scales, and so should be afforded similar allowances. **The regulations should not be based on the governing agency, but should be based on the size of the roadway, the scale of the proposed project, the intended public benefits, and the potential environmental impacts.**
- Impervious surface. Since solar arrays are often sited in fields and other entirely pervious areas, **there should be opportunities for applicants to utilize site-specific information on pre- and post-construction land cover and infiltration capacities to determine the need for stormwater management systems.**
- Maintenance of an Existing Public Roadway. **This definition should not include all instances of “replacing existing drainage pipes”.** Since some drainage pipes are deep beneath the paved surface, replacement might require extensive excavation, large spoil piles, and dewatering.
- Maintenance of an Existing Public Roadway. This new term adds confusion because of language in 10.02(2)(b)(2) and 10.53(3)(f).
- Public Shared Use Paths. The new definition in 10.04 states that the Path must be on “public property or on private property pursuant to an easement that provides for public access”. **MassDEP should afford all owners of publicly accessible land with Public Shared Use Paths the same allowances and requirements under the regulations.** This could include land trust and other permanently protected public or private property with public access.
- The proposed definition of Zone A references 310 CMR 22 (Drinking Water), but the text does not match. The draft wetland regs use the term "surface water" where Drinking Water (22.00) uses the term "surface water source", which is defined therein as a public water supply. Surface water is not defined as a public water supply.
- Many New Terms or Definitions have been introduced and incorporated throughout the redline version (e.g., the multiple new definitions introduced in 10.36(2)). **All terms should have an entry in 10.04 with either a standalone definition or a reference to the section where the term is defined and used.** Examples of new terms include:
  - Limit of Moderate Wave Action (LiMWA)
  - Scientific Research Projects

### 310 CMR 10.05 Procedures

- 10.05(4)(a) Notices of Intent. The regulations should not require such a high level of stormwater management detail for every NOI filing. We recommend two possible alternatives.
  - **Strike the new sentence “A construction period .... Activities” and replace with “All projects must address erosion, sedimentation control, and pollution prevention with plans appropriate to and commensurate with the proposed alterations, even those projects otherwise exempt from the stormwater standards.” OR**
  - **Strike the new sentence “A construction period .... Activities” and change the text in the general instructions for NOIs.**

- **Please note there is a typo:** "... operation and maintenance plan, and an illicit discharge compliance statement."
- 10.05(6)(m)(6): Requiring unpaved footpaths in natural areas to comply with the Stormwater Management Standards seems unreasonable. Trails generally rely on country drainage and so do not "fit" the intentions of the Standards. **We ask MassDEP to include unpaved footpaths in natural areas as exempt activity under the Stormwater Management Standards 10.05(6)(l).**
- 10.05(6)(m)(7): This new provision now requires that Maintenance of an Existing Public Roadway comply with the Stormwater Standards to the maximum extent practicable, however, 10.02(2)(b)(2)(p) appears to exempt the same roadway maintenance from review.

### **310 CMR 10.12 Notice of Intent for an Ecological Restoration Project**

- (2) **The numbering underlined below needs to be fixed because the original (2) was stricken.** "Notwithstanding the provisions of 310 CMR 10.54(4)(a)5., 10.56(4)(a)4., and 10.60, a person submitting a Notice of Intent for an Ecological Restoration Project that meets the requirements of 310 CMR 10.12(1) and (2) is exempt ..."

### **310 CMR 10.53 and 10.24 Limited Project Provisions**

- 10.53(u)8. & 10.24 (7)(c)(8) Public Shared Use Paths
  - **Delete the statement that a separate NOI may be filed either concurrently to the filing of the NOI for the project, or after the OOC is issued, for vegetation management and other activities as defined in 310 CMR 10.02(2)(b)2.r.i.-v. in wetland Resource Areas.** Applicants are always welcome to file NOIs.
  - **Delete "abandoned railbed" in first line.** "Public Shared Use Path" is already defined in 10.04. MassDEP should consider more broadly defining a Public Shared Use Path in this limited project provision. Municipal or land trust paths should be afforded the same limited project status.
- 10.53(4)(e)5. **Typo: The letter "r" is missing from the word "through" in "...set forth in 310 CMR 10.53(4)(a) though (d)..."**

### **Additional Miscellaneous Suggestions for Regulatory Reform Package 1.0**

- **Include a list of common acronyms**, particularly for new definitions. This could be incorporated in Section 10.04.
- **Provide headers at the top of every page of the new regulations with the complete section and subsection reference** to facilitate navigation through the numerous lengthy sections that comprise many pages.
- **Make sure the new version of the regulations is formatted with headers so that the pdf will have internal hyperlinks allowing users to "jump" to specific sections.**

### **Coordinate on the Development of Regulatory Reform Package 2.0**

As we all know, these draft regulation changes alone will not achieve our goal of true resilience. We appreciate that MassDEP has said that it is already working on regulatory reform package "2.0." MSMCP has identified a number of issues that should be addressed in the next regulatory reform package. Many of these suggested revisions are straightforward. Some of these suggestions warrant additional discussion. We

implement the wetland regulations on a daily basis and know what works well and what is challenging. We have a lot to offer to help make 2.0 a real success. **We urge MassDEP to begin a robust process of stakeholder engagement with consultants, field professionals, and conservation agents so that we may help you develop practical, strong, climate resilient regulations.** Here we provide some suggestions to begin the conversation.

### **310 CMR 10.02(2)(a) Activities Within the Areas Subject to Protection ...**

- Trail Maintenance. **We ask MassDEP to create a new section to exempt Maintenance of Existing Trails in use by the public.** This could be done by adding a new section “10.02(2)(a)3. Maintenance activities on trails that traverse Areas Subject to Protection under M.G.L. c. 131, § 40” which reads: “Activities conducted to maintain, repair or replace, but not substantially change or enlarge an existing public trail, provided said work utilizes the best practical measures to avoid or minimize impacts to wetland resource areas outside the footprint of said trail”. Boardwalks, puncheons, waterbars, and other basic trail infrastructure need to be routinely maintained or replaced. Land managers should be able to conduct this essential maintenance work to protect wetland resource areas without having to secure a permit.

### **310 CMR 10.02(2)(b) Minor Activities**

- 10.02(2)(b)(a) Unpaved pedestrian walkways. **We ask MassDEP to define Conservation Property to include all types of natural land onto which the public is invited.** Currently, unpaved pedestrian walkways (trails) less than 3 feet wide for public access on “Conservation Property” are exempt from the regulations. However, many trails traverse general municipal land, land trust properties, and private property with conservation restrictions affording public access. **Additionally, we urge MassDEP to consider increasing the 3-foot width to 4 feet because the state’s own guidance on accessible trails encourages trails are “at least 36” wide, and usually wider” (emphasis added).**
- 10.02(2)(b)(e) Conversion of lawn to uses accessory to residential structures such as decks, sheds, patios, pools. **We ask MassDEP to remove inground swimming pools from this minor activity.** Construction of inground swimming pools involve significant excavation, large impervious areas around the pool, fencing, and often involves discharge of chlorinated water. Having no Conservation Commission oversight of these projects has often led to after-the-fact permitting due to erosion or other problems which have impacted wetland resource areas. Tree cutting and grading has occurred in concert with some pool projects when landowners misunderstood these activities were not part of the minor activity provision. As an exempt activity, there is no requirement for an O&M plan to ensure that chlorinated water is not discharged to wetland resources areas without first being dechlorinated. Requiring a wetland permit and preconstruction review of all inground pool projects in the buffer zone and Riverfront Area will result in better oversight and reduce the non-compliance we see problematic with exempting some inground pools from wetland permitting.
- 10.02(2)(b)(n) Vegetation cutting for road safety maintenance.
  - **We ask MassDEP to update the AASHTO 2011 Policy to “7th edition, 2018 or most current”.**
  - **10.02(2)(b)(n)(iv), We ask MassDEP to remove the detailed language: “To prevent the possible export .... Chipping, disposal method and spreading chips...”** This language is too detailed (means and methods are site-specific and creates some implementation challenges). We suggest working with a stakeholder group and creating a guidance document on appropriate vegetation cutting BMPs that could be applicable to this and other minor activities that involve vegetation cutting.

- Cutting of certain high-risk trees. **We ask MassDEP to add a new minor activity: allowing landowners to remove up to 5 unsafe trees over 6 inches that are in the buffer zone or riverfront area and are threatening structures or human safety.** Trees are suffering from the effects of climate change. Invasive pests like woolly adelgid and emerald ash borer are decimating many of our native hemlocks and ashes. Increases in the number and severity of storms have resulted in more damaged trees. We recognize that certain parameters need to be codified and suggest a guidance document could be created to define and address thresholds associated with minor land management activities and requirements for Conservation Commission notification for certain activities (e.g., giving the Commission 30 days to comment but not necessarily require a permit, akin to forest cutting plans).
- Removal of invasive vegetation. **We ask MassDEP to add a new minor activity to 310 CMR 10.02(2)(b)(2) which reads: "Removal of turf lawn and/or non-native invasive herbs, vines, and shrubs, provided: (1) the activity is located more than 50 feet from the mean annual high water line within Riverfront Area or from BVW, whichever is farther and (2) provided erosion and sedimentation controls are implemented until the area is stabilized with 75% coverage of native species".** Invasive plants are one of the biggest threats to our native habitats. Quick and effective management of invasives is essential in controlling the spread of invasive plants.

### **310 CMR 10.03(6)(b), 10.04 (Alter), 10.05(3)(2)(b), and 10.58(6) Application of Herbicides and Cutting in Rail Rights-of-Way**

- Regulation of herbicides and cutting in railway rights-of-way. **We ask that MassDEP clarify the requirements for permitting the use of herbicides and cutting to control vegetation in rail rights-of-way in Buffer Zones and Riverfront Area.** MBTA and Keolis routinely claim exemptions that do not seem to exist and many cases are now in litigation.

### **310 CMR 10.04 Definitions**

- "Activity" and "Alter". **We ask MassDEP to consider clarifying that "vegetation" used in the definitions of "Activity" and "Alter" applies only to NATIVE vegetation.** See the explanation below.
- Definitions for "Vernal Pool" and "Vernal Pool Habitat". **We ask MassDEP to create new definitions for "Vernal Pool" and "Vernal Pool Habitat".** Currently, Vernal pool habitat includes the definition of both the depression and the 100' jurisdictional area. **We also ask that MassDEP extend the jurisdiction to provide a 100-foot Buffer Zone to vernal pools, regardless of whether it falls within a resource area.** Suggested changes:
  - "Vernal Pool" is a basin or depression that typically holds water for at least two continuous months through the spring and is free of adult, reproducing fish populations. Vernal pools are essential breeding habitat for a variety of amphibian species such as Wood Frog (*Lithobates sylvaticus*) and the Spotted Salamander (*Ambystoma maculatum*) and provide other extremely important wildlife habitat functions during the non-breeding season for these species. Vernal pools are important habitat for other wildlife species. The boundary of a vernal pool is the maximum water level in such a basin or depression and is identified by direct observation or by field indicators of the maximum extent of flooding.
  - "Vernal Pool Habitat" is the area between the boundary of a vernal pool and the boundary of a jurisdictional resource area that contains the vernal pool, or 100 feet from the edge of the vernal pool boundary, whichever distance is greater.

### 310 CMR 10.05: Procedures

- **We ask MassDEP to add the following sentence in 10.05(8) “If requesting an ORAD Extension, the Applicant must submit written confirmation by a professional with relevant expertise that the resource area delineations remain accurate”.** This language appears in 10.05(6)(d) however most Commissions and conservation professionals are unaware of this language since it appears in the wrong section in the regulations (it’s placed in the Order of Conditions section and not the Extensions section).
- **We ask MassDEP to clarify which projects are subject to stormwater management.** Currently, any activity other than the 4 listed categories appear to be subject to stormwater management regulations, however, small projects (e.g., restoration, foot paths) appear to require stormwater management.
- **10.05(8) We ask MassDEP to: (1) move mention of rules associated with extensions from 10.05(6)(d) to 10.05(8); and (2) within 10.05(8) to allow 5-year extensions for any appropriate project (i.e., “where special circumstances warrant and where those special circumstances are set forth in the Order.”)**

### 310 CMR 10.06: Emergencies

- **We ask MassDEP to add new text 10.06(6): “An Emergency Certification issued by a conservation commission shall be signed by a majority of the commission. It may also be signed by a single member or agent of the commission, if said Certification is ratified by a majority of members at the next scheduled meeting of the Commission”,** similar to language provided for Enforcement Orders.

### 310 CMR 10.24 Limited Projects

- 10.24(1)(b). The nature-based resiliency requirement is non-binding. Having applicants merely “consider” these measures does not mean they will implement them. **MassDEP should consider stricter requirements for these measures.**
- 10.24(7)(c). Limited Projects in Coastal Areas at Risk from Sea Level Rise. Allowing the relocation of roads and railroads to avoid the impacts of sea level rise could result in damage to other ecosystems. **We ask MassDEP to postpone this proposed modification until completion of the Resilient Coasts plan.**

### 310 CMR 10.53 Limited Projects

- **We ask MassDEP to expand the Limited Project provisions to simplify permitting requirements for routine land management projects necessary to address the impacts of climate change.**
  - **We ask MassDEP to expand the Limited Project provisions to facilitate large scale invasive species work in wetland resource areas with specific regulatory review standards.** Some invasive species removal projects extend into wetlands and cover >5,000 s.f. There should be a simplified way of allowing landowners and other organizations to tackle invasive species removal projects without triggering complicated permitting processes.
  - **We ask MassDEP to add a limited project provision which specifically allows small- and medium-scale invasive species removal projects with specific regulatory review standards.** Non-native invasive plants pose a major threat to the health and survival of our native ecosystems, and are on the rise with climate change. Currently, invasive plant control work requires time-consuming, costly, and complex wetland permitting devised for construction



projects. Quick identification and removal of invasive plants minimizes the dramatic negative effects of these plants and allows for the recovery of native species diversity and native wildlife habitat, a recognized wetland value.

- **We ask MassDEP to expand the limited project provision in 10.53(j)(a) to allow: “The construction of new public footpaths and associated boardwalks/ puncheons that are constructed close to the ground provided, however, that such structures are constructed on pilings, sills, or posts so as to permit the reasonably unobstructed flowage of water.”**  
Boardwalks and other basic trail infrastructure that cannot avoid wet environments serve to protect the wetland resource areas and their functions and values. Because most boardwalks and puncheons are only elevated 4-12” above the ground for safety reasons, shading is inevitable, and because many boardwalks and puncheons are built on sills, loss of vegetation under the sills is inevitable. Therefore, under the current regulations, all boardwalk and puncheon construction in BVW requires wetland replication. Our proposed minor modification (above) would allow Conservation Commissions to approve public boardwalks and puncheons as Limited Projects. This would reduce the need for inland wetland replication which generally results in the destruction of forested buffer zones in protected public open spaces. Larger public boardwalk/puncheon projects could still be required to undertake wetland replication based on the size, scope, and nature of the project and the opportunity for less impactful alternatives. Below in this letter are recommendations for a Guidance Document of Best Trail Management Practices (BTMPs) to ensure the health of wetland resource areas.

### **310 CMR 10.55 Bordering Vegetated Wetland Performance Standards**

- **10.55(2). We ask that MassDEP modify the definition of BVW and how the boundary of a BVW is defined, to reflect the 2022 “Massachusetts Handbook for Delineation of Bordering Vegetated Wetlands” that was released in March 2023.**
- **10.55(4)(c). We ask that MassDEP simplify the permitting process for trail construction projects by adding to the Bordering Vegetated Wetland regulations a new section in 10.55(4)(c)(4) allowing Commissions to permit new trails in wetlands when: "said work involves the creation of a public trail for non-motorized use (i.e., hiking, skiing, mountain biking, etc.) which will alter less than 500 s.f. of BVW, provided alternatives that attempted to avoid and minimize impacts were considered and that the trail will permit the reasonably unobstructed flowage of water.”** Wetland trail construction should be subject to review under the WPA, but that review should be simplified. Narrow unpaved pedestrian walkways in publicly accessible open space often traverse wetlands. When wetland trails are properly constructed, they preserve wetland functions and values and help build a culture of appreciation and stewardship for these vital resources. (Note: Allowance for ADA compliance and motorized mobility devices must be considered.)

### **310 CMR 10.57 Land Subject To Flooding (Bordering and Isolated Areas)**

- **10.57(2)(a)5. Vernal Pool Habitat** should not necessarily need to be certified by DFW in order to be afforded protection. **We ask that MassDEP consider allowing field-based evidence submitted to the Conservation Commission by competent professionals as acceptable proof of vernal pool habitat.**
- **10.57(2)(a)6. Vernal pools. We ask that MassDEP revise the language to read: “The boundary of a certified or uncertified vernal pool shall be based on field observations of the maximum extent of flooding and delineated by a competent source meeting the criteria in 310 CMR 10.60(1)(b). Vernal pool habitat shall include the area within 100 feet of the boundary of the vernal pool itself.”** DFW does not certify the boundary of vernal pools, so we suggest removing those references. The

application would be submitted with the applicant's representative delineating the vernal pool boundary and the Conservation Commission or MassDEP, as the issuing authority, verifying that delineation. Conservation Commissions and MassDEP staff may meet the requirements under 10.60 but they may not; simply listing the reference to 10.60 would be adequate here.

- **10.57(2)(a)3. We ask MassDEP to change references from the software-based BLSF calculations to “listed in the National Oceanic and Atmospheric Administration (NOAA) Atlas 14 Volume 10 (version 3.0 or later version are permissible)” and any such references to using NOAA 14 throughout the proposed Wetland Protection Act Regulatory changes and Stormwater Handbook to “listed in the most recent “National Oceanic and Atmospheric Administration (NOAA) Atlas”. No changes have been proposed to the ILSF section, but ILSF calculations currently refer to BLSF. Changes to 10.57(2)(a)(3)a-c change to require a more comprehensive software to be used in the BLSF calculations, and reference NOAA Atlas 14. Using the most recent rainfall data available through NOAA promotes climate resilience and avoids the necessity to update the Regulations in the future. NOAA 15 is already in development.**

### **10.57(2)(b) Isolated Land Subject to flooding**

- **We ask MassDEP to consider expanding the jurisdiction over small, isolated wetlands by reducing the size of ILSF to account for loss of isolated wetland protections as a result of the Sackett Decision.**
- **We ask that MassDEP consider adding vernal pools as its own dedicated wetland resource area, with a 100-foot Buffer Zone.** Vernal pools truly are a vital wetland resource subject to flooding, as identified in the Act: “No person shall remove, fill, dredge or alter any bank, riverfront area, fresh water wetland, coastal wetland, beach, dune, flat, marsh, meadow or swamp bordering on the ocean or on any estuary, creek, river, stream, pond, or lake, or any land under said waters or any land subject to tidal action, coastal storm flowage, or flooding, other than in the course of maintaining...” (emphasis added).

### **310 CMR 10.58: Riverfront Area Regulation Revisions**

- Many Conservation Commissions and Conservation Agents find it difficult to interpret many sections of the Riverfront Area sections. We are grateful for the hard work of the working groups who helped develop the regulations which were promulgated in 1996, however, after almost 30 years of implementing these regulations, we have discovered a number of challenges. We welcome discussions with MassDEP as the areas of concern are too complex to detail here. **We ask that MassDEP work with MSMCP and MACC to address the following areas of concern.**
  - **Defining Mean Annual High Water**
  - **Interpreting “practical and economically equivalent”**
  - **Interpreting the Redevelopment requirements for mitigation/restoration for “non-compliance” of more than one performance standard**
  - **Clarifying the distinction, if any, between 310 CMR 10.58(5)(c) and (d)**
  - **Requiring an Alternatives Analysis for Redevelopment projects**
  - **How the regulations apply to large sites with small amounts of pre-existing development**

### **WPA Forms**

Since MassDEP has recently requested MACC and MSMCP to provide comments on the WPA application and permit forms, following we share just a few of our most pressing requests. **We ask that MassDEP work closely with MSMCP and MACC to update the application and permit forms.**



- General Comments.
  - **Application forms should mirror permit forms.**
  - **Application forms and permit forms should reflect the regulations.**
  - **Forms should list the date, project, site, and owner/applicant information on the first page.**
  - **Forms should rely on “appendices” for site or project specific information (such as coastal resource areas, rare species, and stormwater).**
  - **There should be forms that are tailored for purely inland municipalities.**
  - **The language of the forms should be made intelligible to lay people.**
  - **Wetland Fees do not cover the administrative costs for processing, reviewing, issuing, and mailing wetland permits. We ask MassDEP to increase application fees.**
- Comments regarding the NOI form.
  - **The NOI should be greatly simplified and shortened.**
  - **Much of the NOI is not relevant to a majority of projects; the use of appendices would greatly simplify the application for many applicants.**
  - **The NOI form (under C.7.) should add categories of projects to which the stormwater standards do not apply (i.e., not “industrial, commercial, institutional, office, residential and transportation projects”).**
  - **The NOI form should reflect the regulations and ask the applicant to confirm they have met the relevant performance standards.** For example, although applicants are required to check off whether a project qualifies as redevelopment in Riverfront Area, this doesn’t require confirmation how the applicant has met the standards for 310 CMR 10.58(5).
- Comments regarding the OOC form.
  - **The OOC should be modifiable, to allow for routine additions such as longer lists of approved plans, the Commission’s findings, and the Commission’s site-specific conditions.**
  - **The OOC should be more succinct and tailored so that the information is pertinent, and homeowners and contractors will read it.**
  - **The OOC should not ask for data that is not supplied by the applicant, e.g., the closest distance from work to wetlands.**
  - **Clarification should be given for whether the “work” in the “closest distance from work to wetlands” includes restoration work which may happen 0 feet from the wetlands edge or the closest new construction which may be 25 or 50 feet away.**
  - **The OOC Riverfront Area fields should be simplified and clarified to ensure consistency of information.** For example, how commissions define and fill out areas of alteration and replication fields is highly inconsistent. (How does one “replace” riverfront area?)
- Comments regarding the Determination of Applicability form.
  - **Conservation Commissions need to have more latitude to issue negative determinations of applicability or general permits for small-scale or low-impact projects (such as the hand-pulling of aquatic invasives). The full-scale NOI/OOC permitting process is an enormous disincentive to ecological restoration and management. After all, it is the invasive plants that are creating the alteration and violating the Act, not the efforts to remove them. ;-)**
- Comments regarding the ORAD (Form 4B)
  - **The ORAD form should be revised to correct an inconsistency. The Recording Block on Page 1 and the Recording Information on Page 7 should be removed.** MassDEP Circuit Riders have

confirmed that ORADs do not need to be recorded, yet Form 4B (last revised 4/22/2020) indicated that said Form must be recorded. ORADs are simply confirming a wetland boundary for 3 years; no work is associated with ORADs. When applicants record this document, it creates a cloud on a title. Although a landowner can Request a Certificate of Compliance (Form 8A) - that form does not include language appropriate for closing out an ORAD.

- The ORAD form should be revised to reiterate an important regulatory requirement. **DEP should add a regulatory note on ORADs which states “If requesting an Extension, the Applicant must submit written confirmation by a professional with relevant expertise that the resource area delineations remain accurate, per 310 CMR 10.05(6)(d).”** Most Commissions and conservation professionals are unaware of this language since it is difficult to find in the regulations.

## Develop Guidance Documents

Conservation commissions and conservation staff would benefit from guidance documents which provide more detail about various regulatory provisions.

- Herbicides and cutting in rail rights-of-way. **We ask DEP to issue a guidance document outlining not only the exemptions afforded to railroads but permitting requirements and the recommended material to be submitted to each commission should railroads wish to conduct other activities which are not exempt.** That way, Commissions can properly review the request and fully understand what is being asked of them. It does not appear that railroads are a qualifying structure which meets the exemptions of 310 CMR 10.02(2)(a)(2) or 310 CMR 10.03(6). In addition, mechanical removal is not included in 310 CMR 10.05(3)(2)(b); this only applies to herbicide removal.
  - MBTA and Keolis have claimed exemptions which don't exist (i.e. MBTA claims to be exempt from filing a Notice of Intent for mechanical vegetation removal).
  - In 2020, Keolis, on behalf of MBTA, filed RDAs in 99 communities for the review of the wetlands maps in each community as part of the renewal of the 5-year Vegetative Management Plan (VMP). In the “work description” Keolis stated that “This work includes both chemical and mechanical controls as represented within the VMP available for viewing at [fdcerailroadvegetation.com](http://fdcerailroadvegetation.com)”. In the submission, Keolis suggested the Commission consider issuing a Negative #2 determination (indicating the work is within an area subject to protection but will not remove, fill, dredge, or alter that area...) or issue a Number Negative 5 determination, citing as exemption 310 CMR 10.02(2)(a)(2). Twenty-two Commissions disagreed with Keolis' interpretation of the Regulations and denied the mechanical work under the RDA. MassDEP issued an SDA concurring with those decisions, which MBTA/Keolis appealed, and the case is now in adjudicatory hearing with OADR. Unless mechanical cutting is an exempt activity expressly given to railroads, it seems prudent that Railroads be required to submit detailed plans when they wish to cut vegetation or trees within Resource Areas and Buffer Zones.
- Land management activities. **We Ask MassDEP to Issue Guidance Documents clarifying and simplifying wetland permitting on essential land management activities.** Best Management Practices surrounding high-risk tree removal, trail maintenance and construction, and invasive species management are well documented. Finding ways which allow landowners to manage their open space while ensuring best practices are adhered to is critical. MSMCP and other organizations welcome future discussions with MassDEP on devising guidance documents which simplifies the wetland permitting process and helps landowners conduct more climate resilience land management

activities. For example, a guidance document regarding habitat restoration could set regulatory review standards based on the scope, scale, and size of restoration projects.

- **Puncheons and Boardwalks. As an alternative to our recommendation to allow boardwalks and puncheons on publicly accessible trails to be permitted as Limited Projects (as described on page 11), we Ask MassDEP to Issue a Guidance Document clarifying thresholds of negligible impact of boardwalks and/or puncheons on BVW functions and values as a result of shade and loss.** MassDEP has required replication for small publicly accessible puncheons (because of shading and wetland loss) and elevated boardwalks (because of helical piers). A Guidance Document identifying best trail management practices (BTMPs) to create and maintain stable trail surfaces and limit improper widening of the footbed and trampling of vegetation by hikers seeking to avoid wet areas should be promoted. Such BTMPs are ever more important as climate change intensifies storms and worsens flooding.

## Miscellaneous

Our membership has suggested the following additional miscellaneous changes.

- **Update the 401 Water Quality Certification regulations regarding Outstanding Resources Waters (ORWs). We ask that MassDEP make practical allowances for minor incursions into ORWs for small projects that are responding to climate change and restoration needs.** Currently, there is no provision in the Surface Water Regulations that allows even a negligible amount of fill to be introduced into an ORW. Even building a small boardwalk or puncheon on a walking path is considered 'fill' and requires filing for a major Water Quality Certification. Obviously, work in ORWs must be carefully regulated, however, prohibiting even a single puncheon on a wetland trail within an ORW is unreasonable.
- **10.05(3)(a)(1). To use consistent, defined terms, we ask that MassDEP change the language to read: "Any person who desires a determination as to whether M.G.L. c. 131, § 40 applies to land or to work that may alter an Area Subject to Protection under M.G.L. c. 131, § 40, may submit to the conservation commission a Request for a Determination of Applicability, Form 1."**
- **10.05(3)(a)(2).** Currently, an RDA or NOI is required for any activity in the buffer zone. **We encourage MassDEP to provide some discretion for local conservation commissions to utilize an administrative approval process for activities in the buffer zone which will not impact wetland functions and values.** We feel strongly that individuals who wish to undertake minor activities (such as the removal of a high-risk tree) should be able to receive local approval from their local Conservation Commission without filing for a state permit.
- **Amending an OOC. We ask that MassDEP include a specific provision in the regulations that clarifies how an Order of Conditions can be amended. MassDEP should consider allowing Amended Orders that include minimal increases in resource area impacts,** instead of requiring a new NOI to be filed. **We also ask that MassDEP clarify whether an amendment to an Ecological Restoration OOC needs to be re-advertised in the Environmental Monitor.**
- **Provide some discretion** for local conservation commissions to utilize an **administrative approval process** for activities in the buffer zone which will not impact wetland functions and values. We feel strongly that individuals who wish to undertake minor activities (such as the removal of a high-risk tree) should be able to receive local approval from their local Conservation Commission without filing for a state permit.

Thank you for the opportunity to share our comments. As partners in the implementation of the Wetland Regulations, we deeply appreciate your efforts to engage with us and are excited to continue this very important conversation as the 1.0 changes are finalized and as the 2.0 changes begin to be fleshed out.

Sincerely,

Regen Milani (Canton), President  
Kathy Sferra (Stow), Co-Vice President  
Angela Panaccione, Co-Vice President  
Jennifer Steel (Newton), Co-Treasurer  
Leah Grigorov (Longmeadow), Co-Treasurer  
Brian Vasa (Plympton), Clerk  
Liz Allard (Harvard), Board Member  
Rebecca Bucciaglia (Bolton), Board Member  
Jennifer Carlino (Easton), Board Member  
Michelle Greene (West Newbury), Board Member  
Michele Grzenda (Lincoln), Board Member  
Samantha Holt (Newbury), Board Member  
John Keeley (Burlington), Board Member  
Cassie Tragert (Easthampton), Board Member

*The Massachusetts Society of Municipal Conservation Professionals (MSMCP) is a non-profit 501(c)3 organization dedicated to serving the professional staff members that work for Massachusetts Conservation Commissions. MSMCP was founded in 1984 to provide networking and educational opportunities to these municipal professionals focused specifically on their needs. MSMCP works to raise the level of professionalism by providing a forum for professional information exchange, sponsoring technical and scientific seminars and conferences, and fostering cooperation among contiguous or regionally related conservation commissions and their staffs. <https://www.msmcp.org/>*



## Massachusetts Association of Conservation Commissions

protecting wetlands, open space and biological diversity through education and advocacy

April 30, 2024

### ***Via Electronic Mail***

MassDEP – BWR Wetlands Program  
Attn: Wetlands-401 Resilience Comments  
100 Cambridge Street, Suite 900  
Boston, MA 02114  
[dep.wetlands@mass.gov](mailto:dep.wetlands@mass.gov)

### **Re: Wetlands-401 Resilience Comments**

MassDEP – BWR Wetlands Program  
Attn: Waterways Resilience Comments  
100 Cambridge Street, Suite 900  
Boston, MA 02114  
[dep.waterways@mass.gov](mailto:dep.waterways@mass.gov)

### **Re: Waterways Resilience Comments**

*Comments on Proposed Wetlands Resilience 1.0 Draft Regulations, 310 CMR 10.00 and  
Proposed 401 Water Quality Certification Resilience 1.0 Draft Regulations, 314 CMR 9.00  
and  
Comments on Proposed Waterways (Ch. 91) Resilience 1.0 Draft Regulations, 310 CMR 9.00.*

Dear MassDEP Wetlands and Waterways Staff:

Thank you for the opportunity to comment on Massachusetts Department of Environmental Protection's (MassDEP) Draft Climate Resilience 1.0 Regulations. We commend MassDEP for the incredible amount of work invested in these proposed regulatory changes. We recognize how imperative it is that Massachusetts adapts our environmental regulations to address the significant challenges we face due to the impacts of climate change and increasingly severe storms. We greatly appreciate the leadership of the Healey Administration in prioritizing actions on climate change and in recognizing the important role that wetlands play in climate resiliency.

The Massachusetts Association of Conservation Commissions (MACC) is a statewide non-profit organization that supports more than 2,500 volunteer conservation commissioners in their mission to preserve wetlands and open space. Each of the 351 cities and towns in Massachusetts has a conservation commission responsible for administering the state Wetlands Protection Act and municipal wetland bylaws and ordinances, as well as managing municipally owned conservation land. Our association protects Massachusetts' natural resources through our education and advocacy efforts, and we have been doing this work since 1961.

These comments were prepared with input from MACC's Board of Directors, a diverse team of environmental professionals, including environmental consultants, attorneys, land trust advocacy representatives, conservation commissioners, and regulators—practitioners who have implemented these wetlands and waterways regulations for years. In addition, over the course of

this public comment period, a core group of MACC's Directors met weekly with representatives from the Association of Massachusetts Wetland Scientists (AMWS), the Massachusetts Rivers Alliance (Mass Rivers), the Massachusetts Society of Municipal Conservation Professionals (MSMCP), and Mass Audubon, as well as representatives from environmental engineering firms and law firms. Our comments benefited from the expertise of these environmental professionals, and we extend special thanks to Nitsch Engineering, SWCA, Beals + Thomas, and A. Koenigsberg for their contributions to our stormwater comments.

MACC's comments pertain to the following three sets of proposed regulations under Climate Resilience 1.0:

- 310 CMR 10.00, Proposed Wetlands Protection Act Resilience 1.0 Draft Regulations (WPA)
- 314 CMR 9.00, 401 Water Quality Certification Resilience 1.0 Draft Regulations (401)
- 310 CMR 9.00, Proposed Waterways Resilience 1.0 Draft Regulations (Chap 91)

We have separated our comments on these proposed regulations by section but believe that our collective comments may be beneficial to both the MassDEP Wetlands and Waterways Programs where our comments overlap.

We also include recommendations for future improvements for wetland regulatory updates, for "Climate Resilience 2.0," and provide these at the end of this letter.

Recommendations for future improvements for wetland regulation updates, for Climate Resilience 2.0 are also included at the end of this letter. MACC looks forward to participating in the Climate Resilience 2.0 process. We encourage MassDEP to include in that process measures to further advance wetlands restoration. The ResilientMass Plan<sup>1</sup> includes more than a dozen action items for wetlands restoration, including permit streamlining, and the 2.0 process is also an opportunity to further align MassDEP's regulatory programs with the Biodiversity Initiative under Executive Order 618 as well as the role of carbon in wetlands in the state's Clean Energy and Climate Plan.

The Climate Resilience 2.0 process is also an opportunity to improve efficiencies in the wetland program. Particular attention should be paid to items identified in MACC's comments as well as MSMCP's comments, where procedures and standards could be improved to reduce time and complexity for common activities with minimal negative impacts, such as invasive species removal and trail maintenance.

## **1.0 MACC General Comments**

MACC supports many of MassDEP's Climate Resilience 1.0 proposed regulations, including the following:

- establishing performance standards for Land Subject to Coastal Storm Flowage (LSCSF)
- establishing restrictions on new development in the areas with highest storm damage risk
- using future projections of sea level rise to deal with effects of climate change and intensifying storms
- updating precipitation calculations for stormwater designs
- using nature-based solutions
- moving toward more consistency with MS4 permits

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<sup>1</sup> [ResilientMass Plan Action Tracker](#)



These are positive steps toward protecting our coastal resources and infrastructure and making Massachusetts more climate resilient. We offer our general comments followed by more detailed comments where we believe some refinements of the currently proposed language would add clarity and ease of implementation.

## A. Comments on WPA Regulations

- 1.01 Resource Protection and Restoration Preferred.** We support the new Land Subject to Coastal Storm Flowage (LSCSF) section at 310 CMR 10.24 includes provisions giving preference to the protection and restoration of coastal wetlands as alternatives to coastal engineering structures and allowing alteration of LSCSF to facilitate the migration of salt marshes and dunes.
- 1.02 Updated Stormwater Standards and Aligning Stormwater Requirements with MS4 Requirements.** We support updating stormwater standards to include precipitation and coordinating with MS4 requirements, making compliance less burdensome for municipalities.
- 1.03 Enhanced Use of Guidance Documents for details that will be outdated rapidly, rather than including them in the regulations.**
- The updated data (NOAA14+) that MassDEP is proposing to be tied to the Wetland Protection Act regulations will be outdated soon. That data instead needs to address precipitation intensities of future storm events, not just rainfall amounts. Similarly, regarding the Land Subject to Coastal Storm Flowage delineations, MassDEP proposes relying on FEMA maps, rather than sea level rise. Instead, we need to use dynamic, forward-looking projections for precipitation that will protect our community for decades to come. (Stormwater Handbook Standard 2). The Waterways regulations require new structures to be designed to address sea level rise for the life of the project. Similarly, the LSCSF regulations should require that buildings and infrastructure be designed taking into account projections on sea level rise and erosion for the life of the structure.
  - Many of the LSCSF details could be included in guidance documents, rather than in the regulations.
- 1.04 Permitting and Streamlining Restoration Projects.** MACC urges MassDEP to continue to explore mechanisms for additional interagency coordination, easing permit timelines, and costs for restoration projects.
- 1.05 Aligning Infrastructure Protection with Restoration and Migration.** The proposed regulations allow elevation and relocation of existing roads and construction of berms to protect existing developed areas. The final regulations should more clearly define the planning process for such projects, to support restoration and migration of coastal wetlands to the fullest extent possible. For example, road elevation or relocation projects should avoid conflicting with interests of neighboring conservation-oriented landowners to restore more natural flows to salt marshes where the road has been acting as a barrier to that flow.
- 1.06 Combined Applications.** The regulations currently allow combined applications for Wetlands, Waterways, and 401 Water Quality permitting for Ecological Restoration Permit (ERPs). The proposed regulations eliminate those provisions. Rather than



eliminating combined review, MassDEP should seek to improve and expand combined application and permitting of restoration projects.

- 1.07 Research Projects. 310 CMR 10.05(12)** The proposed regulations include a new provision for Scientific Research Projects to allow research into the response of coastal wetlands to climate change. This provision is too narrowly crafted and should be broadened to allow experimentation with coastal and inland wetlands restoration techniques that are not currently utilized in Massachusetts. Appropriate limits on the scale and siting of such projects should be set, and successful projects should be allowed to remain in place. Additional training for conservation commissioners will be needed to interpret monitoring data during the first year of the project and in subsequent years.
- 1.08 Implementation, Complexity, and Training.** The complexity of the new regulations will make review by Conservation Commissions, which are comprised of volunteers that often do not have a wetlands or engineering background, even more challenging. Training for commissions and staff will be important for the successful roll out of these regulations. MACC will be happy to assist with the training in any way we can.
- 1.09 Regulate Based on Impacts not Type of Activity.** Wetland regulation revisions must strive to create greater consistency of thresholds, exemptions/allowances, and requirements based on existing wetland functions and values and the potential impacts (or benefits) on those wetland functions and values of proposed projects, not on the user groups conducting the activity. For instance, the new regulations offer flexibility for moving vulnerable roads that could have a large impact to the resource area but there is not the same flexibility for maintaining trails, where Resource Area impacts could be negligible.
- 1.10 Gravel Roads.** MACC has concerns that classifying gravel roads as impervious surfaces will encourage the construction of paved roads, which are more impactful to wildlife and the environment. This will also likely require construction of stormwater management systems for gravel roads, which may have unintended consequences in rural settings including removal of mature trees and other native vegetation. Low impact designs such as vegetated swales should be preferred for gravel roads, especially in rural settings.

## B. Comments on Ch. 91 Regulations

- 1.11 Chapter 91. 310 CMR 9.37(1)(d).** MACC supports the new requirement for sea level rise data to be considered for new development and redevelopment. All fill and structures to be designed in a manner that *“incorporates the impacts of projected sea level rise throughout the design life of the building structure.”*
- 1.12 Chapter 91. 310 CMR 9.05(g).** We support clarifying that culvert replacements that meet Massachusetts Stream Crossing Standards are exempt from Chapter 91 permits in order to speed up restoration projects.

## 2.0 MACC Specific Comments – WPA (310 CMR 10.00)

MACC's specific comments pertaining to the Massachusetts Wetlands Protection Act Regulations follow the order in which they are presented under each major category within the regulations.

### A. Definitions under 310 CMR 10.04

- 1.13 Alter.** The definition of **Alter** has been modified to include a “change” in water level or water table. As the requirement for infiltration is being increased to “meet predevelopment groundwater recharge and to support baseflow” as outlined in Summary of Target Recharge Volume Evaluation, we expect that this increase in recharge will increase baseflows and potentially water levels in adjacent resource areas. We recommend MassDEP retain the current definition of Alter to eliminate the contradiction of the new increase to baseflow requirements.
- 1.14 Best Management Practices (BMPs) and Stormwater Control Measures (SCM).** More concise, less confusing definitions would be helpful. Some information would be better placed within sections on performance standards. The distinction between BMP and SCM is not clear.
- 1.15 Combined Applications.** The regulations currently allow combined applications for Wetlands, Waterways, and 401 Water Quality permitting for Ecological Restoration Permits (ERPs). The proposed regulations eliminate those provisions. Rather than eliminating combined review, MassDEP should seek to improve and expand combined application and permitting of restoration projects. To accelerate the pace of restoration projects, we need a simplified permitting process. NJ DEP has an office of permit coordination that is effective at streamlining the permit process. California has the “Cutting the Green Tape program for streamlining the environmental permitting process. EPIC has compiled examples from other states, and recommendations for Funding Nature not Paperwork: Funding Nature Not Paperwork - Policy and Programmatic Pathways to Speed Restoration Permitting – Environmental Policy Innovation Center.
- 1.16 Highway Specific Considerations.** This gives one agency (MassDOT) special rights. Municipal Department of Public Works (DPWs) often have control of roadways of similar size and undertake projects of similar scales, and so should be afforded similar allowances. The regulations should not be based on the governing agency but should be based on the size of the roadway, the scale of the proposed project, the intended public benefits, and the potential environmental impacts.
- 1.17 Impervious Surface.** The definition of impervious area includes solar arrays as impervious. However, *MassDEP Wetlands Program Policy 17-1: Photovoltaic System Solar Array Review* mentions using the CN value of material below the arrays. What part of the solar array is considered impervious? The footprint? The land below the panel? The entire array field? MACC recommends revising the definition of solar arrays to indicate they may be considered impervious or pervious based on the surface cover below the array if stormwater will be able to flow off and drain to that surface.
- 1.18 Impervious Surface.** Artificial turf has reduced permeability, which can vary depending on the manufacturer and installer. While there is a drainage layer at the base

of the turf, there are drainage holes in the top layer allowing it to drain; infiltration and groundwater recharge are significantly reduced.

[https://westernresourceadvocates.org/wp-content/uploads/2023/01/2022\\_WRA\\_Artificial\\_Turf\\_Report.pdf](https://westernresourceadvocates.org/wp-content/uploads/2023/01/2022_WRA_Artificial_Turf_Report.pdf).

- 1.19 Impracticable and practicable** have different qualifications in their definitions. The added definition for “Impracticable” is based on physical constraints while the definition of “practicable” factors in costs, technology, proposed use, logistics, and adverse consequences. We believe this will lead to confusion. These definitions should be updated so that the criteria are consistent, such as updating the definition of “impracticable” to include all of the factors listed in the definition of “practicable.”
- 1.20 Macro-Approach.** This definition is less prone to multiple interpretations if the word “development” is removed.
- 1.21 Near** (as also related to **10.05(6)(k)7**). This new definition is vague and thus will be problematic to implement. Does it refer to volume or rate? The terms “strong likelihood” and “significant impact” can be interpreted differently by consultants and commissioners alike. This definition lends itself to inconsistent application. Does this refer to “in addition to” proposed setbacks?
- 1.22 Offsite Mitigation.** How can evaluation be done on any location outside the project locus? The way it is drafted could include a site in a different municipality or even potentially outside of the Commonwealth.
- 1.23 Watershed.** Could a clearer definition be provided? See the definition available on the USGS website.
- 1.24 General Comment on Section 10.04.** In addition to the definitions discussed above, MACC recommends that **all newly introduced terms and definitions also be cited under 310 CMR 10.04**, even when discussed under specific sections elsewhere in the regulations. For instance, just as “Bordering Vegetated Wetland is defined in 310 CMR 10.55(2),” so should be referenced all new definition and terms.

## B. Procedures under 310 CMR 10.05

MACC has a number of comments about revisions to procedures, many of which focus upon the new procedures pertaining to stormwater management.

- 1.25 10.05(4)(a) Notices of Intent.** The regulations should include some flexibility and should not require such a high level of stormwater management detail for every NOI filing. The amount of information should be commensurate with the size and scale of the project.
- 1.26 10.05(4) NOI.** The difference between a long-term pollution prevention plan and an operation and maintenance plan is unclear. Are these terms defined?
- 1.27 10.05(4)(a).** Should the wording “Impracticable due to physical site constraints” be in this section and not just in the definitions?
- 1.28 10.05(6)(k).** Is this minimum setback (from receiving waters and wetlands) the same as that described in the table in 10.05(6)q?

- 1.29 **10.05(6)(k)3.** There should be requirements for the level of detail of what needs to be included in the alternatives analysis. Does it need to include a plan or just a narrative?
- 1.30 **10.05(6)(k)4.c.ii.** Is there some missing text or a numbering error?
- 1.31 **10.05(6)(l)5.** The numeral "5" is mislocated. It should precede the text "Gardens..." not follow it.
- 1.32 **10.05(6)(l) and (m). Exemptions.** Residential (single and multi-family) with 4 or fewer units don't have to meet stormwater standards. (No change to current regs). But the MS4 permits regulate everything over an acre, so these regulations are not consistent but should be as much as possible.
- 1.33 **10.05(6)(m)6.** Does this include boardwalks? Are concrete sidewalks excluded?
- 1.34 **10.05(6)(m)(6).** Requiring unpaved footpaths in natural areas to comply with the Stormwater Management Standards seems unreasonable. Trails generally rely on country drainage and so do not "fit" the intentions of the Standards. MassDEP should include unpaved footpaths in natural areas as exempt activities under the Stormwater Management Standards 10.05(6)(l).
- 1.35 **10.05(6)(o)2. Stormwater MEP.** Does this include boardwalks? Are concrete sidewalks excluded?
- 1.36 **10.05(6)(o)2. Stormwater MEP.** Language is confusing and unclear. How is this to be evaluated? How are costs to be considered?
- 1.37 **10.05(6)(q) Stormwater Minimum Setbacks from All wetland Resource Areas except ...** Could the minimum setback be rephrased to state "Setback of at least 10 feet outside of BVW and Bank"?
- 1.38 **10.05(6)(q) Stormwater Setbacks from Surface Waters.** Why is Land Under Waterbodies and Waterways included in surface waters, but Bank is not? The difference between the minimum 10-foot setback and the 50-foot setback is not clearly explained.
- 1.39 **10.05(12) Research Projects.** The proposed regulations include a new provision for Scientific Research Projects (310 CMR 10.05(12)), to allow research into the response of coastal wetlands to climate change. This provision is too narrowly crafted and should be broadened to allow experimentation with coastal and inland wetlands restoration techniques that are not currently utilized in Massachusetts. Appropriate limits on the scale and siting of such projects should be set, and successful projects should be allowed to remain in place.

## C. General Provisions at 310 CMR 10.24

- 1.40 **10.24(1)(b)** We support the new requirement for nature-based projects to be incorporated into coastal projects "as an alternative to coastal engineering structures to promote resiliency along the shoreline." The **nature-based resiliency requirement** is non-binding. Having applicants merely "consider" these measures does not mean they will implement them. MassDEP could go further in requiring these measures or offering incentives for implementation of nature-based resiliency measures. "Nature-based Projects" is a very broad term. MassDEP should develop guidelines for specific types of

projects and should limit the scope and scale of projects that alter resource areas, regardless of the terminology used in describing them, unless there is a clear demonstration of a net positive benefit to the interests of the Act.

## D. Land Subject to Coastal Storm Flowage (310 CMR 10.36)

- 1.41 **10.36(1) Preamble.** Other interests of the Act should be acknowledged including wildlife habitat and prevention of pollution, at least for consideration in project analysis.
- 1.42 **10.36(6). Land Subject to Coastal Storm Flowage.** We support the prohibition on new structures in velocity zone, and design requirements for development in other parts of floodplain.

## 3.0 Specific Comments on Stormwater

MACC supports updating the stormwater standards to include more current precipitation data and to further support Environmentally Sensitive Site Design (ESSD) and Low Impact Development. The details still need to be refined in several respects. We encourage DEP to avoid inserting too many specific requirements into the regulations and consider moving some of those details into the Stormwater Handbook. The effective date of the stormwater provisions may need to be extended in order to address all of the comments and provide sufficient time and training for conservation commissioners and proponents to prepare to apply the new provisions.

In addition to the comments provided under Section A. Definitions and Section B. Procedures above, we offer the following comments on stormwater.

- 1.43 **Precipitation values and calculations** should stay in Stormwater Handbook rather than in the regulations to allow for future changes and considerations.
- 1.44 **Regulations vs. Guidance.** MACC suggests moving much of the detailed stormwater information from the regulations to the Handbook to allow for updates.
- 1.45 **Legacy Projects.** Consideration should be given to granting “legacy status” certain projects from the new stormwater requirements, similar to the exemptions afforded for projects in Riverfront Area at 310 CMR 10.58(6)(e). Large-scale phased projects that have completed MEPA review will have designed a master plan stormwater system and advanced financing and development plans based upon anticipated square footage. Updating such master planned systems to address the new requirements could result in significant loss of development square footage and affect the viability of such projects.
- 1.46 **The Setback Table** in the regulations differs from the detailed setback table in the Stormwater Handbook. We recommend providing the setback table only in the Stormwater Handbook to allow for periodic and/or minor changes without changing regulations. This change would also increase clarity and prevent having references in multiple locations.
- 1.47 **Implementation of the Stormwater Handbook.** Considering the large volume of information within the Stormwater Handbook and Appendices, with references to calculation methods and backup documentation in additional manuals (i.e., Hydrology Handbook for Conservation Commissioners), it will be difficult for Commissions to review and implement the requirements and content of the Handbook as is currently presented.



We recommend that MassDEP allow a longer lead time than six months for implementation of the new Stormwater Handbook.

- 1.48 Update the Hydrology Handbook for Conservation Commissioners** concurrent with the release of the Stormwater Handbook to remove potentially outdated and conflicting information (i.e., TP40 rainfall). To ensure consistent implementation and interpretation, MassDEP should hold training and working sessions held for Commissions and practitioners prior to the release of both Handbooks.
- 1.49 Stormwater and Conservation Commission Jurisdiction.** Do Conservation Commissions have jurisdiction for the entire site for all stormwater management, even if the stormwater management system is not in a wetland resource area? If the upland site drains to a municipal system, and the discharge is to a wetland or jurisdictional area, how can the Conservation Commission have jurisdiction?
- 1.50 Gravel.** The definition of gravel is problematic. Gravel roads might be more impervious than non-paved roads, but many gravel roads are not impervious, just a lower permeability than some others. There should be more leeway/flexibility on this issue.
- 1.51 Small Stormwater Project Exemptions** While we agree with the need for the changes in the stormwater regulations including increased treatment and infiltration requirements, the stormwater regulations should provide limited exemptions for small projects. For example, stormwater standards do not apply to residential developments of 4 or fewer units (reference 10.05(6)(l)), but these regulations do apply to new trail projects, or commercial properties seeking to add accessible parking spaces. Considering that the trail projects, or the commercial property's addition a few handicapped accessible parking space could have considerably less impervious area and impact on stormwater than exempted residential development, and the trails and handicapped accessible parking spaces would be of a public benefit. MassDEP should consider allowing additional exemptions or maximum extent practical (MEP) projects that would allow Commissions to review and approve small projects.
- 1.52 Alternatives Analyses.** Guidance is needed for the Alternatives Analyses to provide consistency in applications and in review of applications. 10.05(6)(k) requires that projects provide "Environmentally Sensitive Site Design (ESSD) and Low Impact Development (LID) techniques or practices to attenuate pollutants unless it is Impracticable." We anticipate that the Commissions will receive a wide and varied range of "proof" that ESSD/LID are impracticable and recommend that MassDEP provide additional guidance on how practitioners will document and how Commissions will review, interpret, and implement these requirements.
- 1.53 PE stamps.** It is clear that stormwater project calculations will be stamped by a Professional Engineer (PE), but the way the proposed stormwater regulations are currently written, it appears that a PE stamp will also be required for the Stormwater Checklist. MACC suggests that if projects are minimal and include removal of impervious surfaces, then PE stamps might not be needed for projects when there are no changes in impervious surfaces and no changes in grade or topography.



## A. Stormwater Handbook Comments

MACC has compiled the following comments specific to the new Stormwater Handbook.

### *General Comments*

- 1.54 Delay of Handbook Implementation.** The Stormwater Handbook could use some additional clarifications. MACC suggests delaying implementation of the Handbook beyond the 6-month implementation period noted in the draft to allow additional input from practitioners.
- 1.55 Flexibility.** We would like to see additional flexibility for sites with numerous constraints to allow stormwater improvements where feasible.
- 1.56 Stormwater Handbook Target Audience.** It is difficult to understand for whom the Stormwater Handbook is written. MACC sees this as problematic for several reasons.
- Who will interpret the Handbook when there are lots of variables?
  - **Training.** MACC strongly encourages training for conservation commissioners and staff will be needed for consistent reviews across the Commonwealth.
- 1.57 Definitions within the Handbook.** The Stormwater Handbook needs to provide **more precise definitions** for important concepts, including 72-hour drawdown and hydraulic conductivity. These should be consistent with those in the updated regulations at 310 CMR 10.04 as discussed above.
- 1.58 Mounding Analysis.** This analysis is required in several instances, and instructions on how to implement the analysis will help for consistency. The Handbook needs to provide instructions on how to perform and evaluate a mounding analysis, including how to determine and use valid inputs.
- 1.59 MassDOT Section.** During previous stormwater advisory group meetings, it was discussed that the Stormwater Handbook would include a MassDOT section. The Handbook would benefit from a transportation section.
- 1.60 Standardization.** Some Standardization tools may help. Along with the need for flexibility with design approaches, standardization tools will help with consistent implementation of the Stormwater Handbook.

### *Chapter 2: The Massachusetts Stormwater Management Standards*

- 1.61 Table 2-1.** The minimum infiltration rate is 0.01 inch per hour. Is this an error? One would need 100 hours to recharge at 0.01 inch per hour.
- 1.62 Standards for compliance should be performance based,** not based upon infiltration rates for a performance standard. Suggestion: remove this requirement, and have the applicants make sure the drainage system works.
- 1.63 Stormwater Standard 2. Peak Rate Attenuation** Table 2-7 (Pg 2-50)
- Several smaller SCMs, including dry wells, tree box filters, and water quality swales, are noted in Table 2-7 as “Does not have the ability to partially or fully meet the specific Standard.”

- However, all of these SCMs can be designed to provide a measure of detention, particularly on smaller sites. For example, a subdivision may have single family houses with individual dry wells and are tributary to larger treatment SCMs.
  - Although the dry wells would only provide detention during smaller rain events, they can decrease the overall size of the downstream SCM, saving on cost and size demands.
- 1.64 Stormwater Standard 3, Stormwater Recharge.** Table 2-1 Rules for Groundwater Recharge (Page 2-11). This states that recharge volumes may be infiltrated to the maximum extent practicable for various conditions, including water that has "been classified as contaminated." What are the specifications for this requirement?
- 1.65 Standard 6. Critical Areas. Handbook.** There appears to be a typo in line 8 of the Definition paragraph of Standard 6. The words "described in" are floating without context.
- 1.66 Standard 9. Operation and Maintenance Plan. Handbook.**
- It is a step in the right direction to have a post-construction inspection of all SCMs prior to the issuance of a Certificate of Compliance. However, as written on page 2-43, this inspection would be performed either by the Conservation Commissions or MassDEP. Understanding the design and signs of failure in SCMs is a technical skill that requires experience and training.
  - Can the definition of inspector be expanded to include other municipal employees (e.g., town engineer) who may have additional experience with inspecting SCMs? Or will training and documents be made available by MassDEP to provide Conservation Commissions with guidance on inspections?
- 1.67 Standard 10. Illicit Discharges to Drainage System. Handbook.** The URL for "Urban Water Resources Research Council" on page 2-45 is broken.
- 1.68 Consistency Among Use of Terms.** There are different terms in the same sentence used in similar and different ways in several parts of the Handbook. The inconsistent use of some of the terms is confusing.
- 1.69 Section 2.5. Setback Table 2-8 (page 255).** Several practitioners have expressed concerns with this table. How does one interpret this table if the project and the building are not in a resource area, and the infiltration area is not in a resource area. Is the Conservation Commission supposed to evaluate the project? There was no concurrence in MACC's practitioner's group. In addition, are these setbacks required for *all* projects? The amount of slope requirement and separation distances seem difficult to comply with, especially for some smaller parcels.
- Note 8 of Table 2-8 (pg. 255) states that "Structural Stormwater Management Systems (e.g., pipes, catch basins) and structural SCMs are therefore not allowed to be installed in groundwater."
  - This standard could potentially be onerous to design around, particularly for public entities with large drainage systems located in the public way with a variety of groundwater conditions.
  - For instance, it would be a barrier to the installation of deep sump catch basins, which are much deeper than a typical catch basin but provide a measure of water quality.
  - It could also have the side effect of driving up design costs; test pits to identify groundwater are not a typical component in the design of a typical pipe and catch basin

system. For larger systems over a wide area and a myriad of conditions, the implication is that many soil investigations, including potentially at each individual drainage structure, would need to be performed.

- Table 2-8 requires that several SCMs have a  $\geq$  12-foot access perimeter. In many cases, especially smaller applications, a smaller perimeter is sufficient for maintenance access.
- Having a larger access could mean that additional site clearing is needed for space and grading. This could have an overall damaging effect of removing additional forest or undeveloped land that are beneficial for resource areas and for dealing with stormwater.

**1.70 Chapter 2 (page 2-53).** The Handbook indicates that SCMs other than green roofs, rooftop detention, roof gutters, and down spouts may not be installed inside or under buildings. In urban environments such as Boston that have strict infiltration requirements and limited site area, infiltration under the building or location of a storage tank within the building can be unavoidable. Additionally, stormwater reuse tanks may be located within buildings to provide reuse water for building purposes.

MACC recommends allowing for installation of SCMs inside or below buildings as allowed by the Massachusetts Plumbing Code. Furthermore, underground infiltration systems under buildings are the only way in many cases to meet City of Boston Article 32 zoning requirements on existing zero lot line buildings in Boston. The zoning article has the goal of infiltrating stormwater to raise groundwater and protect wooden piles. Allowing the installation of SCMs inside the building would support this Article.

**1.71 Chapter 2 (page 2-54 and 2-55).** Table 2-8 provides the vertical and horizontal setback requirements for each SCM. The setback requirements are unreasonably restrictive and will make it impracticable to provide SCMs on sites. MACC recommends that these setbacks be provided as general guidance where possible and necessitated by site-specific conditions. MassDEP could provide separate language saying SCM setbacks can be evaluated on a case-by-case basis with the Conservation Commission reviewer and requirements of the local jurisdiction.

**1.72 Title 5.** Will the Title 5 code need to be changed because of this Stormwater Handbook and the new regulations? Why are Title 5 soil evaluators not allowed to do work outlined in the Stormwater Handbook?

**1.73 Automated Excel Spreadsheet.** Where is it located? It is very hard to find. Are the links working? This spreadsheet was found but only after much searching (p. 679 – footnote 102).

### *Chapter 3 – Legal Framework for Stormwater Management. Stormwater Handbook.*

**1.74 Stormwater “Manmade” BMPs.** Table 3-1 etc.: Concerns have been raised about circumstances in which "manmade" BMPs are providing ecosystem services. If the BMP is not in a buffer or wetland zone, it seems like there is no authority to subject a developer to review prior to infilling a BMP, even if it is long standing and may still be providing services to the adjacent wetland area.

- 1.75 Typo.** Page 3-14, add “TP” in the sentence "If a TMDL has been established, these regulations may address pollutants other than TSS and TP. The 2016 MS4 permit has regulations on TSS and TP, which are a required local bylaw component.

## *Chapter 4 - Site Planning & Design*

- 1.76 Consistency of Terminology.** There is a great deal of referencing back and forth between the use of LID, SCMs, BMPs, ESSD etc. In some places (4-2) BMPs are not mentioned at all when defining SCMs and providing examples, while BMP is regularly used in Chapter 3. There should be better consistency between these acronyms as they seem to all mean just about the same thing.
- Section 4.2.4. lists to ESSD section could be much more robust --- 4.2.5. all of the additional information on LID is from the 90s, shouldn't these be updated with more recent supplemental material?

## *Chapter 5 – Miscellaneous Stormwater Topics*

- 1.77 Chapter 5 of the Handbook** references the Transportation Separate Storm Sewer System (TS4) permit. It is our understanding that The EPA is in the process of finalizing requirements for the TS4 permit and a final version of this permit has not been released to the public at this time. Has MassDEP coordinated with the EPA to ensure that the requirements contained within the Draft Regulations are consistent with the requirements in the TS4 permit? Are the draft Regulations consistent with the requirements for the TS4 permit?
- 1.78 Shared-Use Path provisions. Handbook 5.6**
- It is helpful to have a section discussing Shared Use Paths (SUPs); however, many of the provisions, requirements and recommendations make no sense for either stormwater or resource area protection.
  - SUPs do not generate pollutants like many other development activities. The section on suggested SCM and BMP is not clear.
  - Definitions and widths of adjacent "suitable pervious area" are impractical in more areas.

## *Chapter 6: Documenting Compliance with the Stormwater Management Standards*

- 1.79 Soil Evaluations.** Soil evaluations can be completed by Engineers in Training (EITs) but what about the soil evaluators? There is a specific statement that soil evaluators are not considered soil professionals. The definition of a competent soil professional is too narrow; other professionals should be considered soil evaluations in these types of projects.
- 1.80 Chapter 6** (page 6-72) and **Chapter 1** (page viii) each indicate that a Soil Evaluator cannot be considered a competent soil professional. Although the soil evaluator title was developed for Title V, training involved as part of becoming a soil evaluator can be used when evaluating soils for stormwater infiltration, particularly identifying estimated seasonal high groundwater elevations.

MACC recommends revising the Stormwater Handbook to include soil evaluators as competent soil professionals.

- 1.81 Chapter 6** (page 6-76). The Handbook indicates that for infiltration SCMs, at a minimum, one test location for every 5,000 SF with a minimum of three (3) test locations per infiltration practice should be included for soil testing. Two borings per test locations: one for ESHGW and one for infiltration testing. Though three test locations may make sense for large scale infiltration SCMs, many SCMs are less than 5,000 SF and may not need that many test locations. Additionally, why can't one test pit be used for both ESHGW and infiltration testing? The way this is written indicates that every infiltration SCM will require 6 test pits or borings which is beyond what should be required.

MACC recommends revising this to remove the minimum so that smaller systems are able to do one or two test pits/borings where it would be impractical or even impossible to dig six test pits.

- 1.82 Soil Testing.** Why does the Handbook limit the types of testing for soil saturated hydraulic permeameter? Other methods are often used in the field and in other states, but they are not allowed in this Handbook. What is the rationale? Can a falling head test be conducted, or other options for K evaluations, such as grain size and other tools?
- 1.83 Alternatives Analysis.** Across the state every conservation commission could interpret this language in different ways ("feasible" or "practicable" or "exhaustion" of all practicable). Should the applicant get a waiver if they cannot complete the analysis? There is a concern that without additional clarification, applicants can state the Alternatives Analysis indicates that none are feasible due to cost. Can the requirements be simplified into using a form with all of the green infrastructure options on one page, rather than multiple pages of written information?
- 1.84 Peer Reviewers.** There is a need for consistent reviews of stormwater submittals. This process would benefit from recommendations or guidance on education and experience requirements.
- 1.85 72-Hour Drainage.** Please clarify the 72-hour required drainage time for infiltration systems. It is assumed that the 72-hour drainage time for infiltration systems starts at the end of the storm, but it is not clear in the Handbook.

For example, for the purposes of a groundwater mounding analysis, the recharge rate is based on the design storm duration. In addition, the mound builds during recharge and declines after recharge stops. If the clock starts at the beginning of a 24-hour design storm, then the basin has to drain within 48 hours of the end of the storm. Therefore, the time the clock starts is critical to determining the system design and performance. If the clock starts at the beginning of the storm, the infiltration system would have to be larger to provide more area for infiltration, so this issue is not trivial. It could lead to substantial extra expense in both system design and construction cost.

MACC supports the recommendation of setting the 72-hour "clock" to begin at the end of the 24-hour storm.

- 1.86 Stormwater Handbook.** To ensure consistency by practitioners and enable review by Commissions, we recommend that MassDEP provide detailed guidelines for mounding



analyses in the Handbook including inputs values, references, and resources for obtaining input values, and documentation requirements for the Stormwater Report such as Height vs. Time graph showing that the mound height is below the infiltration system invert 72-hours post storm. Would MassDEP consider adding instructions on how to do a mounding analysis? The instructions could provide the following:

1. *Definition and purpose of a mounding analysis*
2. *Definition and explanation of inputs*
  - a. *basin dimensions*
  - b. *recharge rate*
  - c. *horizontal saturated hydraulic conductivity*
  - d. *duration of recharge*
  - e. *effective porosity (aka specific yield)*
  - f. *initial aquifer saturated thickness*
3. *Instructions on how to determine the above values and what NOT to use (such as Rawls Rates)*
4. *Require the output to be a Height vs Time graph, also known as a water table recession hydrograph, which shows that the mound height is below the infiltration system invert 72-hours post storm.*
5. *Expectation that a narrative will be provided which explains how each input was determined and provides a detailed model output.*

**1.87 Infiltration basin design guidelines** require installation of monitoring wells. It would be useful to have guidance on how to use the wells for the infiltration design. Potential clarifications could include:

- Monitoring well water levels will be measured at the end of each major storm and at 72 hours thereafter for the first year of operation for each detention system.
- These measurements will be reported to the Conservation Commission and the Town Engineer. If the basin still contains water at 72 hours, water levels shall be measured at 24-hour intervals until the basin or infiltration system is empty.
- These procedures will be incorporated into the Operations & Maintenance Plan for the project.
- Corrective action will be required if the basin consistently does not empty within 72 hours after two storm events. This standard shall apply during the lifetime of the system.

**1.88 Infiltration Rates.** The infiltration rates in the Stormwater Handbook, Recharge Rationale memorandum and EPA BATT are all different.

- Table 1 is a comparison of various recharge rates and Ksat extracted from the references listed below.
- Recharge Rate and Ksat are not the same thing. The first is a rate of infiltration, the latter is an intrinsic property of a given soil, even though both use the same units of measure, Length/Time. That being said, Recharge Rate and Ksat are used interchangeably throughout the various references listed below.
- Note that different recharge rates were used within the Recharge Rationale memorandum. The one used in Appendix B of that document is the same as the Rawls Rate used in the current Handbook. In addition, the EPA BATT also uses the Rawls Rate. The draft Stormwater Handbook uses much lower rates.



- For comparison purposes, the last two columns show Ksat values for NRCS A and C horizons from soils representative of the HSG Soil groups A through C.
- What is concerning is that calculations used to determine target recharge values are much higher than those used for Ksat in the new Stormwater Handbook. The design criteria for SCMs in the BATT assume much higher Ksat values than those used in the new Handbook as well. This inconsistency will make design of SCMs difficult since the tools use different standards for recharge.

### **Recommendations:**

1. MassDEP should review the methodology used to determine Target Recharge and whether it can actually integrate with the much lower values used in the draft Handbook and the much higher rates in the EPA BATT for SCM design.
2. Use of the Rawls Rate (which is actually a hydraulic conductivity, not a rate), for regional infiltration modeling may be underestimating the amount of recharge. Rawls Rates may be sufficient for conservatively modeling recharge for simple infiltration analyses used in HydroCAD, but it is problematic for large regional surficial hydrology models. It may be more accurate to use the vertical hydraulic conductivities specified in NRCS soil mapping. For HSG A soils, Kv for Hinkley soils is 4 in/hr, not the 1.02 in/hr used in the model, and thus is more appropriate. Kv data obtained from the MassMapper Physical Resources > Soils > Top 20 Soils: Saturated Hydraulic Conductivities (Ksat) would be a useful spatial data source to replace Rawls Rates. DEP should evaluate the models using Kv values provided by NRCS or MassMapper data sources instead of the Rawls Rates used in their models to more accurately model runoff and recharge for the Recharge Rationale memorandum.

Table 1 – Comparison of Recharge Rate / Ksat values in references cited in the draft Stormwater Handbook								
Soil Type	Soil HSG	Recharge Rationale Recharge Rate from Text (in/hr) [1]	Recharge Rationale Recharge Rate from Appendix B (in/hr) [2]	BATT Structural BMP Infiltration Rates (in/hr)	Proposed Handbook Ksat (in/hr)	Current Handbook Recharge “Rawls” Rate (in/hr)	NRCS A Horizon Vertical Ksat (in/hr) [3]	NRCS C Horizon Vertical Ksat (in/hr) [4]
Sand	A	1.02	8.27	8.27	1.42	8.27	4.0	25.5
Loamy Sand	A		2.41	2.41		2.41		
Sandy Loam	B	0.52	1.02	1.02	0.57	1.02	1.4	14.1
Loam	B		0.52	0.52		0.52		
Silt Loam	C	0.10	0.27	0.27	0.10	0.27	1.4	0.01
Sandy Clay Loam	C		0.17	0.17		0.17		

#### References

- [1] Summary of Target Recharge Volume Evaluation Memorandum - See Sub-Bullet 6 on Page 2
- [2] Summary of Target Recharge Volume Evaluation Memorandum - UNIT-AREA GROUNDWATER RECHARGE ESTIMATES FOR ESTIMATING IMPERVIOUS COVER RUNOFF CAPTURE FOR INFILTRATION FOR NEW DEVELOPMENT ACTIVITIES – DRAFT 04/20/2022 Appendix B
- [3] EPA BATT (version 2.1) Add Structural BMP Infiltration Rate Selections.
- [4] NRCS A and C horizon Ksat values for Hinkley (HSG A), Agawam (HSG B), and Paxton Soils (HSG C) Soils

### 1.89 Chapter 6, Page 6-40.

- The text states: “*The mounding analysis must also show that the groundwater mound that forms under the recharge system will not break out above the land or water surface of a wetland (e.g., it doesn’t increase the water sheet elevation in a Bordering Vegetated Wetland, Salt Marsh, or Land Under Water within the 72-hour evaluation period).*”
- Water level increases in Resource Areas are theoretically possible due to recharge from an infiltration system, but any such changes from an infiltration system after a storm event will be transient in nature and will be overwhelmed by natural water level fluctuations caused by precipitation events or daily processes such as evapotranspiration. These temporary increases will be rapidly attenuated and have no long-term impact on Resource Areas. The flow rate through the subsurface will also be very slow, on the order of  $1 \times 10^{-5}$  ft/second, so it is unlikely that any discharge from groundwater to surface water will flow fast enough or discharge sufficient volume to cause any detectable impacts to a resource area, such as temporary flooding or inundation and certainly no permanent impacts.
- **Recommendation:** Remove this requirement, as an increase in sheet flow elevation due to groundwater discharge into a Resource Area, if any, will be quite small compared to surface runoff and will be quickly attenuated.

### 1.90 ESSD. Handbook Appendix A, page A-16-17. Non-Native Trees.

- One of the recommended trees in the appendix (page 22 of the document or a-17 of the appendix) is the Callery pear which has been listed as “Likely Invasive” in Massachusetts: [https://massnrc.org/mipag/speciesreviewed\\_category.htm](https://massnrc.org/mipag/speciesreviewed_category.htm). MACC recommends that this species be removed as one of the recommended species.

### 1.91 Stormwater Precipitation Update- NOAA - 14+. It would be beneficial to include a note of the new EEA Climate change projections dashboard (which is part of Climate Resilient Mass). This dashboard allows one to see town-specific precipitation projections using NOAA 14+.

### 1.92 Stormwater Standard 6 Critical Areas. Handbook. Table 2-4b.

- In Tables 2-4b through 2-4d, the language reads “only use proprietary manufactured separators for pretreatment.”
- This wording is potentially confusing, implying that only proprietary separators can be used for pretreatment, excluding other forms like deep sump catch basins, vegetated filters, etc.
- The language in Table 2-4a, “Proprietary manufactured separators may be used only for pretreatment” presents the requirement in a clearer fashion.

### 1.93 Stormwater Standard #11 Total Maximum Daily Loads Table 2-6 (page 2-47)

- Table 2-6 lists the suitability of SCMs to treat TMDL pollutants, and several SCMs including bioretention area (filtration), extended dry detention basins, sand/organic filters, wet basins, and green roofs are noted as “unlikely to provide significant reduction of target pollutant.”
- However, these technologies are listed in Appendix F, Attachment 3 of the MS4 permit as approved structural controls for meeting nutrient load reductions.

- This is a confusing contradiction between the two regulatory documents that will add to the administration and design burden when considering the selection of appropriate SCMs, particularly in retrofit scenarios.

## 4.0 LSCSF Comments

MACC supports the adoption of performance standards for work within LSCSF. This is essential to improve resiliency for the dynamic natural systems along the coast, particularly in light of sea level rise, increasing storm intensities, and accelerating rates of coastal erosion in many locations. In particular, MACC supports the proposed prohibition on new buildings in the highest risk area, the Velocity Zone. Where our comments also overlap with those for the Ch. 91 Waterways regulations, the text is underlined.

### 1.94 **Current vs. Future Conditions.**

- The proposed LSCSF regulations rely on FEMA maps. These are not updated frequently enough, and do not take ongoing sea level rise and erosion rates into consideration. The Chapter 91 regulatory revisions require structures to be designed for future SLR conditions. MassDEP should modify the LSCSF regulations to include consideration of future conditions and use the same SLR projection as proposed in the Chapter 91 Regulations.
- The regulations will allow construction of **berms** to protect existing developed areas. While this is generally preferable to armoring, these projects need to be part of **district or neighborhood level** plans developed with public input. This is the approach proposed tie-in the ResilientCoasts strategy initiative. Any berms or other resiliency measures to protect particular properties need to be planned and permitted in consideration of the Interaction of adjoining landowner interests. For example, if a conservation-oriented landowner wants to facilitate marsh/dune migration but others want to build a berm, the final design for local resiliency measures needs to avoid conflicts between these competing public interests.
- The regulations would allow relocation of roads and railroads into other resource areas if no alternative is available (new limited project). Restoration of the former road or railroad bed to salt marsh or other resource area that would naturally occur in that location is required. This provision needs to be refined to address situations where the existing road or railroad bed is acting as a protective berm for existing developed areas. It should also allow for increased tidal flows into adjoining undeveloped areas where that is beneficial for salt marsh restoration or resource migration.

### 1.95 **Salt Marsh Restoration.**

- MACC is supportive of the efforts that MassDEP has been engaging in with other agencies and external experts to develop guidance for salt marsh restoration projects. We recommend that a **new Ecological Restoration Permit provision** be added to the regulations, based on the guidance, instead of currently proposed language directing these projects to the Limited Project Ecological Restoration process.
- Salt marsh hay to heal ditches – Use the provision in waterways regulations 310 CMR 9.05(3)(m) that allows removal of an unauthorized structure with simple approval from MassDEP, it does not require a Chapter 91 License.

- Also consider **clarifying the definition of fill**, recognizing that use of native plant material to heal a previously excavated, unlicensed ditch is not fill.

#### **1.96 Coastal Resiliency with Nature Based Solutions.**

- Scientific Research Projects. This provision should be revised and broadened to allow testing of nature-based solutions techniques, not just deployment of research data gathering devices.

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## **5.0 Recommendations for Regulatory Reform Package 2.0**

MACC appreciates the opportunity to provide input for the upcoming 2.0 reform package, and we look forward to participating actively in that process. To the extent any of our comments above are not able to be addressed in the 1.0 final regulations, we request that they be considered through the 2.0 process.

**2.01 Stakeholder Engagement (2.0).** MACC recommends that MassDEP Continue Stakeholder engagement with “Office Hours” on a quarterly basis. The MassDEP Office Hour Meetings held in March and April 2024 were very successful in sharing questions and concerns about proposed wetlands regulations. MassDEP should immediately engage day-to-day practitioners in the “Resilience 2.0” planning process. Regulatory changes should incorporate close coordination with conservation commissions, conservation staff, and professional non-profit staff, the people responsible for day-to-day interpretation and consistent implementation of these regulations.

#### **2.02 Collaborate on Training Programs for Conservation Commissioners, Agents, and Wetland Practitioners (2.0)**

- Continue the successful Wetlands Circuit Rider Program.
- Coordinate training programs given by MassDEP’s Circuit Riders to each region should be made available to Conservation Commissioners and Commission staff in all regions. Currently, regional circuit riders provide valuable training to conservation commissions in each region. This training is not provided across all of the regions.
- MACC, MSMCP, AMWS, and MassDEP should collaborate on educational training programs for wetland practitioners and conservation commissioners. This collaboration will provide consistency of regulatory interpretations and implementation of wetland programs.
- MACC welcomes input by MassDEP on MACC’s Fundamentals program training for conservation commissioners to provide a collaborative approach for continuous improvements.

#### **2.03 Consistent regulatory interpretations are needed across MassDEP regions.**

- MACC strongly urges MassDEP to institute consistent interpretation of wetlands regulations and guidance across the four MassDEP regions.
- Currently, wetlands regulatory interpretations are not always consistent across Massachusetts (for example, the 10% redevelopment in Riverfront Areas).

**2.04 Project reviews, audits, and enforcement actions should be prioritized by MassDEP Wetlands staff** in order to focus on projects with large impacts and complex projects and to improve consistency of policy implementation across MassDEP regions.

- MassDEP should provide proactive guidance and feedback to assist the day-to-day practitioners with creating strong, consistent, and unlikely-to-be-appealed decisions.

#### **2.05 Additions to Minor Activities (2.0)**

- MassDEP should expand activities included under Minor Activities.
- Removal of hazard (high-risk) trees should be allowed as a minor activity (or other action) to allow removal of a tree or trees, similar to the Agricultural exemption, with agreement by conservation agent, commissioners, or arborists.
- Allow invasive species management as a minor activity.

#### **2.06 Additional streamlining is needed for restoration projects, both coastal and inland (2.0)**

- Allow use of salt marsh hay for salt marsh restoration; do not include salt marsh hay as “fill.”
- Create new provisions allowing living shorelines and other nature-based solutions that are extremely difficult to permit under current regulations.

#### **2.07 Greater Protection for Vulnerable Wetlands.** In light of the Sackett Decision eliminating federal jurisdiction under the Clean Water Act, **establish additional protections for smaller isolated wetlands, vernal pools and vernal pool habitat (2.0).**

#### **2.08 Greater Protection for Streams.** In light of the Sackett Decision, establish additional protections for Intermittent Streams and Headwater Streams (2.0).

#### **2.09 Buffer Zone Protections** should be enhanced for limiting new construction, or no build zone requirements. (2.0). There is room for expansion of the provisions in 310 CMR 10.53(1), including considerations for a no-disturb zone.

#### **2.10 Riverfront Area.** MACC strongly recommends that MassDEP provide additional guidance documents or Program Policy to assist Commissions and the regulated public in understanding and interpreting the riverfront area. Based upon the nature of the questions received, it is apparent to MACC that this is one of the most difficult sections of the regulations to understand and implement.

#### **2.11 Allow for flexibility for Trail Maintenance and Invasive Species Management Projects (2.0).**

#### **2.12 Provide Guidance on RR Rights of Way and Herbicide usage, RDA submittals or NOI forms (2.0).**

#### **2.13 Artificial Turf Guidance.** MACC recommends MassDEP develop guidance for use of Artificial Turf related to potential impacts to wetlands; surface and groundwater quality; microplastic, PFAs, metals, and phthalates contamination; habitat impacts; and heat impacts, in all wetlands resource areas, and especially in areas of Outstanding Resource Waters (ORWs) and cold water fisheries.

### **A. MassDEP WPA Forms (2.0)**

MACC recommends updating and simplifying the MassDEP WPA Forms for ease of use and to include additional information to help conservation commissions, municipalities, commission



staff, and applicants. We urge MassDEP to meet with MACC and MSMCP concerning improvements to the forms, including, but not limited to the suggestions below:

- Application forms should mirror permit application forms.
- Application forms and permit forms should reflect the regulations.
- Forms should list the date, project, site, and owner/applicant information on the first page.
- Forms should rely on “appendices” for site or project specific information (such as coastal resource areas, rare species, and stormwater).
- There should be forms that are tailored for purely inland municipalities.
- The language of the forms should be simplified and easier to understand by the public.

**2.14 NOI Form (WPA Form 3) (2.0).**

- The NOI form should be more succinct.
- Much of the NOI form is not relevant to a majority of projects.
- The use of appendices would greatly simplify the application for many applicants. Consideration should be given to having coastal and freshwater applications be separate parts of the form.
- The NOI form (under C.7.) should add categories of projects to which the stormwater standards do not apply (i.e., not “industrial, commercial, institutional, office, residential and transportation projects”).

**2.15 OOC Form (WPA Form 5) (2.0).**

- The OOC form should be able to be modified to allow for routine additions such as longer lists of approved plans, the Commission’s findings, and the Commission’s site-specific conditions.
- The OOC should be more succinct and tailored so that the information is pertinent to the project.

**2.16 Determination of Applicability (WPA Form 2) (2.0).** Conservation Commissions need to have more latitude to issue negative determinations of applicability or general permits for small-scale or low-impact projects (such as the hand-pulling of aquatic invasives).

**2.17 ORAD (WPA Form 4B) (2.0)**

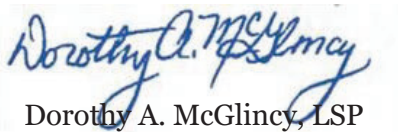
- The ORAD form should be revised to correct the following inconsistencies:
  - The Recording Block on Page 1 and the Recording Information on Page 7 should be removed. MassDEP Circuit Riders have confirmed that ORADs do not need to be recorded yet the form, which was last revised on April 22, 2020, states that the form must be recorded.
  - ORADs are simply confirming a wetland boundary for 3 years. When applicants record this document, it can create a cloud on a title in part because there is no equivalent of a certificate of compliance to “close it out.”
- The ORAD form should be revised to reiterate an important regulatory requirement. DEP should add a regulatory note on ORADs which states “If requesting an Extension, the Applicant must submit written confirmation by a professional with relevant expertise that the resource area delineations remain accurate, per 310 CMR 10.05(6)(d).” Most Commissions and conservation professionals are unaware of this language since it is difficult to find in the regulations.

- 2.18 Wetland Fees** do not cover the administrative costs for processing, reviewing, issuing, and mailing wetland permits. We ask MassDEP to consider increasing application fees to help struggling Conservation Departments that rely on the Wetland Protection Fund for auxiliary services.
- 2.19 On-line Database.** Provide an on-line, searchable database of wetlands projects to allow for coordinated project review and climate resilience planning.
- A program similar to the consolidated online permit system implemented by Virginia and Rhode Island could help streamline wetland permitting.
  - An on-line wetlands database system could promote carbon tracking of no-net loss of carbon in wetlands.

Thank you for your time and consideration of these comments. We look forward to a continued collaborative effort with MassDEP in the protection of our Commonwealth's wetland resources.

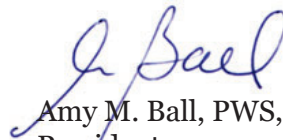
Sincerely,

***Massachusetts Association of Conservation Commissions***



Dorothy A. McGlinchy, LSP  
Executive Director

[dorothy.mcglincy@maccweb.org](mailto:dorothy.mcglincy@maccweb.org)



Amy M. Ball, PWS, CWS  
President

[aball@horsleywitten.com](mailto:aball@horsleywitten.com)

**From:** [Patrice Murphy @ Manchester Essex Conservation Trust](#)  
**To:** [DEP Wetlands \(DEP\)](#)  
**Subject:** Wetlands-401 Resilience Comments  
**Date:** Tuesday, April 30, 2024 6:02:53 PM

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Dear DEP,

The Wetlands Protection Act, and proposed revisions fall short in the area of Vernal Pool protection.

The uplands surrounding vernal pools determine the success of the vernal pool for annual water budget, and provides habitat for the amphibians that rely on vernal pools for reproduction, but live in the uplands for the remainder of their lives. Migration to the pools for seasonal reproduction functions is well documented. Expanding the protection of vernal pools to include buffers in the uplands is needed, and numerous municipalities have adopted stricter wetland bylaws to this end. Below is a suggestion for wording to expand protection of vernal pools in the WPA.

Protection for vernal pools as an additional resource area. The boundary of vernal pools extends one hundred feet beyond the annual mean high waterline that defines the vernal pool depression. A buffer zone extends another hundred feet beyond the resource area, where activities and alterations within the buffer are presumed to have a “high likelihood of adverse impact” on the vernal pool.

Vernal pools and their buffer zones are also presumed to “perform essential habitat functions. For work proposed within thirty feet of a vernal pool, the burden to show no adverse effect increases to “clear and convincing evidence” which is defined to mean “substantially more likely true, than not.”

That heightened standard also applies to any alteration of a vernal pool itself: “Applicant shall demonstrate by Clear and Convincing Evidence as set forth in an Alternatives Analysis that there is no Practicable Alternative”.

Sincerely,

Patrice Murphy  
Executive Director  
Manchester Essex Conservation Trust

**From:** [Mark Dibb](#)  
**To:** [DEP Wetlands \(DEP\)](#)  
**Subject:** Wetlands-401 Resilience Comments  
**Date:** Friday, April 26, 2024 1:30:40 PM

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Hello please consider this a formal written comment on the draft regulations.

In 10.36, Section (8) Redevelopment , Subsection (c)

*(c) No portion of any proposed new building may be located within the V-Zone and no portion of any newly reconstructed building may be located more seaward than its previously developed location within the MoWA Zone area of the lot. A building in the V-Zone that has been substantially damaged or is undergoing substantial improvement may be reconstructed only if elevated on Open Piles as specified in 310 CMR 10.36(4)(a) and if the building was constructed and received an occupancy permit prior to the effective date of this regulation. No reconstructed building may be larger than the building it replaces, so that the overall building footprint on the site is not increased:*

The area underlined sentence above seems to be clearly in relation to the sentence before it. "A building in the V-Zone that has been substantially damaged or is undergoing substantial improvement may be reconstructed only if...."

Is it the intention of the last sentence in this section to apply to reconstructed buildings **in the V-Zone**.

So can/should the underlined sentence above be reworded to "No reconstructed building in the V-Zone may be larger than the building it replaces, so that the overall building footprint on the site is not increase."

\*\*\*\*\*

Mark Dibb, P.E.  
Senior Project Engineer  
**CAPE & ISLANDS ENGINEERING, INC.**  
800 Falmouth Road, Suite 301C  
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\*\*\*\*\*

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Thank you.

**From:** [Marlies Henderson](#)  
**To:** [DEP Wetlands \(DEP\)](#)  
**Cc:** [MassConPros@gmail.com](mailto:MassConPros@gmail.com)  
**Subject:** Wetlands-401 Resilience Comments  
**Date:** Friday, April 12, 2024 12:05:27 PM

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**CAUTION:** This email originated from a sender outside of the Commonwealth of Massachusetts mail system. Do not click on links or open attachments unless you recognize the sender and know the content is safe.

To whom it may concern:

I live in Billerica, and I lead a popular weekly winter walk program, which has been essential to raising awareness of open space, natural resources and historic heritage (residents care for what they love, but they can't love what they don't know). Access to open space is not only important for the open space protection; it is also vital for mental and physical health in an increasingly more densely populated environment. I work with a small team of stewards to maintain the network we use.

Ironically, I have met with tremendous resistance at the municipal Conservation Commission level when trying to get a boardwalk or small bridge structure done where trails get muddy. While I appreciate abiding by the law, a lack of a boardwalk or bridge exacerbates the negative impact more than a boardwalk or bridge would, and yet, only very expensive solutions allow for protecting open space and granting public access, which is very unethical in terms of environmental justice. If mosquito control and utilities work is exempt because it serves the public, so should trail stewardship activities.

Another reason to more easily facilitate structures legally, is that *not* legally approving structures, virtually welcomes illegal hazardous structures and activities to pop up; in many ways, tolerance of minor structures benefits the natural resources more than restrictive rules.

**In short, I ask that MassDEP create an exemption for trail maintenance similar to the exemptions afforded to existing structures associated with many other public services in 10.02(2)(a)(2).**

Thank you for your attention to this matter.  
Marlies

--

Marlies Henderson, CIG  
[marliesoutdoors.com](http://marliesoutdoors.com)

*"People protect what they love" (Jacques Yves Cousteau)*

April 30, 2024

Massachusetts Department of Environmental  
Protection (MassDEP) – Bureau of Water  
Resources (BWR) Wetlands Program  
100 Cambridge Street, Suite 900  
Boston, MA 02114

Via Email: [dep.wetlands@mass.gov](mailto:dep.wetlands@mass.gov)  
Re: Wetlands-401 Resilience Comments

MassDEP - BWR Waterways Program  
100 Cambridge Street, 9th Floor  
Boston, MA 02114

Via Email: [dep.waterways@mass.gov](mailto:dep.waterways@mass.gov)  
Re: Waterways Resilience Comments

### **Accelerating the Pace and Scope of Wetlands Restoration**

Dear Commissioner Heiple, Wetlands Program Chief Rhodes, and Waterways Program Chief Padien:

On behalf of the undersigned organizations, we submit the following comments on the proposed changes to the Wetlands (310 CMR 10.00), 401 Water Quality Certification (314 CMR 9.00), and Waterways (310 CMR 9.00 aka Chapter 91 or Tidelands) regulations. These comments focus on the need to streamline permitting for wetlands restoration projects, to accelerate progress and meet the scale and urgency of the challenges the Commonwealth faces.

We appreciate the leadership of the Healey Administration in prioritizing action on climate change<sup>1</sup> and biodiversity<sup>2</sup>, and in recognizing the important roles that wetlands and other lands play in addressing both of these important issues. MassDEP's proposed regulatory updates in the current "Climate Resilience 1.0" package advance progress by reducing the risk associated with development in the coastal floodplain and updating stormwater management standards statewide. We are grateful for these revisions, and many of us are providing additional detailed comments recommending further refinements for those regulations.

Our organizations support the protection and restoration of wetlands. We look forward to offering our expertise to assist MassDEP in the upcoming "2.0" process.

Other states have achieved significant efficiencies in wetlands restoration permitting, and we encourage you to consider these models<sup>3</sup>, in collaboration with other agencies, including the Department of Fish and Game (DFG) through the state's Biodiversity Initiative.

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<sup>1</sup> [Executive Order 604: Establishing the Office Of Climate Innovation and Resilience Within the Office Of the Governor](#)

<sup>2</sup> [Executive Order 618: Biodiversity Conservation in Massachusetts](#)

<sup>3</sup> [Funding Nature Not Paperwork - Policy and Programmatic Pathways to Speed Restoration Permitting — Environmental Policy Innovation Center](#), February 1, 2024.



## **The Need to Accelerate Wetlands Restoration**

Wetlands provide many important functions including water quality protection, flood damage prevention, and essential habitat for fish and wildlife. Healthy coastal wetlands sequester up to ten times the amount of carbon per year compared to forests<sup>4</sup>. And our diverse coastal and inland wetlands provide habitat for more than 200 species of greatest conservation need in Massachusetts<sup>5</sup>.

Massachusetts has long been a leader in environmental protection. It was the first state in the nation to adopt a wetlands protection law. It also is a leader in restoring wetlands, and MassWildlife's Division of Ecological Restoration (DER) is widely acclaimed for the support it provides to myriad restoration projects. Still, the scope of the need far exceeds the current pace of progress on restoration. Massachusetts has lost 41% of its salt marshes<sup>6</sup> and nearly a third of its freshwater wetlands<sup>7</sup>. Thousands of acres of salt marsh are at increased risk of loss due to historic ditching and agricultural embankments that are accelerating the rate of marsh subsidence, dieback, and erosion. Inland rivers and wetlands are fragmented by 3,000 dams, most of which are functionally obsolete, along with 25,000 culverts, many blocking passage of fish and wildlife and posing risks of washouts of roads and railroads in the more intense storms we are already experiencing. Cranberry bogs that are no longer economically viable offer tremendous opportunities to restore systems that have been filled, diked, and channelized. Invasive species choke our diverse wetlands and replace native species that are essential for biodiversity. Rivers and streams have been channelized, buried in culverts, and impacted by runoff and loss of naturally vegetated buffers. We need to greatly accelerate the rate of restoration to address these challenges.

## **Climate Resilience 1.0 Comments**

The currently proposed regulatory changes make important progress toward reducing the risks to development and infrastructure from climate impacts including sea level rise and increasing storm intensities. We offer the following suggestions for further improvements in the final regulations.

**Resource Protection and Restoration Preferred:** The new Land Subject to Coastal Storm Flowage (LSCSF) at 310 CMR 10.24 includes provisions giving preference to the protection and restoration of coastal wetlands as alternatives to coastal engineering structures, and allowing alteration of LSCSF to facilitate the migration of salt marshes and dunes. We support these provisions.

**Aligning Infrastructure Protection with Restoration and Migration:** The proposed regulations allow elevation and relocation of existing roads and construction of berms to protect existing developed areas. The final regulations should more clearly define the planning process for such projects, to support restoration and migration of coastal wetlands to the fullest extent possible. For example, road elevation or relocation projects should avoid conflicting with interests of neighboring conservation-oriented

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<sup>4</sup> McLeod, E. et al. 2011. A blueprint for blue carbon: toward an improved understanding of the role of vegetated coastal habitats in sequestering CO<sub>2</sub>. *Frontiers in Ecology and the Environment*. 9(10), pp. 552-560

<sup>5</sup> [State Wildlife Action Plan \(SWAP\)](#)

<sup>6</sup> Bromberg, K. D., & Bertness, M. D. (2005). Reconstructing New England Salt Marsh Losses Using Historical Maps. *Estuaries*, 28(6), 823–832. <http://www.jstor.org/stable/3526949>

<sup>7</sup> Dahl, T.E., [1990, Wetlands-Losses in the United States, 1780's to 1980's](#): Washington, D.C., U.S. Fish and Wildlife Service Report to Congress.

landowners to restore more natural flows to salt marshes where the road has been acting as a barrier to that flow.

**Ecological Restoration Permit (ERP):** The ERP provisions in the regulations provide for a somewhat streamlined process for permitting certain categories of wetlands restoration. Projects meeting specified requirements receive permits with pre-specified conditions, and are generally exempt from review under the Massachusetts Environmental Policy Act (MEPA). We recommend that MassDEP expand the applicability of the ERP process to include salt marshes, using the guidance that is under development through the Interagency Coastal Wetlands Climate Resilience Workgroup<sup>8</sup>.

**Combined Applications:** The regulations currently allow combined applications for Wetlands, Waterways, and 401 Water Quality permitting for ERPs. The proposed regulations eliminate those provisions. Rather than eliminating combined review, MassDEP should seek to improve and expand combined application and permitting of restoration projects.

**Research Projects:** The proposed regulations include a new provision for Scientific Research Projects (310 CMR 10.05(12)), to allow research into the response of coastal wetlands to climate change. This provision is too narrowly crafted and should be broadened to allow experimentation with coastal and inland wetlands restoration techniques that are not currently utilized in Massachusetts. Appropriate limits on the scale and siting of such projects should be set, and successful projects should be allowed to remain in place.

### **Climate Resilience 2.0 Regulations**

We appreciate the fact that MassDEP recognizes that additional regulatory reforms are needed to achieve the Commonwealth's climate resiliency goals. We recommend that the above recommendations for 1.0 be addressed in 2.0 to the extent MassDEP is unable to fully include them in the final 1.0 regulations. We also request that the 2.0 process address the following items.

**Expand ERP:** The ERP process should be expanded to include additional categories of restoration such as invasive species removal and cranberry bog restoration. Detailed guidance should be developed with input from external experts and practitioners. The ERP provision should also allow other additional types of restoration projects to be included when MassDEP approves associated guidance, without the need for regulatory updates. The system should be designed to be more flexible and to expand restoration streamlining as the state of the science and practice evolves.

**Permit Streamlining – Aim for Single Application Coordinated Review:** We also request that the 2.0 process include additional permit programs and agencies, with a goal of integrating and streamlining permitting for wetlands restoration projects across all applicable state environmental laws and regulations. **The goal should be a single permit application, managed by a single agency that coordinates across all other agencies and with the project proponent, resulting in a single combined permit issued quickly, preferably within 90 days of submission of a complete application.**

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<sup>8</sup> [Interagency Coastal Wetlands Climate Resilience Workgroup](#)

Full streamlining will likely require statutory as well as regulatory changes. We encourage MassDEP to work with agencies to achieve as much progress toward that goal as possible in the 2.0 process while identifying any additional reforms and funding needed to achieve full streamlining in the next iterative process beyond 2.0.

We look forward to participating in the 2.0 process and encourage MassDEP to engage with external experts and restoration practitioners including nonprofit organizations; wetlands consultants and scientists; federal, state and local conservation agencies; and others. This effort should be conducted in coordination with the Department of Fish and Game's Biodiversity initiative pursuant to Executive Order 618 and should tap into the ecological management and restoration expertise of the Division of Ecological Restoration and MassWildlife.

Thank you for considering these comments. For more information, please contact Heidi Ricci at Mass Audubon, [hricci@massaudubon.org](mailto:hricci@massaudubon.org).

Regards,

E. Heidi Ricci  
Director of Policy & Advocacy  
Mass Audubon

Katharine Lange  
Policy Director  
Massachusetts Rivers Alliance

Heather Rockwell  
Director of Operations  
Barnstable Clean Water Coalition

Theodore Beauvais  
President and Policy Director  
Blackstone River Watershed Association

Richard Delaney  
President and CEO  
Center for Coastal Studies

Laura Jasinski  
Executive Director  
Charles River Conservancy

Zeus Smith  
Associate Attorney  
Charles River Watershed Association

Ali Hiple  
Senior Policy Analyst  
Conservation Law Foundation

David Melly  
Legislative Director  
Environmental League of Massachusetts

Jen Klein  
Executive Director  
Friends of the Blue Hills

Benjamin Cote  
President  
Friends of the Ten Mile River Watershed

Arianna Collins  
Executive Director  
Hoosic River Watershed Association

Erik Reardon  
Berkshire Watershed Director  
Housatonic Valley Association

Pine duBois  
Executive Director  
Jones River Watershed Association

Dorothy McGlincy  
Executive Director  
Massachusetts Association of Conservation Commissions

Samantha Woods  
Executive Director  
North and South Rivers Watershed Association

Kate McPherson  
Narragansett Bay Riverkeeper  
Save The Bay

Danica Belknap  
Environmental Planning Manager  
Southeastern Regional Planning and Economic Development District

Lindsey Ketchel  
Executive Director  
Sudbury Valley Trustees

Gloria Bancroft  
Coordinator  
Taunton River Watershed Alliance  
Taunton River Stewardship Council

Peter Schilling  
Environmental Coordinator, Cape Cod Chapter  
Trout Unlimited

Cynthia Dittbrenner  
VP Conservation and Resilience  
The Trustees of Reservations



April 30, 2024

Massachusetts Department of Environmental  
Protection (MassDEP – Bureau of Water  
Resources (BWR) Wetlands Program  
100 Cambridge Street, Suite 900  
Boston, MA 02114

MassDEP - BWR Waterways Program  
100 Cambridge Street, 9th Floor  
Boston, MA 02114

Via Email: [dep.wetlands@mass.gov](mailto:dep.wetlands@mass.gov)

Via Email: [dep.waterways@mass.gov](mailto:dep.waterways@mass.gov)

Re: Wetlands-401 Resilience Comments

Re: Waterways Resilience Comments

### **Accelerating Progress on Salt Marsh Restoration**

Dear Commissioner Heiple, Wetlands Program Chief Rhodes, and Waterways Program Chief Padien:

On behalf of the undersigned organizations, we submit the following comments on the proposed changes to the Wetlands (310 CMR 10.00), 401 Water Quality Certification (314 CMR 9.00), and Waterways (310 CMR 9.00 aka Chapter 91 or Tidelands) regulations. These comments are focused on salt marsh restoration and related topics that are subject to all of these regulations. There is an urgent need to streamline permitting for salt marsh and other wetlands restoration projects both within each regulatory program and for more coordinated interagency review and permitting across programs.

We are grateful to MassDEP for proposing updates to these regulations as a “Climate Resilience 1.0” package, and for inviting comments for additional changes to be suggested for an upcoming “2.0” set of regulatory revisions. We also appreciate the work MassDEP has undertaken on developing guidance on use of the techniques of ditch remediation, runneling, and marsh habitat islands to restore salt marshes.



We are particularly grateful that DEP has provided opportunities for several external salt marsh restoration experts to provide input on the guidance with the Interagency Coastal Wetlands Climate Resilience Workgroup.<sup>1</sup>

### **Coastal Wetlands - Urgent Need to Accelerate Restoration**

Climate change is already impacting Massachusetts, including through accelerating rates of sea level rise and more intense storms. Our coastal wetlands including salt marshes and the coastal floodplain provide many essential functions and values, protecting our communities from storm damage and flooding, preventing pollution, and providing habitat for many species of fish and wildlife. Salt marshes are among the most productive ecosystems globally, sequestering and storing more carbon per acre than other habitats.

Many of Massachusetts' 45,000 acres of salt marshes are severely degraded by thousands of historically installed ditches and agricultural embankments that are causing subsidence, drowning marsh vegetation, and restricting natural tidal flows and sediment deposition. Reversing this damage within the next few years is vitally important to extend the life of these marshes. Currently there are more than a dozen salt marsh restoration projects across thousands of acres planned by nonprofit organizations and government agencies (attached). It is essential that permitting for these projects proceed expeditiously.

The following comments provide recommendations for:

1. Immediate steps MassDEP can take to improve permitting for salt marsh restoration through improved interpretation of existing regulations, coordination on permit processing, and in finalizing the proposed regulations;
2. Further regulatory refinements in the next round of regulatory review (aka "2.0"); and
3. More broadly by establishing a fully integrated and streamlined permitting pathway for ecological restoration projects.

While the draft guidance addresses Wetlands and 401 Water Quality regulatory requirements, salt marsh restoration projects typically require many other permits and reviews (Massachusetts Environmental Policy Act (MEPA), Waterways, CZM Federal Consistency, Massachusetts Endangered Species Act (MESA), and others), with a timeline spanning up to two years or longer. By streamlining and coordinating restoration permitting as several other states have done, the Commonwealth can achieve its goals on both climate and biodiversity, while creating efficiencies, saving time and money for agencies and restoration practitioners.<sup>2</sup>

### **Immediate Action – Waterways Regulations and Ditch Remediation**

Healing selectively identified ditches that are disrupting natural marsh hydrology can be accomplished in many instances by using hay harvested within the marsh to capture sediment and allow for growth of

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<sup>1</sup> <https://www.mass.gov/info-details/interagency-coastal-wetlands-climate-resilience-workgroup>

<sup>2</sup> [Funding Nature Not Paperwork - Policy and Programmatic Pathways to Speed Restoration Permitting — Environmental Policy Innovation Center](#), February 1, 2024.

marsh vegetation. The DEP Waterways program has interpreted this work as involving placement of fill below the mean high water line and requiring a Chapter 91 license. This permitting process is complex and lengthy. An existing provision in the Waterways regulations can and should be applied to allow these projects to proceed without the need for a Waterways permit or license:

*310 CMR 9.05(3) Activities Not Requiring a License or Permit. Notwithstanding the provisions of 310 CMR 9.05(1) through (2), no license or permit is required for: ... (m): demolition or removal of any unauthorized structures or fill in order to facilitate water dependent use provided prior written approval is obtained from the Department, which, at the discretion of the Department may include prior public notice and comment*

These historic ditches were, in almost all instances, never previously permitted or licensed. Restoration is a water-dependent use. Therefore this provision applies, and we request that MassDEP utilize it.

### **Climate Resilience 1.0 Regulations**

The proposed regulations mention salt marsh restoration and migration projects. We support the proposal to allow modifications to Land Subject to Coastal Storm Flowage to facilitate migration of salt marshes and dunes (310 CMR 10.36(9)).

This same draft provision states that salt marsh restoration projects should utilize the Ecological Restoration Limited Project provision (310 CMR 10.24(8)). Since the guidance the Interagency Workgroup is developing is close to completion,<sup>3</sup> we request that in the final regulations MassDEP instead allow these projects to proceed through the Ecological Restoration Project (ERP) provisions (310 CMR 10.11-10.14), relying on the guidance for the application requirements and conditions for these projects. We also recommend that the guidance be referenced within the regulations and that it be a living document that can be modified and updated as additional experience and refinement of methods continues to be developed.

The draft regulations also include new provisions for the elevation of low-lying roads and the relocation of roads and railroads, with restoration of salt marsh or other resources that would naturally occur in the former road/RR bed locations (310 CMR 10.24(7)(c)1. and 10.24(7)(c)9.). The proposed LSCSF provisions allow the installation of berms in the coastal floodplain to protect existing developed areas (310 CMR 10.36(8)(g)). While we are generally supportive of these concepts, the provisions should be refined to provide a planning process with input from adjoining landowners and conditions ensuring that these projects do not result in unintentional negative impacts to adjoining salt marshes or other coastal wetland resources. These provisions should not prohibit the restoration of tidal flows where the relocated or elevated road or other infrastructure previously restricted natural flows to a salt marsh.

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<sup>3</sup> The recent input on the draft guidance from external experts and practitioners has been a productive process. We hope that the most recent round of comments as well as input from other agencies including MassWildlife and DER will help MassDEP produce a final draft that can be issued for public comment and then adopted. For future updates or development of guidance on other types of restoration, we encourage MassDEP to also solicit input from external experts.

## **Climate Resilience 2.0 Regulations**

We appreciate the fact that MassDEP recognizes that additional regulatory reforms are needed to achieve the Commonwealth's climate resiliency goals. We request that the above recommendations be addressed in Resilience 2.0 in the event MassDEP is unable to fully include them in the current regulatory revisions. We also request that the 2.0 process include additional permit programs and agencies, with a goal of integrating and streamlining permitting for wetlands restoration projects across all applicable state environmental laws and regulations. The ultimate goal should be a single permit application, managed by a single agency that coordinates across all other agencies and with the project proponent, resulting in a single combined permit issued quickly, preferably within 90 days of submission of a complete application.

We encourage MassDEP to work with agencies to achieve as much progress toward that goal as possible in the 2.0 process while identifying further reforms and funding needs to achieve full streamlining in the next iterative process beyond 2.0.

We look forward to participating in the 2.0 process and encourage MassDEP to engage with external experts and restoration practitioners including nonprofit organizations; wetlands consultants and scientists; federal, state and local conservation agencies; and others. This effort should be conducted in coordination with the Department of Fish and Game's Biodiversity initiative pursuant to Executive Order 618<sup>4</sup> and should tap into the deep ecological management and restoration expertise of the Division of Ecological Restoration, MassWildlife, and other state agencies.

Thank you for considering these comments.

Regards,

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<sup>4</sup> <https://www.mass.gov/executive-orders/no-618-biodiversity-conservation-in-massachusetts>

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Project Name	Lead Org	Location	Acreage	Permit status (approved, pending, upcoming)	Grant(s) - List Funder if Awarded, or Pending, Upcoming	Partners	Comments/notes  Draft information not for public dissemination.  List is not a complete inventory of all planned projects.
Permitting process and costs concerns common to many of these projects (see spreadsheet on permitting for details): - 6-12 different permits, 18 months or more, multiple forms of info submission required, difficult coordinating across permits - Costly monitoring - lack of statewide monitoring system with consistent methods to track trends and compare restored marshes to those not restored - Regulatory system designed for development not restoration - metrics are "impacts" of restoration work, should look at designed benefits and measure outcome in relation to that. - Coastal Restrictions on deeds not allowing restoration; cumbersome to amend - Ch. 91 Waterways treating healing ditches with salt marsh hay as "fill" requiring a license rather than a simple permit. Could be interpreted more flexibly. - Time required for permitting does not align well with time periods for completing grants							
Chase Garden Creek Salt Marsh	APCC	Yarmouth/Dennis	1500	Planning and design	Grant(s) awarded	Towns of Yarmouth, Dennis, Foundation and many more	Early planning stage. Foundation funding over 5 years to assess marsh, complete monitoring and plans. Funding awarded for project start in 2023. We anticipate this as a ditch remediation, runneling project that we would begin design work on perhaps in 2025/2026. We would build upon this our learning working with Mass Audubon on the nearby Barnstable Great Marsh project. Hoping to see these other projects pave the way for our design and permitting effort starting in a few years time.
Weir Creek at Lower County Road	APCC	Dennis, Bass River	120	Planning and design	Grant(s) awarded	Town of Dennis, NRCS, CCCD, mosquito control program and others	Planning for tidal restoration but discussion includes potential further upstream restoration of the marsh pending further data collection, modeling and ongoing discussion and progress with ditch remediation and runneling. Cape Cod Mosquito Control is part of larger project team so could be engaged in this work if the restoration could feasibly incorporate or need further marsh surface restoration and modification upstream. Feasibility studies underway now 2023 with SNEP and NFWF grants. Culvert permit ready design to be complete 2024. Request out to NOAA to fund permitting, final design and construction - doesn't call out this alternative restoration technique but again we are still early planning and looking at value and opportunity for marsh platform restoration with all our tidal restoration projects of large scale now at this stage this is just most immediate/ongoing project. Could be moving to permitting late 2024 or likely 2025 if we included channel modification or work in the marsh proper
Allens Pond	Mass Audubon	Dartmouth, MA		Permits approved	Grant(s) awarded	Save the Bay, USFWS, Bristol County Mosquito Control, NOAA, Dartmouth Natural Resource trust, Wareham Land Trust, DU	Saltmarsh surface tidal hydrology restoration, tidal restriction and barrier removal and restoration of upland/saltmarsh boundary completed on over 60 acres funded through a 2000 SNEP grant. Received additional SNEP grant beginning in Jan 2024 to continue this work on an additional 100 acres of saltmarsh and low lying uplands across Allens Pond. Most of the planned work on the second phase of this project is permitted but we will need some additional permits to expand the saltmarsh surface tidal hydrology restoration.
Barnstable Great Marsh Wildlife Sanctuary	Mass Audubon	Barnstable, MA	76	Planning and design	Grant(s) awarded	DFG ILF Program, NOAA, APCC, CCMCP	Project funded by ILF Program. Design complete. Permitting likely to start early 2024.
Barnstable Great Marsh	Mass Audubon	Barnstable, MA	430	Planning and design		USFWS, NOAA, APCC, CCMCP, Town of Barnstable	Design funded by USFWS + complete.
Rough Meadows Wildlife Sanctuary	Mass Audubon	Rowley, MA	229	Planning and design	Proposal(s) pending	DFG, ILF Program, Greenbelt, Mass Wildlife	USACE approved project for funding from ILF Program. Project was designed in coordination with MassWildlife Ecosystem Recovery Project. ILF & Mass Audubon contacted DEP for feedback in April of 2023 and again in October. Wetland Restriction Order is complicating the process for identifying a permitting pathway, so DFG & Mass Audubon haven't contracted funds for permitting and construction yet.
Winsegansett Marsh	Bristol County Mosquito Control	Fairhaven, MA	30	Planning and design	Upcoming proposal(s)	Save the Bay, BBC, Town of Fairhaven	Ditch maintenance and runnels to better drain the marsh system
Great Marsh Ecosystem Recovery Project	MassWildlife	Ipswich, Newbury, Rowley	3,000	Permitting upcoming	Grant(s) awarded	The Trustees, USFWS, Ducks Unlimited	National Coastal Resiliency Fund grant to complete final design and permitting for 3,000 acres of ditch remediation, runneling, and nesting islands. Project includes removal of Hay Street and Stage Island tidal obstructions. To be completed in 3 years. Start permitting fall 2024 or later.
Great Marsh Phase III	Trustees	Ipswich and Essex	1100	Planning and design	Grant(s) awarded	Masswildlife, Greenbelt	Project funded and designed. Working on permitting as of 12/2023. Anticipate starting permitting in early 2024
Broad Cove	Dighton/Save The Bay	Dighton, MA	29	Planning and design		Bristol County Mosquito Control Project, Town of Dighton	Planning stages of a 2nd phase of marsh platform tidal hydrology restoration project impacted by legacy agricultural features and mosquito ditching. Restoration activities would include maintaining select ditches, installing runnels, using excavated peat to create marsh islands and to fill in depressions that create mosquito breeding habitat and mulching Phragmites. Potential for marsh migration facilitation by addressing Phragmites and agricultural features that impound fresh and brackish water in the migration corridor. First phase conducted by partners in 2017.

Building Beach and Saltmarsh Resilience to Protect Island Communities (MA)	Trustees	Edgartown, MA	250	Planning and design	Grant(s) awarded	Martha's Vineyard Commission and MV Land Bank	Project includes assessing all salt marsh within the Cape Poge Bay and Pocha Pond ecosystem and drafting a plan for restoration. The assessment will include identification where ditch remediation, runneling and nesting island creation will be beneficial.
Herring River Berm Removal & Sediment Redistribution	Ducks Unlimited	Wellfleet, MA	1-2 acres of TLP	Planning and design	Grant(s) awarded	Cape Cod National Seashore/NPS	This is a subset of the Herring River Restoration project that is removing the berms along the river and reusing the material within the salt marsh area. This project is currently being designed and we have had initial conversations with regulators via the larger project.
Great Marsh 1450 project	USFWS	Ipswich, Rowley, and Newbury	1450	Permits applied	Grant(s) awarded	Ducks Unlimited, Audubon	NFWF Coastal Resiliency Grant, DU as awardee. Parker River National Wildlife Refuge, work to be conducted in seven units on Plum Island and west of Plum Island Sound. 3 units to be done in-house (including a ditch remediation team hired for project with Mass Audubon). 4 units to be contracted out. Single-channel hydrology restoration. Permit submitted July 2023. Awaiting final approval for WQC... all other reviews and approvals complete. Also includes pepperweed control and Phragmites control.
Sage Lot Pond's Doghead marsh	Waquoit Bay NERR	Mashpee, MA	17	Permits approved		Woodwell Climate Research Ctr, Northeastern Univ, Cape Cod Mosquito Control Project, Save the Bay	Runnels and ditch maintenance 12/6/23 in partnership with Cape Cod Mosquito Control Project and under guidance of Wenley Ferguson, Save the Bay. Runnels will be checked and edited as needed to maintain drainage functions.
Sage Lot Pond, Jehu Pond	Waquoit Bay NERR	Mashpee, MA	~100	Planning and design	Grant(s) awarded	Woodwell Climate Research Ctr, MIT Sea Grant, Okeanolog, Interfluve, Cit Protection Waquoit Bay, Mashpee NWR, Friends of Mashpee NWR, Mashpee Wampanoag, MA CZM, Cape Cod Mosquito Control Project	NFWF Coastal Resiliency Grant, Woodwell as awardee.
Sage Lot Pond's Doghead marsh to Flat Pond	Waquoit Bay NERR	Mashpee, MA	~60	Planning and design	Proposal(s) pending	MIT Sea Grant, Interfluve, Cit Protection Waquoit Bay, Mashpee NWR, Friends of Mashpee NWR, Mashpee Wampanoag, MA CZM, Cape Cod Mosquito Control Project	Proposal to replace undersized culvert to restore tidal hydrology to Flat Pond (east of Doghead marsh), currently Flat Pond is brackish.
Mattapoisett Neck Road	Mattapoisett Land Trust	Mattapoisett, MA	~60	Planning and design	Grant(s) awarded	Buzzards Bay Coalition, Town of Mattapoisett, MA CZM grant to MLT	Proposed culvert replacement at Matt. Neck Road to improve drainage of salt marsh. Potential for runnels and other improvements.
Jack's Marsh	Buzzards Bay Coalition	Wareham, MA	~11	Planning and design	Grant(s) awarded	Wildlands Trust, Town of Wareham	Proposed culvert replacement at Town road; restoration of salt marsh and freshwater wetlands proposed.
Puritan Bogs	Buzzards Bay Coalition	Bourne, MA	~16	Planning and design	Proposal(s) pending	Town of Bourne, NRCS	Proposed removal of dike at retired head of tide cranberry bog; restoration of salt marsh and freshwater wetlands proposed.





April 30, 2024

Massachusetts Department of Environmental Protection (MassDEP)  
100 Cambridge Street, Suite 900  
Boston, MA 02114

Attn: Bureau of Water Resources (BWR) Wetlands Program

Via Email: [dep.wetlands@mass.gov](mailto:dep.wetlands@mass.gov)

Re: Wetlands-401 Resilience Comments

Attn: BWR Waterways Program

Via Email: [dep.waterways@mass.gov](mailto:dep.waterways@mass.gov)

Re: Waterways Resilience Comment

Dear Commissioner Heiple, Wetlands Program Chief Rhodes, and Waterways Program Chief Padien:

Mass Audubon offers the following comments on the proposed changes to the Wetlands (310 CMR 10.00), 401 Water Quality Certification (314 CMR 9.00), and Waterways (310 CMR 9.00 aka Chapter 91 or Tidelands) regulations. These comments have been combined into one letter including cross-cutting comments, notably support for **integrating and streamlining permitting for wetlands restoration projects across these and other state regulatory programs**.

Mass Audubon appreciates the time and effort that MassDEP has put into this regulatory update, as well as the extensive opportunities that were offered for input from external experts and interested parties. We look forward to participating in the “Climate Resilience 2.0” process.

## Summary Comments

Mass Audubon supports the overall focus of the regulatory changes on increasing climate resilience by:

- Restricting new development in the coastal floodplain;
- Incorporating sea level rise into permitting under the Waterways regulations;
- Updating stormwater precipitation calculations and management standards; and
- Supporting the use of nature-based solutions for climate resilience.

**There is an urgent need to accelerate and streamline permitting for beneficial restoration projects across multiple permit programs.** We offer specific recommendations for immediate actions and a process for transitioning to a combined, speedy and efficient review process for restoration projects.

We have concerns regarding some specific provisions and offer suggestions for items to be clarified in the final regulations or held for further refinement in the 2.0 process including:

- Provisions allowing elevation or relocation of coastal roads and other transportation infrastructure need to be refined and connected with district-based planning under the ResilientCoasts Initiative; and
- There should be a shift in emphasis away from adding details and complexity to the Wetlands regulations for specific types of activities and instead focusing more on overall project impacts or benefits. Details on means and methods for various types of activities should be located in guidance and policy documents unless essential to include in regulations.

### **Process and Timeline for Finalizing the Regulations**

We are aware that MassDEP has received many comments on these regulations, with some parties requesting a delay in the entire package. **Given the urgent need to better regulate development in the coastal floodplain and to update stormwater management, we urge MassDEP to proceed with the main provisions on those topics.** To the extent details need to be worked out, we would prefer to see those details moved into guidance documents including the Stormwater Handbook. A short additional delay (e.g. a few months) in the effective date of the updated Stormwater Standards may be warranted to allow conservation commissions and project designers to come up to speed, but the issuance of the regulations should not be delayed indefinitely.

### **Background and Importance for State Priorities**

Mass Audubon greatly appreciates MassDEP's efforts on this "Climate Resilience 1.0" package and its commitment to undertaking additional regulatory updates in an upcoming "2.0" process. Improving protection of coastal and inland wetlands and waterways is essential to support the Commonwealth's goals on climate and biodiversity, including the ResilientMass Plan<sup>1</sup>, Clean Energy and Climate Plan (CEPC)<sup>2</sup>, Executive Orders 618 and 569 on Biodiversity<sup>3</sup> and Climate<sup>4</sup>, and other related plans and initiatives. We strongly support the Healey Administration's whole-of-government approach to these important issues.

Coastal and inland wetlands, waterways, buffer zones, and riparian and shoreline areas provide vitally important natural services that protect public interests including prevention of flooding and storm damage; protection of habitat for fish, shellfish, and wildlife; water supply protection; and prevention of pollution. Waterways and tidelands also protect public access rights. In addition to these interests recognized in state laws, these resources provide other important services and values including recreational opportunities, shade and cooling of air and water, and contributions to overall quality of life and property values. Wetlands sequester and store carbon at rates higher than terrestrial systems, providing important contributions to the CECP goal for eliminating carbon pollution in Massachusetts by 2050. Protection and restoration of these resources is also of increasing urgency to provide resiliency to

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<sup>1</sup> [resilient.mass.gov/](https://resilient.mass.gov/)

<sup>2</sup> [mass.gov/info-details/massachusetts-clean-energy-and-climate-plan-for-2050](https://mass.gov/info-details/massachusetts-clean-energy-and-climate-plan-for-2050)

<sup>3</sup> [mass.gov/executive-orders/no-618-biodiversity-conservation-in-massachusetts](https://mass.gov/executive-orders/no-618-biodiversity-conservation-in-massachusetts)

<sup>4</sup> [mass.gov/executive-orders/no-569-establishing-an-integrated-climate-change-strategy-for-the-commonwealth](https://mass.gov/executive-orders/no-569-establishing-an-integrated-climate-change-strategy-for-the-commonwealth)

climate impacts including increasing storm intensities and more frequent droughts along with sea level rise and accelerating coastal erosion.

The challenges the state and region face in aligning wetlands, water quality, and waterways programs with initiatives on climate mitigation and resiliency, biodiversity, and Environmental Justice (EJ) offer opportunities to chart a more sustainable future for people and nature. The Commission on Clean Energy Infrastructure Siting and Permitting<sup>5</sup> recognized the need for bold new approaches to streamline and accelerate permitting for energy projects that are essential to achieving the state's goals for reducing carbon pollution while also protecting important natural and working lands and community interests. A similar, fresh approach to streamlining permitting for wetlands ecological restoration projects is also needed to meet the scale and scope of the need and create efficiencies for both restoration practitioners and regulatory agencies, as has been done in several other states<sup>6</sup>.

We are grateful for the opportunities MassDEP is providing for input from Mass Audubon and other experts and stakeholders. We particularly appreciate MassDEP's inclusion of Mass Audubon's ecological restoration staff and other external experts in the development of guidance for permitting salt marsh restoration projects through the Coastal Wetlands Climate Resilience Interagency Workgroup<sup>7</sup>. Mass Audubon was also a member of the Land Subject to Coastal Storm Flowage (LSCSF) Advisory Group<sup>8</sup> and the Stormwater Management Updates Advisory Committee<sup>9</sup> that provided input into these proposed regulatory revisions. The LSCSF and Stormwater Advisory Groups last met more than four years ago. These regulations are long overdue, and we urge MassDEP to finalize them with refinements as described below. Mass Audubon's science and policy staff are committed to supporting and advising the state as it works through the 2.0 process and beyond.

### **Simplify and Focus on Protection and Restoration**

The Wetlands regulations are exceedingly long and complex, and the proposed revisions would make them more so. The existing and proposed regulations carve out special "Limited Project" exceptions for specific categories of activities, allowing these projects to exceed the otherwise applicable limits on the amount of wetland resource areas that can be altered or destroyed. We recognize the need to retain many of the longstanding Limited Projects that implement statutory exemptions for maintenance and improvement of public infrastructure, farming and forestry, and other activities with broad public interests. It is not necessary, however, to further expand these exceptions based on other new, specific types of projects such as the new Limited Project 10.24(7)(c)8. and 10.53(3)(u) for Shared Use Paths on abandoned railroad beds and minor project exemption at 10.02(2)(b)2.(r) for maintenance of those paths, especially without addressing the many other types of trail construction and maintenance projects. **We recommend that MassDEP instead focus on protecting and restoring wetland resources in regulatory performance standards, while describing appropriate means and methods for specific types of activities through guidance documents and policies.**

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<sup>5</sup> [mass.gov/info-details/commission-on-energy-infrastructure-siting-and-permitting](https://mass.gov/info-details/commission-on-energy-infrastructure-siting-and-permitting)

<sup>6</sup> [Funding Nature Not Paperwork - Policy and Programmatic Pathways to Speed Restoration Permitting — Environmental Policy Innovation Center](#)

<sup>7</sup> [mass.gov/info-details/interagency-coastal-wetlands-climate-resilience-workgroup](https://mass.gov/info-details/interagency-coastal-wetlands-climate-resilience-workgroup)

<sup>8</sup> [mass.gov/info-details/land-subject-to-coastal-storm-flowage-advisory-group](https://mass.gov/info-details/land-subject-to-coastal-storm-flowage-advisory-group)

<sup>9</sup> [mass.gov/info-details/massachusetts-stormwater-management-updates-advisory-committee](https://mass.gov/info-details/massachusetts-stormwater-management-updates-advisory-committee)

The complexity and level of detail in the regulations also makes it increasingly difficult for the 351 volunteer conservation commissions across the state to administer the law and for project proponents to navigate the process. The regulations create paradoxical situations where activities that involve extensive impacts (e.g. infrastructure improvement projects) have provisions tailored to facilitating approval with only broad-brush conditions, while small, beneficial activities like hand pulling of invasive species or repairing erosion on an existing footpath are required to follow the same permitting processes as development projects. The level of detail in the regulations also makes updates difficult to implement in a timely fashion as new information becomes available and best practices evolve. **The proposed stormwater regulatory updates include lengthy technical details that would be better placed within the Stormwater Handbook.**

**For Ecological Restoration Projects (ERP), the regulations should provide for additional categories** of such projects (e.g. salt marsh restoration, cranberry bog restoration, and invasive species removal) to be allowed based on approval by MassDEP of guidelines for new categories rather than requiring use of the Ecological Restoration Limited Project provisions.

**There is an urgent need for additional interagency coordination and easing of the permit timelines and costs for restoration, to accelerate progress and meet the scale and scope of this important work. We offer suggestions in this regard and are committed to working with MassDEP and other agencies to achieve the necessary streamlining while retaining strong protections for wetlands.**

## Specific Comments

### Coastal and Inland Ecological Restoration

Healthy wetlands are essential for climate mitigation and resilience, biodiversity, water supply and quality, and many other public interests. Massachusetts has a long history of leadership on environmental protection generally and wetlands protection specifically. It is also a leader in recognizing and taking action to reverse historic and ongoing loss, fragmentation, and degradation of wetlands and water resources. MassWildlife's Division of Ecological Restoration (DER) is widely acclaimed for its work, and the state offers grants for restoration projects through several programs including the Municipal Vulnerability Preparedness (MVP) Program. Yet the challenges are of such a great scale and urgency that a bold new approach to streamline and accelerate restoration is needed.

Massachusetts has lost 41% of its salt marshes<sup>10</sup> and nearly a third of its freshwater wetlands.<sup>11</sup> Thousands of acres of salt marsh are at increased risk of loss due to historic ditching and agricultural embankments that are accelerating the rate of marsh subsidence, dieback, and erosion. Inland rivers and wetlands are fragmented by 3,000 dams, most of which are functionally obsolete, along with 25,000 culverts, many blocking passage of fish and wildlife and posing risks of washouts of roads and railroads in the more intense storms we are already experiencing. Cranberry bogs that are no longer

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<sup>10</sup> Bromberg, K. D., & Bertness, M. D. (2005). Reconstructing New England Salt Marsh Losses Using Historical Maps. *Estuaries*, 28(6), 823–832. <http://www.jstor.org/stable/3526949>

<sup>11</sup> Dahl, T.E., [1990, Wetlands-Losses in the United States, 1780's to 1980's](#): Washington, D.C., U.S. Fish and Wildlife Service Report to Congress.

economically viable offer tremendous opportunities to restore systems that have been filled, diked, and channelized. Invasive species choke our diverse wetlands, replacing native species and often contributing to soil degradation and erosion. Rivers and streams have been channelized, buried in culverts, and impacted by runoff and loss of naturally vegetated buffers. We need to greatly accelerate the rate of restoration to address these challenges.

Mass Audubon conducted a survey with the Conservation Law Foundation (CLF), on barriers to permitting and implementing wetlands restoration and nature-based solutions projects (report attached). This included 139 survey responses from local, state, and federal agencies; nonprofits, wetlands consultants, and others involved in such projects, along with ten in-depth interviews and additional background research. **The most frequently identified challenge was “confusing and difficult permitting pathways.”**

**Permitting for restoration should not be approached the same way as permitting for development projects that damage or destroy wetlands.** Currently, restoration projects must navigate a half dozen or more permitting systems, each with its own regulatory requirements and application forms.<sup>12</sup> There is no clearly defined mechanism for restoration proponents to receive guidance or coordinate across permitting agencies to ensure that they have addressed all applicable requirements, conditions, and monitoring requirements<sup>13</sup>. The Massachusetts Environmental Policy Act (MEPA) process provides a mechanism for agencies to comment on projects, and could be utilized as a mechanism for proponents to obtain interagency consultation. Yet the MEPA process itself is costly and time consuming. Preparation of an Environmental Impact Report can cost tens or even hundreds of thousands of dollars. **We recommend that the Executive Office of Energy and Environmental Affairs (EEA) work with the MEPA office, MassDEP, DER, other agencies, and external experts to identify ways to improve the efficiency of restoration permitting.**

Standardizing guidance for specific types of restoration is an approach that offers significant potential. Massachusetts has applied this approach to some extent, through the ERP permit provisions at 310 CMR 11 through 13. This process provides guaranteed approval, with pre-specified conditions, for certain categories of projects including dam removal, stream crossing upgrades, stream daylighting, tidal restoration, rare species habitat restoration, and fish passage. However, this process does not address other types of restoration that need to be scaled up including salt marsh platform restoration (ditch remediation, runneling and marsh habitat islands), invasive species removal, cranberry bog restoration, and restoration of rivers and riparian areas. These other types of restoration must file under the Ecological Restoration Limited Project (ERLP) pursuant to 310 CMR 10.24(8) or 10.53(4). The ERLP

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<sup>12</sup> An additional non-permitting barrier for restoration arises for projects on land protected under the DEP Wetlands Restriction programs (G.L. c. 130, section 105 for coastal wetlands; G.L. c. 131, section 40A for inland wetlands). Statutory changes seem to be necessary, as ecological restoration projects on these parcels are currently prohibited, and it appears DEP cannot create regulatory exemptions, even for fully permitted projects.

<sup>13</sup> One notable exception is the Massachusetts Endangered Species Act (MESA) review process through the Natural Heritage and Endangered Species Program (NHESP). The MESA regulations at 321 CMR 10.00 provide for pre-application consultation. The NHESP works with project proponents (for both restoration and development) to identify design refinements and conditions to avoid adverse impacts to state-listed rare species. The Wetlands and MESA regulations also provide a coordinated review process for rare species habitat impacts in wetlands, with Wetlands Notices of Intent filed simultaneously with the NHESP and the local conservation commission. NHESP then provides comments, identifying any conditions needed in the Wetlands permit and clarity as to whether or not additional review is required under MESA. These are beneficial processes that should be incorporated into permitting for restoration projects more generally.

provision does not provide certainty regarding approval and applicable conditions, nor does it streamline MEPA review as is the case with the ERP process. Neither the ERP nor the ERLP process addresses coordination with all the other permits needed for these projects.

The regulations currently include provisions for Combined Application for ERP projects, under all three of the regulatory programs that are the subject of this current regulatory review process. The proposed revisions will delete the Combined Application review procedures.

**We recommend that EEA undertake a wetlands restoration permit streamlining initiative to combine and simplify permitting for restoration projects** across MassDEP and other agencies (e.g. NHESP, Department of Conservation and Recreation Office of Dam Safety, Department of Fish and Game Division of Marine Fisheries, and others). This initiative should tap into the considerable expertise and experience of DER in restoration projects. Other states have streamlined restoration permitting, with a single application submitted to one agency that reviews the project based on standard guidelines and coordinating input from other agencies. **The Environmental Policy Innovation Center (EPIC) has compiled examples in their *Funding Nature, Not Paperwork* report,<sup>14</sup> and has a searchable database on restoration streamlining programs nationwide.<sup>15</sup>**

The need for restoration streamlining is longstanding, and the time for action is now. In 2007, EEA convened an Aquatic Habitat Restoration Task Force. The task force recommended formation of an interagency committee within EEA and a comprehensive review of the regulatory system to identify opportunities to reduce the time and costs of permitting while maintaining resource protections.<sup>16</sup> The 2023 ResilientMass Plan identifies more than a dozen priority actions for restoration, including a high priority action to “Develop updated wetlands restoration guidance and regulations to improve climate resilience.”<sup>17</sup> Mass Audubon and other restoration practitioners stand ready to assist the state in implementing restoration streamlining reforms. There are tremendous opportunities not only to advance the state’s biodiversity, climate, and EJ goals but also to create efficiencies, save money and address agency capacity challenges.

**The ultimate goal should be a single, online application, with a coordinated review process managed by a single agency. Permits for categories of projects meeting approved guidelines should be issued quickly, preferably within 3 months following submission of a complete application.**

### **Interim Steps to Improve Restoration Permitting**

Recognizing that comprehensive restoration streamlining will take some time to accomplish, we also recommend immediate interim steps to improve efficiency under current regulatory programs.

#### **Salt Marsh Platform Restoration:**

Most of the 45,000 acres of salt marshes along the Massachusetts coast are suffering from ongoing impacts from a history of ditching and draining for agriculture and mosquito control. These alterations

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<sup>14</sup> [Funding Nature Not Paperwork - Policy and Programmatic Pathways to Speed Restoration Permitting — Environmental Policy Innovation Center](#), Feb. 2024.

<sup>15</sup> [policyinnovation.org/restoration/database](https://policyinnovation.org/restoration/database)

<sup>16</sup> [mass.gov/info-details/aquatic-habitat-restoration-task-force-report-and-recommendations](https://mass.gov/info-details/aquatic-habitat-restoration-task-force-report-and-recommendations)

<sup>17</sup> [resilient.mass.gov/actiontracker](https://resilient.mass.gov/actiontracker)



to natural hydrology and beneficial sediment regimes result in many detrimental effects including subsidence and accelerated erosion. Accelerating rates of sea level rise increasingly threaten the ability of salt marshes to survive. The Office of Coastal Zone Management (CZM) has developed models of sea level rise impacts on salt marshes<sup>18</sup>. CZM has also identified locations where roads and other barriers are restricting tidal flow, which also negatively impacts salt marshes, and the ERP regulations include provisions for restoring tidal flows. CZM has also identified areas where marshes can migrate, although these areas are limited due to extensive existing development and topography along the coast.

While tidal flow restoration is important, if the ditches and embankments on a marsh platform are not remediated, the marsh will continue to deteriorate. Losses may even be accelerated with the increased tidal flows, if these other alterations are not repaired. Even in areas where there is no tidal restriction, the ditches and embankments are increasing marsh degradation and losses. Scientists and restoration practitioners have developed low impact techniques to restore natural hydrology through a combination of ditch remediation (using salt marsh hay to heal selective ditches), runneling (shallow channels, strategically placed), and marsh islands (small patches slightly elevated using material excavated from the runnels). The marsh “islands” are small features, a few feet in diameter, that rapidly revegetate and provide nesting habitat for the Saltmarsh Sparrow. Massachusetts supports 10% of the global population of this threatened species<sup>19</sup>. Restoring thousands of acres of salt marshes with these techniques is essential, and this work needs to get underway within the next few years, before the rate of SLR increases even more rapidly with the upswing phase of the 19-year Metonic Cycle.

The Southeast New England Program of the Environmental Protection Agency, in coordination with other federal and state agencies and salt marsh restoration practitioners including Mass Audubon, organized a full day conference on *Navigating Salt Marsh Restoration in Massachusetts: Challenges, Strategies, and Opportunities*, held on September 19, 2023. The agenda was structured around understanding the existing regulatory structure, with opportunities for participants to identify suggestions for next steps. This conference and the resulting materials explored the complex web of permitting these projects must navigate, and the need for further collaborations to increase the pace of progress and develop clear guidance.<sup>20</sup>

**We appreciate MassDEP forming a Coastal Wetlands Climate Resilience Interagency Workgroup to develop guidance for use of these techniques for salt marsh restoration under the Wetlands and 401 Water Quality regulations. The inclusion of Mass Audubon’s ecological restoration staff and other external experts in the refinement of this guidance has been a productive process in recent months. We recommend that MassDEP include nonprofit, academic, consultant, and federal agency representatives in wetlands restoration streamlining planning and development of guidance for other restoration techniques as well.**

### **1.0 Salt Marsh Restoration Streamlining:**

**As the salt marsh restoration guidance document is nearly final, we recommend that MassDEP adopt it as the basis for use of the Ecological Restoration Permit (ERP) pathway under the regulations.** The proposed regulations at 310 CMR 10.36(9) allow alterations to LSCSF to facilitate migration of salt marshes and dunes. We support that, but request deletion of the last sentence in that paragraph,

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<sup>18</sup> [mass.gov/info-details/sea-level-affecting-marshes-model-slammm](https://mass.gov/info-details/sea-level-affecting-marshes-model-slammm)

<sup>19</sup> [acjv.org/saltmarsh-sparrow/overview/](https://acjv.org/saltmarsh-sparrow/overview/)

<sup>20</sup> [epa.gov/snep/navigating-salt-marsh-restoration-massachusetts-challenges-strategies-and-opportunities](https://epa.gov/snep/navigating-salt-marsh-restoration-massachusetts-challenges-strategies-and-opportunities)

“Work in Salt Marsh or Coastal Dune may be proposed under 310 CMR 10.24(8): Ecological Restoration Limited Project.”

We also request deletion of this same sentence at the end of 310 CMR 10.36(8)(g) (Redevelopment in LSCSF). There are other kinds of work in these resource areas that can be permitted under various other regulatory provisions, so the sentence is confusing and misleading.

Instead, **we recommend that language be added to the ERP provision allowing additional categories of restoration to utilize the ERP procedure provided MassDEP has adopted guidance for that category.**

This would enable MassDEP to expand use of the ERP for other categories such as cranberry bog restoration or invasive species removal following completion and approval of guidance, rather than waiting for future regulatory revisions.

#### **Waterways Licenses – Do Not Require for Ditch Remediation:**

MassDEP has been requiring Chapter 91 Waterways licenses for ditch remediation, under an interpretation that placement of hay in a ditch constitutes “fill” and is an alteration of an existing structure.

Placing hay in historically installed ditches as part of a salt marsh restoration project should not require a license. DEP has the discretion to allow this work now, under existing regulations:

*310 CMR 9.05(3) Activities Not Requiring a License or Permit. Notwithstanding the provisions of 310 CMR 9.05(1) through (2), no license or permit is required for: ... (m): demolition or removal of any unauthorized structures or fill in order to facilitate water dependent use provided prior written approval is obtained from the Department, which, at the discretion of the Department may include prior public notice and comment.*

This provision applies for the following reasons:

- Ditches that are being remediated were typically never permitted or licensed;
- Restoration is a water-dependent use; and
- Requiring a license for this work is counterproductive to salt marsh protection, adding costs and delays that will allow the marsh to continue to deteriorate. Therefore, it does not serve the purpose of the Waterways Act.

**We recommend that MassDEP issue an opinion letter or policy that confirms the interpretation that this regulatory provision applies and therefore ditch remediation using salt marsh hay and obtaining all other required permits is not subject to permitting or licensing requirements under 310 CMR 9.00.**

#### **Other Priority Categories for Restoration Permit Streamlining:**

There are several other categories of restoration needed across large areas of the Commonwealth including:

- Invasive species
- Cranberry Bogs and other Agricultural Lands historically ditched, drained, or filled
- Rivers and Riparian Areas

**We recommend that MassDEP prioritize the development of guidance for these categories of projects. The ERP regulations should include a provision allowing additional types of restoration to qualify, based on guidance approved by MassDEP. We also encourage MassDEP to work with DER and external experts to develop guidance, and to adapt guidelines and standards developed in other states that are relevant here.**

**For invasive species, consider expanding the Minor Projects exemptions.** For example, consider allowing hand pulling and cutting with hand tools. MassDEP could use its discretionary authority to determine that if the scope and scale of this work is limited with defined parameters and associated guidance, it is not deemed an “alteration” under the Wetlands regulations because nonnative invasive species are not wetland vegetation that the Act intended to protect. MassDEP could also develop a guidance document for more extensive types of invasive plant removal and then allow those projects to proceed under the ERP process.

**For cranberry bogs, we recommend working with DER, Mass Audubon and other entities that have already successfully restored cranberry bogs<sup>21</sup>, to develop guidance that then allows use of the ERP process.**

Restoration of rivers and riparian areas is another category deserving close attention and development of guidance. The Franklin Regional Council of Governments (FRCOG) is currently developing design templates and guidance documents for certain types of riparian stabilization and floodplain reconnection using nature-based designs. Guidance is also needed on other types of riparian restoration such as daylighting streams that have been buried in culverts or restoring riverfront areas on abandoned industrial sites and vacant urban lots. Guidance for dam removals also need to be updated. The Waterways regulations should be revised to allow installation of instream features such as riffles and root wads.

## **Monitoring**

Guidance is needed on appropriate methods for follow-up monitoring for restoration projects. This should be based on a cost-benefit approach, calibrated to the value of the information gathered. Intensive monitoring is not needed for projects where there is imminent risk of loss to the system, or the natural system has already been so severely degraded that it is not fulfilling significant public interests.

**Follow up monitoring should be designed to document that the intended benefits were achieved and identify any unintended negative effects that need follow-up work.** The final salt marsh restoration guidance and guidance developed for other categories of restoration should have reasonable and practical monitoring requirements. It should not cost more to monitor than to undertake the planning, design, permitting, and implementation of the restoration project. To the extent that the state is interested in intensive monitoring for research purposes, that work generally should be funded separately from monitoring required to secure permits for beneficial restoration.

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<sup>21</sup> [massaudubon.org/places-to-explore/wildlife-sanctuaries/tidmarsh/sanctuary-history](https://massaudubon.org/places-to-explore/wildlife-sanctuaries/tidmarsh/sanctuary-history)

## Wetlands Restoration Streamlining Initiative

Beyond the incremental improvements in wetlands restoration permitting that can be achieved within the existing regulatory framework, **we recommend that the state undertake a more comprehensive review. The following summarizes a rough sequence such a program could follow:**

1. Establish an Interagency Wetlands Restoration Streamlining initiative, coordinated by EEA. Include external experts, other stakeholders, and federal and local agencies.
2. Improve coordination and processes across existing permits.
  - a. Establish clear expectations that agencies will provide meaningful, pre and post application consultations to help projects move through the permit process.
  - b. Instruct agencies to communicate with each other and restoration proponents to resolve any conflicting provisions or pinch points a restoration project encounters.
  - c. Utilize expertise in DER to identify ways to smooth the process and for development of guidance documents for specific types of restoration.
3. Expand use of the ERP process, relying on approved guidance documents for application requirements, project review, and conditions.
4. Identify and implement measures to consolidate applications across programs, e.g. through creation of online combined applications. Obtain funding for the IT system necessary to create a consolidated permit.
5. Identify and implement additional procedural, regulatory, and statutory reforms as needed to complete full streamlining.
6. Ultimately, implement streamlined single-stop restoration permitting.

## Nature-based Climate Solutions

The proposed coastal provisions at 310 CMR 10.24(1)(b) establish a preference for the use of nature-based designs to protect existing developed coastal areas from the impacts of sea level rise and coastal storms. This should be more than a preference - it should be a requirement unless demonstrated infeasible, similar to the ESSD and LID mandate for stormwater management.

We support prioritizing coastal wetlands restoration and migration, retention and planting of trees and other native vegetation, and the use of “soft” features like vegetated berms and swales over engineered flood control structures like concrete walls. At the same time, MassDEP needs to recognize that there are a wide range of techniques within the broad category of “nature-based solutions,” In both coastal and inland settings. These practices should be encouraged but still regulated carefully, with appropriate guidance. **As noted in the attached survey report from Mass Audubon and CLF, wetlands restoration is distinct from the use of nature-based solutions, and the two types of activities should be regulated differently. True restoration is aimed at restoring a naturally functioning ecosystem, whereas nature-based solutions reduce but do not eliminate the impacts of development.**

## LSCSF and Coastal Resiliency

The proposed regulations would, for the first time, create performance standards for work in the coastal floodplain, known as LSCSF. The updates to the Waterways regulations strengthen standards for new

and redevelopment to address future sea level rise. We support the overall approach to the coastal regulations while offering recommendations for refinement.

### **Support**

- Prohibition on new structures in the Velocity Zone, and design requirements for development in other parts of floodplain to ensure that the functionality of the LSCSF to protect the interests of the Wetlands Protection Act remains intact.
- Allowing alteration of coastal floodplain to facilitate salt marsh and dune migration.
- Retention of all existing performance standards for other resource areas such as dune or coastal bank where those resources overlap with LSCSF.
- Waterways requirements for structures to be designed for future sea level rise.

### **Requested changes for LSCSF – current 1.0 - Provisions needing modification/clarification**

- Presumptions of significance (10.36(1) Preamble): The proposed regulations state that LSCSF is likely to be significant to storm damage prevention and flood control. Other interests of the Act should be acknowledged as potentially present depending on site conditions, including wildlife habitat and prevention of pollution. Naturally vegetated, undeveloped coastal floodplain provides important habitat for migratory birds and other species.
- Allowing elevation of roads where necessary to continue essential access, with mitigation for salt marsh impacts. This provision needs to be integrated with a local/district level public planning process. These projects should be allowed to facilitate marsh and dune migration where that is appropriate while protecting existing developed areas from increased flows or velocities. Similar district level planning is also needed for flood protection berms.
- The provision for Scientific Research projects should be clarified and expanded to allow experimentation with nature-based solution designs that are not currently permissible.

### **Current vs. Future Conditions:**

The LSCSF proposed regulations (310 CMR 10.36) rely on the FEMA maps. This does not take sea level rise and erosion rates into consideration. The Waterways regulatory revisions require structures to be designed for future sea level rise conditions. **DEP should consider modifying the proposed LSCSF provisions to better consider future conditions.**

### **Coastal Resiliency with Nature-based Solutions:**

**Scientific research projects** 310 CMR 10.05(12). – As drafted, this provision is narrow, focusing on deploying scientific research equipment and conducting research. While such projects do need to be allowed, as written it appears impractical for most types of actual research, which often requires multiple years of data to develop meaningful analysis. This provision should be broadened to allow testing of nature-based techniques (e.g. living shoreline designs that are not currently permissible). Experimental nature-based projects that have positive results without significant negative impacts should be allowed to remain in place. The current draft for scientific research requires removal.

**Coastal Berms:** 310 CMR 10.36(8)(g) The proposed regulations allow construction of berms to protect existing developed areas. This is preferable to armoring. However, such projects need to be part of a

district or neighborhood level plans developed with public input, as is envisioned for the ResilientCoasts Strategy. There needs to be a process for considering and addressing the interactions across adjoining landowner interests. For example, if a conservation-oriented landowner wants to facilitate marsh or dune migration but other property owners want to build a berm to protect against water flowing from the ocean, a process is needed to sort these competing interests out and develop an optimized local plan.

**Relocation of roads and railroads:** 10.24(7)(c)9. A new Limited Project provision would allow relocation of coastal transportation infrastructure into resource areas other than salt marsh if no alternative (new limited project). This provision requires restoration of the former road or railroad bed to salt marsh or other resource area appropriate to the site, which we support.. However, this provision also needs to address situations where the existing road or railroad bed is acting as a protective berm for existing developed areas. As drafted it prohibits an increase in tidal flows. Increases should be allowed where the road bed has been acting as a tidal restriction in locations where restored flows would be beneficial to salt marsh restoration or migration, provided this would not impact developed areas. A district or neighborhood level planning process is also needed for these projects.

### **Stormwater Management Updates**

MassDEP is proposing a major update to the stormwater management standards and Stormwater Handbook. Mass Audubon strongly supports the key features of this update including:

- Emphasis on nature-based designs using Environmentally Sensitive Design (ESSD) and Low Impact Development (LID) stormwater techniques.
- Increased alignment with the EPA General Permits for Stormwater Discharges from Small Municipal Separate Storm Sewer Systems in Massachusetts (MS4 Permit).
- Replacing outdated precipitation calculation data with the more recent NOAA 14+ data.
- Addition of a new Standard #11 to meet Total Maximum Daily Load (TMDL) requirements in watersheds with impaired water quality.

The updates to the stormwater management standards (310 CMR 10.05(6)(k)-(q) require the use of ESSD and LID unless demonstrated impracticable for the site and project. Impracticable for these purposes is defined as “impossible in practice to do or carry out based solely on physical constraints.” ESSD and LID have many benefits, including retention of natural vegetation and soils, minimization of impervious surfaces, cost-effective treatment to maintain water quality and recharge, and maintenance of natural runoff characteristics to the extent possible. LID features utilize plants and soils to filter, slow, and infiltrate stormwater. An added benefit is that properly designed and maintained LID systems will not create mosquito breeding habitat. In contrast, conventional stormwater systems with structures like catch basins and wet detention basins can hold pools of stagnant water, particularly if not properly maintained. Roads with vertical curbing and catch basins also entrap and kill amphibians. **For all of these reasons we strongly support requirements for use of LID designs wherever possible.**<sup>22</sup>

The methods that have been used for calculating stormwater intensities are extremely outdated, based on data from the 1960s and earlier. Storm intensities are increasing with climate change. We support

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<sup>22</sup> The SNEP Network has many educational resources on LID including Mass Audubon’s bylaw review tool and the New England Stormwater Retrofit Manual. See [www.snepnetwork.org](http://www.snepnetwork.org).



the update to the NOAA 2014 Atlas using the “plus” approach of the 90<sup>th</sup> percentile numbers. As newer data continues to become available, and to provide resilience for the design life of projects as storm intensities continue to increase, **flexibility should be retained for conservation commissions to impose newer or more stringent requirements.**

## 1.0 Recommendations for Stormwater Management

**Solar Arrays:** The proposed regulations include solar arrays in the definition of Impervious Surfaces, as is appropriate. The Stormwater Handbook includes Section 5.5 on solar array review, and references the MassDEP *Wetlands Program Policy 17-1: Photovoltaic System Solar Array Review*<sup>23</sup>, and provides for ESSD credit if certain design parameters are met. The Policy was never subjected to public review and needs to be refined along with the ESSD provisions. The Policy, Handbook section, and ESSD guidelines are not entirely consistent.

As drafted, the guidelines seem to assume that the array is being constructed on a greenfield site with land clearing and grading involved. Solar arrays can also be deployed on areas that have already been developed or otherwise altered. If an array is being constructed on a parking lot or rooftop, there is no increase in impervious surface or pollutant loading. If it is constructed on an existing turfed grass area, stormwater considerations should take that into account along with other characteristics such as the size of the array and slope. The Policy states that peak rate attenuation should be calculated based on the land cover type underneath the array, but this negates the acknowledgement that the arrays are impervious surfaces that concentrate runoff at each drip edge. This effect may be negligible for a small array constructed on an existing, nearly level lawn area or quite significant for a large array on a newly cleared slope (despite attempts to stabilize the soil with seeding). The guidelines also call for seeding with turf grass, but there are situations where other land cover may be more appropriate, e.g. a meadow for pollinator habitat.

**We recommend that these provisions be revised to better account for the range of situations and associated degree of impact on stormwater associated with solar arrays. Arrays on already developed lands and small arrays on existing turfed areas should not require stormwater management in most instances.**

**Gravel Roads:** The proposed Wetlands regulations would categorize most gravel roads as impervious surfaces. While we recognize that this is often functionally accurate, we are concerned regarding unintended consequences of requiring rural municipalities and utility companies with service access ways for transmission and other Rights-of-Way (ROW) to install stormwater management systems along these roadways. Given that the stormwater standards will now rely on LID designs as the preferred approach, it may be possible to resolve this by including in the Handbook provisions designed to address these roads. **Simple techniques like roadside swales should be generally preferred over more heavily engineered structures.** The regulations should recognize that utility ROWs receive minimal traffic and traverse broad swaths of undeveloped lands including protected conservation lands owned by federal, state, and local governments, private land trusts, and private lands with Conservation Restrictions.

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<sup>23</sup> [mass.gov/info-details/massdep-wetlands-program-policy-17-1-photovoltaic-system-solar-array-review](https://mass.gov/info-details/massdep-wetlands-program-policy-17-1-photovoltaic-system-solar-array-review)

Stormwater management features in such settings should not be overly intrusive, and should be protective of wildlife including amphibians, turtles, and other small animals that can become trapped in constructed stormwater features.

We recognize that MassDEP is receiving many technical comments on the proposed updates to the stormwater management standards and Handbook. We recommend that the main changes to the standards (updated precipitation calculation methods, addition of Standard #11 for TMDLs, and the required use of ESSD and LID) be adopted in final regulations as soon as possible. Consider moving details such as methodologies and the crosswalk table into the Handbook. The effective date of the new stormwater provisions may need to be extended to provide time to address all comments, finalize the Handbook, and conduct training for conservation commissions and consultants. **By simplifying the level of detail in the regulations, MassDEP can finalize the regulations sooner rather than later, while providing more flexibility for further refinements of the Handbook over time.**

### **Trails**

The proposed new limited project for Shared Use Paths is too narrowly focused only on public multi-use trails on former railroad beds. There are many other trails, often narrow footpaths, on public lands as well as nonprofit land trust lands, open to public use. **MassDEP should develop, in consultation with entities that build and maintain trails, guidelines for both maintenance of existing trails and construction of new trails.**

For existing trails traversing wetlands, where impacts are occurring due to trampling and the trail cannot be readily rerouted across adjoining upland, MassDEP should allow some forms of trail stabilization as remediation, without the need for complex permitting. For example, placement of puncheons, low wood structures that allow water to flow underneath while halting ongoing trampling impacts should be allowed. This is different than new trail construction where alternatives to wetland crossings should be considered and unavoidable crossings may require elevated boardwalks or other features that allow wetland vegetation to continue to grow underneath.

### **Mosquito Control – Wetlands Restoration and Low Impact Development (LID)**

Healthy, diverse wetlands support a variety of aquatic life, including mosquito predators such as fish, predatory beetles, and dragonflies (both larval and adult). In contrast, stagnant ditches, poorly maintained stormwater systems, and degraded wetlands are more likely to breed large numbers of mosquitoes while not supporting fish and other mosquito predators. Mosquito Control Districts (MCDs) can partner with wetlands restoration projects and assist with work such as runneling in salt marshes, restoration of cranberry bogs that are no longer in production, or replacement of culverts that are blocking stream flows and fish passage. The report of the Mosquito Control for the Twenty-First Century Task Force recognized the potential to expand these partnerships, and recommended increased cooperation and collaborations between MCDs, DER, and wetlands restoration projects<sup>24</sup>. MCDs are

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<sup>24</sup> [mass.gov/orgs/mosquito-control-for-the-twenty-first-century-task-force](https://mass.gov/orgs/mosquito-control-for-the-twenty-first-century-task-force)

exempt from the Wetlands Protection Act but not 401 Water Quality Certification or Waterways permitting or various other laws such as the Massachusetts Endangered Species Act (MESA).

As noted above, we also support the stormwater regulatory updates requiring the use of ESSD and LID stormwater management techniques wherever possible. LID designs do not create mosquito breeding habitat, unlike conventional stormwater systems with features like catch basins and wet detention basins that can hold pools of stagnant water particularly if not properly maintained. The Stormwater Handbook includes a section (5.4) on mosquito control and Stormwater Management Practices. This includes information about how ESSD can help avoid creation of mosquito breeding habitat, and recommendations for management of structural control measures that can create mosquito habitat if not properly managed and maintained. We recommend that the final Handbook more clearly describe the benefits of LID designs in avoiding creation of mosquito habitat, and connect that more directly with the new requirements to utilize ESSD and LID unless that is infeasible at a particular site.

**2.0 Mosquito Control Recommendations: We recommend that MassDEP explore opportunities to further enhance cooperation between MCDs and wetlands restoration projects in the 2.0 process.** We also recommend educational outreach and development of cooperative informational partnerships on the use and benefits of ESSD and LID for and with MCDs, Departments of Public Works, Planning Boards, Boards of Health, other local officials, and local and regional environmental nonprofit organizations.

### **Future Climate Resilience 2.0**

Mass Audubon appreciates MassDEP's commitment to undertaking another regulatory review process to further improve climate resiliency. We look forward to participating in that process. As noted above, we have identified the following priorities for the 2.0 regulatory review (and beyond):

- Comprehensive review of streamlining for restoration projects, both coastal and inland. As noted above, this should be coordinated by EEA and include multiple agencies including MassDEP. The goal should be a single application, coordinated interagency review process, with a combined permit issued relatively quickly (e.g., within 3 months of complete application). See above comments for interim steps including expansion of the ERP process with guidance on additional categories of restoration and improved interagency coordination processes with restoration proponents.
- New provisions are needed to allow living shorelines and other nature-based solutions that are hard or impossible to permit now. This applies to both coastal and inland settings.
- The 2.0 process should also explore more broadly opportunities to align programs across agencies to improve resiliency and advance the use of LID in all forms of development.

### **Support for Input from Experts**

Mass Audubon has conferred extensively with other organizations involved in protection and restoration of wetlands and waterways in developing these comments, including the Massachusetts Association of Conservation Commissions (MACC), Massachusetts Society of Municipal Conservation Professionals (MSMCP), Association of Massachusetts Wetland Scientists (AMWS), and the Massachusetts Rivers Alliance. Those organizations are submitting comments that include more specific comments on the

stormwater management standards and guidelines and other provisions. We generally support those other comments.

Over the past two plus years, we've been meeting with salt marsh restoration experts and practitioners. In 2023, Mass Audubon conducted a survey on wetlands restoration and nature-based solutions (NBS) with the Conservation Law Foundation, and the report from that survey is attached with these comments.

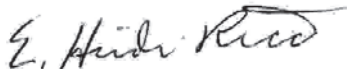
Mass Audubon is also co-signer to three comment letters on streamlining permitting for Salt Marsh Restoration and Ecological Wetlands Restoration more generally, and on ecologically-based mosquito control using wetlands restoration and LID.

**We encourage MassDEP to continue to strengthen its collaborations with other state agencies including MassWildlife and the Division of Ecological Restoration (DER), federal agencies (e.g. USFWS, NOAA, EPA), municipalities, nonprofit organizations, academic and other experts, and stakeholders in the 2.0 process and beyond.**

### **Conclusion**

In conclusion, Mass Audubon commends MassDEP for the climate resiliency regulatory reforms proposed in the 1.0 package. We recommend that MassDEP refine and simplify these updates while moving extensive details into guidance documents. We look forward to participating in the 2.0 process.

Sincerely,

A handwritten signature in black ink, appearing to read "E. Heidi Ricci". The signature is fluid and cursive, with a large, stylized "E" and "R".

E. Heidi Ricci  
Director of Policy and Advocacy



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## **Barriers to Wetlands Restoration and Nature-based Solutions Projects in Massachusetts**

### **Research Memo: Survey and Interview Findings**

**February 2024**

#### **Introduction**

Massachusetts is a leader in coastal and inland wetlands restoration<sup>1</sup> and the application of nature-based solutions (NBS)<sup>2</sup> projects. However, practitioners have increasingly recognized that permitting and regulatory systems designed to minimize impacts of development on natural resources can be counterproductive to supporting critical projects that benefit the environment and communities. This issue is made all the more urgent due to sea level rise, increasing storm intensities, and other rapidly increasing impacts of the climate crisis. NBS projects are critically needed to help adapt to these climate impacts, and action is needed now to revitalize remaining salt marshes, wetlands, and other natural resources before they are irreversibly lost. NBS projects also serve as a favorable alternative to hard-engineered structures (like sea walls) that further degrade and harm our natural resource areas.

To better understand these challenges and possible solutions, CLF and Mass Audubon conducted research on regulatory and other barriers to these projects in Massachusetts. Our objective was to identify real and perceived barriers to permitting and constructing wetlands restoration and NBS projects to understand what statutory, regulatory, or policy changes are needed to streamline and accelerate this beneficial work. Between May and August 2023 we collected information in an online survey that received 139 responses, conducted ten practitioner interviews, and gathered additional background research.

This document details our findings from this research effort. It includes each question as it was asked in the survey and a summary of the survey responses, and is supplemented with additional information gathered during the interviews. It is important to note that for many questions in the survey, respondents could select multiple answers, so numbers in the charts will often not add up to the total

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<sup>1</sup> We refer to a definition of wetlands restoration that is derived from the state Wetlands Protection Act regulations at 310 CMR 10.05: *Wetlands Ecological Restoration Project means a project whose primary purpose is to restore or otherwise improve the natural capacity of a Wetland Resource Area(s) to protect and sustain the interests identified in M.G.L. c. 131, § 40, when such interests have been degraded or destroyed by anthropogenic influences. The term Wetlands Ecological Restoration Project shall not include projects specifically intended to provide mitigation for the alteration of a Resource Area authorized by other state permits other than projects implemented pursuant to a US Army Corps of Engineers approved in-lien fee program.* This is a process-based definition that focuses on restoring previously destroyed or impaired systems so that they can provide functions with little to no ongoing human intervention.

<sup>2</sup> A working definition of nature-based solutions that we used throughout this research process is: *Nature-based solutions are strategies that rely on ecological processes to achieve climate resilience objectives. They restore, protect, and/or manage natural systems and/or mimic natural processes to address hazards like flooding, erosion, drought, and heat islands in ways that are cost-effective, low maintenance, and multi-beneficial for public health, safety, and well-being.* NBS may include wetlands restoration as well as additional, broader types of projects, including constructed features. We did not provide a definition of NBS in the survey, but did ask respondents if they had one (page 7).



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number of respondents. We also include a section summarizing research into how other states have approached these permitting questions. At a high level, our research identified the following challenges:

Regulatory challenges:

- Overall, applying the same requirements to restoration and NBS as to development is counterproductive.
- The definition and interpretation of “fill” and how it is treated under the Wetlands Protection Act (and to a lesser extent Chapter 91) can be either prohibitive or unclear.
- The list of project types that are eligible for the Ecological Restoration Project Order of Conditions is too narrow and should be expanded.
- The Area of Critical Environmental Concern (ACEC) designation often restricts or complicates permitting of projects that would have positive effects.

Other permitting challenges:

- Inconsistency in agency interpretation and application of regulations can lead to confusion and added time and cost in the permitting process.
- Some restoration and NBS projects include innovative techniques that regulators are less familiar with and may be hesitant to permit.
- Grant timelines are often misaligned with permitting timelines, making it difficult to fund this work.
- Multiple permits required for the same restoration work increases time, cost, and complexity for both applicants and regulatory agencies.

**Research Findings**

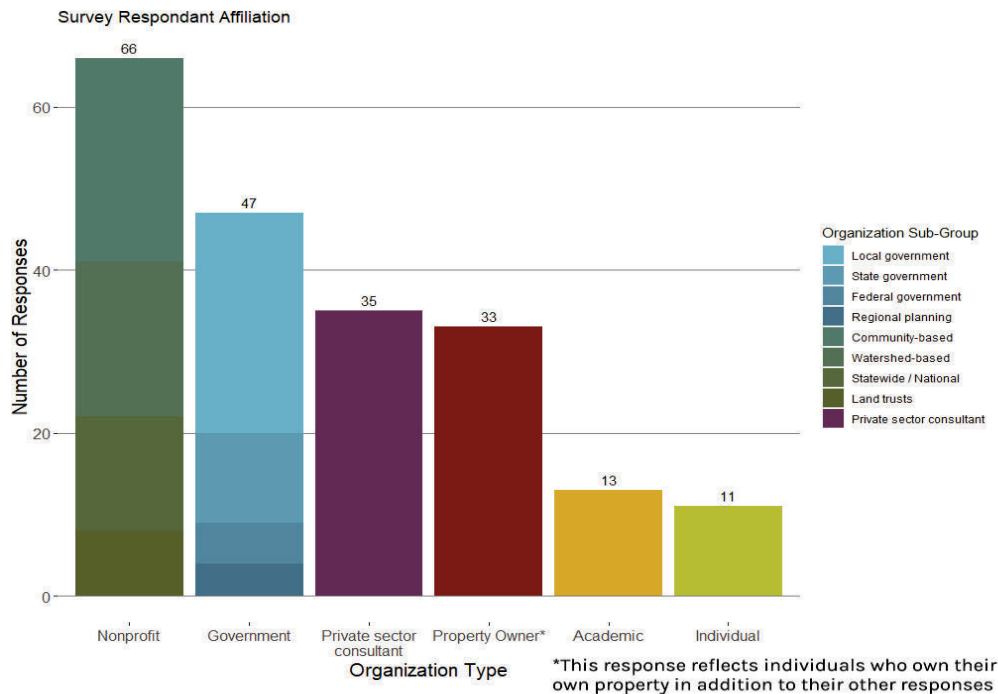
**What type of stakeholder do you identify as?**

The survey had 139 responses in total, representing 112 individual organizations or agencies.<sup>3</sup> Respondents could select multiple stakeholder types, and many did (Figure 1). We also asked for specific affiliation (i.e. name of organization). We further interviewed 10 stakeholders who represented NGOs, conservation commissions, state and federal agencies, and the private sector.

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<sup>3</sup> Some respondents were unaffiliated.

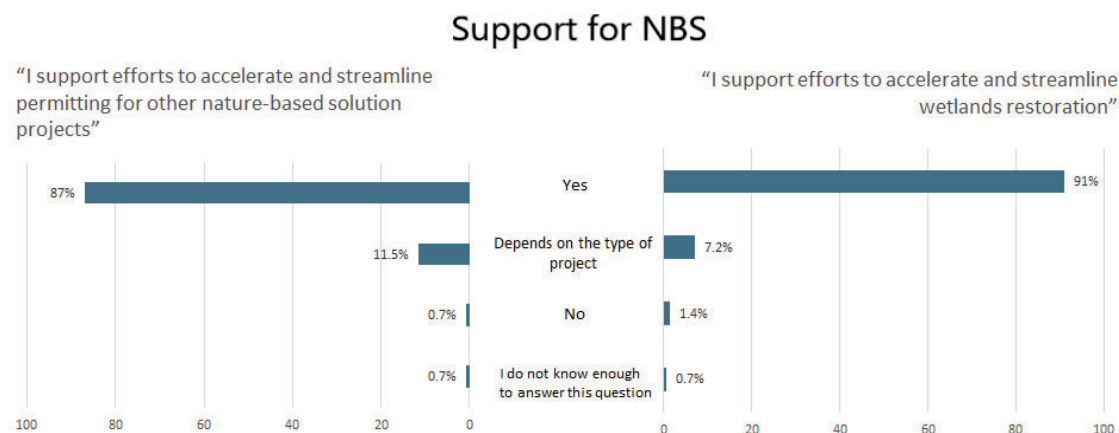
Figure 1.



**I support efforts to accelerate and streamline permitting for wetlands restoration/other types of nature-based solutions.**

The responses to this question clearly illustrate that NBS and restoration work is widely conducted and supported throughout the state (Figure 2). The NBS version of the question had slightly more variation in responses, which likely reflects the lack of clear understanding about what constitutes NBS work. See page 8 for further discussion of defining NBS.

Figure 2.







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### What kind of nature-based solution projects do you work on or support?

Survey respondents were asked what type of projects they work on or generally support, and could select multiple answers. It is useful to group projects by type as shown in Figures 3-6 below. Wetlands restoration, both coastal/salt marsh and inland, ranked highly as common answers. Vegetation management, particularly invasive plant removal, was the most common response overall. The responses also included projects that are not common right now due to regulatory restrictions but that nonetheless ranked highly and therefore seem to reflect a need and desire for this kind of work. For example, despite being the second most common type of coastal restoration project identified, living shorelines can be difficult to permit because of the complexity of using fill under the Wetlands Protection Act, Section 401 and 404 permits.

Figure 3.

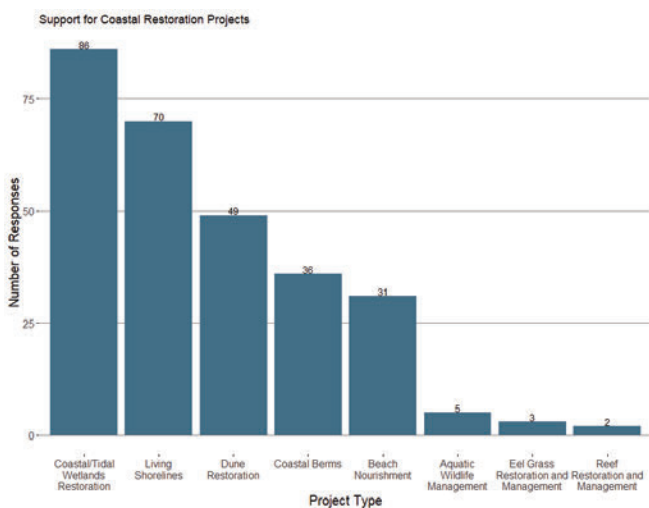


Figure 4.

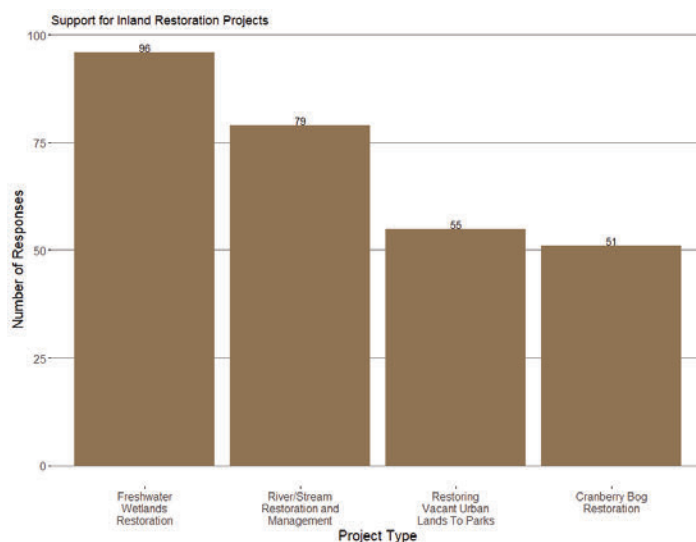
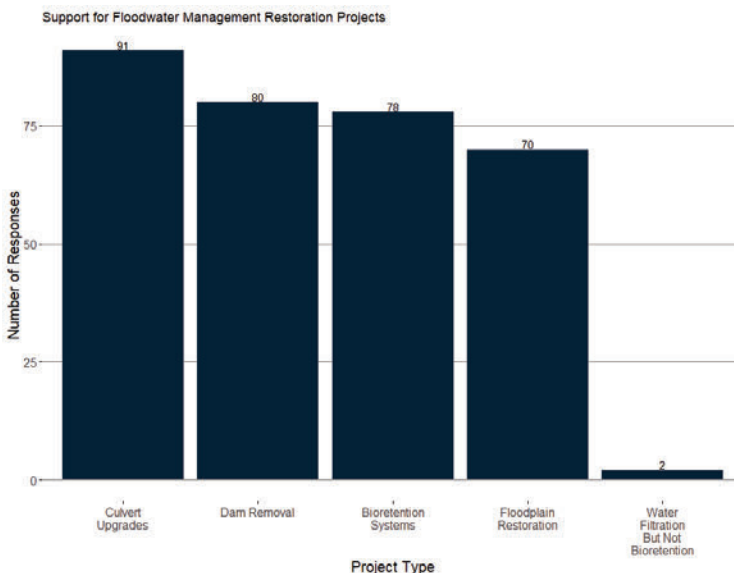
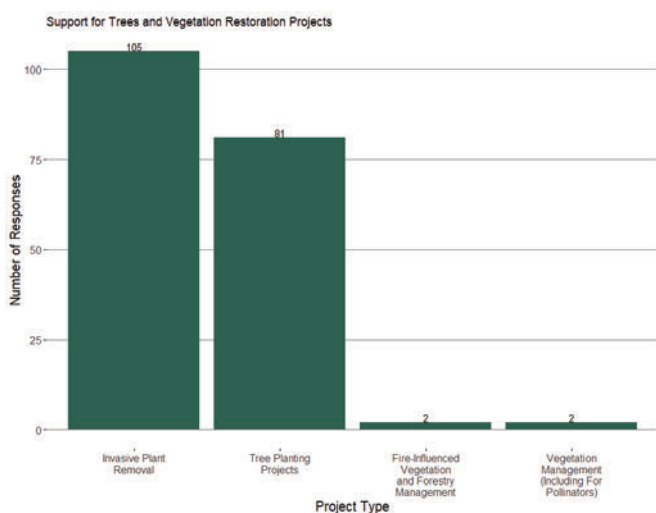


Figure 5.

Figure 6.



Interview respondents further discussed the following project types and techniques:

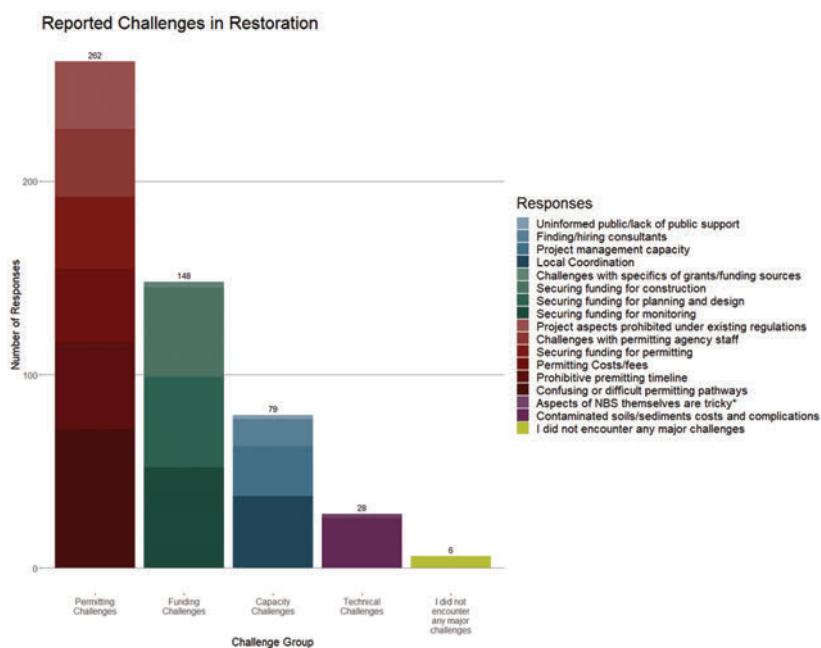
- Salt marsh restoration
- Dam removal
- Vegetation management
- Erosion control (at freshwater ponds)
- Cranberry bogs
- Calcareous fens
- Living levies
- Floodplain restoration
- Runneling, micro-runneling
- Ditch remediation
- Micro-topography
- Chop-and-drop
- Thin layer placement/deposition
- Herbicides

In the interviews, we also asked what kind of NBS projects respondents saw as top priorities or the most important kinds of projects to advance quickly or scale up. Most of the interviewees (6 out of 10) specifically identified salt marsh restoration as a type of project that is most important to advance, given the Metonic cycle and the short window of opportunity to repair damage and head off further destruction. Dam removal and cranberry bogs were other common project types cited by interviewees, and many interviewees expressed a need to focus on inland NBS and restoration projects as well as coastal. Another common response given by interviewees was the need to scale up newer or less common techniques that are innovative and cost-effective. Some examples specifically referenced by interviewees include “chop-and-drop” for river restoration – allowing trees to fall into rivers to direct the flow of water and help build up sediment – and runneling and ditch remediation for salt marsh restoration.

**If you have experience working on one or more nature-based solution projects, what were the challenges you encountered? Check all that apply.**

In the survey, more than half of the respondents identified “confusing or difficult permitting pathways” as a challenge; this was the most common answer and was also reflected in the following open-ended question where we asked respondents what their single biggest challenge was.

Over a third of respondents identified securing funding for various project stages as a challenge. This too was highlighted in the response to the open-ended question, as exemplified in one response which read *“Possibly the biggest challenge is funding - especially if it needs to be secured from multiple sources which may have their own timelines and restrictions (eg. cannot use*





*mitigation funds, requires X% match, what format that match can be).*”

Other themes that appeared in the responses to this question are around coordinating between agencies, challenges at the local level (i.e. resource and capacity challenges, challenges working with conservation commissions), and needing to educate both the general public and regulators.

The interviews corroborated these survey findings. We asked respondents to walk us through the permitting process for specific projects, which highlighted challenges related to the length of time and funding for projects. Based on our interview findings, it can take two or more years just to receive all necessary permits for a project, and there is significant variation in how long it can take even similar projects to move through the permitting process. It is rarely clear when starting a project just how long it will take, and this can lead to significant funding challenges since these projects are often funded by grants that must be spent down by a certain time.

Many interviewees also discussed challenges related to lack of coordination and consistency on the part of agencies. For example, multiple respondents referenced having a project successfully move through permitting in one part of the state, but having a similar project denied by the DEP office in another region of the state due to different interpretation of the regulations (most often the Wetlands Protection Act and Chapter 91). For example:

- *“I know that there is variability within the state among the different regions and how things are approached and that can be a significant factor, so there’s not always consensus between the various DEP regions on approaches. Even among the section chiefs in the northeast and southeast regions...they don’t always apply the same standards the same way.”*
- *“Chapter 91 is the same way, where Western region DEP interprets navigable waters very differently.”*
- *“I’ve also noticed that in terms of...understanding the goals of restoration and wanting to make restoration projects go forward, it seems like the on the ground staff like the circuit riders in the regions of DEP, are very different in terms of how they approach that than the top folks at DEP are.”*
- *“Each DEP District is a little bit different and the real difficulty that we’re finding...is each Conservation Commission is different.”*

Interview respondents also highlighted the fact that some NBS and restoration techniques (i.e. ditch remediation) may be innovative, less well-established approaches, and that these are often difficult to permit, due to regulators being unfamiliar with the work.

### **What is the single biggest challenge you face in working on nature-based solutions projects?**

In an effort to hone in on the most pressing challenges, the survey asked respondents in an open-ended question about the single biggest challenge they face in working on NBS and restoration projects. Most answers discussed permitting, funding, and regulations; the words “permitting” or “permit” were used 28 times, “regulations” or “regulatory” 17 times, and words like “funding,” “fund,” and “cost” were also used 17 times.



There was also an evident theme around a lack of education and awareness of NBS, and how this related to challenges. Some answers to the “single biggest challenge” question that highlighted this theme include:

- “...public perception regarding restoration (negative views of seeing landscapes change, even if the change is an ecological improvement)”
- “Permitting authorities don't know much about NBS, and are more likely to say no to something they haven't seen (i.e., some reviewers treat NBS, Green Infrastructure, and restorative projects as if they are development to be mitigated). Seems like the “luck of the draw” with respect to who is reviewing and what pre-knowledge they have of nature-based solutions.”
- “Not enough technical expertise in nonprofits and small towns who are most often the groups able to drive decision making”

**If you have experience working on or supporting one or more nature-based solution projects, which of the following regulatory structures have posed a barrier? If you indicated that any specific regulatory structure above posed a barrier to your project, please provide us with more information about the challenges you encountered.**

In the survey, the Wetlands Protection Act was identified as the regulatory framework that poses the most challenges to proponents. Chapter 91 was the second most commonly identified, closely followed by local bylaws/ordinances. MEPA and federal regulations were also identified as challenges.

Table 1. Regulatory frameworks ranked by which respondents found most challenging.

Type	Count	Percent
Wetlands Protection Act	56	50.0%
Chapter 91/tidelands	37	33.0%
Local bylaws/ordinances	36	32.1%
Massachusetts Environmental Policy Act (MEPA)	32	28.6%
Federal laws/regulations (including Army Corp permits)	32	28.6%
Areas of Critical Environmental Concern (ACEC)	22	19.6%
Massachusetts Endangered Species Act	17	15.2%
Historic preservation requirements	17	15.2%
Designated Port Area (DPA) regulations	5	4.5%
401 Water Quality Certification	4	3.6%
Article 97	2	1.8%
Pesticides	1	0.9%
NHESP (Natural Heritage and Endangered Species Program)	1	0.9%

We asked a different version of this question in the interviews (“Can you talk about what kind of projects, in your experience, are tricky/onerous to permit?”) to hone in on more specific challenges. Among interviewees, the most common responses were salt marsh projects, work in ACECs, and dam removals. Respondents said that any project involving a salt marsh or within an ACEC was likely to be challenging to permit because of Wetlands Protection Act restrictions on activity in these areas. Dam



removals were also mentioned, because of the complexity and number of permits involved, particularly if contaminated sediment is present. Further challenges identified in the interviews are discussed below, organized by regulatory framework.

#### 401 Water Quality Certification

- The 401 Water Quality Certification was identified by a few people as a process that was particularly unclear. There was confusion as to what information needed to be submitted, and also inconsistency and changes in agency interpretation due to staff turnover (“There’s been a changeover in staff recently [and] we’ve really encountered some challenges recently in the 401 process that we thought were put to bed.”)

#### Areas of Critical Environmental Concern (ACECs)

- Multiple interviewees described challenges with working on projects in ACECs. The challenge seems to primarily be with the Wetlands Protection Act regulations on activities within ACECs, rather than with the ACEC regulations (301 CMR 12), and proponents found that nearly all activity in ACECs is effectively prohibited, even when the purpose is restoration or protection of the resource.

#### Chapter 91

- A major barrier identified relating to Chapter 91 was how fill is defined and treated. “Fill” is defined in Chapter 91 as “any unconsolidated material that is confined or expected to remain in place in a waterway, except for: material placed by natural processes not caused by the owner or a predecessor in interest; material placed on a beach for beach nourishment purposes; and dredged material placed below the low water mark for purposes of subaqueous disposal.” This has been interpreted by DEP, for example, to include even placing salt marsh hay, from the same marsh, into historically dug ditches that were never permitted nor licensed, in order to promote natural healing of the marsh.
- One interviewee said that DEP interpretation of Chapter 91 regulations can vary significantly by region. One specific example given was related to the Chapter 91 definition of “navigable” regarding an exception from Chapter 91 jurisdiction, which excludes “any portion of any such river or stream which is not normally navigable during any season, by any vessel including canoe, kayak, raft, or rowboat.”

#### Wetlands Protection Act

- The definition of fill under the WPA is very broad, it simply reads “Fill means to deposit any material so as to raise an elevation, either temporarily or permanently.” A number of interviewees identified the WPA’s treatment of fill as a challenge, as it imposes overly onerous permitting requirements on a lot of restoration techniques, such as ditch remediation and microtopography.
- There are only six types of projects that are eligible for a Restoration Order of Conditions under the Ecological Restoration Project criteria. These are dam removal, freshwater stream crossing repair and replacement projects, stream daylighting, tidal restoration, rare species habitat restoration, and restoring fish passageways. A common theme throughout the interviews was that many of the project types that practitioners are working on, and feel are important to





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advance quickly or scale up, are not on this list. Specific examples of projects that should be added are salt marsh restoration, river restoration, and cranberry bog restoration.

- As stated above, WPA restrictions on activities relating to ACECs were identified as a current challenge.

We also asked interviewees *“If you could design a wetlands restoration permitting system with a blank slate, what would you suggest that would provide efficiency without reducing environmental protection? Would your suggestions differ if it was a different type of nature-based solution, like a living shoreline?”* In general, there was a common thread among responses that the current regulatory frameworks do need at least some targeted revisions in order to best support restoration and nature-based solutions work. By and large, however, broader frustrations seemed to be with inconsistent agency interpretation of the regulations; lack of availability of clear and consistent early consultation and guidance; and confusion and difficulty with navigating the permitting process. For example, some interviewees emphasized the need for partnership and improved communication and engagement with regulatory agencies, while others suggested adaptations to existing frameworks such as MEPA. Some selected quotes include:

- *“It would be a single unified application ... where a decision is issued in three months, or else it's presumptive approval. I think I would use MEPA for the process and just expand it instead of being a permit coordination, they could be the permitting system you already have.”*
- *“Quite frankly, it's not just simply tweaking how the regulatory world operates and the applicants work, but more literally a true partnership.”*
- *“We need a new model that says we're gonna work together to solve the problem, pool our land pool, our resources, our knowledge.”*
- *“The permitting system, the regulatory system needs to allow innovation to proceed, but not just give it a blank check.”*

Some key elements that were mentioned were: better adherence to turnaround times; having a review system that was flexible and could accommodate new techniques and project types (“plans should be mostly based on goals and objectives, not strict engineering/design plans”); and having reviewers who were well-versed and experienced in the topics at hand (“having people that are ... a little bit more immersed in this world and have an understanding of what needs to happen”).

#### **Does your organization have a definition for "nature-based solution" projects and if so what is it?**

Very few of the survey respondents provided definitions, and nearly all said their agency or organization does not have a formal or official definition. Some listed project examples but didn't provide a full definition. Those who did provide some form of definition typically had very broad answers, and some acknowledged that their own definitions often changed.

This is a particular challenge for this work moving forward. A working definition that Mass Audubon and CLF have been using is: *“Nature-based solutions are strategies that rely on ecological processes to achieve climate resilience objectives. They restore, protect, and/or manage natural systems and/or mimic natural processes to address hazards like flooding, erosion, drought, and heat islands in ways*



*that are cost-effective, low maintenance, and multi-beneficial for public health, safety, and well-being.”<sup>4</sup>* A specific and encompassing definition of nature-based solutions is needed so that regulatory frameworks like the Wetlands Protection Act and others can be sufficiently protective of the environment while efficiently supporting the expansion of beneficial NBS and restoration work. The existing regulatory definition of wetlands Ecological Restoration projects, focused on restoring damaged or destroyed wetlands for natural functionality, remains valid.

### **Best practices from other states**

In addition to the survey and interviews, we also conducted research into how other states are approaching permitting for NBS and restoration projects. There is an effort underway at the moment to examine this very question at a national level, which is being led by the Environmental Policy Innovation Center (EPIC). EPIC identified five main pathways through which states have been addressing this question: 1) through executive order or state legislation, 2) through categorical exclusion or streamlined permits that allow one analysis to cover all subsequent activities of a project, 3) a programmatic biological option which “streamlines permits for multiple similar actions for a region or for a particular species,” 4) the use of nationwide or regional permits such as Army Corps of Engineer general permits being used to streamline permitting for applicable projects under Section 404 of the Clean Water Act, and 5) creating a dedicated or rapid response permit review team.<sup>5</sup> This approach to “Funding Nature not Paperwork” offers many benefits both on the ground and for efficiencies for both regulators and restoration practitioners.

### **Conclusion**

Our findings from this research fit into a few main themes. In the short term, improved coordination is needed to resolve inconsistencies in agency interpretation and application of regulations, provide certainty and clarity, prioritize the use of NBS over hard engineering structures, and reduce time and cost in the permitting process. Agencies should work together and with external experts to streamline the permit application process and eliminate redundancies. In the longer term, agencies should create new or expanded regulatory pathways to best manage NBS and restoration work. This could include support (with appropriate oversight) for new, innovative techniques and the use of general permits for certain eligible NBS projects.

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<sup>4</sup> There is an existing definition of “nature-based solutions” in MGL Chapter 21N which is “*strategies that conserve, create, restore and employ natural resources to enhance climate adaptation, resilience and mitigation to mimic natural processes or work in tandem with man-made engineering approaches to address natural hazards like flooding, erosion, drought and heat islands and to maintain healthy natural cycles to sequester and maintain carbon and other greenhouse gases.*” A key difference is that this definition includes engineered structures, whereas we would prefer to focus permit streamlining on techniques that function using natural systems of soils and plants. We do acknowledge that some require engineering for initial design, e.g. coastal vegetated berms or nearshore sills to protect living shorelines from waves.

<sup>5</sup> Environmental Policy Innovation Center, “Funding Nature Not Paperwork - Policy and Programmatic Pathways to Speed Restoration Permitting,” available at: <https://www.policyinnovation.org/publications/funding-nature-not-paperwork-policy-and-programmatic-pathways-to-speed-restoration-permitting>





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Throughout this research process, we heard repeatedly from stakeholders that improving the regulatory landscape for NBS and restoration projects, and better supporting this important work, was extremely important to them. The number of survey responses and level of engagement we encountered throughout this work indicates a consensus around just how critical this work is. It is also a matter of urgency given the increasing severity of climate impacts and the brief window of opportunity that exists to protect existing natural resources and strengthen the resiliency of the Commonwealth.

A bold new approach is needed to achieve efficiencies and scale up the work to meet the scope of the needs.<sup>6</sup> This is essential both to fulfill the goals of the ResilientMass Plan and the Executive Order 168 on Biodiversity, and to best prepare the Commonwealth for the impacts of climate change. Incremental improvements could be made in specific programs and specific regulatory provisions through improved consultation opportunities, guidance documents, and regulatory refinements. We recommend that the Commonwealth consider the implications of the findings of this survey and the results being achieved in other states, and consider a high level, comprehensive approach to streamlining wetlands restoration and NBS, coordinated through the Executive Office of Energy and Environmental Affairs.

**For more information contact:** Heidi Ricci, Mass Audubon [hricci@massaudubon.org](mailto:hricci@massaudubon.org); Deanna Moran, Conservation Law Foundation [dmoran@clf.org](mailto:dmoran@clf.org).

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<sup>6</sup> 16,000 acres of salt marsh needing restoration; 3,000 dams - many obsolete and in poor repair; 25,000 culverts - with a high percentage not adequate for current storm flows and blocking fish passage; thousands of acres of cranberry bogs no longer in production; 1,500 miles of coastline and thousands of river miles needing natural resiliency features.



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April 29, 2024

Ms. Lisa Rhodes  
Attn: Wetlands-401 Resilience Comments  
MassDEP – BWR, 100 Cambridge Street, Suite 900  
Boston, MA 02114

VIA EMAIL

**RE: MassDEP Wetlands-401WQC/Resilience - Comments**

Dear Ms. Rhodes,

The Massachusetts Airport Managers Association (MAMA) is submitting these comments on the proposed regulatory revisions to the Wetlands Protection Act regulations (310 CMR 10.00), 401 Water Quality Certification regulations (314 CMR 9.00) and the proposed updates to the Massachusetts Stormwater Handbook (Handbook). We appreciate the extension of the comment period to evaluate these changes and how they may impact airport infrastructure improvements and investments across the Commonwealth.

Founded in 1972, MAMA actively promotes and protects the interests of the aviation community by maintaining a working relationship with governmental agencies such as local airport authorities, MassDOT/Aeronautics Division and the Federal Aviation Administration on matters that directly affect the aviation community. MAMA's Environmental subcommittee has reviewed MassDEP's proposed revisions and offers the following comments:

**1. Airport Project Costs and Timelines:**

The proposed requirements will increase the costs of planning, design, engineering, permitting, and construction for airport infrastructure projects – many of which are solely safety enhancements to existing infrastructure. Additionally, airport infrastructure projects – that rely on funding from federal and state agencies – may experience project delays and loss of funding due to project costs increases and additional timeline. Massachusetts Airports compete regionally for a limited amount of funding available for projects in the northeast region. The funding available for airport projects will decrease overall as the complexity of environmental review and permitting increases in Massachusetts.

**2. Incompatibility with Airport Safety Standards**

*Stormwater Standard 3: "Loss of annual recharge to ground water shall be avoided or minimized through the use of infiltration measures including ESSD, LID techniques or practices, SCMs, BMPs, and good operation and maintenance practices..."*



Airport infrastructure has unique site constraints (related to safety) and existing regulatory requirements, which may be in conflict with this updated regulation. Many environmentally site sensitive designs (ESSD) and low impact development (LID) techniques conflict with Federal Aviation Administration (FAA) policies, standards and procedures and would not be appropriate for airports.

For example, **ESSD 5: tree canopy protection** seeks preservation of trees on-site or new trees to be planted in proximity to the impervious cover. Trees within runway approach surfaces, visibility zones, safety areas, etc. are considered hazardous to airspace. Generally speaking, airports are not in the business of planting trees. The list of acceptable “medium” and “small” trees proposed in the new Handbook is quite limited and may not be suitable in an airport environment. Fruit bearing trees are considered a wildlife attractant and hazardous to plant. While airports may consider tree planting in parking areas, these would need to be restricted to a certain height. MAMA suggests expanding the list of trees to include those more suitable for use at airports.

In addition, FAA regulations prohibit the use of measures that may act as a wildlife attractant, such as open water bodies, stormwater wetlands, etc. Each airport project is required to prepare an alternatives analysis which requires a Notice of Intent submittal and/or Water Quality Certification application with these same FAA regulatory constraints is burdensome.

### 3. **FAA Safety Standards and Airport Pavement Areas**

Many FAA design standard updates revise and modify existing impervious surfaces at airports. Frequently, updates require an increase in impervious surface in order to meet these new standards, such as the taxiway fillet design modification which generally widens taxiways at the turn (FAA Advisory Circular 150/5300-13B). This conflicts with **ESSD Credit 6: Reduce Impervious Area at Redevelopment Sites** as there is not the opportunity to provide onsite reduction of impervious area within the airfield and meet this standard.

### 4. **Airport Pavement Surfaces and Minimal Pollutants**

*Stormwater Standard 4. “Stormwater management systems for new development shall be designed to remove 90% of the average annual post-construction load of Total Suspended Solids (TSS) and 60% of the average annual post-construction load of Total Phosphorus (TP). . . .”*

Many general aviation airports do not treat runways or taxiways in winter with sand, salt, or other de-icing methods other than plowing. Previous FAA funded studies at airports found that “Nutrients are generally very low in airside stormwater runoff, approaching values of natural systems” and “overland flow is an effective method of concentration and load reduction for [pollutants]...Overland flow is compatible with



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safe airport operations and with water quality management” (Florida DOT, 2008).<sup>1</sup> There is no accommodation within this standard for impervious surfaces that are not treated. Increasing the percentage threshold required for treatment results in larger, more expensive structural control measures (SCMs) to be implemented. MAMA notes that considerations could be made within the proposed standard revisions for impervious surfaces which are not exposed to salt, sand or chemical products (i.e. icing, fertilizers, etc.) that would serve as sources of sediment or phosphorus.

## 5. Existing Coastal Airports

**Land Subject to Coastal Storm Flowage performance standards:** MAMA notes that three of its member airports, Plum Island Airport, Provincetown Airport and George Harlow Field (Marshfield) are within the 100-year coastal floodplain and would be directly affected by the implementation of these performance standards.

Publicly funded projects already programmed and budgeted will require additional funding to accommodate the increased compliance costs associated with the implementation of these new standards. MAMA suggests a phased approach to implementation rather than immediate.

MAMA and the airports it represents, appreciate the opportunity to provide comments on the proposed regulatory updates to [310 CMR 10.00: Wetlands Protection Act Amendments](#), 310 CMR 9.00: The Massachusetts Waterways Amendments, and [314 CMR 9.00: 401 Water Quality Certification Amendments](#). We remain available to discuss any of the above comments with you and to work together on implementing regulations that can work for the aviation sector in Massachusetts.

Sincerely,

A handwritten signature in black ink, appearing to read 'Chris Kelly', is written over a horizontal line.

Executive Director  
On behalf of MAMA

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<sup>1</sup> Technical Report – Florida Statewide Airport Stormwater Study. 2008. Florida Department of Transportation. Available at <https://www.florida-aviation-database.com/dotsite/pdfs/Technical.pdf>

# Massachusetts Boating and Yacht Clubs Association, Inc.

1919

2024



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Chelsea Yacht Club  
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Cottage Park Yacht Club  
Crescent Yacht Club  
Danversport Yacht Club  
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Fox Hill Yacht Club  
Green Harbor Yacht Club  
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Hull Yacht Club  
Hyannis Yacht Club  
Ipswich Bay Yacht Club  
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Marshfield Yacht Club  
Medford Boat Club  
Metropolitan Yacht Club  
Milton Yacht Club  
Mystic Wellington Yacht Club  
Nahant Dory Club  
Nantasket Beach Salt Water Club  
Neponset Valley Yacht Club  
Newton Yacht Club  
Norfolk Yacht Club  
North End Boat Club  
Old Colony Yacht Club  
Orient Heights Yacht Club  
Palmer's Cove Yacht Club  
Pelagic Sailing Club  
Peninsula Yacht Club  
Pleasant Park Yacht Club  
Plymouth Yacht Club  
Point Independence Yacht Club  
Point Of Pines Yacht Club  
Port Norfolk Yacht Club  
Puritan Canoe Club  
Quincy Yacht Club  
Riverside Yacht Club  
Salem Willows Yacht Club  
Saugus River Yacht Club  
Savin Hill Yacht Club  
Scituate Harbor Yacht Club  
South Boston Yacht Club  
South Shore Yacht Club  
Squantum Yacht Club  
Swampscott Yacht Club  
Volunteer Yacht Club  
Watertown Yacht Club  
Wessagussett Yacht Club  
Winter Hill Yacht Club  
Winthrop Yacht Club  
Wollaston Yacht Club

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## Committees

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Port Operator's Group: P.C. Peter Gilson 617-244-1540  
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Social: Carol Gilson 617-244-1540  
Yearbook: P.C. Cheryl Chisholm 978-839-3077

April 29<sup>th</sup>, 2024

To: [dep.wetlands@mass.gov](mailto:dep.wetlands@mass.gov)  
[dep.waterways@mass.gov](mailto:dep.waterways@mass.gov)

MassDEP – BWR Wetlands Program  
Attn: Wetlands-401 Resilience Comments  
100 Cambridge Street, Suite 900  
Boston, MA 02114

Subject: Wetlands-401 Resilience Comments

Dear Mass DEP Waterways, Wetlands and Other Interested Parties:

*Thank you for the opportunity to comment on the proposed regulatory changes related to "Resilience from Coastal and Inland Flooding".*

*The Massachusetts Boating and Yacht Clubs Association (MBYCA), founded in 1917 and comprised of over seventy area yacht clubs, representing over 10,000 members, advocates for recreational boating interests at the local, State and Federal level. They provide access to a broad spectrum of waterborne activities and contribute significantly to the long maritime business economy throughout the State.*

*We advocate for and support protecting the environment while maintaining access to the water for commercial and recreational uses.*

"BOATERS ARE VOTERS"

"THE VOICE OF OVER FIFTY THOUSAND BOATING FAMILIES"



*Many of our clubs have been in operation for over 100 years and are closely interwoven with local communities/economies and are located in V Zones, A Zones and X Zones, i.e. all LSCSF FEMA zones.*

*We have several significant concerns as follows:*

- 1. It is important that club reconstruction not be confined to the identical original footprint.*
- 2. Make the allowed water dependent uses explicit and not left to the discretion of local Conservation Commissions when dealing with piers, docks, floats and buildings. Specifically, water dependent facilities should be allowed in the Land Subject to Coastal Storm Flowage (LSCSF) area.*
- 3. It is critically important that pre-existing water dependent facilities receive CH 91 License renewals absent persuasive evidence of inadequate consideration of sea level rise and climate change. Also, that incremental capital investment projects be allowed rather than making them all required at the license renewal. Few clubs are in a position to fund any required modifications simultaneously rather than over time. Some twenty clubs reside on DCR property with permits versus leases, which further limits their ability to acquire funding for new investments.*
- 4. We strongly recommend that the current exemption for maritime industrial uses in the Designated Port Area be an exemption for all Water Dependent Uses.*

*We would be pleased to discuss our concerns/comments at your convenience.*

*Thank you for your consideration.*

*I may be reached at: 617-877-0774 or  
[philgreenstein@gmail.com](mailto:philgreenstein@gmail.com)*

*Philip Greenstein  
Commodore  
Massachusetts Boating and Yacht Clubs Association, Inc.  
33 Catherine Drive  
West Peabody, MA 01960*

*cc: State Representative Tackey Chan  
Governor Maura Healey  
[randall.Lyons@boatma.com](mailto:randall.Lyons@boatma.com)  
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**From:** [Philip Guerin](#)  
**To:** [DEP Wetlands \(DEP\)](#)  
**Subject:** Wetlands-401 Resilience Comments-Request for Extension  
**Date:** Monday, April 29, 2024 9:07:54 AM

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Good Morning

On behalf of the Massachusetts Coalition for Water Resources Stewardship (MCWRS) I am writing to request a 30-day extension of the comment period for the proposed regulatory changes at 314CMR 9.00 and 310CMR 10.00 (Wetlands and stormwater regulations). We appreciate that MassDEP has previously extended the comment period but believe that an additional 30 days would allow us to provide more meaningful commentary on this important regulatory proposal. The regulatory package is extremely dense, with details and technical components that are challenging to review and understand even for those with significant expertise in stormwater management and wetlands issues. Other organizations we have conversed with are having similar difficulties getting through the documents and will be hard-pressed to get useful comments compiled by the current deadline. A 30-day extension would prove beneficial in the long run with the goal of producing revised regulations that will guide stormwater management and development near wetlands resources under the changing conditions brought by more intense precipitation.

Once MassDEP has considered all comments received and modified the proposed regulatory changes accordingly, MCWRS urges the Department to then issue another draft regulatory package for public review rather than following the normal process of moving to a final regulation. The proposed changes are very complex and impact local, volunteer Conservation Commissions, municipal public works departments, municipal budgets and developers. In some ways these changes may also conflict with other state initiatives such as the push for affordable housing. Having another round of public input after revisions are made to the proposed regulations can only lead to better outcomes. We would also encourage MassDEP to reconvene the Stormwater Advisory Committee to review the revised draft regulations as part of a second round of public scrutiny.

Finally, one of the stated purposes of the regulatory changes is to "improve consistency between state regulations and EPA stormwater permits". The current MS4 (stormwater) general permit that applies to some 250 municipalities has expired. EPA Region 1 recently indicated it plans to issue a new draft MS4 General Permit this summer (2024). MCWRS thinks it would be in everyone's best interest to have the revised regulations be consistent with the new MS4 permit and not with the expired permit. We urge MassDEP to delay any finalization of the proposed regulations until after the new EPA MS4 General Permit has been finalized.

Thank you for your consideration.

Philip D. Guerin

President

Massachusetts Coalition for Water Resources Stewardship



# MASSACHUSETTS LAND TRUST COALITION

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April 30, 2024

Massachusetts Department of Environmental Protection  
Bureau of Water Resources -Wetlands Program  
Attention: Wetlands-401 Resilience Comments  
100 Cambridge Street, Suite 900  
Boston, MA 02114  
via email: [dep.wetlands@mass.gov](mailto:dep.wetlands@mass.gov)

*Re: Wetlands-401 Resilience Comments*

Dear MassDEP Wetlands Program Staff:

Thank you for the opportunity to comment on the draft regulations in MassDEP's "Climate Resilience 1.0" package. On behalf of the Massachusetts Land Trust Coalition, I am pleased to submit the following comments.

The Massachusetts Land Trust Coalition (MLTC) is a non-profit organization working to advance land protection in Massachusetts by supporting and strengthening land trusts. We advocate for the interests of 140 non-profit land trusts that engage in land and water conservation and ecological restoration projects to preserve natural resources for the benefit of all Commonwealth residents.

I applaud MassDEP for proposing revised regulations to better protect vulnerable coastal and inland resources and infrastructure. MLTC specifically supports the following provisions:

- Using future projections of sea level rise to deal with effects of climate change and intensifying storms
- Updating precipitation calculations for stormwater designs
- Establishing restrictions on new development in areas at highest risk of flooding
- Allowing for migrating salt marsh and dunes to also be protected
- Encouraging the use of nature-based solutions
- Clarifying that culvert replacements that meet (MA Stream Crossing Standards) are exempt from Chapter 91 permit in order to speed up restoration projects
- Allowing for scientific research projects to happen, as long as they are performed by an environmental NGO, academic institution, or government agency with limited impacts, duration, and restoration required.



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MLTC urges MassDEP to consider further strengthening of proposed regulations by:

- Requiring nature-based resiliency measures rather than making them voluntary. Given their importance, having applicants merely “consider” such measures is not sufficient.
- Using dynamic, forward-looking projections for precipitation and sea-level rise to protect communities into the future, rather than FEMA maps and other data that will soon be outdated.
- Proposing a new “combined application” option for WPA, Waterways and Section 401 Water Quality Certifications that is actually efficient -- especially one that simplifies permitting for ecological restoration projects.
- Exempting saltmarsh hay from the definition of “fill” in order to relieve saltmarsh restoration projects of the need for a Chapter 91 license simply for using a natural process.
- Not allowing the relocation of coastal roads and railroads to avoid the impacts of sea level rise to automatically benefit from limited project status.

MLTC recognizes the need for additional regulatory updates and urges MassDEP to begin work as soon as possible on a “Climate Resiliency 2.0” package to address the following issues:

- Land trusts know firsthand that well-used trails help build a culture of appreciation and stewardship for vital wetland resources. DEP should reduce the permitting burden on trail construction activities that conform to best trail management practices.
- We ask that MassDEP simplify permitting of trail construction projects by:
  - Expanding the limited project provision to allow: “The construction of public footpaths and associated boardwalks/puncheons, that are close to the ground provided, however, that such structures are constructed on pilings, sills, or posts so as to permit the reasonably unobstructed flowage of water.”
  - Adding to the Bordering Vegetated Wetland regulations a new section allowing Conservation Commissions to permit trail work in BVWs when: “Said work involves the creation of a trail for non-motorized use (e.g., hiking and skiing) which will alter less than 500 s.f. and will permit the reasonably unobstructed flowage of water.”
- Boardwalks, waterbars, and other basic trail infrastructure need to be routinely replaced, expanded, and/or created. We ask MassDEP to create an exemption for trail maintenance similar to the exemptions afforded to existing structures associated with many other public services in 10.02(2)(a)(2).
- All trails on public open space should be regulated in the same way. Currently unpaved pedestrian walkways located within buffer zone or Riverfront Area and less than 3’ wide for public access on “Conservation Property” are exempt from wetland permitting. However, many trails traverse general municipal land, land trust properties, and private property with conservation restrictions. MassDEP should define “Conservation Property” to include all these types of natural land onto which the public is invited.



**MASSACHUSETTS  
LAND TRUST  
COALITION**

- Non-native invasive plants pose a major threat to the health and survival of our native ecosystems. Currently, invasive plant control work requires the same time-consuming, costly, and complex wetland permitting devised for construction projects. We ask DEP to simplify the permitting process for certain habitat restoration projects involving invasive species management. This could be accomplished by the following changes:
  - Create a new minor activity in 310 CMR 10.02(2)(b)(2) which allows for the removal of turf lawn and/or non-native invasive herbs, vines, and shrubs, on the condition that erosion and sedimentation controls are implemented until the area is restabilized with native species.
  - Add a limited project provision which specifically allows small-, medium-, and large-scale invasive species removal projects with distinct regulatory review standards.

Thank you for your consideration of these comments, and for all your efforts to make the Commonwealth more resilient to climate change.

Sincerely,

Robb Johnson  
Executive Director







Massachusetts  
Municipal  
Association

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April 30, 2024

Massachusetts Department of Environmental Protection (MassDEP)  
Waterways and Wetlands Teams  
100 Cambridge Street, Suite 900  
Boston, MA 02114

310 CMR 9.00: The Massachusetts Waterways Regulation  
310 CMR 10.00: Wetlands Protection Act Regulations  
314 CMR 9: 401 Water Quality Certification

*Delivered Electronically*

Dear Massachusetts Department of Environmental Protection Waterways and Wetlands teams,

On behalf of all 351 cities and towns across the Commonwealth, the Massachusetts Municipal Association wishes to express our appreciation to the Department and provide input on the proposed changes to Waterways and Wetlands regulations, specifically, *310 CMR 9.00: The Massachusetts Waterways Regulation, 310 CMR 10.00: Wetlands Protection Act Regulations, and 314 CMR 9: 401 Water Quality Certification*. As a member of the Stormwater Advisory Committee, we recognize the considerable effort by MassDEP to update these regulations.

We also appreciate the extensive efforts of the Legislature and Administration to help the Commonwealth navigate and adapt to the implications of climate change. Included in these efforts is the ResilientMass Plan that works in coordination with the proposed Wetlands and Waterways regulations to help ensure that from the Cape to the Berkshires, our communities are resilient and ready for the impacts of climate change.

We strongly believe that basing these regulations on updated science is incredibly timely. The use of this up-to-date science (through NOAA Atlas 14 precipitation data and NOAA 14 PLUS projections) will further guide stakeholder efforts across the state as we face more frequent and severe storms as a result of the changing climate. We appreciate the efforts made to streamline and reconcile state policy with national requirements for MS4 standards, including extensive revision and reformatting of the Stormwater Handbook. Further, we are grateful that MassDEP has clarified confusion regarding stormwater implications of solar panels. As we move through the energy transition and solar siting ramps up, this clarification is incredibly helpful.

As you know, municipalities are key partners in state initiatives and critical environmental stewards. Local officials are actively working to ensure their cities and towns are resilient, negative environmental impacts are minimized, and the wellbeing of the community is supported. However, with Proposition 2 ½ restricting municipal revenue generation and additional fiscal challenges, the ability for municipalities to comply with stringent environmental regulations is very worrisome.

We are highly concerned that several of the proposals included in the draft regulations will create significant challenges for municipal compliance while local officials also wrestle with urgent priorities in areas of housing, economic development, and public safety. In many instances, the proposed regulations appear in direct conflict with other statewide goals.

For example, we are sensitive to the conflict created with traffic safety efforts to improve roadways while also reducing fatalities and injuries. Initiatives like Complete Streets, which may require roadway widening to safely expand accessibility for vulnerable road users, could be in direct conflict with the goal of reducing impervious roadway surfaces and development restrictions outlined in the proposed regulations. When faced with such contradictions and the increased costs associated with meeting all standards, municipalities will be left with no choice but to avoid infrastructure improvements and stifle our progress towards accessibility and resilience. We urge the Department to re-evaluate how these proposed regulations affect other state initiatives and programs.

Regarding various housing development efforts across the state, the proposed regulations stand to increase construction costs in both coastal and inland regions. Development costs will rise in communities that will now be subject to more stringent stormwater standards. We anticipate similar implications for economic development projects and a variety of municipal infrastructure projects, and no source of funding has been identified to help offset these cost increases for cities and towns. It is essential that these downstream implications are considered.

We strongly encourage your teams to revise the proposed regulations to clearly differentiate between public entities and private, for-profit entities. We also encourage you to expand flexibility to meet goals to the maximum extent possible. Municipalities require this in order to meaningfully achieve our common goals to protect the environment while fortifying our communities in the face of climate change.

Further, in order to support a successful implementation of these regulations, we strongly recommend extending the timeline. Our members and advocacy partners are still absorbing the details of the proposed regulations, thus additional time is needed to review and revise. We recommend adding an additional comment period to the revision process by providing a second draft of the proposed recommendations for review by the public. In addition, municipal officials will need considerable technical support to implement these regulations in the future. In order to accommodate this, we urge you to extend the start date for these regulations to at least one year after the final promulgation date.

Finally, we encourage you to develop a robust communication and technical assistance program to support our municipalities in implementing these regulations. We recognize that these regulations may continue to change as we continue to respond to the impact of climate change. However, it is essential that municipalities are supported to understand what is required and are engaged regularly in the case where standards change in the future. We offer our partnership in this effort to engage with our local officials in the Commonwealth.

My team and I are available to answer any questions you may have and further discuss the details and implications of the proposed regulations. Please do not hesitate to contact me or MMA Legislative Analysts Josie Ahlberg and Adrienne Núñez at [jahlberg@mma.org](mailto:jahlberg@mma.org) and [anunez@mma.org](mailto:anunez@mma.org), at any time.

Many thanks to each of you for your work on these important regulations and for your partnership with municipalities in helping to ensure our natural and built environments are healthy and resilient as we face the uncertainties of climate change.

Sincerely,

A handwritten signature in blue ink, appearing to read "Adam Chapdelaine". The signature is fluid and cursive, with a large initial "A" and a long, sweeping underline.

Adam Chapdelaine  
Executive Director & CEO



# MASSACHUSETTS Rivers Alliance

11 Curtis Avenue, Somerville, MA 02144  
617-714-4272 • [massriversalliance.org](http://massriversalliance.org)

April 26, 2024

Massachusetts Department of Environmental Protection  
Bureau of Water Resources Wetlands Program  
Attention: Wetlands-401 Resilience Comments  
100 Cambridge Street, Suite 900  
Boston, MA 02114

Dear Ms. Rhodes and the MassDEP Wetlands Program,

Thank you for the opportunity to comment on the draft Wetlands Protection Act regulations as part of MassDEP's "Climate Resilience 1.0" package.

The Massachusetts Rivers Alliance is a statewide organization with 86 member groups dedicated to protecting and restoring the rivers and streams of the Commonwealth.

We are pleased to see that these regulations advance climate resilience. These are necessary steps towards ecological restoration, public safety, and preparing our communities for the impacts of climate change. We appreciate the years of work MassDEP has spent crafting these draft regulations, and strongly support many of the proposed provisions. We also appreciate MassDEP's responsiveness to the public during the rollout of Climate Resilience 1.0, and hope that there will be a similar level of support given to educating conservation commissions and other practitioners on the final set of regulations.

**Specifically, Mass Rivers supports the following and recommends their promulgation:**

- The new requirement for nature-based improvements to be considered in coastal project planning.<sup>1</sup> These projects are great tools in climate adaptation, and we applaud MassDEP for including them in this regulatory update.
- The new, common sense standard of no new construction in the Velocity Zone,<sup>2</sup> a section of coast that already experiences extreme flooding.

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<sup>1</sup> 310 CMR 10.24 (1)(b)

<sup>2</sup> 310 CMR 10.36 (6)

- Protecting migrating salt marshes and coastal dunes.<sup>3</sup> This provision will be crucial as our coasts change. Allowing these ecosystems to migrate will support wildlife habitat, but also buffer coastal infrastructure from storms and flooding.
- Including “artificial turf” under the definition of Impervious Surface.<sup>4</sup> The chemicals found in artificial turf have long degraded public health and water quality.
- The increased 1-inch recharge requirement for all new soil types in new development under Standard 3, especially using the static sizing method.<sup>5</sup>
- Expanding Low Impact Design/Environmentally Sensitive Site Design credits.<sup>6</sup>
- Exempting basic Shared Use Path maintenance from WPA permitting requirements.<sup>7</sup>
- Aligning the Wetland Protection Act’s conditions to coordinate with the Municipal Small Sewer System permit, making compliance less burdensome for municipalities.

#### **Where the regulations must be refined:**

- The nature-based resilience requirement for coastal projects is non-binding.<sup>8</sup> Having applicants merely “consider” these measures does not mean they will implement them. While the provision states that “the Issuing Authority may require” natural methods and materials, it is not clear under what circumstances MassDEP would do so. We ask that MassDEP make this provision more stringent by requiring applicants to analyze nature-based methods as their first option, and set a high bar of impracticability.
- The updated data (NOAA14+) that MassDEP is proposing be tied to the Wetland Protection Act regulations<sup>9</sup> is likely to become outdated soon. These draft regulations bring us to present precipitation trends; they do not yet bring us into the future. Instead, the Commonwealth needs to use dynamic, forward-looking projections for precipitation that will protect our community for decades to come, perhaps by including “...and subsequent versions,” to ensure that as the data is updated, the regulations will be too.
- MassDEP has proposed to strike out the “Combined Application” option for the Wetlands Protection Act, Waterways, and Section 401 Water Quality Certifications,<sup>10</sup> without proposing a new procedure to fill its place. To accelerate the pace of restoration projects, Massachusetts needs a simplified permitting process. This is a missed opportunity to create that streamlined process. Such a process would also be especially beneficial to municipalities with predominantly environmental justice populations who need these projects for health and safety reasons, and are often deterred from pursuing such projects due to the assumed red tape and high costs of the permitting process.

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<sup>3</sup> 310 CMR 10.36 (9)

<sup>4</sup> 310 CMR 10.04

<sup>5</sup> Stormwater Handbook Standard 3

<sup>6</sup> Stormwater Handbook Standard 4

<sup>7</sup> 310 CMR 10.02 (2)(b)(r)

<sup>8</sup> 310 CMR 10.24 (1)(b)

<sup>9</sup> Stormwater Handbook Standard 2

<sup>10</sup> 310 CMR 10.04

- We are concerned that the “Maximum Extent Practicable” recharge standard for all soil types in redevelopment<sup>11</sup> will be too easy for applicants to skirt, resulting in insufficient recharge in many sites. MassDEP must hold recharge to a more stringent standard than MEP to truly meet the climate resilience intentions of these regulations.
- While we are glad that basic Shared Use Path maintenance is exempted from permitting, the directives of subsection (iv) (“cut vegetation may be...and properly disposed”) are too narrow to be included in regulation, since management methods are highly site-specific. Instead, these methods should be developed as a Best Management Practice or guidance document. Furthermore, we question why MassDEP would prohibit “work on any component of a Stormwater Management System,” including drainage swales.<sup>12</sup> This language is contradictory to exemptions already made for stormwater management projects, unhelpful at increasing flood protection, and should be deleted.
- Mass Rivers is glad to see adaptive Resource Area conversion allowed for climate resilience. However, the proposed regulation could prove difficult for project managers to interpret, as the allowance for restoration projects is inhibited by language further down in the provision. Section 10.24 (b) starts with: “the Issuing Authority may require the restoration, enhancement, or creation of wetland Resource Areas through natural methods and materials.” Further down, 10.24 (b) also reads: “the project will not cause an increase in flood velocity, volume, or elevation on other properties.”<sup>13</sup> Many of the wetland restoration projects suggested in this provision would increase the volume, velocity, and sometimes elevation of water on other properties (though, importantly, without adverse impacts to neighboring infrastructure). Replacing an undersized pipe culvert with an open bottom culvert that meets Stream Crossing Standards allows more water to pass underneath; the same is true for dam removals, and some salt marsh restoration projects. We understand and support MassDEP’s intent of this regulation, to protect neighboring properties from flooding during storms, but the current language nearly precludes the coastal restoration projects it is supposed to encourage. We recommend that MassDEP refine this language to clarify the agency’s allowance, and encouragement, of coastal restoration projects that improve resilience during storms.
- We are concerned with the provision allowing the relocation of roads and railroads as Limited Projects.<sup>14</sup> Of course the siting of our coastal roads and railroads needs to be seriously reexamined in light of sea level rise, but done so in context with all other coastal infrastructure and ecosystems. The Healey administration’s ResilientCoasts Initiative has just begun to do this, studying each coastal neighborhood’s assets and risks. Relocating roads and railroads will need to take into account impacts on ecosystem function and habitat at the new sites. For these reasons, we recommend removing Limited Project status for relocating roads and railroads until a greater, coastwide strategy and decision-making process are established.

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<sup>11</sup> Stormwater Handbook Standard 3

<sup>12</sup> 310 CMR 10.02 (2)(b)(r)(v)

<sup>13</sup> 310 CMR 10.24 (1)(b)

<sup>14</sup> 310 CMR 10.24 (7)(c)(9)



Though the draft regulations are overall moving in a positive direction, they do not go far enough in achieving the stated goals of “Resilience 1.0.” **After swift promulgation of these updates, we strongly encourage MassDEP to begin the “2.0” process to continue improving the Wetland Protection Act regulations.** There must be no delay in ramping up our regulatory approach to development to match the challenge of the climate crisis before us.

Thank you for the considerable time and effort the agency has invested in creating these draft regulations thus far. We look forward to continuing to work together to protect Massachusetts’ rivers, ecosystems, and communities from the impacts of climate change.

Sincerely,

A handwritten signature in black ink, appearing to read 'Katharine Lange', with a stylized, flowing script.

Katharine Lange  
Policy Director  
Massachusetts Rivers Alliance

[katharinelange@massriversalliance.org](mailto:katharinelange@massriversalliance.org)

April 30, 2024

Via Electronic Mail

MassDEP – BWR Wetlands Program  
100 Cambridge Street, Suite 900  
Boston, MA 02114



RE: MSMSC's Comments on MassDEP's Stormwater Handbook and Portions of the Resilience 1.0 Draft Regulations

Dear MassDEP:

### Introduction

The **Massachusetts Statewide Municipal Stormwater Coalition** (MSMSC) is a volunteer-led group of 14 regional stormwater coalitions, representing over 190 regulated communities from Cape Cod to the Pioneer Valley. Our Coalition formed in 2017 with the mission to support one another and advance stormwater public education efforts in a cohesive manner for all regional stormwater coalitions across the Commonwealth.

MSMSC members are largely interested in cost-effective compliance strategies and measures consistent with the EPA National Pollutant Discharge and Elimination (NPDES) Municipal Separate Storm Sewer System (MS4) Permit. As such, our comments primarily focus on the updated Stormwater Handbook and Stormwater Standards.

While MSMSC has been focused on changes to the Stormwater Handbook and related sections in the proposed regulations, MACC and the MA Society of Municipal Conservation Professionals (MSMCP) have focused on general, coastal and inland wetlands. We have greatly appreciated a collaborative approach with MACC and MSMCP and endorse their comments submitted under separate cover.

We sincerely appreciate the effort that MassDEP put into developing these updated regulations and handbook, as well as the ample opportunities to attend overview briefings and provide feedback. We see many of the proposed changes as positive steps towards greater consistency with the MS4 Permit and strengthening stormwater management regulations for a more resilient Massachusetts. That said, there needs to be **a balance between scientific precision and overly burdensome requirements** that render them difficult for volunteer Conservation Commissions, practitioners and applicants to implement. As currently written, there are unreasonable barriers for design engineers and unintended consequences for municipalities.

## 310 CMR 10.00

### Definitions

1. The definitions for "impracticable" and "practicable" have different qualifications. The new **"impracticable"** definition means "impossible in practice to do or carry out based solely on physical constraints." The impracticable definition does not take into account costs, technological feasibility or practicality of implementation. This is unreasonable and conflicts with municipalities' goals to use taxpayer dollars responsibly. We request that "impracticable" be redefined to include all the factors listed for "practicable".
2. **Environmentally Sensitive Site Design** (ESSD) and **Low Impact Development** (LID) have similar definitions, but different applicability in the regulations. Clarification may be needed to avoid confusion.
3. The new **"Saturated Hydraulic Conductivity Test"** definition is narrow and very few practitioners know how to conduct the ASTM referenced tests. We request MassDEP to restore the provision to use the Title V percolation test to estimate saturated hydraulic conductivity. This is the only method we see in practice in our communities. Percolation tests been used effectively for Title 5 since the 1970s and the knowledge base in known and can be built upon.

### 310 CMR 10.24(7) (c)(8) Limited Project Provisions

4. Our members welcome the Limited Project status for conversion of former railbeds into public shared use paths. We request that MassDEP consider expanding this provision for municipal and land trust paths. Many municipalities are working on Vision Zero Action plans which prioritize bicycle and pedestrian-friendly options.

## Stormwater Management Handbook

### Stormwater Management Standards

#### *Standard 1: No Untreated Discharges or Erosion to Wetlands*

No comments.

#### *Standard 2: Peak Rate Attenuation*

#### **Reference: Section 2.3.2 Page 2-5**

5. We concur with MassDEP with respect to adopting the National Oceanic Atmospheric Association Atlas 14- Precipitation-Frequency Atlas of the U.S. Volume 10, Version 3.0: Northeastern States (NOAA Atlas 14) for hydrologic and hydraulic analyses. The NOAA Atlas 14 precipitation estimates are based on frequency analysis of partial duration series using data up to 2015 that covers the New England and New York region. This dataset is more robust than the current dataset used for Technical Paper No. 40 (TP-40). TP-40 was published in 1961 and is based on historical data from approximately 50 years of observations and does not reflect recent rainfall estimates. Along with using the NOAA Atlas 14, we request that MassDEP incorporate the flexibility to adopt any data that supersedes NOAA Atlas 14 in the future, in order to accommodate future atlases published by NOAA/USGS.
6. Table 2-7 lists SCMs types that do not have the ability to partially or fully meet Standard 2, including sand filters, tree box filters, roof dripline filters, dry wells, infiltration trenches, vegetated filter strips, rain barrels and cisterns. We support the use of these types of SCMs and believe they have the ability to be designed to play a

role in the control of peak discharge rates, such as tree box filters and roof dripline filters that are designed as exfiltrating systems. This list is also inconsistent with language in Appendix A for some of these SCM types, for example *"Large sand filters can be designed to play a role in the control of peak discharge rates"* (A-105), *"Infiltration trenches are effective at mimicking the natural, pre-development hydrological regime at a site. Full exfiltration systems that have been carefully designed may be capable of controlling peak discharges from the 2-year and 10-year 24-hour storm."* (A-148), and *"Cisterns and rain barrels can provide benefits by reducing the required water quality volume and peak discharge rates depending on the amount of storage available at the beginning of each storm."* (A-176). If peak rate computations are completed using methods outlined in Section 6.2.2. of the Handbook, we would like to see these SCM types allowed to meet Standard 2 partially or fully. Not allowing these SCMs to contribute towards a site's peak rate reduction, especially in highly urbanized sites, disincentivizes their use.

### **Standard 3: Stormwater Recharge**

**Reference: Section 2.3.3, see pages 2-7, 2-8 and Table 2-1 and elsewhere throughout the Handbook.**

7. The minimum infiltration rate is 0.01 in/hr. Is this a typo? It is not feasible to fully meet this standard and design a SCM to draw down in 72 hours with this soil permeability. Please clarify.

Requiring recharge in soils with permeabilities as low as 0.01 in/hr would require excessively large BMPs and is unrealistic and impractical. Therefore, we request that the lower limit for infiltration stay 0.17 in/hr.

**Reference Section 2.3.3 Page 2-7.**

8. The Handbook indicates that in order to meet the groundwater recharge standard: ESSD or LID must be used unless demonstrated to be impracticable based on written alternatives analysis to be submitted with the Notice of Intent. Requiring a written alternative analysis is burdensome and generally does not change the outcome. We respectfully request MassDEP to consider allowing subsurface infiltration systems to meet Standard 3 without requiring an alternative analysis. This standard will be challenging to meet without subsurface infiltration, particularly in urban areas, where space for LID is limited or non-existent.
9. MassDEP cites alignment with the MS4 Permit as one of the reasons for the updated Stormwater Handbook, yet requires 1-inch of recharge. In contrast, the MS4 permit allows the 1-inch recharge as an option for how to meet the post-construction treatment requirements. Under the MS4 permit, the designer may choose to use the EPA BMP performance curves for meeting the treatment requirements in lieu of demonstrating recharge. For example, an infiltration trench in soils with an infiltration rate of 2.41 in/hr. reduces 60% total phosphorus (TP) load at a 0.25-inch treatment depth. Requiring 1-inch treatment for this same SCM because infiltration rates are greater than 2.4 in/hr. increases costs and results in larger stormwater management system, when the intent of this Standard can be met with a smaller control. By providing options, designers are allowed more flexibility to provide the right type of treatment for the site and to maximize the areas which can provide treatment. The proposed revisions to this standard are not in alignment with the MS4 permit.
10. We strongly support reducing this Required Recharge Volume requirement to be consistent with NPDES MS4 Permit.

**Reference Table 2-1 Page 2-11.**

11. Table 2-1 states that recharge volumes may be infiltrated to the maximum extent practicable for various conditions, including water that has "been classified as contaminated". Many soils by roadsides become "contaminated" by virtue of their location and other areas that fall under "Urban Fill" can have bricks, concrete and other materials mixed in with the soil. Further clarification is requested.

#### **Standard 4: Pollutant Removal**

**Reference: Section 2.3.4, see pages 2-12, 2-13, and 2-14**

12. We appreciate MassDEP allowing the use of proprietary manufactured separators and proprietary media filters to meet this Standard, allowing for flexibility on sites where stormwater improvements cannot be met through ESSD, LID and traditional SCMs only. Until there are standard nutrient removal credits for these types of devices, we would like to see the Stormwater Handbook not exclusively reference TARP protocols for written documentation requirements. Perhaps the Handbook could expand the list of protocols also include Technology Assessment Protocol – Ecology (TAPE) and/or Stormwater Testing and Evaluation of Products and Practices (STEPP). Better yet, would MassDEP consider providing an approved list of proprietary water quality structures and their pollutant removal rating? A resource similar to NJDEP's [Stormwater Best Management Practices Manual](#), see Chapter 11.3, would be extremely helpful.

The case-by-case evaluation is burdensome on Issuing Authorities when there are reliable third-party field studies available.

13. Use of both water quality volume and pollutant percent reduction as targets for this standard creates confusion and incongruence with the MS4 permit. The Stormwater Handbook cites alignment with the MS4 Permit but requires a water quality volume of 1-inch for certain scenarios, including discharge from LUHPPLs, near or to Critical Areas, and sites with rapidly infiltrating soils (page 2-14). We would like the ability to use the EPA Performance curves to demonstrate TSS and TP removal for consistency with the MS4 permit for these scenarios. The EPA Performance curves demonstrate TSS and TP reductions meeting Standard 4 can be met at treatment depths significantly less than 1-inch. Requiring use of a treatment depth neglects the value of the EPA Performance Curves.

#### **Standard 6: Critical Areas**

14. In Tables 2-4b through 2-4d, the language reads "only use proprietary manufactured separators for pretreatment". This wording is potentially confusing, implying that only proprietary separators can be used for pretreatment, excluding other forms like deep sump catch basins, vegetated filters, etc.

The language in Table 2-4a, "Proprietary manufactured separators may be used only for pretreatment" presents the requirement in a clearer fashion.

#### **Standard 7: Redevelopment**

**Reference: Section 2.3.7, see pages 2-34 and 2-35 and Appendix E, see pages E.1 and E.2**

15. MassDEP's definition of redevelopment includes improving existing drainage systems, widening less than a single lane, adding shoulders, and correcting substandard intersections, and sewer separation. Since redevelopment projects must now fully meet Standard 4, this results in municipal roadway improvement projects needing to utilize off-site mitigation if treatment requirements cannot be met fully on site, which is costly and greatly impacts the scope of these standard municipal projects.
16. Page 2-34 of the Stormwater Handbook states that "Retrofit Projects shall comply with 310 CMR 10.05(6)(k)1., 5., 6., 8., 9., and 10." While redevelopment projects must meet Standards 5 and 6 to MEP, retrofit projects must fully comply with these Standards and treat a 1-inch water quality volume. We request that retrofit projects also be allowed to meet Standards 5 and 6 to MEP, as the goal of retrofit projects are to improve existing conditions.

17. Appendix E page E-1 states that “Retrofits are not a component of Redevelopment.” but page E-2 lists “stormwater retrofit projects” as an example of remedial projects that fall under the definition of redevelopment. This is unclear. In addition, some retrofit projects may be considered improvement of existing drainage systems, which is considered redevelopment under MassDEP’s current definition. We believe it is MassDEP’s intention to encourage retrofits to meet TMDL and water quality goals, but the categorization, and thus requirements, for these projects as written are unclear. We suggest MassDEP create a category of projects specifically for retrofits to help clarify requirements.

#### ***Standard 9: Operation and Maintenance Plan***

***Reference: Section 2.3.9, see page 2-41***

18. The Stormwater Handbook states that Standard 9 “is presumed to be met when the maintenance proposed in the long-term operation and maintenance plan occurs with the frequencies listed in Appendix A of the Massachusetts Stormwater Handbook [2022 Edition] and when the plan is otherwise prepared in accordance with the Handbook.”
19. The current maintenance frequencies in Appendix A of the Stormwater Handbook are generic in nature and attempt to align activities to specific SCM types but do not address the unique components and specific function of individual systems. Similar to the maintenance sections of ESSD Credit Appendix A Factsheets, we would like to see the Stormwater Handbook list recommended maintenance practices and suggested frequencies, but allow Issuing Authorities to approve Operation and Maintenance Plans with site-specific maintenance frequencies, as needed.

#### ***Standard 10: Illicit Discharges to Drainage System***

***Reference: Section 2.3.10, see page 2-44***

20. The MS4 Permit definition for Illicit Discharges states “diverted stream flows”, “water from crawl space pumps” and “lawn watering” as discharges that do *not* constitute an Illicit Discharge. We request MassDEP revise their definition for better clarity and consistency with EPA and the MS4 Permit.

#### ***Standard 11: Total Maximum Daily Loads***

***Reference: Section 2.3.11, see page 2-47***

21. Table 2-6 provides a list of SCMs that are appropriate for treating certain target TMDL pollutants. This list is inconsistent with the MS4 Permit in that it does not allow any filtering SCMs or wet basins to be used for nutrient TMDLs. Under the MS4 Permit, these types of SCMs have performance curves for phosphorus and nitrogen removal. While a small-scale filtering practice may not have “significant” reduction of a target pollutant, we would like to see the Stormwater Handbook include these types of SCMs, which other parts of the Stormwater Handbook promote as ESSD/LID techniques. Precluding filtering SCMs to be eligible for Standard 11 compliance, disincentivizes green infrastructure on sites where soils are not conducive to infiltration. We are concerned that the limited list of eligible SCMs may result in more off-site mitigation and higher project costs.

#### ***Environmentally Sensitive Site Design (ESSD)***

22. The Stormwater Handbook states that ESSD and LID must be used to meet Standard 4 and lists small scale controls as one option. Small scale controls are defined as “For purposes of stormwater management, Environmentally Sensitive Site Design, Low Impact Development, Stormwater Control Measures, and Best



Management Practices, that treat or store 1-inch or less of runoff and, in aggregate, account for the total pollutant removal required on-site." Table 4-1 lists small scale controls as a MassDEP Recognized ESSD/LID technique, however, the Small-Scale Controls factsheet in Appendix A (A-39) states "There are no numerical ESSD Credits associated with this Fact Sheet." This is misleading since many of the LID practices listed as examples of small-scale controls (bioretention and rain gardens, tree box filters, dry wells, infiltration trenches, vegetated filter strips, and porous pavement) receive pollutant removal credits at treatment depths less than 1-inch and can contribute towards a site's pollutant removal requirements. We suggest clarifying this wording as we believe it is MassDEP's intent to promote small scale controls, but the wording as it stands does not clearly convey this.

## Chapter 2 – other sections

Reference: Chapter 2 and Appendix A (A-48, A-51, A-55, A-72)

23. The Handbook prohibits the construction of pipes, SCMs and drainage structures below Estimated Seasonal High Groundwater (ESHGW). This requirement is very prohibitive, especially for previously developed sites and sites with high seasonal groundwater. Further, some existing municipal drainage infrastructure, particularly pipes and catch basins are in the ESHGW. **We recommend MassDEP reconsider this; and allow for the construction of pipes, drainage structures and SCMs at elevations below ESHGW with typical watertight specifications, such as impermeable liners and watertight pipes.**
24. The new requirements for subsurface investigation for infiltration SCMs have more than doubled the number of test locations required and no longer allow the use of Rawls Rate for infiltration/dewatering calculations, instead requiring in-situ hydraulic conductivity testing at every test location. This will have serious impacts to municipal roadway projects. One test location every 50 feet for linear infiltration and 2 borings/test pits per test location is excessive and not necessary to characterize soils for permeability. We request restoring the previous requirements for infiltration testing and allowing the use of the Rawls Rates.
25. Reference: Table 2-2, see pages 2-18 and 2-19  

The Street cleaning credits for pollutant removal currently listed in Table 2-2 are dependent on street cleaner type and sweeping frequency. We suggest MassDEP coordinate with EPA to understand if street cleaning credits may be calculated using a mass-based approach in future MS4 permits. If EPA moves to a mass-based approach, this will be another inconsistency between the MassDEP Stormwater Handbook and MS4 permit, will cause confusion, and will require designers and municipalities to complete two sets of calculations.
26. Reference: Table 2-2 SCM Conventional Crosswalk
  - a. Table 2-2 lists the applicable EPA Performance Removal Curve for Subsurface Infiltrators and Leaching Catch Basins as Infiltration Basin (i.e., shallow infiltration). This is inconsistent with the MS4 Permit where Subsurface Infiltration SCMs (e.g., galleys, chambers, pipes etc.) *use the Infiltration Trench curve* since there is no surface ponding storage. We would like to see this inconsistency with the MS4 Permit rectified to avoid confusion about how to calculate pollutant reductions for these types of SCMs. Otherwise, designers will need to complete two sets of pollutant calculations for project sites if using subsurface infiltration or leaching catch basins as part of their design.
  - b. Table 2-2 does not list an applicable EPA Performance Removal Curve for Rain Barrels & Cisterns. This is inconsistent with the MS4 Permit. We would like to see EPA's Performance Removal Curve for Impervious Area Disconnection through Storage listed as applicable for consistency with the MS4 Permit, which states "Impervious Area Hydrologic Disconnection using Storage (e.g., rain barrels, cistern, etc.) performance results are for collecting runoff volumes from impervious areas such as roof tops, providing temporary storage of runoff volume using rain barrels, cisterns or other storage containers, and

discharging stored volume to adjacent vegetated permeable pervious surfaces over an extended period of time." This curve shows this practice achieves 60% TP or greater in HSG A, B, C, and D soils at storage volume to impervious area ratio of 0.5-inches. Limiting eligibility for EIC reduction for Rain Barrels & Cisterns to only those sized to retain the 1-inch Water Quality Volume disincentives smaller practices when we believe it is MassDEP's intent to encourage design of small-scale controls as part of a site's overall stormwater design.

27. Reference: Section 2.5, see page 2-53

Section 2.5 of the Stormwater Handbook states "Horizontal setback and vertical separation requirements apply to Redevelopment projects to the Maximum Extent Practicable (MEP). A written alternatives analysis is required for any Redevelopment projects that seek to meet any horizontal setback and vertical separation distance requirements to the MEP (see Section 6.1.4)." We support the flexibility to allow Redevelopment projects to meet setbacks and vertical separation requirements to the MEP, however requiring a written alternatives analysis is burdensome. We agree supporting documentation should be provided to justify meeting setbacks and vertical separation requirements to the MEP, but that a complete alternatives analysis including all components listed in Section 6.1.4 should not be required.

28. Reference: Table 2-8, see pages 2-54 and 2-55

Table 2-8 is a good resource for horizontal and vertical setback distances with some exceptions. Is there a need to distinguish between the "downslope" and "upslope" distance from any surface water of the Commonwealth? Could this be combined or simplified?

The required  $\geq 12$  ft buffer maintenance access around the perimeter of SCM is more space than is generally required for infiltration practices. Suggest revising.

For those communities that reference the Stormwater Handbook in their local stormwater bylaws, the requirement for infiltration trenches to be  $> 100$  ft from any slope  $> 5\%$  will have significant impacts to future redevelopment both inside and outside of Wetland Resources Areas.

### ***Chapter 3 – Legal Framework (Page 3-14)***

29. Page 3-14, consider adding "TP" or "Total Phosphorus" in the sentence "If a TMDL has been established, these regulations may address pollutants other than TSS". The 2016 NPDES MS4 permit has regulations on TSS and TP which are required local bylaw components.

### ***Chapter 4 – Site Planning (Page 4-4)***

30. Table 4-1 lists green roofs as a MassDEP recognized ESSD/LID technique, and the Appendix A Fact Sheet on Small Scale Controls (defined as SCMs that treat or store 1-inch or less of runoff) lists Green Roofs as example LID Practices. However, Table 2-2 states that green roofs must be designed to retain the 1-inch Water Quality Volume to be eligible to reduce EIC from the roof. We would like to see a way to quantify credit for green roofs that treat less than the 1-inch Water Quality Volume. Not providing credit for green roofs unless they retain the full 1-inch Water Quality Volume disincentives their use when we believe it is MassDEP's intent to encourage design of small-scale green roofs where practical.

### ***Chapter 6 – Documenting Compliance (Section 6.3 )***

31. Page 6-62: Off-site mitigation is not allowed for redevelopment projects in LUHPPLs and Critical Areas. This is inconsistent with the MS4 Permit, where off-site mitigation is allowed for all redevelopment projects. Under

MassDEP's current definition of redevelopment, projects adding shoulders or correcting substandard intersections on a roadway that discharges to or near a Critical Area must fully meet Standard 4 on-site, which may render these types of projects infeasible. We encourage MassDEP to reconsider the redevelopment definition in this context or allow for off-site mitigation for this scenario.

32. On Page 6-72, the definition of a Competent Soils Professional is given. The list of qualifications does not include the Title V Certified Soils Evaluator. The credentials required coupled with extensive training for this NEIWPCC certification program (4 all day classroom sessions and 4 all day field sessions), are more than adequate to qualify as a Competent Soils Professional. We encourage MassDEP to update the definition of Competent Soils Professional to include Certified Soils Evaluators.

Sincerely,

Massachusetts Statewide Municipal Stormwater Coalition



Maria P. Rose, Chair

**Comments prepared by the MSMSC Advocacy Subcommittee:**

Eilish Corey, Town of Wellesley

Cece Gerstenbacher, Merrimack Valley Planning Commission

Lucica S. Hiller, City of Somerville

Daniel J. Murphy, P.E., P.L.S, Town of East Longmeadow

Martin Pillsbury, Metropolitan Area Planning Commission (MAPC)

Kerry Reed, P.E., Town of Hopkinton

Maria Rose, CFM, Town of Brookline

Cambria Ung, P.E., City of Cambridge



April 30, 2024

Massachusetts Department of Environmental Protection (MassDEP)  
100 Cambridge Street, Suite 900  
Boston, MA 02114

Attn: Bureau of Water Resources (BWR) Wetlands Program  
Via Email: [dep.wetlands@mass.gov](mailto:dep.wetlands@mass.gov)  
Re: **Wetlands-401 Resilience Comments**

Attn: BWR Waterways Program  
Via Email: [dep.waterways@mass.gov](mailto:dep.waterways@mass.gov)  
Re: **Waterways Resilience Comments**

**Mosquito Control – Wetlands Restoration and Low Impact Development (LID)**

Dear Commissioner Heiple, Wetlands Program Chief Rhodes, and Waterways Program Chief Padien:

The undersigned members of the “Massquito Coalition<sup>1</sup>” submit the following comments on the proposed changes to the Wetlands (310 CMR 10.00), 401 Water Quality Certification (314 CMR 9.00), and Waterways (310 CMR 9.00 aka Chapter 91 or Tidelands) regulations. Our organizations support ecologically-based mosquito control that focuses on natural methods of managing mosquitoes while avoiding the use of toxic pesticides to the maximum extent possible. We support proposed changes to the stormwater management standards. We recommend that the next round of regulatory revisions (aka Climate Resilience 2.0) include streamlining of wetlands restoration projects including cooperative involvement of Mosquito Control Districts (MCDs).

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<sup>1</sup> [nofamass.org/home/policy/massquito/](https://nofamass.org/home/policy/massquito/)

Healthy, diverse wetlands support a variety of aquatic life, including mosquito predators such as fish, predatory beetles, and dragonflies (both larval and adult). In contrast, stagnant ditches, poorly maintained stormwater systems, and degraded wetlands are more likely to breed large numbers of mosquitoes while not supporting fish and other mosquito predators. MCDs can partner with wetlands restoration projects to improve water quality and habitat connectivity for fish and other beneficial aquatic organisms. The report of the Mosquito Control for the Twenty-First Century Task Force recognized the potential to expand these partnerships, and recommended increased cooperation and collaborations between MCDs, DER, and wetlands restoration projects.<sup>2</sup> MCDs are exempt from the Wetlands Protection Act but not 401 Water Quality Certification or Waterways permitting. We recommend that MassDEP explore opportunities to further enhance cooperation between MCDs and wetlands restoration projects in the 2.0 process.

The regulatory updates also include updates to the stormwater management standards, including requirements for the use of nature-based designs using Environmentally Sensitive Design (ESSD) and Low Impact Development (LID) stormwater techniques wherever possible. LID designs do not create mosquito breeding habitat, unlike conventional stormwater systems with features like catch basins and wet detention basins that can hold pools of stagnant water, particularly if not rigorously maintained. The Stormwater Handbook includes Section 5.4 on Mosquito Control and Stormwater Management Practices. This includes information about how ESSD can help avoid creation of mosquito breeding habitat, and recommendations for management of structural control measures that can create mosquito habitat if not properly managed and maintained. We recommend that the final Handbook more clearly describe the benefits of LID designs in avoiding creation of mosquito habitat, and connect that more directly with the new requirements to utilize ESSD and LID unless that is infeasible at a particular site.

We look forward to providing further information on the benefits of ecologically-based mosquito management in the Climate Resilience 2.0 process.

Regards,

E. Heidi Ricci, Director of Policy and Advocacy, Mass Audubon

Jay Feldman, Executive Director, Beyond Pesticides

Pine duBois, Executive Director, Jones River Watershed Association

Michele Colopy, Executive Director, LEAD for Pollinators, Inc.

Dorothy McGlincy, Executive Director, Massachusetts Association of Conservation Commissions

Mary Duane, President Massachusetts Beekeepers Association

Renée Scott, Coordinator, NOFA/Mass Pollinator Network

Clint Richmond, Conservation Chair, Sierra Club of Massachusetts

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<sup>2</sup> [mass.gov/orgs/mosquito-control-for-the-twenty-first-century-task-force](https://mass.gov/orgs/mosquito-control-for-the-twenty-first-century-task-force)

**From:** [REDACTED]  
**To:** [Lin, Nancy \(DEP\)](#); [Rhodes, Lisa \(DEP\)](#); [DEP Wetlands \(DEP\)](#)  
**Cc:** [Rachel Watsky](#)  
**Subject:** Comments on the proposed Amendments to Wetlands Regulations.  
**Date:** Tuesday, April 30, 2024 7:27:26 PM

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To: Nancy Lin and Lisa Rhodes

Hello Nancy – I hope all is well with you. I have been thinking about preparing comments and simply could not find the time to write them out in the detail I wanted, but this will have to suffice.

When drafting the provisions of the Wetlands Regulations, in my view it is essential to keep in mind the statutory structure of the regulatory program under the WPA. It is very different from the Clean Water Act, which is completely controlled and implemented by the ACOE and EPA, agencies that are excellent at setting national standards and training their staff on those standards. Discretionary decisions are made based on a very detailed set of criteria, and are vetted by a manager with expertise in the rules and policies to ensure consistency nationwide. Call it the command and control system.

In contrast, decisions under the WPA start at a point completely the opposite of the CWA system, with 351 separate municipalities serving as the initial decision makers for any permit application filed under the WPA. Regulatory standards that set objective criteria that any engineer can apply to the set of facts in a particular case work well. Discretionary standards that require subjective judgments do not work well, lead to far higher transaction costs for applicants, essentially no predictability, and ultimately far more effort and time required by the DEP to resolved disputes. In addition, the standards need to be reasonable for applicants to meet, and take into consideration the financial impact of the regulation when imposed on small, low cost projects as well as large scale projects. Imposing strict standards that will be applicable and trigger extremely high costs even to small, low expenditure projects, will not result in actual improvements in environmental quality. Such standards will result in avoidance of the system altogether.

An example of the best of DEP's current regulations are the standards for the Inland Bordering Land Subject to Flooding in 10.57. Everyone with any experience knows how to apply the standard to have equal compensatory flood storage provided, on a one foot to one foot elevation basis, to offset proposed fill in a BLSF. That particular regulation triggers very little in the way of controversy, peer review fees, or complicated appeals to DEP.

In contrast, the current and the proposed stormwater standards require multiple discretionary decisions; and the proposed amendments by their terms would impose a requirement for



strict compliance with the stormwater standards without regard to the value of the project and the applicant's financial capability to pay for full compliance.

I have appeared before numerous Town and City Commissions and dealt with many private peer reviewers. The range of expertise, and range of potential outcomes is astonishing. In contrast with a project that is only under the BLSF standards, for which I can advise and guide a client and engineer to a reliably predictable outcome, the Stormwater regulations, with their subjective, discretionary criteria, make it impossible to reliably predict an outcome in too many cases. Different Towns and Cities and different peer review engineers reach entirely different outcomes on similar sets of facts.

The proposed amendments regulations do not deal with this, though at least in one instance seem to have attempted to take a step in that direction. That is where with regard to setbacks from ORWs, the proposed amendment sets a criteria of "at least" a 10 foot setback for SW discharges towards an ORW BVW wetland. That attempts to clarify the prior rule that just said a "setback" is required but did not state how far. In practice, however, the amendment is a distinction without a substantive difference. By making the setback "at least" 10 feet, it leaves it open to each Commission, and each peer reviewer to make its own judgment on whether more setback could be provided. Could the design use a vertical retaining wall at some x cost, to enable another 5 feet or 10 feet of setback? Could the design eliminate a house, and make it to 90 feet of setback? The questions will be asked, and every community will have its own view of how to interpret the rule.

Maximum Extent Practicable is inherently a subjective criteria. The proposed amendments make it extraordinarily onerous. In the Federal rules, EPA has stated explicitly in its preamble to the rules that the two most important considerations are the applicant's financial capability and logistics (what reasonably can be completed if adequate funding is available.) In contrast, the DEP's proposed amendments actually define the term Impractical to mean something that is not capable of being done, regardless of the funding available. I will address that somewhat more below.

As I noted in my prefatory paragraphs – the EPA and ACOE, with their top down, tightly managed and highly trained staff, are capable of making decisions about what is the MEP design criteria that should be applied to a particular site, and applying them fairly across the regulated public. 351 Cities and Towns simply are not able to do so – and in my experience we see astonishingly different levels of review, and of outcomes in different towns. Certain peer reviewers and certain Towns are nearly guaranteed to raise a litany of issues about any plan prepared by any engineer. Others commonly accept what a capable design engineer has presented, using his or her professional judgment of how to interpret the rules. I urge the DEP to step away from the MEP standard. It is simply not a standard that can be fairly and uniformly applied across the state. Even DEP's most experienced staff disagree with one another about whether a particular site design meets that standard, and when essentially the same sets of facts are presented across the Commonwealth in the different municipalities, we

get very different outcomes. A valid set of regulations should be objectively clear, and realistically capable of being applied uniformly across the state. MEP does not meet that criteria.

In my view, the DEP should craft a different set of standards – identify a base line feature of a stormwater design improvement, such as for a redevelopment project, and provide that if a project includes that feature, it will be presumed to satisfy the stormwater rules. The SW rules need to set objective standards.

I noted briefly the real life consequence of setting a standard for redevelopment (which can include merely resurfacing an existing parking lot without increasing the area of impervious surface) that requires MEP without regard to cost. First, the complexity and cost of engaging an engineer and paying a peer reviewer in a completely unpredictable regulatory environment will make many potential applicants stay away from the system altogether. I have a project on-going right now in which the Town charged peer review fees, including permit application fees, in excess of \$60,000, most of which was spent on a series of iterations of peer review comments on and critiques of a SWM design. An owner's choice to avoid the system might be a choice not to buy a particular property. Or it could be a choice by the owner of an existing facility not to go ahead with any resurfacing of a degraded parking lot, because the costs to make MEP improvements may be so high that it is impossible to fund those improvements. So, what happens – the degraded parking lot, with crumbling pavement, perhaps in existence since the 1970s or 1980s, is left as is, with no repaving, no improvement in SW management at all, and because it is in such degraded condition, more sediment comes off of it than if it was repaved. Or – I can easily envision many such owners (after consulting with their local engineer) choosing to just go ahead and repave - seek forgiveness, if necessary, rather than permission. The costs and complexity of SWM is very well known now, and it is feared.

The rules should provide owners of existing impervious surfaces who wish to repair but not expand those surfaces with a presumption of compliance if a particular detail is included in a design and application for a permit – for example, a rule could provide that existing paved surfaces with no SWM features, if repaired or replaced in kind, are presumed to meet the current SWM standards if rain gardens or Water Quality swales are provided. If the rules had that kind of provision, across the board for all projects, with reasonable, clear, objective, non-discretionary standards, and for which an outcome is easily projected, the DEP would see far more applicants who wish to make such improvements come into the system. And, the time, expense, and effort to get the approvals would drop – not only for applicants, but for the DEP as well. These SWM discretionary decisions are time intensive for the DEP as well. Making the SWM standards clear and objective, like the 10.57 BLSF standards, would enable the DEP staff to focus on other matters and not get tied up in SOC and adjudicatory hearing appeals with well-funded warring parties.

Understand – advocates who oppose something will push where it seems that push will get the most reward. The SWM standards are currently the place where there is so much

discretion, and so much lack of clarity, that battles can be fought over those details. To harken back to one of the DEP's earlier Commissioners – Tom Powers - we should seek less process and more protection. The MEP standards for SWM add lots of process, and while the stated goal is to get the most protection possible, it actually fails to do so.

I could go into a point by point, subparagraph by subparagraph analysis of the draft amendments, but lack the time or inclination to do so. If the DEP chooses to look for more practical, objective standards (note, I did not use the word practicable) it will go a long way towards solving what I see as really a crisis that is before us now. The current system is simply unworkable.

Matt

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#### Statement of Confidentiality

The information contained in this electronic message and any attachments to this message are intended for the exclusive use of the addressee(s) and may contain confidential or privileged information. If you are not the intended recipient, please notify Matthew Watsky, Attorney at Law, at the indicated phone number or e-mail address.

# Massachusetts Boating and Yacht Clubs Association, Inc.

1919

2024



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Metropolitan Yacht Club  
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Nantasket Beach Salt Water Club  
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Pelagic Sailing Club  
Peninsula Yacht Club  
Pleasant Park Yacht Club  
Plymouth Yacht Club  
Point Independence Yacht Club  
Point Of Pines Yacht Club  
Port Norfolk Yacht Club  
Puritan Canoe Club  
Quincy Yacht Club  
Riverside Yacht Club  
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Swampscott Yacht Club  
Volunteer Yacht Club  
Watertown Yacht Club  
Wessagussett Yacht Club  
Winter Hill Yacht Club  
Winthrop Yacht Club  
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## Committees

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Membership: Tom Pappa 781-983-3501  
National Boating Federation: P.C. Peter Gilson  
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Social: Carol Gilson 617-244-1540  
Yearbook: P.C. Cheryl Chisholm 978-839-3077

April 29<sup>th</sup>, 2024

To: [dep.wetlands@mass.gov](mailto:dep.wetlands@mass.gov)  
[dep.waterways@mass.gov](mailto:dep.waterways@mass.gov)

MassDEP – BWR Wetlands Program  
Attn: Wetlands-401 Resilience Comments  
100 Cambridge Street, Suite 900  
Boston, MA 02114

Subject: Wetlands-401 Resilience Comments

Dear Mass DEP Waterways, Wetlands and Other Interested Parties:

Thank you for the opportunity to comment on the proposed regulatory changes related to "Resilience from Coastal and Inland Flooding".

The Massachusetts Boating and Yacht Clubs Association (MBYCA), founded in 1917 and comprised of over seventy area yacht clubs, representing over 10,000 members, advocates for recreational boating interests at the local, State and Federal level. They provide access to a broad spectrum of waterborne activities and contribute significantly to the long maritime business economy throughout the State.

We advocate for and support protecting the environment while maintaining access to the water for commercial and recreational uses.

"BOATERS ARE VOTERS"

"THE VOICE OF OVER FIFTY THOUSAND BOATING FAMILIES"



*Many of our clubs have been in operation for over 100 years and are closely interwoven with local communities/economies and are located in V Zones, A Zones and X Zones, i.e. all LSCSF FEMA zones.*

*We have several significant concerns as follows:*

- 1. It is important that club reconstruction not be confined to the identical original footprint.*
- 2. Make the allowed water dependent uses explicit and not left to the discretion of local Conservation Commissions when dealing with piers, docks, floats and buildings. Specifically, water dependent facilities should be allowed in the Land Subject to Coastal Storm Flowage (LSCSF) area.*
- 3. It is critically important that pre-existing water dependent facilities receive CH 91 License renewals absent persuasive evidence of inadequate consideration of sea level rise and climate change. Also, that incremental capital investment projects be allowed rather than making them all required at the license renewal. Few clubs are in a position to fund any required modifications simultaneously rather than over time. Some twenty clubs reside on DCR property with permits versus leases, which further limits their ability to acquire funding for new investments.*
- 4. We strongly recommend that the current exemption for maritime industrial uses in the Designated Port Area be an exemption for all Water Dependent Uses.*

*We would be pleased to discuss our concerns/comments at your convenience.*

*Thank you for your consideration.*

*I may be reached at: 617-877-0774 or  
[philgreenstein@gmail.com](mailto:philgreenstein@gmail.com)*

*Philip Greenstein  
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Massachusetts Boating and Yacht Clubs Association, Inc.  
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*cc: State Representative Tackey Chan  
Governor Maura Healey  
[randall.Lyons@boatma.com](mailto:randall.Lyons@boatma.com)  
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# MCWRS

Massachusetts Coalition for  
Water Resources Stewardship

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April 30, 2024

MassDEP-BWR Wetland Program  
ATTN: Wetlands-401 Resilience Comments  
100 Cambridge Street-Suite 900  
Boston, MA 02114

Via email to: [dep.wetlands@mass.gov](mailto:dep.wetlands@mass.gov)

### RE: Wetlands-401 Resilience Comments

To Whom It May Concern:

The Massachusetts Coalition for Water Resources Stewardship (MCWRS) is a non-profit organization representing the interests of municipalities, districts and commissions in the world of wastewater, stormwater and drinking water. Members include municipal, district and commission wastewater, stormwater and drinking water utilities, engineering consultants, legal firms and stormwater coalitions.

MCWRS appreciates the opportunity to comment on the proposed changes to 314 CMR 9.00, 310 CMR 10.00 and the Stormwater Management Handbook. These revisions are significant and complex and will impact local Conservation Commissions, Public Works and Highway departments, municipal budgets and the taxpayers and ratepayers who pay for services provided by municipal government. MCWRS understands MassDEP's desire to update these regulations to address climate change impacts on precipitation. However, the proposed regulatory changes are extremely difficult to comprehend and exceedingly detailed.

MCWRS offers the following general comments. For more specific comments we suggest you review the submittal from the Massachusetts Statewide Municipal Stormwater Coalition (MSMSC).



**1. The timing of these regulatory changes is problematic.**

One of the stated purposes of the regulatory changes is to "improve consistency between state regulations and EPA stormwater permits". The current MS4 (stormwater) general permit that applies to some 250 municipalities has expired. EPA Region 1 recently indicated it plans to issue a new draft MS4 General Permit this summer (2024). MCWRS thinks it would be in everyone's best interest to have the revised regulations be consistent with the new MS4 permit and not with the expired permit. We urge MassDEP to delay any finalization of the proposed regulations until after the new EPA MS4 General Permit has been finalized.

Similarly, the proposed regulations require the use of either Massachusetts NRCS NOAA Type C or D rainfall distributions. This data will soon be outdated as NOAA is currently developing Atlas 15, which will present updated rainfall frequency estimates for the entire United States and will include guidance for accounting for climate change (see [NOAA Atlas 15 Flyer.pdf \(weather.gov\)](#) ). Work on Atlas 15 commenced in 2022, and publication is planned for 2026. A delay in finalizing these regulatory changes would again make sense given that Atlas 14 will soon be outdated.

**2. The process for finalizing these regulations should be improved.**

Once MassDEP has considered all comments received and modified the proposed regulatory changes accordingly, MCWRS urges the Department to then issue another draft regulatory package for public review rather than following the routine process of moving to a final regulation. The proposed changes are very complex and impact volunteer Conservation Commissions, municipal public works departments, municipal budgets, and developers. In some ways these changes may also conflict with other state initiatives such as the push for affordable housing. Having another round of public input after revisions are made to the proposed regulations can only lead to a better outcome. We would also encourage MassDEP to reconvene the Stormwater Advisory Committee to review the revised draft regulations as part of a second round of public scrutiny.

**3. Roll out of the new regulations must be a multi-year process with extensive training for all impacted sectors.**

Because of the complexity of the new regulations and the significant impacts they will have on practitioners and administrators, a minimum of two years should be dedicated to training before the regulations become effective. Perhaps a phased approach could be employed to ease the burden. Massachusetts already has an effective set of stormwater management rules that are currently in place. The first phase of the new regulations could simply be to adopt the Atlas 15 rainfall data when it becomes available. That alone, when used for project design, would go a long way toward addressing higher precipitation totals and intensities.

Many communities have developed their own stormwater regulations, some stricter than the current MassDEP stormwater standards. How does MassDEP intend to work with communities through this transition period when local regulations may conflict with the state regulations?

**4. Better coordination with the MS4 General Permit is needed.**

MassDEP is correct in its desire to improve consistency between state stormwater regulations and the EPA-issued MS4 General Permit. However, the proposal fails to provide enough consistency, especially in definitions. Discrepancies include:

- a. Requires 1-inch recharge, in contrast, the MS4 permit allows the 1-inch recharge as an option for how to meet the post-construction treatment requirements.
- b. The current definition of redevelopment in the Stormwater Handbook is inconsistent with the definition used in EPA's MS4 Permit.
- c. Off-site mitigation is not allowed for redevelopment projects in LUHPPLs and Critical Areas. This is inconsistent with the MS4 Permit, where off-site mitigation is allowed for all redevelopment projects.
- d. The MS4 Permit definition for Illicit Discharges states, "diverted stream flows", "water from crawl space pumps" and "lawn watering" as discharges that do *not* constitute an Illicit Discharge.
- e. Table 2-6 provides a list of SCMs that are appropriate for treating certain target TMDL pollutants. This list is inconsistent with the MS4 Permit in that it does not allow any filtering SCMs or wet basins to be used for nutrient TMDLs.
- f. Table 2-2 lists the applicable EPA Performance Removal Curve for Subsurface Infiltrators and Leaching Catch Basins as Infiltration Basin (i.e., shallow infiltration). This is inconsistent with the MS4 Permit where Subsurface Infiltration SCMs (e.g., galleys, chambers, pipes etc.) *use the Infiltration Trench curve* since there is no surface ponding storage.
- g. Table 2-2 does not list an applicable EPA Performance Removal Curve for Rain Barrels & Cisterns. This is inconsistent with the MS4 Permit.

**5. Need to coordinate with UIC program to avoid duplicative approvals.**

The regulations note that some stormwater treatment devices that discharge to the ground for groundwater recharge may need to be registered under the Underground Injection Control (UIC) program. MassDEP should devise an approach that allows automatic approvals across programs to avoid needless multiple approvals/registrations. Stormwater SCMs that comply with these regulations should not be required to register with the UIC Program.

**6. Definition of impervious area should not include artificial turf with stone reservoirs.**

Artificial turf with a stone reservoir is commonly used as a Best Management Practice for providing peak attenuation and groundwater recharge and should not be considered an impervious surface.

**7. Regulations should not be a disincentive to solar arrays on landfills or at wastewater treatment facilities**

The footings associated with solar arrays are considered as impervious surface, but solar panels were not considered an impervious surface because precipitation sheet flows off the panel onto the ground. Solar arrays are commonly placed on landfills and at treatment plants. If they are considered to be an impervious surface, compliance with the stormwater standards may be difficult due to lack of available space for stormwater control measures. Solar farms are a renewable energy and help Massachusetts move away from fossil fuels. Requiring stormwater control measures may act as a disincentive for entities to install solar farms. MCWRS does not support constructing solar arrays which require clear cutting of forested areas as that does not appear to be a sound environmental approach. Perhaps the regulations could differentiate between solar array construction on already disturbed sites (landfills, treatment plants, brownfields, etc.) by making stormwater standards less rigorous versus arrays on forested areas or certain "natural" open spaces where standards could be stronger to dissuade such practices.

**8. MassDEP should work with stormwater software providers before regulations become effective.**

The draft manual notes that the Type C and D rainfall distributions are currently not available in WinTR20, WinTR-55 and proprietary versions of the software, but require the user to import these distributions into the software. Depending on the software package used, it can be challenging to import rainfall distributions and opens the potential for users to do it incorrectly. Before the effective date of the regulations, MassDEP should work with software providers to have the most current distributions added into their products so that stormwater control measures are designed correctly. For example, the computer program HydroCAD, which is commonly used in Massachusetts, should be updated as it provides rainfall distributions specific to certain states.

**9. Infiltration requirements should be adjusted based on soil groups as in current regulations.**

The draft regulations require the first inch of runoff to be fully infiltrated for Hydrologic Soil Groups A, B, and C, and infiltrated to the maximum extent practicable for Hydrologic Soil Group D within 72 hours. As the soil becomes less permeable, the required footprint for the stormwater control measure will grow larger. The current regulations adjust the infiltration requirement based on the soil type, more appropriately matching existing natural infiltration rates of the soils.

In addition, if the static method is being used or if exfiltration is being incorporated into peak rate reduction calculations, extremely conservative infiltration rates must be used (Table 6-4 below), which also leads to a larger footprint for the stormwater control measure. The result is that, depending on soil conditions, it may be impossible to meet the infiltration requirement on a site, unless proposed site features are reduced.

**Table 6-4.** Design saturated hydrologic conductivity based on Hydrologic Soil Group for the “Static” Method

HSG	Design $K_{sat}$ (in/hr)
A	1.42
B	0.57
C	0.10
D	0.02

**Notes:**

1. Table adapted from Table 7-1 of the NRCS 2009 Part 630 National Engineering Handbook.
2. Design  $K_{sat}$  values assume that the depth to any impermeable layer (e.g., bedrock) or the water table is greater than 2 feet.
3. Values in this table must be used when sizing infiltration SCMs based on the *Static Method* or when incorporating exfiltration into peak rate reduction calculations for applicable infiltration SCMs as described in **Section 6.2.2**.
4. The selected HSG must correspond to a field evaluation conducted in the actual location and soil layer where stormwater infiltration is proposed as described in the procedures above.

**10. The slope setback from a slope greater than 5% is excessive.**

The proposed regulations require a setback of 100 ft from any slope greater than 5% to an infiltration basin (surface exposed or subsurface) or infiltration bioretention area. The intent is to mitigate groundwater breakout; however, 100 ft is excessive and, coupled with the 1-inch infiltration requirement, it may be impossible to meet the infiltration requirement at a site.

**11. Opportunity to grandfather projects should be provided.**

Some projects have a long design period and an extensive permitting process. What approach will be taken when a project's design and permitting period extends before and after these regulations go into effect?

**12. Provide greater regulatory relief for construction and reconstruction of wastewater facilities being modified or relocated to provide climate change adaptation.**

Last year, EPA Region 1 began including adaptation planning requirements in NPDES permits issued to wastewater facilities and collection systems. The point of these requirements is to have wastewater systems identify, plan and implement steps to protect facilities from climate change driven flooding. Protective measures might include relocation of facilities outside of flood prone areas or construction of flood-proofing barriers such as dikes or levees. Given these requirements are demanded by a federal agency and are intended to protect surface waters from uncontrolled wastewater releases due to flooding of facilities, the proposed regulations should allow for a more streamlined process of approval for implementing such measures. Perhaps the relocation or protection of wastewater facilities and drinking water facilities from flood damage should fall under the "reconstruction" category and only be subject to a maximum extent practicable standard relative to compliance with the proposed stormwater requirements.

**13. More land used for stormwater management may mean less land being left undeveloped.**

An unintended consequence of these expanded stormwater requirements is that more land will be disturbed in new and existing developments to site larger stormwater management facilities. Developments will cover every square foot of land with either buildings and associated facilities or stormwater management structures. Less open, undisturbed land with forest and fields will remain. Is that truly environmental improvement?

**14. The proposed regulations need to find a better balance between scientific precision and practical implementation.**

The proposed regulations may have a sound basis in scientific literature, but they appear to be overly detailed and difficult to understand. As currently written, there are unreasonable barriers for design engineers and unintended consequences for municipalities. If the difficulties in reviewing this regulatory package are a guide, then implementation by volunteer conservation commissions and compliance by public works departments under MS4 permits will be daunting.

**15. Definitions in 310CMR 10.00 need to be revised.**

The definitions for "impracticable" and "practicable" have different qualifications. The new **"impracticable"** definition means "impossible in practice to do or carry out based solely on physical constraints." The impracticable definition does not consider costs, technological feasibility or practicality of implementation. This

is unreasonable and conflicts with municipalities' goals to use taxpayer dollars responsibly. We request that “impracticable” be redefined to include all the factors listed for “practicable”.

The new “**Saturated Hydraulic Conductivity Test**” definition is narrow and very few practitioners can conduct the ASTM referenced tests. We request MassDEP to restore the provision to use the Title V percolation test to estimate saturated hydraulic conductivity. This is the only method we see in practice in our communities.

**16. Routine roadway projects should not be termed “redevelopment” and should not be captured by the regulations.**

For purposes of the Stormwater Management Standards, Redevelopment projects are defined to include the following:

- 1) Improvement of existing roadways, including widening less than a single lane, adding shoulders, correcting substandard intersections, and improving existing drainage systems.

This definition should be updated to clarify MEP requirements for “Maintenance of An Existing Public Roadway” (listed on pg. 2-36). Redevelopment requirements include “New stormwater controls (retrofitted or expanded) should be incorporated into the design and result in a reduction in annual stormwater pollutant loads from the site. All Redevelopment projects shall also incorporate measures that will address water quantity issues by reducing the peak runoff rate from the site and by increasing recharge.”

The way redevelopment is defined, maintenance to roadways would trigger this requirement, even though there is no significant change to stormwater runoff quantity or quality from this type of work. For example, milling and overlay of an existing roadway within the existing paved area as is typical in annual pavement management programs. Maintenance of roadways should not be required to meet stormwater standards for redevelopment. If this regulation remains it will create an immense burden for Conservation Commissions and for Public Works departments.

**17. More latitude and flexibility should be given to projects undertaken to improve local drinking water, wastewater and public works infrastructure.**

The majority of projects undertaken to repair, replace, upgrade and improve local drinking water, wastewater and public works infrastructure are publicly funded and intended to provide critical services to support public health, safety and the environment. Unlike a developer building a shopping center or subdivision, public infrastructure projects are not pursued to make a profit. Water infrastructure in particular is already many decades behind in terms of replacement needs, overburdened by a multitude of federal and state regulations, and hopelessly underfunded. The proposed regulations should not add to this overwhelming situation with even more requirements. MassDEP should craft these regulations in a way that provides off-ramps, waivers and variances for public infrastructure projects and a simplified means to request such considerations. Piling on more to a system that is already broken will not result in meaningful environmental improvements.

**18. Reconvene the Stormwater Advisory Committee.**

In the early stages of the development of these regulations, MassDEP had a stakeholder group, the Stormwater

Advisory Committee, which served a very useful purpose in guiding discussion on updating the Stormwater Management Handbook. Once the proposed regulations went into a draft for public comment the Advisory Committee no longer played a role and that has led to some of the difficulties in reviewing this regulatory package. MCWRS recommends that the Stormwater Advisory Committee be reconvened to review a revised draft regulatory package (see comment #2). Further, the Advisory Committee should remain an active participant during the roll out and implementation of the new regulations. Having an active group of interested stakeholders participating to advise MassDEP on stormwater issues would benefit both the Department and the stakeholder groups represented. MassDEP has long had a Safe Drinking Water Act Advisory Committee playing this role relative to drinking water. A similar arrangement for stormwater would make sense and help elevate the topic to a higher standing.

Thank you for your consideration of these comments.

Sincerely,

A handwritten signature in black ink, appearing to read "Philip D. Guerin". The signature is fluid and cursive, with the first name "Philip" being more prominent and the last name "Guerin" following in a similar style.

Philip D. Guerin  
President





April 29, 2024

MassDEP – BWR Wetlands Program  
Attn: Wetlands-401 Resilience Comments  
100 Cambridge Street, Ste. 900  
Boston, MA 02114  
Bonnie Heiple, Commissioner

Executive Office of Housing and Livable Communities  
100 Cambridge Street  
Boston, MA 02114  
Edward M. Augustus, Housing Secretary

Re: Wetlands-401 Resilience Comments

Dear Commissioner Heiple and Secretary Augustus,

Thank you for the opportunity to comment on the proposed Wetlands Protection Act regulations (310 CMR 10.0). As affordable housing developers and owners with extensive experience in the Boston Metro West region, we are concerned that the proposed regulations would unnecessarily reduce the potential for new housing development at a time when housing supply is among the most critical issues facing the Commonwealth.

Given the breadth of our reach across Boston's Metro West region, we know firsthand the dramatic toll that the housing crisis has taken on millions of Commonwealth residents. While we serve some of Massachusetts' most wealthy communities, our on-the-ground experience has shown us that no municipality is protected from the emergency state in which we find ourselves. Too many of the highly-resourced communities of opportunity in which we work remain a far reach for Massachusetts' most vulnerable populations, particularly for our Black and Brown residents.

While we fully understand and support the critical need to address climate change, we ask that you consider very carefully the impact that the proposed Wetlands Protection Act regulations would have on other state goals, such as increased access to safe and affordable housing opportunities. Based on comments provided by our engineering partners Hancock Associates and Nitsch Engineering (attached here), we are concerned that the proposed regulations will create significant barriers to the creation and preservation of much-needed affordable housing across the state and render some projects infeasible altogether.

We know that the climate crisis calls for monumental action and we support the Commonwealth's steps towards achieving necessary goals in the near-term. However, we urge you to weigh these actions against our state's dire need for more affordable housing. The livelihood of our state's individuals, families, and communities depends on this careful balance.

Thank you for the opportunity to provide our written comments on the proposed Wetlands Protection Act regulations (310 CMR 10.0). If you have questions, please feel free to reach out to me at [Caitlin@metrowestcd.org](mailto:Caitlin@metrowestcd.org).

Sincerely,

A handwritten signature in blue ink, appearing to read 'Caitlin'.

Caitlin Madden  
Executive Director  
Metro West Collaborative Development  
79-B Chapel Street

**Attachments:**

- 1.) Hancock Associates comment letter, February 8, 2024
- 2.) Nitsch Engineering comment letter, April 26, 2024

**From:** [Michaela Colombo](#)  
**To:** [DEP Wetlands \(DEP\)](#); [Rhodes, Lisa \(DEP\)](#); [lin@mass.gov](mailto:lin@mass.gov)  
**Subject:** Wetlands-401 Resilience Comments  
**Date:** Tuesday, April 30, 2024 3:50:41 PM

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April 30, 2024

I fully support the proposed regulatory updates to the Wetlands Protection and Water Quality Certification Regulations for Stormwater Management in their entirety. As a member of the Mashpee Select Board and the Barnstable County Assembly Delegates I have ongoing opportunities to discuss environmental issues with many colleagues and constituents in Mashpee and throughout Cape Cod. The science is clear. The climate is changing, sea levels are rising, and storms are intensifying. As our natural environment changes, overdevelopment in land subject to coastal storm flowage becomes increasingly precarious. The proposed regulations for land subject to coastal storm flowage are necessary for flood control and storm damage prevention. The new regulations address these issues and will protect public health and safety as well as the economy by reducing recurring public expenses to address damage in these areas.

Thank you for these important regulatory changes.

Sincerely,

Michaela Wyman-Colombo, Ed.D.

A black rectangular redaction box covering the signature area.

**Michelle A. Kaczynski**  
**Attorney At Law**

April 30, 2024

MassDEP - BWR Wetlands Program  
Re: Wetlands-401 Resilience Comments

Sent via email to [dep.wetlands@mass.gov](mailto:dep.wetlands@mass.gov)

I have lived on Cedar Point, Scituate, Massachusetts since 1972. My home is in a velocity zone (V-Zone). I've had two flood claims in 52 years.

I only became aware of the new regulations that your department is proposing for land subject to coastal storm flow two days ago through an email from our neighborhood association. My comments are limited to your proposals contained in 310 CMR 10.36, and with particularity to subsection (8), Redevelopment Within Previously Developed Land.

In brief, I fail to see the need for your agency to impose additional conditions for construction, repair or reconstruction located in the flood zones. The Massachusetts State Building Code already covers these activities with a clarity which is lacking in your proposed regulation. See 780 CMR 120.G. The wording of your proposal in general is vague, confusing and inappropriate to establish workable and knowable building conditions.

For example, 310 CMR 10.36 (8) states:

the Issuing Authority **may** allow work to redevelop a previously developed area within Land Subject to Coastal Storm Flowage; **provided that the work promotes resiliency by improving existing conditions to the maximum extent practicable.**

Could a local conservation commission prohibit reconstruction as their idea of "improving existing conditions" is that the structure not be rebuilt or repaired? Who is to determine the "maximum extent practicable" and what does it mean?

310 CMR 10.36 (8) states:

Activities shall conform to the standards specified in 310 CMR 10.36(4) through (7) **when a site was previously developed but is not currently developed.**

Does this mean that if a home is totally destroyed it has to conform to new construction sections?

**(a) At a minimum, proposed work shall result in an improvement over existing conditions of the capacity of the Land Subject to Coastal Storm Flowage to protect the interests of storm damage prevention and flood control to the maximum extent practicable.**

By using the work "shall", if the work cannot "result in an improvement" is it prohibited? What if a home already on pilings were to be destroyed? Ending the phrase with "maximum extent practicable" does not help. Who is to judge "practicable"? Or "maximum extent". This type of

subjective wording which runs throughout this section is not appropriate for building code type restrictions.

310 CMR 10.36 (8):

(d) Mitigation, such as flood easements or other means, is implemented or any fill, structure, or topographic alteration that would increase flood velocity, volume, or elevations within a confined basin that can be identified using LiDAR or on a USGS topographic map, where a manmade or natural feature significantly impedes or prevents the return flow of coastal flood waters;

I'm don't know what this paragraph is saying.

The elevation requirements of 310 CMR 10.36 (8) (e) already exist in the State Building Code, with much clearer and cleaner wording. See 780 CMR 120.G.301 - 601.

Your proposed regulations in so far as they attempt to control building and repairs within the flood zones, will only cause confusion among builders, local conservation commissions, and building inspectors, to the detriment of home owners. Litigation will surely follow, and my sympathy is with the judge or judges who would have to reconcile these regulations with the State Building Code and interpreting words such as "significant", and "practicable."

Very truly yours,

Michelle A. Kaczynski  
aka Michelle A. Loring

cc: Patrick.Oconnor@MASenate.gov  
Patrick.kearney@mahouse.gov  
David Ball, President, Cedar Point Assn

**From:** [Mike Peckar](#)  
**To:** [DEP Wetlands \(DEP\)](#)  
**Cc:** [rettenger@outdoors.org](mailto:rettenger@outdoors.org); [Mike Peckar](#); [Don Hoffses](#); [Emily Merlino](#); [massconpros@gmail.com](mailto:massconpros@gmail.com); [Walter Nutter](#)  
**Subject:** Wetlands-401 Resilience Comments  
**Date:** Monday, April 29, 2024 1:27:56 PM

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We are grateful to MassDEP for soliciting comments towards the “Resilience 2.0” regulatory changes and are writing today to advocate for the easing of the permitting burden on volunteer groups like ours that are related to trail work. We also support easing of permitting for habitat restoration and climate resilience.

The Midstate Trail is a 92-mile long distance single-track footpath located in Central Massachusetts that runs from the New Hampshire border to the Rhode Island border. The Midstate Trail Committee oversees the administration, development, promotion and maintenance of this trail utilizing nearly 100 volunteers. The trail passes through conservation land that is owned mostly by the State of Massachusetts, but also includes land owned by the federal government, towns, nonprofit organizations and private landowners, many of whom hold state conservation restrictions.

This comment letter is being sent by the Midstate Trail Committee, which operates under the Appalachian Mountain Club. The AMC Policy staff has or will be commenting under separate cover, but we wanted to add our comments as well. As an all-volunteer committee of less than 10 folks, we are frequently faced with the onerous task of obtaining permits for time-sensitive trail reroutes or for basic improvements to the trail that often mitigate environmental issues or otherwise improve and better protect our lands and wetlands.

For example, over a year ago, the committee proposed (to the landowner and the town Conservation Agent) a short, 60 foot reroute at Browning Pond Circle in Spencer to move the trail out of a low area that is frequently flooded to higher ground nearby. This reroute was planned to keep hikers safe and to reduce impact on vegetation and ground erosion in that low, wet area. The town asked that we file a WPA Form 1: Request for Determination of Applicability and go through the town's Conservation Commission for approval of the reroute. This reroute was planned to be unpaved and less than 3' wide and open to the public. On "Conservation Property", this reroute would have been exempt from wetland permitting.

This is just one example of the many which place a burden on volunteers who are both mindful of protecting wetlands and the safety of hikers when maintaining trails. We ask that MassDEP adopt the specific input provided to you by the MA Society of Municipal Conservation Professionals to you under separate cover, for not only trail work, but also for habitat restoration and climate resilience.

Much of the trail work occurring in the state, on both long distance and local trails, is organized, planned, and conducted by volunteers who have taken great efforts and time to maintain these wonderful trail resources here in Massachusetts. Creating streamlined, common-sense regulations which place all public trailwork on equal footing will allow trails like the Midstate Trail to better protect the wetlands it traverses and will allow volunteers to do more to serve the public in these valuable natural and enjoyable places for all.



Submitted with respect,

Mike Peckar  
Chair, Midstate Trail Committee  
Worcester Chapter, Appalachian Mountain Club  
email: [mst@amcworchester.org](mailto:mst@amcworchester.org)  
(m) 508-209-1833

**From:** [Mike Jones](#)  
**To:** [DEP Wetlands \(DEP\)](#)  
**Subject:** Wetlands -401 Resilience Comments  
**Date:** Tuesday, April 30, 2024 12:13:57 PM

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Good Afternoon,

I would like to make some general suggestions for the Wetlands Protection as it relates to public trail maintenance. The people doing a substantial amount of that maintenance work are volunteers. So I feel that is important that the regulations are focused on letting those people do the appropriate work in trail areas.

One way to make trail work easier would be to increase "minor activities" trail width to 48" rather than 36" on public lands.

Thank you for your time

Mike Jones [REDACTED]

#### Old Version Wetlands Protection

310 CMR: DEPARTMENT OF ENVIRONMENTAL PROTECTION 310 CMR 10.00:  
WETLANDS PROTECTION

(b) Activities Within the Buffer Zone. Any activity other than minor activities identified in 310 CMR 10.02(2)(b)2. proposed or undertaken within 100 feet of an area specified in 310 CMR 10.02(1)(a) (hereinafter called the Buffer Zone) which, in the judgment of the issuing authority, will alter an Area Subject to Protection under M.G.L. c. 131, § 40 is subject to regulation under M.G.L. c. 131, § 40 and requires the filing of a Notice of Intent. (See also 310 CMR 10.05(3)(a)2.). The areas subject to jurisdiction identified in 310 CMR 10.02(1)(b) through (f) do not have a buffer zone. 1. Minor activities, as described in 310 CMR 10.02(2)(b)2., within the buffer zone and outside any areas specified in 310 CMR 10.02(1)(a) through (e) are not otherwise subject to regulation under M.G.L. c. 131, § 40 provided that the work is performed: solely within the buffer zone, as prescribed in 310 CMR 10.02(2)(b)2.a. through q., in a manner so as to reduce the potential for any adverse impacts to the resource area during construction, and with post-construction measures implemented to stabilize any disturbed areas. Factors to

consider when measuring the potential for adverse impacts to resource areas include the extent of the work, the proximity to the resource area, the need for erosion controls, and the measures employed to prevent adverse impacts to resource areas during and following the work. 2. The following minor activities, provided that they comply with 310 CMR 10.02(2)(b)1., are not otherwise subject to regulation under M.G.L. c. 131, § 40: a. Unpaved pedestrian walkways less than 30 inches wide for private use and less than three feet wide for public access on conservation property; b. Fencing, provided it will not constitute a barrier to wildlife movement; stonewalls; stacks of cordwood; c. Vista pruning, provided the activity is located more than 50 feet from the mean annual high water line within a Riverfront Area or from Bordering Vegetated Wetland, whichever is farther. (Pruning of landscaped areas is not subject to jurisdiction under 310 CMR 10.00.); d. Plantings of native species of trees, shrubs, or groundcover, but excluding turf lawns; e. The conversion of lawn to uses accessory to residential structures such as decks, sheds, patios, pools, replacement of a basement bulkhead and the installation of a ramp for compliance with accessibility requirements, provided the activity, including material staging and stockpiling is located more than 50 feet from the mean annual high-water line within the Riverfront Area, Bank or from Bordering Vegetated Wetland, whichever is farther, and erosion and sedimentation controls are implemented during construction. The conversion of such uses accessory to existing single family houses to lawn is also allowed. (Mowing of lawns is not subject to jurisdiction under 310 CMR 10.00); f. The conversion of impervious to vegetated surfaces, provided erosion and sedimentation controls are implemented during construction; g. Activities that are temporary in nature, have negligible impacts, and are necessary

**From:** [mel@millwaymarina.com](mailto:mel@millwaymarina.com)  
**To:** [DEP Wetlands \(DEP\)](#); [Waterways, DEP \(DEP\)](#)  
**Subject:** Wetlands and Waterways Resilience Comments  
**Date:** Monday, April 29, 2024 10:09:21 PM

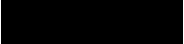
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To whom it may concern:

The proposed changes to the Mass DEP regulations would create a huge negative impact on our local Cape Cod marine economy. Millway Marina, our small 50+ years old waterfront business, provides access and services to the local recreational boating community as well as the Coast Guard and local police as needed. Maintaining our facility in a safe and environmentally sensitive manner is critical to the success of our business. It only makes sense to encourage all marine businesses to utilize the latest technologies and tested design principles when upgrades become necessary. The proposed regulations' negative, one dimensional approach to maintenance and development does not even come close to addressing the needs of waterfront properties. What is needed is a more thoughtful, nuanced regulatory approach that would support rather than constrain local marine business, promote smart adaptive technology and sustain this vital sector of the Massachusetts economy.

Melissa Marchand  
[mel@millwaymarina.com](mailto:mel@millwaymarina.com)



**From:** [Randall Lyons](#)  
**To:** [DEP Wetlands \(DEP\)](#); [Waterways, DEP \(DEP\)](#)  
**Cc:** [Jamy Madeja Buchanan](#); [Marie Hayward](#)  
**Subject:** Wetlands-401 Resilience Comments  
**Date:** Monday, February 19, 2024 9:36:11 AM  
**Attachments:** [image001.png](#)  
[MMTA Combined Comment Letter.pdf](#)

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**CAUTION:** This email originated from a sender outside of the Commonwealth of Massachusetts mail system. Do not click on links or open attachments unless you recognize the sender and know the content is safe.

To whom it may concern,

The Massachusetts Marine Trades Association (MMTA) is pleased to provide the attached comment letter concerning the recently proposed revisions to the Wetlands regulations and corresponding revisions to the 401WQC regulations.

Within the comment letter we have addressed our significant concerns with these new proposed regulations. Some of our immediate follow up questions are as follows:

- *What type of submission is anticipated for a complete application under the proposed Waterways requirement to “adequately consider” sea level rise and climate change, and what data can be relied upon?*
- *What would be the standard to apply for a Waterways license to be granted or renewed if these proposed regulations are enacted?*
- *What would the standard be for Conservation Commissions to apply in debating whether docks, piers and floats “may” be approved in Land Subject to Coastal Storm Flowage?*
- *How would the new proposed standards for Land Subject to Coastal Storm Flowage be imposed on sites which have both developed and undeveloped areas on the same site?*
- *What exactly is the newly proposed limited project exception for relocating Water Dependent Uses and what is the standard of review*

\*We have submitted these questions in advance of the upcoming 3 virtual office hour sessions being held over the next couple months.

**Copied on this email**

- MMTA President Marie Hayward from New England Marine Documentation
- Jamy B. Madeja; Esq. from Buchanan & Associates representing the MMTA

**Blind copied on this email**

- MMTA Boating Caucus members including approximately 60 representatives from both the House and Senate

Thank you in advance for your consideration related to the attached comment letter and our concerns related to the proposed regulation changes.

Randall M. Lyons, CMM

Executive Director

**Massachusetts Marine Trades Association**

(774) 404-8005

**Main Association page:** [www.boatma.com](http://www.boatma.com)

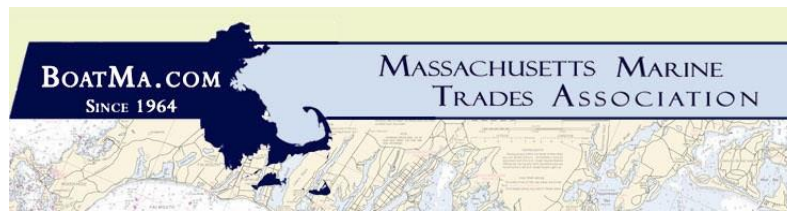
**Jobs/Careers site:** [www.massboatingcareers.com](http://www.massboatingcareers.com)

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Industry growth through **C**ollaboration, **C**ommunication & **E**ducation





*Industry growth through Collaboration, Communication and Education*

February 13, 2024

**Via Emails (copy to each):** [dep.wetlands@mass.gov](mailto:dep.wetlands@mass.gov), must include Wetlands-401 Resilience Comments in the subject line; [dep.waterways@mass.gov](mailto:dep.waterways@mass.gov), must include Waterways Resilience Comments in the subject line

Dear MassDEP Waterways, Wetlands and Other Interested Parties:

On behalf of the Massachusetts Marine Trades Association (MMTA), we thank you for the opportunity to comment on four different yet related proposed regulatory changes all released December 22, 2024 concerning “Resilience from Coastal and Inland Flooding.”. We note the effort to address some water dependent uses in some ways, for which we are grateful, especially to the managers and staff who tried to help us educate our members quickly in January. We also appreciate the extension of the comment period until April 30, 2024, and may submit additional comments after participating in the newly scheduled working informational meetings.

**Collectively, these proposed regulations if enacted “as is” would more than likely make recreational boating facilities unfinanceable overnight, due to the uncertainty of being allowed to continue to operate in future years, even without any new buildings, docks or piers, and especially with them. The absence of reliable permit requirements would also impact insurability of existing facilities and operations.**

These comments are combined because the Waterways regulations import the Wetlands regulations by requiring a Wetlands Order of Conditions before any Waterways application will be considered a ‘complete application.’ They are also combined because the Gubernatorial press release addressed all the proposed changes as a package, and we fear all may be advanced in one premature package. <sup>1</sup>

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<sup>1</sup> Announced Proposals December 22, 2023 Gubernatorial Press Release: [Healey-Driscoll Administration Proposes Regulations to Strengthen Resilience from Coastal and Inland Flooding | Mass.gov](https://www.mass.gov/news/healey-driscoll-administration-proposes-regulations-to-strengthen-resilience-from-coastal-and-inland-flooding)

**BOSTON** — The Massachusetts Department of Environmental Protection (MassDEP) today issued draft regulations to strengthen wetlands and stormwater resilience by providing flood control and preventing storm damage to shorelines and infrastructure from the impacts of climate change. The proposed regulations will help protect areas vulnerable to sea-level rise and storm surge, promote nature-based solutions to flooding, streamline certain permitting processes, and use updated precipitation data to inform decision-making...The regulations are proposed under the Wetlands Protection Act and the Massachusetts Public Waterfront Act. MassDEP will accept comments on the draft regulations until March 1, 2024. ...“Data tells us that inland and coastal flooding are two of the biggest threats to Massachusetts. The storms we saw this summer showed us that there is no time to waste,” **said Energy and Environmental Affairs Secretary Rebecca Tepper**. “These updates strike a balance to preserve and protect development along our waterways. These changes also present Massachusetts with another opportunity to lead – we’re promoting the most cutting-edge nature-based solutions along our coastlines.” ...“We cannot continue a ‘business-as-usual’ approach if we want to build more resilient communities,” **said MassDEP Commissioner Bonnie Heiple**. “With these regulations, we’ve integrated the latest science and green infrastructure techniques to mitigate climate change impacts and protect residents, municipalities, and businesses from costly rebuilding efforts. MassDEP is grateful for the engagement of stakeholders and agencies in developing this proposal and looks forward to continued feedback on

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## **About MMTA and Our Perspective**

*Established in 1964, MMTA is the statewide, non-profit, representative body for over 1,000 marine trades businesses in the Commonwealth. Our businesses employ just under 20,000 men and women and generate over \$5 billion in direct and indirect annual economic activity for Massachusetts. MMTA's mission is to provide the framework for furthering the interests of the marine trades and the boating public through the promotion of boating, participation in legislation and workforce development programs.*

The recreational boating/marine industry contributes positively and significantly to the economic strength and quality of life enjoyed in Massachusetts. The 'business of boating' provides jobs, economic opportunity, public access to our precious waterways, improves aesthetics of inland and coastal waters and supports environmental stewardship while promoting a family-friendly form of recreation and tourism. One of the Massachusetts Marine Trades Association's top priorities is to stem the exodus of recreational boating businesses from the Commonwealth and the loss of waters-edge usage for recreational boating purposes. We actualize the Public Trust Rights to navigate the waterways, and our jobs and our industry of recreational boating generates over \$5 billion in direct and indirect revenue for the Commonwealth. Boating gives families without the resources to purchase waterfront property the opportunity to exercise their public trust rights and enjoy the Massachusetts coast and harbors. While doing so, Massachusetts boaters and those transiting through our waters substantially invest in their destination ports by patronizing shops, restaurants, retailers, fuel sellers and often hotels and resorts. In fact, every \$1 spent on dockage equates to close to \$4 to the local community where those boaters are visiting. The waterfront communities are dependent upon the annual financial boost boaters bring to their local economies.

It is also our perspective that it is dangerous and serious when an element of the government proposes to ban and prohibit what people want to do for themselves and are capable of doing safely. Setting safety standards and engineering requirements and building codes is an entirely rational governmental function. Banning and prohibiting due to the preference or policy of some with government power but without adequate foundation in science is not rational and not a sustainable approach in a democracy. A small but essential portion of these proposed regulations must change or they will fall into this dangerous category. The Wetlands Protection Act already has protections for nature in the resource areas of salt marsh, coastal beach, bank, dune, etc. The Federal Emergency Management Agency already has protections and standards regarding flooding and buildings. It is not helping nature to prohibit sound, adaptive buildings; it is only harming people. It is notable that the photos used in the public information sessions are of old and flimsy structures, not built to withstand wind or water. No photos were used of the

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these regulations." ...The proposed Wetlands regulations will promote resilience by creating performance standards to protect the natural buffering function of wetlands and floodplains and help prevent damage to both the natural and built environment. The standards will require elevation of new development in areas of the coastal floodplain where most storm damage occurs and minimize new development in the most vulnerable area of the coastal floodplain where waves are higher than three feet. The regulations encourage nature-based approaches to improve resilience, such as restoration of salt marshes, coastal dunes, and barrier beaches on the coast, as well as inland wetlands. Updated stormwater management standards will reduce stormwater pollution to water bodies throughout the state, helping to improve the water quality of our rivers and streams. The Waterways regulations allow modifications to licenses for identified smaller structures (primarily small docks and piers) to account for sea-level rise and maintaining public water access.

innumerable buildings around the state and the nation and the world which have been built adaptively and are both safe and protective of nature.

People have lived and worked in inhospitable environments for eons, from the arctic to the desert, adapting their structural designs ingeniously to survive and thrive (and without harming the nature around them). Prohibitions on buildings do not reflect the skills, materials and technologies available now and in the future. Please, modernize these proposed regulations to require adaptive structures, not banned buildings.

## Chapter 91

1. Mass DEP states that the Engineering and Construction Standards at 310 CMR 9.37(1)(d) are proposed to be revised to take projected sea level rise into account. The proposed language introduces the phrase “adequately consider” projected sea level rise, with respect to any new licenses and the renewal of any existing licenses.

**Comments: MMTA agrees that considering projected sea level rise and tidal surge is both sensible and technologically attainable, with an accredited, licensed attestation as to the accuracy of the data being used for the projections. It is our understanding MassDEP anticipates using a website of some data, and to accept any other site-specific or accredited data. Please make this so. There is so much debate over policy-driven data on climate change, rather than facts, it is important to accept that of licensed experts.**

**Regarding implementation, we who work in the water and at the water’s edge know it will be quite expensive to elevate and otherwise modify water and waterfront facilities in the decades and half-century to come. Please find a way to make clear in the proposed regulations that it is not necessary for all facilities to have fully actualized all projected sea level rise all at once, and write in the ability to do “rolling” capital project improvements. It would be deadly if existing water dependent users all had to replace all their facilities at once, at time of Chapter 91 license renewal, in order to obtain a renewed license. Without this flexibility to adjust to changes in sea level rise over time, there simply isn’t enough money in operating water dependent uses to finance a complete retrofit all at once.**

**We also seek more clarity on what “adequately consider” sea level rise actually means. Must one go through MEPA for public comment from any interested party anywhere in the state regarding what ‘adequately consider’ means? Must one always use the maximum available technology and materials or will this decision of “adequate consideration” be a more traditional reliance on the professional stamp of a licensed engineer attesting to the plan’s adequacy for projected impacts? Can one obtain a Chapter 91 license for the usual necessary period of three decades and build in the assumption of using new materials and technologies when they become available?**

2. MassDEP states that the regulations propose exempting from the height restriction at 310 CMR 9.51 moving mechanicals and other elements to the top floor or roof.

Thank you, this is sensible. While the height limits do not apply to Water Dependent Uses anyway, many predominantly water dependent sites also have non-water dependent uses on site and may need this exemption.

3. MassDEP states that there is a minor technical revision to replace the term "grandfather" with the term "exempt" in the section on Private Recreational Boating Facilities at 310 CMR 9.38(2).

Many will not understand this change. Perhaps it would help to explain it in the preamble to the proposed changes. It is our understanding that the term "grandfather" is being eliminated in keeping with the appellate court case authored by Judge Jim Milkey, requiring the removal of the term "grandfather" in land use matters due to social justice reasons, because the term originated with efforts to prevent voting by people of color.

### **310 CMR 10.00/ Wetlands Proposed Regulatory Changes**

#### **General Comments:**

**1. We wish there were the usual Frequently Asked Questions to assist in understanding the proposed changes with examples. No FAQ's have been published and hundreds and hundreds of people came onto the informational calls without getting answers, mainly asking questions central to the proposed changes. All would benefit from FAQ's, meaning the proponent agencies and the regulated entities and areas. Some of these most impactful changes have been under discussion for over 10 years within MassDEP and the Office of Coastal Zone Management without external consultation with practicing non-governmental waterfront experts with actual application experience. We list some of our outstanding questions below.**

**2. We respectfully request the State reach vastly more people and businesses and experts and affirmatively consult with the most impacted and knowledgeable people and businesses and licensed engineers and waterfront project managers. Please, before promulgating these regulations spend time out on the water, at its edge and be there to ask, listen and learn.**

**3. These proposed changes are currently being labeled by the Commonwealth's representatives as "managed retreat" and "nature-based solutions" yet proposed as though they are for the purpose of climate change adaptation and resiliency. We disagree. They are neither. Retreating from nature at the water's edge is not a rational way to adapt to climate change or to accomplish climate resilience. Nature is changing in ways which preclude giving up and backing away and expecting nature to create solutions on its own for absorbing more tidal flow and dissipating more wind and tidal energy. Nature on its own will not provide solutions which protect people and businesses and public access to the waterways. Banning and prohibiting buildings will not provide solutions, it only bans and prohibits the new money needed to pay for solutions. It also irrationally invites nature to keep coming further and further inland where more and more bans and prohibitions ever**

onward will be need to be imposed if this “managed retreat” approach is taken rather than standards based in building codes, engineering and technology.

**The Wetlands Protection Act and Regulations are already among the most protective in the nation, with detailed, extensive protections for salt marsh, coastal bank, coastal beach, coastal dune and buffer zones to same. It is not as though nature will have no protections unless today’s MassDEP adds more bans and prohibitions, added to those of the WPA currently and those of FEMA and the Building Code. We also note that all images of damaged buildings– every single image—used by MassDEP in its public sessions in January and on its website are of old and poorly maintained structures. Not a single one is of modern engineering and design.**

**These proposed regulatory changes should be revised to include the use of modern technology, engineering, and design to protect people from nature as well as nature from people. It can be done, as it has been all over the world and for eons, in inhospitable climates from the arctic to the dessert to right here, such as with the permitted and even Commonwealth-prioritized construction of wind turbines in high velocity zones out in the ocean. We have the technology. Let us use it.**

4. We note that MassDEP states that the performance standards for Land Subject to Coastal Storm Flowage do not apply to Water-Dependent Industrial Uses in Designated Port Areas (310 CMR10.36(4)(d)).

**MMTA supports this exemption. We also seek exemption for all Water Dependent Uses, and particularly marine industrial uses such as vessel servicing, for substantive and rationality reasons. It is illogical and irrational to not apply a new performance standard just in Designated Port Areas. All Water Dependent Uses need to adapt to the sea whether or not the state 40 years ago made a DPA designation decision on criteria unrelated to the Wetlands Protection Act. The DPA’s were originally designated to achieve eligibility geographically for federal marine infrastructure grants, The DPA’s were not calibrated or linked in any way to the Wetlands Protection Act. In addition, the prohibition against having any uses other than marine industrial ones in DPA’s was a much later regulatory choice by the Commonwealth, to preserve land/water area for marine industrial uses only, again unrelated to WPA matters. Please exempt all Water Dependent Uses for the new performance standard for Land Subject to Coastal Storm Flowage. This action alone would save the disastrous impact of the current proposed regulatory changes on the business of recreational boating.**

5. MassDEP tells us Public and commercial boat launching facilities, open rack elevated boat storage, navigational aids, piers, docks, wharves, and dolphins are proposed to be allowed in the V-zone and MoWA zones (310 CMR 10.36(6)(c)). The construction of new buildings in the V-zone is not allowed; reconstruction or redevelopment of buildings in the V-zone is governed by Redevelopment provisions (310 CMR 10.36(8)).

Here is where the regulatory proposals are devastating immediately upon passage for water dependent uses. The term used in the actual proposed regulation is not “allowed” it is “may” be

approved, which also means may not be approved, with no standards specified as to what does or does not result in approval. No lender will finance now on the basis of something “may” be approved later, including existing facilities in need of money to pay for climate adaptations now.

**This prohibition of new buildings in the V-zone prohibits even the water dependent buildings needed to operate a marina or a boatyard, such as the vessel servicing buildings and the indoor marina facilities.**

**This prohibition then ties into being approved for a renewed Chapter 91 license, because the Chapter 91 license can only be issued **after** the Wetlands Protection Act approval has been issued. The Chapter 91 license application even for a renewal isn’t considered “complete” without it. So, the prohibition on new buildings in the velocity zone under the wetlands regulations is profoundly problematic, devastating to water dependent uses, even with the exemption for docks and piers and racked boat storage (which is often indoors in a building so the vessels can be worked on off-season). Will even reconfigurations in the zones already approved by Chapter 91 Waterways be denied by the Conservation Commissions?**

**There is also a lack of clarity on the applicability of the new proposed standards to sites which have both developed and undeveloped areas on the same site.**

6. The new proposal is to prohibit reconstruction or redevelopment, unless on the exact same footprint and elevated. Many of our members work on or own property with mixed areas of previous construction and open areas used for boat storage or work zones. There is no rational purpose under the Wetlands Protection Act to limiting reconstruction to the exact same footprint. Substantively, redesign to adapt to climate change is the ostensible purpose of the regulations – it is not rational to prevent whatever new adaptation is viable rather than artificially restricting the reconstruction to the exact same footprint. And of course, there is the problem of what pays for the reconstruction if the result is exactly the same but elevated?

7. We note MassDEP says maintenance and repair of existing coastal engineering structures is allowed in the V-zone and MoWA zones (310 CMR 10.36(6)(d)).

**This is good because repair and maintenance are essential, nature is not going to respect and take care of structures. People have to respect and take care of the impact of nature on existing structures. Technology and design are available and are documented to work in these zones. These proposed regulations should be changed to allow for modifications of the existing engineering structures to make them higher and use different materials to improve the structural integrity in planning for projected sea level rise. And, per the comment above, please make the language explicit that such work is allowed, without the risk of absence of approval, so long as engineering and building code and existing WPA standards have been met regarding resource areas already heavily regulated.**

**8. We note MassDEP says for Land Subject to Coastal Storm Flowage and all other coastal resource areas, a new limited project has been proposed for relocation or reconfiguration of water-dependent uses where necessary to avoid flooding or coastal storm damage (310 CMR 10.24(7)(c)9).**



**This seems to be something between an encouragement and a mandate to relocate, when many if not most property owners do not have anywhere to relocate to much less the funds. This is not really an exemption. It is an unclear and important issue overlapping with both who owns what property and what new standard would apply. Does a limited project mean if one is relocating floats, or docks to make them more secure? Buildings? In or out of velocity zones? It is unclear. Does a limited project mean if one is relocating floats, or docks to make them more secure or a building to make it more secure qualifies as a limited project which shall be approved or is it again a discretionary decision in the hands of hundreds of different volunteer Conservation Commissions?**

8. MassDEP writes that [f] or Land Subject to Coastal Storm Flowage and all other coastal resource areas, the new limited project also allows the construction, reconstruction, or reconfiguration of water-dependent use projects determined to “e "functionally dependent" (see reference in the proposed provision) which applies to certain docking and port facilities. This provision was included specifically to provide consistency with FEMA and building code requirements that also have a special provision for these facilities (310 CMR 10.24(7)(c)9).

**This is a very promising limited project. We look forward to more clarity with examples including for water dependent buildings as well as docks and piers. Thank you very much.**

To summarize, our primary concerns are:

1. the absence of expert non-governmental voices in the drafting process, particularly technical advisors working every day in the geographic areas which are the subject of the revised regulations. **Please invite and listen to expert marine engineers and architects and contractors and water dependent businesses and users.**
2. Do not ban and prohibit. Instead require building code and technology certification from licensed engineers for adaptive, sustainable building.
3. Allow reconstruction and adaptation on altered footprints, not the exact same ones.
4. Make explicit the allowed water dependent uses and do not leave to the undefined discretion of hundreds of volunteer Conservation Commissions whether existing buildings, piers and docks and floats can be renewed, reconfigured or expanded or newly installed, no matter how adaptive and sound the proposal. We seek “water dependent facilities are allowed in LSCSF” and remain subject to the other performance standards for other resource areas.
5. Please make it express that pre-existing water dependent facilities shall receive Chapter 91 license renewals absent persuasive evidence of inadequate consideration of sea level rise and climate change. And allow for rolling investment in the capital projects needed, not making them all required at the same time as license renewal.
6. Make the exemption for marine industrial uses in Designated Port Areas an exemption for all Water Dependent Uses. This change alone would make these proposed regulatory changes not deadly to the business of providing boating of the waterways in the Commonwealth.

### **Questions:**

- What type of submission is anticipated for a complete application under the proposed Waterways requirement to “adequately consider” sea level rise and climate change, and what data can be relied upon?
- What would be the standard to apply for a Waterways license to be granted or renewed if these proposed regulations are enacted?
- What would the standard be for Conservation Commissions to apply in debating whether docks, piers and floats “may” be approved in Land Subject to Coastal Storm Flowage?
- How would the new proposed standards for Land Subject to Coastal Storm Flowage be imposed on sites which have both developed and undeveloped areas on the same site?
- What exactly is the newly proposed limited project exception for relocating Water Dependent Uses and what is the standard of review?

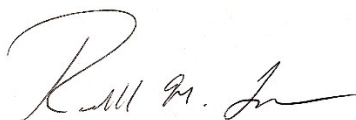
### **Stormwater / Water Quality Certification**

We have not heard enough yet from our membership to comment on all the technical details of these two aspects of the proposed regulatory package. For now, we note two things:

*1) Massachusetts is one of the two most costly places by far to attempt to permit a water dependent facility. The other is California. The primary reason is the extraordinary overlap of multiple regulatory programs and imposition of requirements not imposed anywhere else in New England or beyond.*

*2) Massachusetts is the only state in the nation which requires treatment of stormwater runoff to below drinking water standards. It is well beyond problematic and deep into unproductive inequity that water's edge businesses are forced to take on storm water runoff from all over the watershed area and then pay for monitoring, treatment and removal from storm water runoff to standards below drinking water quality. These regulations should not be promulgated until they stop imposing everyone's runoff concerns onto water's edge facilities.*

MMTA respects the hard work of those who worked for ten years discussing and considering climate change and sea level rise. On behalf of the Massachusetts Marine Trades Association, the 20,000 marine trades workers and with respect to the over 140,000 boaters in Massachusetts, we thank you for your time and consideration of our comments. Both I and MMTA's Government Relations and Legal Representative, Jamy Buchanan Madeja from Buchanan and Associates are available to discuss this and any other matters related to the business of boating. Please feel free to contact either of us. My contact information is below and you can reach Jamy at 617-256-9491 or [jmadeja@buchananassociates.com](mailto:jmadeja@buchananassociates.com). Thank you in advance for your consideration,



**Randall M. Lyons, CMM**  
Executive Director  
Massachusetts Marine Trades Association  
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April 30, 2024

Lisa Rhodes  
Wetlands Program Chief  
MassDEP - BWR Wetlands Program  
Attn: *Wetlands-401 Resilience Comments*  
100 Cambridge Street, Suite 900  
Boston, MA 02114

**Subject: Comments on 310 CMR 9.00 Draft Waterways Regulations, 310 CMR 10.00 Draft Wetlands Regulations & 314 CMR 9.00 Draft 401 Water Quality Certification Regulations.**

Dear Esteemed Members of the Massachusetts Department of Environmental Protection,

On behalf of the collective entities representing the breadth of the recreational boating industry in Massachusetts, we extend our gratitude for the opportunity to provide feedback on the proposed revisions to wetlands regulations outlined on December 22, 2023, under the theme of "Resilience from Coastal and Inland Flooding." As custodians of both marine and freshwater ecosystems, we commend Massachusetts DEP's commitment to enhancing water quality and preserving these vital habitats. Nevertheless, we harbor concerns regarding the potential ramifications of the proposed regulations on recreational boating enterprises throughout the Commonwealth.

The current iteration of the proposed regulations, if enacted, presents immediate challenges to the financial viability of recreational boating facilities. The uncertainty surrounding continued operation in subsequent years renders these establishments unattractive to potential financiers. Moreover, the envisaged regulations threaten to create a prohibitive business landscape, impeding the procurement of essential permits, insurance, and financing for new infrastructural developments such as buildings, docks, or piers. Additionally, existing facilities face the prospect of insurance unavailability due to non-compliance with the proposed regulatory framework. We urge the Massachusetts Department of Environmental Protection to contemplate amendments to these regulations, tailored to accommodate the needs of recreational marine enterprises statewide, thereby safeguarding their sustainability.

The Marine Retailers Association of the Americas (MRAA) stands as the preeminent trade association representing small businesses engaged in the sale and servicing of new and pre-

owned recreational boats, as well as the operation of marinas, boatyards, and accessory outlets across North America. With over 1,300 individual member retail locations, MRAA advocates diligently on their behalf.

The National Marine Manufacturers Association (NMMA) serves as the foremost trade association for the U.S. recreational boating sector, comprising 1,300 marine enterprises encompassing recreational boat, marine engine, and accessory manufacturers. This industry sector exerts a significant \$230 billion impact on the nation's economy, sustaining over 800,000 American jobs across 35,000 marine businesses domiciled in the United States.

The Association of Marina Industries (AMI) represents marinas and boatyards nationwide. We have over 1300 members nationwide, including 38 marinas and boatyards in the state of Massachusetts. There are approximately 350 marinas and boatyards in Massachusetts; these businesses support \$1 billion in economic activity alone.

The Commonwealth of Massachusetts, boasting a picturesque coastline and an abundance of pristine rivers and lakes, provides an idyllic setting for recreational boating pursuits. From angling for Striped Bass in Vineyard Sound to pursuing Bluefin Tuna off Chatham's shores, or simply indulging in a leisurely cruise on one of the state's numerous lakes, the recreational opportunities are boundless. According to data from the National Marine Manufacturers Association, recreational boating alone injects a substantial \$5.0 billion in annual economic activity into the Bay State, supporting 17,614 jobs across more than 1,000 businesses. Undoubtedly, recreational boating constitutes an integral facet of Massachusetts' rich historical and cultural tapestry, remaining a cherished pastime among residents and visitors alike. Furthermore, with 129,699 registered boats scattered throughout the state, many of which are harbored at waterfront or water-adjacent facilities, easy access to aquatic pursuits is facilitated.

While we commend the Department's steadfast commitment to environmental preservation, water quality enhancement, and the fortification of coastal communities against climate change impacts, we harbor reservations regarding the perceived threats posed by the proposed regulations to marine enterprises statewide. The proposed amendments to both the Wetlands Protection Act (WPA) and Water Quality Certification regulations risk exacerbating the already intricate regulatory landscape confronting marine enterprises, potentially precipitating the demise of Massachusetts' marine industry. We implore the Department to contemplate revising the proposed regulations to better align with the operational realities confronting marine enterprises, fostering a regulatory framework that harmonizes the Department's objectives with the imperatives of coastal and near-coastal businesses.

Below, we delineate more detailed commentary on the proposed regulations:

#### **Chapter 91 Comments:**

- **310 CMR 9.37 – Update Reference to Sea Level Rise:** We beseech the Department to elucidate the term "adequately consider" through precise definition, ensuring applicants grasp the requisite considerations concerning sea level rise.

- **310 CMR 9.51 - Modify Height Provisions:** We endorse the proposed modification exempting height restrictions within 310 CMR 9.51 for moving mechanical elements and analogous components to upper floors or roofs. This exemption assumes critical significance for marine enterprises, as numerous water-dependent sites concurrently harbor non-water-dependent activities that stand to benefit from this provision.
- **310 CMR 9.38 – Use Standards for Recreational Boating Facilities:** Respectfully, we request the Department to expound upon this amendment in the preamble, fostering a comprehensive understanding among regulated entities regarding the rationale underpinning this alteration. Absent such clarification, marine enterprises may harbor unwarranted apprehensions regarding the amendment's implications.

### **310 CMR 10.00/ Wetlands Proposed Regulatory Changes General Comments:**

**Frequently Asked Questions (FAQs) Publication:** We respectfully urge the Department to compile and disseminate a compendium of FAQs to afford enhanced clarity on the proposed regulations. Despite robust public engagement during numerous Virtual Public Information Sessions, the absence of FAQs engenders lingering ambiguities, necessitating this resource to foster comprehensive comprehension among regulated entities and other stakeholders.

1. **Continued Stakeholder Engagement:** We implore the Department to persist in soliciting stakeholder input from members of the recreational boating community and other stakeholder's integral to the working waterfront. While we commend the Department for facilitating "Office Hours" and analogous initiatives to elucidate the regulatory proposals, we advocate sustained outreach to recreational boating stakeholders post-comment period closure, fostering an iterative dialogue to discern the regulations' full ramifications on Massachusetts businesses.
2. **Regulatory Scope Expansion:** We respectfully petition the Department to broaden the purview of proposed regulatory changes to encompass not only "nature-based solutions" but also modern technological, engineering, and design interventions conducive to bolstering marine enterprises' resilience while augmenting environmental fortification within built environments. Restricting businesses solely to "managed retreat" and "nature-based solutions" compromises their adaptive capacity, necessitating a more nuanced regulatory approach to foster resilience.
3. **Exemption Extension for Water-Dependent Uses:** We endorse the exemption of Water-Dependent Industrial Uses within Designated Port Areas from performance standards for Land Subject to Coastal Storm Flowage as delineated in 310 CMR 10.36(4)(d). Additionally, we advocate extending this exemption to encompass all Water-Dependent Uses, particularly marine industrial activities such as vessel servicing. Excluding Designated Port Areas disproportionately affects marine enterprises statewide, warranting equitable treatment under the regulatory framework.

**Proposed Regulatory Constraints:** The regulatory prescriptions delineated in section 310 CMR 10.36 portend dire implications for the recreational marine industry statewide, imposing severe constraints on new development within V-zones essential for marinas and boatyards. The discretionary nature of approvals and absence of specified standards exacerbate capital availability concerns, deterring lenders from financing projects lacking assured compliance.

4. **Reconstruction and Adaptation Provisions:** The limitation precluding reconstruction or redevelopment, unless confined to identical footprints and elevated, proves excessively restrictive and impracticable for recreational marine enterprises. A regulatory focus on facilitating climate change adaptation warrants a more flexible approach accommodating viable adaptations beyond identical footprints.

In summary, our principal apprehensions encompass:

1. The paucity of expert non-governmental representation in the regulatory drafting process, particularly from technical advisors immersed in geographic locales subject to the revised regulations. We advocate for the inclusion and solicitation of input from expert marine engineers, architects, contractors, and water-dependent businesses to ensure regulatory efficacy.
2. Advocating for a paradigm shift from prohibition to requirement, mandating building code and technology certifications from licensed engineers to foster adaptive, sustainable building practices.
3. Advocating for the allowance of reconstruction and adaptation on altered footprints, transcending rigid adherence to identical footprints to promote pragmatic climate change adaptation strategies.
4. Advocating for explicit delineation of permitted water-dependent uses, mitigating ambiguity, and vesting regulatory decision-making authority with designated bodies to enhance regulatory predictability and transparency.
5. Advocating for the explicit preservation of pre-existing water-dependent facilities via Chapter 91 license renewals, contingent upon compelling evidence of adequate consideration of sea level rise and climate change. Furthermore, advocating for phased capital investment in requisite infrastructure projects, diverging from concurrent expenditure mandates upon license renewal.

6. Advocating for the extension of the exemption for marine industrial uses in Designated Port Areas to encompass all Water-Dependent Uses, mitigating regulatory disparities and safeguarding the viability of recreational boating enterprises statewide.

In conclusion, we extend our sincere appreciation for affording us the opportunity to articulate our reservations concerning the proposed regulations. We trust that our commentary elucidates the adverse implications these regulations may exert on the Massachusetts recreational marine economy. While we commend the Department's commitment to coastal preservation, we implore caution to ensure that such endeavors do not imperil the very enterprises that constitute the essence of Massachusetts' coastal identity. Should any inquiries arise, please do not hesitate to contact Chad Tokowicz, Government Relations Manager for the Marine Retailers Association of the Americas, at [Chad@mraa.com](mailto:Chad@mraa.com) or (978) 569 5127.

Sincerely,

Jesse McArdell  
State Policy & Engagement Manager Midwest  
National Marine Manufacturers Association

Chad Tokowicz  
Government Relations Manager  
Marine Retailers Association of the Americas

Eric Kretsch  
Legislative, Outreach, and Clean Marina Manager  
Association of Marina Industries



Lisa Rhodes  
Attn: Wetlands-401 Resilience Comments  
Mass DEP – BWR  
100 Cambridge Street, Suite 900  
Boston, MA 02114  
Via email: [dep.wetlands@mass.gov](mailto:dep.wetlands@mass.gov)

April 30, 2024

Dear Ms. Rhodes,

Thank you for the opportunity to comment on the proposed update to wetlands protection regulations (310 CMR 10.00). Although individual municipalities and organizations will provide more comprehensive comments, this letter represents general agreement across multiple communities located in the Mystic River Watershed and participating in the [Resilient Mystic Collaborative](#).

Having participated in multiple in-person and virtual meetings with you and your colleagues, we recognize the progress you have made over current regulations. For example, these updates:

- Update rainfall data from the 1960s to include current extreme storms (NOAA14+ data);
- Establish performance standards for coastal areas, including banning new structures in velocity zones;
- Provide an opportunity for researchers to develop effective coastal wetland resilience strategies;
- Align TMDL and equivalent surface water standards with EPA regulations by eliminating the “maximum extent possible” ambiguity.

As Mass DEP staff said during public meetings on these proposed regulations, they need to be considered the “1.0” version of regulatory updates, due to the pressing and accelerating challenges of extreme precipitation, sea level rise, and coastal storms. **We strongly encourage you to finalize these regulations as quickly as possible, and immediately start on the 2.0 version.** Our remaining comments relate to improvements to these proposed regulations that should be made as quickly as possible. We would be glad to serve on any advisory committee for the 2.0 regulations.

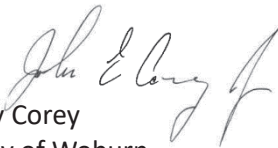
Critical improvements include the following:

- Projected rainfall and coastal flood data (sea level and coastal storms) based on high quality downscaled global climate models need to replace empirical data. With extreme weather events increasingly diverging from historical data, regulations must be pegged to the external conditions expected by the end of a project lifespan, not its beginning.
- This is especially important for the lands subject to coastal storm flowage. These regulations need to incorporate climate projections for both sea level rise and coastal storms. We are lucky to have the Massachusetts Coast Flood Risk Model available for the entire coastline. This hydrodynamic model not only predicts current coastal flood risks better than the FEMA maps, but it incorporates future coastal flood probabilities to help communities and individuals avoid harm. Updated regulations need to incorporate these projections to help people understand more accurately their increasing risks over time.

- Incorporating regional planning into regulatory actions. Mass DEP regulatory actions focus on parcel-by-parcel projects without the benefit of regional planning. Updated regulations need to incorporate the data and strategies of the Resilient Mass Plan and the emerging Resilient Coasts program such that individual projects reflect broader policies and priorities.
- Updating wetlands regulations to encourage construction of stormwater wetlands with upstream BMPs. With flash flooding/flash droughts and winter rains becoming the norm, we need to be able to create and expand existing wetlands fragments to capture and hold more filtered stormwater in locations where existing small wetlands are not able to handle all runoff from existing development. Current regulations make it very difficult to permit and construct such natural retrofit projects.
- Accelerating guidance on coastal resilience projects. Much of coastal Massachusetts was developed by filling coastal wetlands, and as a result is low-lying and highly flood prone. Updated regulations need to identify 1) which resource areas need restoration and additional intervention (e.g., saltmarsh migration pathways) and 2) which developed areas have little to no residual ecological value and can be altered to protect settled cities and towns from coastal flooding.
- Currently, multiple coastal flood management strategies have been designed (including with nature-based solutions) to protect urban neighborhoods from chronic King Tide and storm flooding but are not currently able to be permitted. We would love to work with Mass DEP to develop one or more well-designed, well-monitored pilot projects that would help work out the legal framework/mechanics for an updated regulatory pathway for such projects to be implemented more quickly and without unintended negative consequences.

Again, thank you for your work and for your commitment to Massachusetts and our natural and human communities. We look forward to working with you as we all seek to meet the challenge of surviving and thriving in a rapidly changing climate.

Sincerely,



Jay Corey  
City of Woburn



Emily Sullivan  
City of Somerville



Ken Pruitt  
Town of Winchester



Vonnie Reis  
City of Melrose



Maria Luise  
City of Malden

**From:** [Tamara Small](#)  
**To:** [Heiple, Bonnie \(DEP\)](#)  
**Cc:** [Anastasia Daou](#); [Augustus, Ed \(EOHLC\)](#); [Shupin, Eric \(EOHLC\)](#); [Ferrarese, Brian \(DEP\)](#); [DEP Wetlands \(DEP\)](#)  
**Subject:** Stormwater and LSCSF Comments from NAIOP  
**Date:** Tuesday, April 30, 2024 4:18:02 PM  
**Attachments:** [FINAL - NAIOP Cover Letter Wetlands Regulations \(April 30 2024\).pdf](#)  
[NAIOP Comments Regarding Proposed Updates to Stormwater Handbook - 2024.pdf](#)  
[FINAL - NAIOP Redline 310 CMR 10 WETLANDS \(LSCSF AND STORMWATER\).pdf](#)

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**CAUTION:** This email originated from a sender outside of the Commonwealth of Massachusetts mail system. Do not click on links or open attachments unless you recognize the sender and know the content is safe.

Dear Commissioner Heiple,

Attached, please find:

- a cover letter from NAIOP Massachusetts, The Commercial Real Estate Development Association, overviewing our comments on the proposed changes to 310 CMR 10.00
- a document listing out our comments regarding proposed changes to the Stormwater Handbook; and
- a redline of the proposed regulations, with comments and suggested revisions.

As you'll see in the attachments, NAIOP received an unprecedented number of comments relating to the proposed changes for Stormwater and Land Subject to Coastal Storm Flowage. Given that many NAIOP members have been involved with working groups and advisory groups related to these efforts for decades, and NAIOP's membership represents professionals who have been in the field for decades, NAIOP is concerned that we heard unanimously from experts that these regulations do not advance the goals of MassDEP, and in many cases are completely impracticable. The volume of substantive comments we received is unlike anything we have experienced in our decades of submitting comments to MassDEP. It is therefore very clear that these proposed changes are not in any way ready for promulgation.

NAIOP urges MassDEP to engage in a thorough review of all comments received on these regulations and review all comments submitted as a result of past meetings of relevant advisory groups before advancing a new draft for public comment. This will ensure that the enormous amount of time and effort that went into public review from multiple organizations and individuals over many years is properly responded to and considered.

NAIOP Massachusetts represents the interests of companies involved with the development, ownership, management, and financing of commercial properties. NAIOP has over 1,800 members who are involved with office, lab, research & development, industrial, mixed use, multifamily, retail and institutional space.

If you have any questions or would like to meet with our members to discuss these comments further, please do not hesitate to reach out.

Best,  
Tamara

**Tamara Small** (she/her/hers)  
CEO | **NAIOP Massachusetts**  
**The Commercial Real Estate Development Association**  
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(781) 453-6900 x5 | [small@naiopma.org](mailto:small@naiopma.org)

**Not yet a NAIOP member? [Join today](#)**

**Connect with [NAIOP Massachusetts](#): [Twitter](#) | [LinkedIn](#) | [YouTube](#)**



April 30, 2024

Bonnie Heiple, Commissioner  
Massachusetts Department of Environmental Protection  
Attn: Wetlands-401 Resilience Comments  
100 Cambridge Street, Suite 900  
Boston, MA 02114

**RE: Comments on the proposed amendments to 310 CMR 10.00: Wetlands Protection Act published in December 2023**

Dear Commissioner Heiple:

NAIOP Massachusetts, The Commercial Real Estate Development Association, is pleased to provide the attached comments on the Massachusetts Department of Environmental Protection's (the "Department") proposed changes to 310 CMR 10.00: Wetlands Protection Act. NAIOP is also grateful to the Department for extending the public comment period to ensure that the public had the opportunity for a longer review of the proposed regulations.

NAIOP's members represent decades of experience working throughout the Commonwealth on projects subject to these regulations, including working through Conservation Commission review, serving as local Commission members, and serving as Conservation Agents. NAIOP's members are committed to working with public and private stakeholders to design, permit and build projects in a way that protects the environmentally sensitive areas that provide many ecological benefits. Several of our members have served as subject matter experts in the Department's LSCSF Advisory Group and Stormwater Advisory Group.

NAIOP recognizes the effort that went into these proposed regulations over many years, and appreciates the way in which the Department has solicited, heard, and begun to incorporate stakeholder feedback.

That said, while NAIOP supports the Department's goals in theory, in practice, we have serious concerns relative to the impacts the proposed amendments will have on development in the Commonwealth, and in particular the ability to meet the state's housing production goals. The potential consequences are substantial as strict compliance with the revised regulations will be challenging or even impossible based on existing site conditions, particularly for urban projects. Such an outcome is antithesis to the Commonwealth's goals relating to housing, urban revitalization, and encouraging redevelopment of already disturbed sites.

Furthermore, the proposed stormwater requirements will significantly increase design and construction costs, which could result in projects not moving forward. For example, the new testing requirements relating to infiltration analysis are well beyond what is needed to inform sound design.

Many of our members have raised serious concerns regarding the ability of the existing workforce required to meet the new standards. There is concern that there are simply not enough professionals in the field today to assist projects in meeting the proposed new requirements. As noted below, NAIOP believes that working through these revisions should not be rushed and the Department should not promulgate the regulations until it has vetted the concerns of the professionals and unpaid local regulators who are being asked to implement the changes.

Finally, NAIOP is also concerned about the variety of effective dates proposed across the regulatory package, and strongly believes that the currently proposed changes should have the same effective date, six months after the date of promulgation (with caveats for projects undergoing the MEPA process). This level of consistency will help create a more predictable regulatory process.

NAIOP respectfully offers the below comments and the attached redline for consideration and incorporation into the proposed regulations ahead of final promulgation.

## **I. General Comments – Land Subject to Coastal Storm Flowage**

One of NAIOP's main concerns is that, as currently written, the regulations will hinder rather than improve Conservation Commissions' ability to permit climate resilience measures. While one of the Department's stated objectives is to "promote coastal resiliency against worsening impacts of storms, flooding, and sea level rise," the proposed regulations effectively prevent efforts to do so. In many cases, the most practicable path to protecting the shoreline and adjacent upland areas has been to place fill within the floodplain to eliminate coastal flooding (*i.e.*, eliminate LSCSF), as is currently proposed and practiced in many coastal municipalities. Conversely, the regulations require that efforts to promote resiliency and effective flood control simultaneously preserve floodplain functions (*i.e.*, continue to allow areas to flood). The Department must be crystal clear in its prioritization of climate adaptation efforts that are designed to protect public and private property, and human health and safety.

NAIOP appreciates that the Department's draft regulations recognize that LSCSF functions differently in previously altered and unaltered areas. NAIOP's comments suggest ways to further clarify which sections of the regulations are relevant to new development and redevelopment activities. NAIOP has also identified instances of unclear or conflicting terminology related to developed areas (including "Previously Developed," "developed," and "currently developed,") and development (including "Redevelopment," "new development," "new building," "new construction," "newly reconstructed building" and "reconstruction"). These and other definitions should be consistent across all of the related regulations. NAIOP would appreciate the Department's careful consideration and further refinement of these and other terms.

Further, NAIOP is concerned that the regulations will negatively impact the production of new housing and economic development by 1) requiring extensive analyses that volunteer Conservation Commissions are not necessarily equipped to review, thereby lengthening review processes, and 2) requiring unnecessarily complex, expensive project designs. This is especially a concern within areas of Moderate Wave Action (MoWA). As ascertained during a recent BBRs process to review potential changes to the Massachusetts State

Building Code for buildings in the MoWA, there is no reliable data that indicates that moderate wave action poses a significant risk to structures that are built under the Massachusetts Building Code. Requiring that projects have zero impact on velocity or elevation of flood waters and that they do not cause any reflection or refraction is both an impossible standard to meet and not necessary or appropriate. In our experience all structures in the flood plain, even those on piles, could have some effect on flood waters. This standard appears to preclude placing any structures within LSCSF. Our comments address these concerns and suggest that the “zero impact” standard be replaced with a “no significant impact” standard.

## **II. Additional Questions and specific concerns, Land Subject to Coastal Storm Flowage**

- i. NAIOP believes that the provisions for previously developed area/redevelopment activities are unnecessarily restrictive and if implemented as written, would jeopardize the tremendous economic activity that has been encouraged in urban harbors throughout the Commonwealth.
- ii. NAIOP hopes that the Department can clarify why the Appendices were stricken from the Table of Contents. While this is a minor comment, NAIOP members have found it useful to have the list of revisions to a set of Regulations included and would recommend a relocation to the end of the document.
- iii. All references to the Stormwater Handbook are for 2023. NAIOP assumes that will be updated to the year the Regulations are promulgated. Similarly, the regulations reference the Massachusetts Forestry Best Management Practices Manual, dated 2013. A concern with removing the date and using current/effective is the public comment can be removed if the Department were to institute more stringent regulations through future revisions of the Manual; however, it also does not allow flexibility if the Manual is updated.
- iv. Website addresses change frequently as the tools are revised. There are several of these in the regulations. NAIOP recommends that instead of listing the web address the language be revised to reach *“The (tool, user guide, standards, etc.) can be found at the following website (or the most current version thereof).”*
- v. NAIOP would appreciate clarification of whether or not the inclusion of solar arrays in the Impervious Surfaces definition changes how the Department is currently reviewing solar projects.

## **III. Suggested New Definitions**

In addition to the comments within the redline, NAIOP respectfully urges the Department to consider adopting the following definitions:

- *“Previously Altered Area” (to replace all instances of “Previously Developed Area”) means an area that is not in a natural, previously undisturbed state as a result of human activity including any change in grade from naturally occurring grade or placement of structures. Previously Altered Areas for the purposes of LSCSF may contain features such as pavement or other impervious surfaces, structures or portions of structures, or construction debris, or may have been filled or excavated. Areas historically disturbed by*



*human activities that have reverted to a natural state so as to be indistinguishable from undisturbed natural areas are not considered Previously Altered Areas.”*

- *“Shoreline Protection Project” means projects that are intended to prevent or reduce current or future coastal flooding. Such activities may include construction of seawalls, bulkheads, revetments, levees and any associated fill, as well as elements of living shorelines such as vegetation, edging and sills. (Note: this term is only used once, at 10.24(1)(b)). Alternatively, it could be struck from that section).*

#### **IV. Comments Specific to the Stormwater Regulations**

The bulk of NAIOP’s comments regarding the regulations can be found in the accompanying redline. NAIOP suggests the changes presented in the redline as a way to strengthen understanding, clarity, and predictability. Please see the below table accompanying our comments for CMR 10.05(6)(k)(3).

Not all soils are capable of recharging one inch of rainfall. The Standard should be updated to reflect the variability of soils. Some sands may be capable of recharging more than one-inch while sandy loams or loam will recharge much less. NAIOP suggests revising the standard to provide a range in recharge requirements that targets more recharge in soils capable of accepting recharge (Sand) while maintaining Maximum Extent Practicable approach for soils less conducive to recharge (Sandy-Loam/Loam)

HSG	Minimum Recharge Requirement (in)	Soil Textural Classification	Saturated Conductivity (in/hr)	Targeted Recharge Requirement (in)
A	1.0	Sand	8.27	>1.0
B	0.8	Loamy Sand	2.41	0.80
C	0.25	Sandy Loam	1.01	MEP
		Loam	0.52	MEP
		Silt Loam	0.27	MEP
		Sandy Clay Loam	0.17	MEP
D	0	Clay Loam	0.09	0

#### **V. Comments Related to Stormwater Handbook**

Please see attachment “NAIOP Comments Regarding Proposed Updates to Stormwater Handbook, 2024” for the entirety of NAIOP’s comments relating to the Stormwater Handbook.

#### **VI. Additional Comments on the Regulations**

While the below comment is not related to changes proposed in the regulations, NAIOP wanted to provide the below comment on coastal banks for consideration in this regulatory package.


- i. *Definition. Coastal Bank means the seaward face or side of any elevated landform, other than a coastal dune, which lies at the landward edge of a coastal beach, land subject to tidal action, or other wetland.*

This definition should be clarified to exclude filled tidelands. In the case of filled tidelands, what has often been regulated as a coastal bank is man-made land that was created by constructing Coastal Engineering Structures (CES) and then placing fill “landward” of those structures. The CESs in these cases were not installed to protect any existing landforms, but rather to form new land. As such, although the CES is a vertical buffer to storm waters, the land behind it has no “natural resistance...to erosion caused by wind and rain runoff” which is identified as a vertical buffer’s critical characteristic in 10.30(1): “When the issuing authority determines that a coastal bank is significant to storm damage prevention or flood control because it is a vertical buffer to storm waters, the stability of the bank, *i.e.*, *the natural resistance of the bank to erosion caused by wind and rain runoff*, is critical to the protection of that interest(s),” and further related to the only relevant performance standard at 10.30(6): “Any project on such a coastal bank or within 100 feet landward of the top of such coastal bank shall have no adverse effects on the stability of the coastal bank.” The CES that is providing the vertical buffer to storm waters is not a natural resource and should not be regulated as one.

NAIOP urges MassDEP to engage in a thorough review of all comments received on these regulations and review all comments submitted as a result of past meetings of relevant advisory groups before advancing a new draft for public comment. This will ensure that the enormous amount of time and effort that went into public review from multiple organizations and individuals over many years is properly responded to and considered.

NAIOP is grateful for the opportunity to comment on behalf of our more than 1800 members involved with the development, ownership, management, and financing of office, lab, industrial, mixed use, multifamily, retail, and institutional space throughout the Commonwealth. Please contact me if you have any questions.

Sincerely,



Tamara C. Small  
Chief Executive Officer  
NAIOP Massachusetts, The Commercial Real Estate Development Association

*Enclosed:*

*NAIOP Comments Regarding Proposed Updates to Stormwater Handbook  
FINAL NAIOP Redline 310CMR 10 Wetlands (LSCSF AND STORMWATER)*

CC:

Secretary of Housing and Livable Communities, Ed Augustus

*\*Please note, all non-italicized font represents NAIOP's comments on the draft Stormwater Handbook.*

## **NAIOP Comments Regarding the Draft Updates to the Stormwater Management Handbook**

### *Chapter 2: The Massachusetts Stormwater Standards*

Page 2-3 and 2-4:

#### **What Constitutes an Existing Discharge?**

*The following are considered to be existing stormwater discharges provided that any relocated or combined outlet points are not located in an Area Subject to Protection under M.G.L. c. 131, § 40, other than bordering land subject to flooding, isolated land subject to flooding, land subject to coastal storm flowage, or riverfront area, and provided the annualized pollutant load, annual volume of runoff; and the peak runoff rate for the 2-, 10- and 100-year 24-hour storms is equivalent to or less than existing conditions:*

- Existing discharge points created prior to **January 1, 2008**, where no work is proposed, and where no additional stormwater runoff is directed to it...

#### **What Constitutes a New Discharge?**

*A discharge is new when it meets any of the criteria below.*

- A new point source, created after **January 1, 2008**, discharges to a Wetland Resource Area, such as any discernible, confined, and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, or vessel or other floating craft from which pollutants are or may be discharged;
- NAIOP hopes that MassDEP can clarify why January 1, 2008 is being used as the benchmark, and how MassDEP plans to address discharges that were approved through an Order of Conditions between January 1, 2008 and the adoption of the proposed regulations. **Instead, NAIOP suggests aligning the date with the promulgation of the regulations.**

Page 2-5:

#### **Calculating Peak Discharge**

- The use of the pre-existing is not consistent with the language in Standard 2 and may cause some confusion. To be consistent with the standard, NAIOP recommends that the term should be pre-development where development is defined as the proposed project. To provide further clarity, NAIOP suggests using Existing Conditions and Proposed Conditions.
- WinTR20 and WinTR55 are specific models. Is the intent to exclude use of other models such as SWMM that use methodologies consistent with standard engineering practice?

**NAIOP suggests not restricting analysis models to WinTR20 and WinTR55 and allow Issuing Authority to approve alternate methodologies.**

Page 2-8:

**What is the Required Recharge Volume?**

*The required Recharge Volume (Rv) is the stormwater volume that must be infiltrated – it is calculated as the depth of runoff multiplied by **the total post-construction impervious area on site**.*

- Despite the requirement in the standard is that the *annual recharge from the post-development site shall approximate the annual recharge from the pre-development conditions*, in the Handbook, the required recharge is based on the total post-construction impervious area on site. NAIOP believes that the recharge requirement should be based on net new impervious.
- For consistency the terms pre-development and post-development should be used.

Page 2-18:

- NAIOP recommends that Table 2-18 be updated to include **Enhanced Bioretention with Internal Storage Reservoir**.

Page 2-43:

**Certificate of Compliance Inspections**

*Prior to issuing a Certificate of Compliance, the Conservation Commission or MassDEP should inspect the site to determine whether the Stormwater SCMs are operating as designed so that the stormwater at the site may be managed in accordance with the Stormwater Management Standards. In conducting the inspection, the Conservation Commission or MassDEP should look for indications that the stormwater SCMs are not functioning as designed. Evidence of problems with stormwater SCMs may include sediment plumes at outfalls, excessive sand and debris in catch basins, oil sheens, stressed vegetation, accumulated litter, and/or failure of the SCM to drain after 72 hours. No Certificate of Compliance should be issued unless and until the stormwater SCMs are functioning in accordance with the Final Order of Conditions and the Stormwater Management Standards.*

- NAIOP suggests requiring that the Engineer of Record provide an Engineer's Certificate certifying that the Stormwater Management System is functioning as designed.

Page 2-47:

- Table 2-6 Suitability of SCMs to Treat TMDL Pollutants indicates that Bioretention Area (Filtering) and Sand/Organic Filter are not suitable to treat Total Phosphorous and Total Nitrogen. NAIOP is curious why these SCMs are not suitable. The EPA curves indicate that these systems provide treatment for both pollutants. NAIOP suggests including these

SCMs as suitable for treatment.

- NAIOP suggests adding Enhanced Bioretention with Internal Storage Reservoir to Table 2-6 Structural Treatment SCMs as suitable to treat Total Phosphorous and Total Nitrogen.

Page 2-50

- NAIOP suggests adding Enhanced Bioretention with Internal Storage Reservoir to Table 2-7 Structural Treatment SCMs.

Page 2-51:

- *Table 2-7 Standard 2: Does SCM Attenuate Peak Flows.* NAIOP wonders why Dry Wells, Infiltration Trenches and Cisterns are considered incapable of attenuating peak flow. Dry well systems, infiltration trenches and cisterns can be designed to provide peak flow attenuation. NAIOP strongly suggests that MassDEP not limit the potential use of these SCMs.

Page 2-53:

### **2.5 Horizontal Setbacks and Vertical Separation Distance Requirements**

*Stormwater Control Measures (SCMs) and any component of a Stormwater Management System must be setback from wetlands and building foundations and other features in accordance with 310 CMR 10.05(6)(q). Structural SCMs must also include vertical separation between certain features, such as the depth to seasonally high groundwater. Horizontal and vertical separation distances listed by Table 2-8 are presumed to meet the minimum setback requirements. **Where there is a conflict between horizontal setbacks and vertical separation distances listed in Table 2-8 versus other sections of the Stormwater Handbook, the more restrictive setback shall apply.** The following miscellaneous requirements also apply:*

- *Installation inside or under buildings. Other than green roofs, rooftop detention, roof gutters and down spouts, SCMs must not be installed inside or under buildings. Introducing stormwater under a building, such as through subsurface chambers, are difficult to maintain and could cause foundation failure.*
- *Parking garages. Drainage from open air parking garages that may include multiple decks is considered wastewater and must meet the Massachusetts State Plumbing Code regulations. **As such, drainage from parking garages must not be directed to a Wetland Resource Area or storm drainage system.** Significant runoff is not generated in parking garages other than the roof top deck. When a parking garage is subject to review pursuant to the Wetlands Protection Act or 401 regulations, both the Wetlands/401 regulations and State Plumbing Code provisions must be met. Underground floor drains are not allowed in parking garages pursuant to the Underground Injection Control provisions, 310 CMR 27.00.*
- Please refer to earlier comments regarding the Minimum Setback Table from 10.05(6) q.
- If there is conflict regarding horizontal/vertical setbacks within the Stormwater Handbook this section states that the more restrictive setback shall apply. If the setbacks are codified in Section 10.05(6)q of the regulations the Minimum Setback Table should govern and should supersede any setbacks within the Stormwater Handbook.
- In urban projects SMSs are often within a building or immediately adjacent. These elements are carefully designed by the project team and are a key contributor to how projects can achieve compliance with local and/or state stormwater regulations. Requiring them to be 10-feet outside the building envelope would be a hardship, especially in dense/urban areas and for redevelopment projects. Infiltration can be performed within 10-feet of a building provided waterproofing is applied to the below grade spaces that may be impacted by the infiltration system.

- Section 10.17 Storm Drains (11) Roof Drains, (b) Roof Drain Assemblies 1. General Use of the Massachusetts Uniform State Plumbing code states that *Roof drain assemblies that serve vehicle parking decks or that serve the outside top level of open parking garages shall convey storm discharge to an independent gas, oil, and sand interceptor/separator in accordance with 248 CMR 10.09(1)(b) and **shall discharge to the storm drainage system** or other approved method of disposal.*
- NAIOP believes that the Handbook should be updated to reflect the requirements of the plumbing code to avoid potential conflicts.

Page 2-54:

**Table 2-8 Summary of Applicable Horizontal and Vertical Separation Distances by SCM**

- Please refer to earlier comments regarding the Minimum Setback Table from 10.05(6) q.
- This table includes setbacks not included in the Minimum Setback Table from 10.05(6) q. Rather than providing setback distances, NAIOP believes that the Stormwater Handbook should include performance standards (demonstrate that recharge will not breakout, impact abutting structures, etc...). This flexibility allows the opportunity for the applicant to demonstrate that specific site conditions and constraints paired with prudent engineering design can yield a design that provides sufficient protection of the resource area.
- Table 2-8 Footnote 3 requires that when drainage is from a Land Use with Higher Potential Pollutant Load (LUHPPL), the bottom of a gravel wetland is to be at least 2-feet above SHGW. Gravel wetlands are typically designed with a low permeability layer below the gravel component making separation to groundwater unnecessary. NAIOP suggests that the reference to gravel wetlands in Footnote 3 be deleted or modified as follows: Gravel wetlands can be built above or below SHGW, but when drainage is from a LUHPPL, design the bottom of the gravel wetland to be at least 2-feet above SHGW **if a low permeability liner is not provided.**
- Table 2-8 Footnote 6 Maintenance Access will expand project impacts and do not appear to align with the approach of ESSD/LID and nature-based solutions. Reasonable access for maintenance should be required. However, if equipment is required to maintain a SCM then temporary access can be established and restored.
- Table 2-8 Footnote 8 prohibits installation of Structural Stormwater Management Systems (e.g., pipes, catch basins) and structural SCMs from being installed in groundwater. This requirement is overly restrictive as stormwater systems can be designed to be watertight. NAIOP suggests changing the footnote to require watertight construction for Structural Stormwater Management Systems and structural SCMs located within seasonal high groundwater.



## Chapter 6: Documenting Compliance with the Massachusetts Stormwater Standards

### 6.2.2 Standard 2: Peak Rate Attenuation

Page 6-18 and 6-19

#### Curve Numbers for Green Roofs and Porous Pavements

- NAIOP requests that MassDEP provide references for the curve numbers provided for Green Roofs and Porous Pavements and to allow other documented curve numbers if available.

#### Incorporating Exfiltration into Peak Rate Calculations

- The Hydrology Handbook for Conservation Commissions may be a helpful guide for conservation commissions to understand the basics of hydrology and stormwater design but **NAIOP suggests referencing the NRCS National Engineering Handbook Part 630 for more detailed/technical guidance for final design.**
- Typically, porous pavement without an underdrain can be modeled as an infiltration SCM. In this instance a CN of 98 is used and runoff from the porous pavement is captured/retained in the reservoir stone and infiltrated into the underlying soils. In some instances, an underdrain may be installed in the upper level of the reservoir to allow for overflow if necessary. **NAIOP suggests that flexibility be allowed for the design/analysis of porous pavement otherwise it may limit the use of porous pavement in development projects.**
- Step 3 Exfiltration Rate states *The NRCS Soil Survey only represents the top 60 inches of the soil.* Per the NRCS National Engineering Handbook Chapter 7 Hydrologic Soils Groups the Hydrologic Soil Groups (HSG) is determined by the saturated hydraulic conductivity within 40 inches of the surface. NAIOP suggests that the Handbook should be updated to reflect the NEH.
- Step 3 Exfiltration Rates, also tries to correlate the infiltration layer with an HSG. HSGs are intended to be used to determine the Curve Number based on cover type and should not be used to define the saturated hydraulic conductivity for the infiltration layer. NAIOP recommends that Soil Textural Classification with corresponding Rawls Rates or in-situ testing should be used to determine the saturated hydraulic conductivity for the infiltration layer.
- Step 3 Exfiltration Rates references Table 6-4 Design Saturated Hydraulic Conductivity based on Hydrologic Soil Group for the Static Method. This table is adapted from Table 7-1 of the NEH which is intended to provide the range of saturated hydraulic conductivity to establish the HSG. This table should not be used to establish the saturated hydraulic conductivity of the infiltration layer. NAIOP urges that Soil Textural Classification with corresponding Rawls Rates and/or in-situ testing should be used to determine the saturated hydraulic conductivity for the infiltration layer.
- Based on the methodology outlined in Step 3 Exfiltration Rates, an in-situ test will be required to determine the saturated hydraulic conductivity of the infiltration layer. This

number will then be compared to Table 6-4 and the nearest rate below the field rate will be used for the design. Step 3 explicitly states that *Field measured in-situ saturated hydraulic conductivity values shall not be used for peak rate computations*. NAIOP does not understand why the cost and effort to complete the in-situ testing is required and then the project proponent is not allowed to use the results in the analysis. If the in-situ testing demonstrates a saturated hydraulic conductivity of 20 inches per hour based on this methodology the design saturated hydraulic conductivity will be 1.42 inches per hour. This is a significant reduction and will result in infiltration systems being significantly oversized. NAIOP believes that the in-situ testing should be allowed to be used for peak rate computations.

- This methodology is a significant change from the current practice. NAIOP would appreciate MassDEP's clarification regarding whether or not these changes were necessary to align with the MS4.

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### **6.2.3 Standard 3: Stormwater Recharge**

- Please refer to earlier comments for Standard 2 regarding the minimum saturated hydraulic conductivity.
- NAIOP questions whether a slope stability analysis is required in all situations where an infiltration system is located within 50 feet of a 3:1 slope and would like MassDEP to clarify situations where the system is downgradient of the slope. Will there be standards or guidance for the slope stability analysis?

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### **Step 3: Drawdown within 72 hours**

- NAIOP does not understand why project proponents must demonstrate that the 100-year storm recharges within 72 hours. The likelihood of two 100-year storm events occurring within 72 hours is very remote and NAIOP believes that using this as a design standard is unreasonable. The 100-year storm is a significant event, and it would not be expected that water within a basin would draw down within that time period. The 10-year design storm should instead be used to demonstrate drawdown within 72 hours.
- NAIOP recommends that in-situ saturated hydraulic conductivity be allowed for the Static Method. As mentioned previously, why expend the cost and effort to complete the in-situ testing and not allow the results to be used in the analysis? NAIOP again suggests that the in-situ testing should be allowed to be used for the drawdown computations.

### **Mounding Analysis**

- The purpose of the mounding analysis should be stated more clearly and be consistent with the regulations and the Handbook. Requiring the entire volume of the 100-year storm be recharged within 72 hours is not reasonable. NAIOP suggests that the mounding analysis demonstrate that for the 10-year design storm the infiltration SCM is dewatered within 72 hours and that recharge waters do not break out at grade or within a regulated resource area.
- NAIOP recommends that additional guidance should be provided within the Handbook relative to the mounding analysis.
- Why are infiltration chambers considered linear features? Typically, they are designed in square or rectangular configurations. MODFLOW is a specialized groundwater modeling program and will often require a geotechnical engineer or geohydrologist to complete the mounding analysis. NAIOP suggests removing infiltration chambers with square or rectangular configurations from the MODFLOW requirement.
- NAIOP also suggests the following revisions to the following paragraph:

**Groundwater Modeling** ~~Mounding analysis~~ is also needed when recharge is proposed at or adjacent to a site classified as contaminated, was capped in place, or has an Activity and Use Limitation (AUL) that precludes inducing runoff to the groundwater, pursuant to MGL Chapter 21E and the Massachusetts Contingency Plan 310 CMR 40.0000; or is a solid waste landfill pursuant to 310 CMR 19.000; or groundwater from the recharge location flows directly toward a solid waste landfill or 21E site. In this case, the ~~mounding analysis~~ **groundwater model** must determine **the direction of groundwater flow and** whether infiltration of the Required Recharge Volume will leach soil contaminants or impact ~~cause or contribute~~ to groundwater contamination.

### **6.3 Soil Evaluation Procedures**

#### **6.3.1 Soil Testing Methods**

##### **Testing for Saturated Hydraulic Conductivity**

- NRCS Soil Textural Classification and corresponding Rawls Rates are not included as a method to determine saturated hydraulic conductivity. NAIOP is curious as to why this methodology been removed. The Soil Textural Classification and corresponding Rawls rates are an effective engineering tool that allows for straightforward determination of saturated hydraulic conductivity without the need for specialized testing equipment. In addition, the EPA Pollutant Removal Curves for infiltration practices are based on the Rawls Rate of the infiltrating layer. NAIOP suggests including NRCS Soil Textural Classification and corresponding Rawls Rates as a method for determining Saturated Hydraulic Conductivity and to better align with the MS4 methodologies.

- It is critical to allow flexibility to use additional test methodologies that may be available or developed in the future. NAIOP suggests adding the following additional bullet to the list of acceptable tests:
  - Or other methodology approved by the issuing authority. A Title 5 percolation test, as defined at 310 CMR 15.002, is not an acceptable Saturated Hydraulic Conductivity Test for purposes of stormwater management (310 CMR 10.05(6)(k)-(q)).

### **Footnote 93**

*A Competent Soils Professional is an individual with demonstrated expertise in soil science, limited to the following: a Massachusetts Registered Professional Engineer in civil or environmental engineering, Engineer in Training (EIT certificate) with a concentration in civil or environmental engineering, or Bachelor of Arts or Sciences degree or more advanced degree in Soil Science, Geology, or Groundwater Hydrology from an accredited college or university, that for purposes of stormwater management, assesses the Seasonal High Groundwater Elevation, soil texture, Saturated Hydraulic Conductivity Test, and hydrologic soil group. A soil evaluator pursuant to 310 CMR 15.017 and 15.018 is not a Competent Soil Evaluator.*

- NAIOP does not understand why evaluators are no longer considered Qualified Soils Professionals. During office hours, MassDEP representatives stated that Soil Evaluators are explicitly excluded in the current handbook, but that is not the case. *A Competent Soils Professional is an individual with demonstrated expertise in soil science, including, but not limited to, a Massachusetts Registered Professional Engineer, Engineer in Training (EIT certificate) with a concentration in civil, sanitary or environmental engineering, or Bachelor of Arts or Sciences degree or more advanced degree in Soil Science, Geology, or Groundwater Hydrology from an accredited college or university.*
- Based on those requirements it is reasonable to conclude that soil evaluators meet the standard of competent soils professional. The eligibility requirements for soil evaluators in 310 CMR 15.017 generally align with the requirements of the Footnote 93. Soil Evaluators must complete training, pass an examination, and pursue continuing education credits to maintain their qualifications. Not all who classify as Qualified Soils Professionals under the proposed regulations are trained to identify redox reactions/estimated seasonal high groundwater. NAIOP suggests that the last line of Footnote 93 be deleted.

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**Using Results from Field Testing to Determine Hydraulic Soils Groups**

- Per the NRCS National Engineering Handbook Chapter 7 “Hydrologic Soils Groups”, the Hydrologic Soil Groups (HSG) is determined by the saturated hydraulic conductivity within 40 inches of the surface. HSGs are intended to be used to determine the Curve Number based on cover type and should not be used to define the saturated hydraulic conductivity for the infiltration layer.

**6.3.3 Field Verifying Soils at Specific Location Where Recharge is Proposed.**

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- Step 1 specifically states that it not acceptable to solely perform a textural analysis to determine HSG or to use the Rawls Rates to determine saturated hydraulic conductivity. Why is this the case? Have there been issues with textural classification and Rawls Rates? If so, NAIOP would appreciate if MassDEP shared such examples.
- The Soil Textural Classification and corresponding Rawls rates are an effective engineering tool that allows for straightforward determination of saturated hydraulic conductivity. In-situ testing requires specialized testing equipment and is typically conducted by a geotechnical engineer or geohydrologist. This may impact smaller projects as geotechnical engineers or geohydrologists may not typically be part of the project team and will need to be brought on to complete these tests.

**6.3.3 Field Verifying Soils at Specific Location Where Recharge is Proposed.**

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Item i.

- The qualified soils professional should determine the testing procedures as the requirements are likely to change from site to site.

Step 2. Use Results from Testing to Determine the Design Saturated Hydraulic Conductivity for Recharge Computations

- What is the basis for the Design Saturated Hydraulic Conductivity in Table 6.4? Are these changes necessary to align with the MS4? These numbers are fairly low and overly conservative. If you have a sand material with an in-situ rate of 20 in/hr you must use the 1.42 in/hr when using the static method. Why not allow the use of the in-situ rate? Why expend the effort of the in-situ testing and not allow it to be used in the design/analysis. This standard will result in oversized infiltration SCMs with no added benefit. NAIOP suggests maintaining use of soil textural classification and Rawls Rates for the static method.

## **Appendix A Structural Infiltration**

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- NAIOP does not understand why Drywells, Infiltration basins and Trenches must not be placed over fill materials, or why there is a requirement to never locate infiltration basins above existing manmade fill. Many urban areas consist of historic fills. Redevelopment sites may already have suitable fill material. If the underlying material is suitable for infiltration why impose this restriction? NAIOP suggests removing this restriction.

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## **Subsurface Infiltrators**

- Why are subsurface infiltrators considered linear structures? Most often these systems are configured as square or rectangular. Requiring MODFLOW when conducting mounding analysis for these systems is unnecessary. NAIOP believes that this guidance should be modified to allow the use of Hantush Method for subsurface infiltrator systems with square or rectangular configurations.
- The guidance states that *chambers are not allowed in the BLSF, ILSF or LSCSF as the subsurface is saturated during flooding events*. It is unclear which flood event is being referenced. Not all flood events will immediately raise groundwater elevation; impacts will vary from site to site and will also be affected by subsurface conditions. NAIOP also believes that MassDEP should clarify if this same standard applies to infiltration basins that are located 2 feet above seasonal high groundwater the same as a subsurface infiltrator.
- It does not seem reasonable to limit placement of these systems within the BLSF, ILSF or LSCSF especially for redevelopment or retrofit sites where it may not be possible to locate outside these areas and it is not possible to construct surface basins due to site constraints. It seems that the benefit of the recharge and treatment on a regular basis outweighs the potential for the system not providing recharge during the 100-year storm event. Even during a major storm event, subsurface infiltrators will provide significant benefits to treat the “first flush” of stormwater in the early portion of a storm, before flood waters rise. NAIOP suggests that this requirement be deleted.



DRAFT – SUBJECT TO REVISION

**Preface for Reviewers to the Proposed 2023 Revisions to the Wetlands Protection and  
Water Quality Certification Regulations for Stormwater Management**

The Department is proposing for public comment the following major revisions to the Stormwater Management Standards in the Wetlands Protection Act (WPA) regulations (310 CMR 10.00), the Water Quality Certification (WQC) regulations (314 CMR 9.00), and the associated Massachusetts Stormwater Handbook (Stormwater Handbook): 1) promote nature-based Environmentally Sensitive Site Design (ESSD) and Low Impact Development (LID) in project designs; 2) revise the WPA/WQC Stormwater Management Standards and Stormwater Handbook to more closely align with the EPA General Permits for Stormwater Discharges from Small Municipal Separate Storm Sewer Systems in Massachusetts (MS4 Permit); 3) replace outdated precipitation frequency estimates used for design storms with more recent and accurate precipitation estimates to reflect more current, higher precipitation associated with extreme storms; and 4) add a new standard for achievement of Total Maximum Daily Loads (TMDLs).

Updating the Massachusetts WPA/WQC regulations will allow the Commonwealth to further the eight interests of the WPA (the eight interests of the WPA are to (1) protect private or public water supply, (2) protect ground water, (3) provide flood control, (4) prevent storm damage, (5) prevent pollution, (6) protect land containing shellfish, (7) protect wildlife habitat, and (8) protect fisheries); restore and maintain the chemical, physical and biological integrity of water resources as required by the WQC regulations; improve climate resilience and protection of water quality that is afforded by wetland Resource Areas; and strengthen compliance with TMDLs. The proposed updates to the WPA/WQC Stormwater Management Standards (310 CMR 10.05(6)(k) and 314 CMR 9.06(6)(a)) pertain to new discharges, peak discharge rate, recharge, and pollutant removal for new development and Redevelopment (as defined in 310 CMR 10.04). The proposed updates will also affect other wetland Resource Area performance standards that rely on design storms such as bordering land subject to flooding. Projects subject to WPA and WQC jurisdiction require approval by local Conservation Commissions and/or MassDEP.

The joint EPA/MassDEP MS4 Permit authorizes approximately 260 municipalities in Massachusetts as well as MassDOT highways and other non-traditional MS4s (such as certain state universities and colleges), approximately 242 Department of Conservation and Recreation facilities (including certain state parks and parkways), and Department of Correction facilities (including certain state prisons), to discharge stormwater to the waters of the United States. The MS4 Permit requires compliance with the Massachusetts WQC regulations and design specifications in the Stormwater Handbook. However, the WPA/WQC regulations and the MS4 Permit's stormwater standards currently differ in some instances. This amendment will increase consistency to the extent possible as described in more detail below. In particular, the MS4 Permit's focus is on removal of pollutants including Total Suspended Solids and Total Phosphorus and discharges subject to requirements related to an approved TMDL. The WPA/WQC regulations require removal of different amounts of Total Suspended Solids, and currently do not require removal of Total Phosphorus. Although MassDEP does require



compliance with TMDLs, more emphasis is needed in this area. Municipalities that are classified as MS4s by EPA are required to adopt a local ordinance or bylaw to require compliance with the MS4 Permit's stormwater standards. Additionally, as MassDOT Highway is a regulated MS4 entity, its stormwater discharges to waters of the U.S. will be regulated through an EPA issued Transportation Separate Storm Sewer System permit.

MassDEP's stormwater standards and associated Stormwater Handbook have wide-reaching implications across the Commonwealth. For example, the standards are directly incorporated into the WPA/WQC regulations and the Handbook is frequently referenced in the regulations. Both are referenced in the MS4 Permit and they are expected to be referenced in the Transportation Separate Storm Sewer System Permit. Additionally, an Underground Injection Control registration may need to be obtained for certain subsurface stormwater infiltration wells. Also, MassDEP is proposing a new stormwater standard that will require a higher level of stormwater treatment to meet the load allocations where a TMDL has been established due to water quality impairment, and project proponents will be obligated to reduce pollutant loads to those waterbodies. Whether specific load allocations are assigned in TMDL watersheds or not, specific standards for stormwater management will assist in attaining higher water quality and increased climate resilience.

The WPA/WQC regulations and Stormwater Handbook currently require ESSD that incorporates LID to be "considered" as part of the Redevelopment design. MassDEP proposes to require that ESSD/LID design strategies be incorporated unless such practices are infeasible for both new development and Redevelopment. This is similar to EPA's requirement in its MS4 Permit. ESSD involves identifying important natural features, placing buildings and roadways in areas less sensitive to disturbance, and designing stormwater management systems that create relationships between development and natural hydrology. LID includes landscaping and design techniques to maintain the natural, pre-developed ability of a site to manage rainfall, and to capture water on site, filter it through vegetation, and let it soak into the ground. This standard is proposed to be strengthened since sites designed with nature-based solutions better handle increases in runoff and associated pollutants expected from increasing precipitation.

To better align with the MS4 Permit, MassDEP is proposing to incorporate the use of EPA Performance Removal Curves to determine pollutant removal efficiency credits. However, because some commonly used stormwater control measures do not have an EPA Performance Removal Curve, the MassDEP method currently used to award pollutant removal credits will continue to exist, parallel to the EPA curves. Where there is no established EPA Pollutant Removal Curve, the MassDEP water quality volume (*e.g.*, first 1-inch of runoff) will be used for sizing of stormwater control measures, to determine the pollutant removal credit. Further, MassDEP proposes to amend the WPA/WQC regulations to adopt the EPA MS4 Permit's numeric criteria to require removal of 90% Total Suspended Solids and 60% Total Phosphorus from the average annual pollutant loads, and no additional water quality volume would be required with certain exceptions.

The WPA/WQC regulations' Stormwater Management Standards and other standards (such as for Bordering Land Subject to Flooding), and the Stormwater Handbook currently specify design storms that rely on precipitation data from the 1961 U.S. Weather Bureau Technical Paper 40

(TP40). MassDEP proposes to require that the National Oceanic and Atmospheric Administration Precipitation Atlas 14 Volume 10 (NOAA Atlas 14), most recently updated in 2019, be used in place of the outdated TP40. This change would be reflected in the Stormwater Handbook (e.g., peak rate discharge) as well as in other parts of the WPA regulations, such as 310 CMR 10.57, where design storms are specified. TP40 substantially underrepresents current conditions. Use of the NOAA Atlas 14 will bring Massachusetts up to date with current conditions. A scaling factor is also proposed to be incorporated to account for uncertainty in extreme precipitation represented by larger currently observed storms documented in the NOAA Atlas 14 data, and which are predicted to occur more often in the future. The scaling factor to account for larger currently observed storms is the NOAA Atlas 14 upper (90%) confidence interval multiplied by 0.9. The scaling factor accounts for most of the uncertainty in the NOAA Atlas 14 precipitation frequency estimates and provides resiliency in sizing stormwater management systems and determining the extent of lands subject to flooding. In addition, MassDEP is proposing to require attenuation of runoff from the 1% chance (100-year) storm.

The current numerical recharge targets based on Hydrologic Soil Groups (HSG) are failing to approximate the annual recharge volume lost as a result of new development. To offset the loss of recharge from the post-development site, when using the static design method, MassDEP proposes that recharge systems need to be sized to a minimum of at least 1-inch multiplied by the impervious area for new development for all HSGs, except for HSG D which will remain a Maximum Extent Practicable (MEP) standard. Other methods will be allowed including the simple dynamic and dynamic field methods, and the continuous simulation method. The proposed increased recharge requirement will, in part, help achieve minimum reduction requirements for Total Suspended Solids and Total Phosphorus, in addition to maintaining wetland levels, baseflow that supports streams and rivers, water supply, and reducing stormwater runoff volumes/peak flows.

For Redevelopment projects, the MS4 Permit requires that, to improve existing conditions on site, stormwater treatment systems must be designed to retain the volume of runoff equivalent to, or greater than, 0.80 inch multiplied by the total post-construction impervious surface area on the site or remove 80% of the average annual post-construction load of Total Suspended Solids and 50% of the average annual load of Total Phosphorus generated from the total postconstruction impervious surface area on the site. MassDEP proposes to adopt the MS4 Permit requirements for pollution reduction on Redevelopment sites to replace the current Maximum Extent Practicable (MEP) requirement in the WPA/WQC regulations (Stormwater Management Standard 7 for Redevelopment) for pollutant removal. Using the MS4 Permit's numeric criteria for pollutant removal will result in greater water quality protection in wetland areas and downstream locations and will facilitate achievement of TMDLs. Water quality improvements that are sufficient to meet TMDLs may not be achieved with the current MEP standard for water quality in Redevelopment. Redevelopment projects will still have to meet the other standards to the MEP as defined under the existing Stormwater Management Standard 7. Further, MassDEP proposes that existing stormwater exemptions and projects subject to the MEP standard as defined in 310 CMR 10.05(6)(l) and (m) will not change, however there are additional categories of projects that will be subject to the MEP standard (including Stormwater Management Standard 7) such as existing public roadway maintenance. MassDEP also proposes to allow the applicant to meet the Redevelopment pollutant removal and recharge standards off-site when the

issuing authority determines that on-site mitigation cannot be fully provided or can only be partially provided.

Finally, MassDEP proposes to add a new Stormwater Management Standard 11 for projects that discharge to waters designated with a TMDL for phosphorus, nitrogen, metals, or pathogens. While the existing Stormwater Handbook contains language to facilitate TMDL achievement, the inclusion of this proposed standard will add emphasis to that goal. Stormwater runoff is a leading cause of water quality impairments in the Commonwealth's rivers, lakes, ponds, and marine waters. Point and non-point discharges of pollution to watersheds for which TMDLs have been approved are required to reduce pollutant loads to their waterbodies based, in part, on standards outlined in the Stormwater Handbook. These recommended changes are a key component of meeting pollutant reduction goals set by TMDLs and for improving wetlands water quality. It is part of MassDEP's core mission to protect public health and enhance the quality and value of the water resources of the Commonwealth. MassDEP is also directed (MGL c. 21, §§ 26 through 53) to take all action necessary or appropriate to secure to the Commonwealth the benefits of the federal Clean Water Act, 33 U.S.C. § 1251 *et. seq.* the objective of which is the restoration and maintenance of the chemical, physical, and biological integrity of the Nation's waters. Inclusion of this specification as a standard will improve success in meeting TMDL goals and ultimately removal of impaired waters from the 303(d) list.

#### **Preface For Reviewers to the 2023 Revisions to the Wetlands Protection Act Regulations for Land Subject to Coastal Storm Flowage**

The Department is proposing for public comment revisions to its regulations under the Wetlands Protection Act to add provisions for Land Subject to Coastal Storm Flowage. This Resource Area extends from the mean low water line to the farthest landward extent of the coastal floodplain, typically described as the area that has a 1% annual chance of flooding in a coastal storm. The other coastal Resource Areas, such as Dune, Barrier Beach, and Coastal Bank, are sometimes found within Land Subject to Coastal Storm Flowage and have been subject to performance standards since the late 1970s. Land Subject to Coastal Storm Flowage varies depending on topography, geomorphology, and exposure to the predominant storms - Nor'easters and hurricanes. There is often extensive development within this Resource Area, which is increasingly at risk as climate change leads to sea level rise and more frequent and intense storms. Land Subject to Coastal Storm Flowage buffers the effects of coastal storms, reducing damage to property, infrastructure, and the environment. Inappropriate construction and other human modifications can adversely impact its ability to reduce storm damage, resulting in threats to public health and safety, government-subsidized flood insurance claims, and reoccurring public expenditures to address damage to private and public property.

These regulations implement recommendations of the Massachusetts State Hazard Mitigation and Climate Adaptation Plan (September 2018). Municipalities regulate development in the floodplain through planning and zoning that meet the minimum requirements for participation in the National Flood Insurance Program (NFIP), and the Massachusetts State Building Code sets construction standards conforming to the NFIP. The NFIP program is based on Flood Insurance Rate Maps (FIRM) produced by the Federal Emergency Management Administration (FEMA),

which show the boundaries of the 1% annual chance floodplain and other zones within it based on past conditions. The regulations for Land Subject to Coastal Storm Flowage are based on FEMA's maps, which depict the information necessary for permitting activities in this Resource Area. Applicants are also encouraged to supplement the required evaluations by consulting the Massachusetts Coast Flood Risk Model Maps, referenced in the Massachusetts State Hazard Mitigation and Climate Adaptation Plan, which show probability and depth of inundation under projected future conditions for various scenarios of sea level rise and changing climate conditions.

While projects within Land Subject to Coastal Storm Flowage are typically subject to the Building Code or other regulations with different objectives, the purpose of the Wetlands Protection Act review is to ensure that activities affecting Resource Areas contribute to identified public interests. Land Subject to Coastal Storm Flowage is either *per se* or presumed significant to the public interests of flood control and storm damage prevention. Flood control is defined as the prevention or reduction of flooding and storm damage. Storm damage prevention is defined as the prevention of damage caused by water from storms, including erosion and sedimentation, damage to vegetation, property or buildings, or damage caused by flooding and water-borne debris. The regulations promote resilience by both preserving and restoring natural floodplain functions that Land Subject to Coastal Storm Flowage provides as well as promoting flood control and storm damage prevention by protecting developed areas, and in specific instances allow land to be elevated above LSCSF so as to promote flood control and storm damage prevention. ~~The regulations promote resilience by preserving and restoring natural floodplain functions that Land Subject to Coastal Storm Flowage provides.~~

The Department's regulations are not concerned with the standards for construction or materials of buildings, which are governed by the state Building Code, but do address the adverse effects of proposed buildings, other structures, or alterations on the floodplain functions of the Resource Area. The Department has designed its regulations for Land Subject to Coastal Storm Flowage to coordinate requirements to the extent possible with other state and federal law, but its role is distinct and unambiguous. The purpose of review under the Wetlands Regulations for Land Subject to Coastal Storm Flowage is the same as for other Resource Areas: to protect the interests of the Act when proposed work sited there could affect its capacity to contribute to flood control and storm damage prevention.

Land Subject to Coastal Storm Flowage is divided into zones that reflect the magnitude of wave energy of flood waters in the 1% annual chance storm event and are shown on the FIRM. The Velocity Zone, or V-Zone, is generally the most seaward zone and contains wave heights three feet or greater. Buildings and infrastructure along the Massachusetts coastline damaged or destroyed during storms are typically located in the V-Zone, resulting in significant and often repetitive private and public costs. The siting of buildings in the V-Zone diminishes the capacity of the V-Zone and other Resource Areas to prevent storm damage. Roads built in the V-Zone are also being inundated by rising seas, resulting in the need for reconstruction or elevation, which can further impair Resource Areas. Under these proposed regulations, activities in the V-Zone are therefore limited. New buildings, even on piles, are not allowed in the V-Zone, because the turbulent wave action causes scour around the piles and erosion beneath structures, decreasing the ability of these Resource Areas to recover after storm events. As this occurs, the V-Zone becomes less effective at absorbing wave energy – a critical floodplain function even more important with sea level rise. This requirement is consistent with the Department's Title 5 regulations, which prohibit new septic tanks and soil absorption systems in the V-Zone.

**Commented [A1]:** There seems to be an ideological conflict between eliminating LSCSF (as would be the result of flood control projects built in compliance with 10.36(8)(g)) and LSCSF being presumed significant to the interests of flood control and storm damage prevention. The regulations need to confirm that elevating land currently characterized as LSCSF so that it is no longer subject to flooding prevents/reduces flooding and prevents storm damage.

This conflict is demonstrated in a recent DEIR comment letter by DEP on a project that is implementing a section of a district-scale flood protection measure (that has City backing and potential FEMA funding): "As described in the ENF, the proponents plan to fill the entirety of the lot located within Land Subject to Coastal Storm Flowage (LSCSF)...to raise the site above the current FEMA floodplain elevation of 10' NAVD88 (FEMA Zone AE). The proponent claims that elevating the site "will protect the resource area values of LSCSF" pertaining to storm damage prevention and flood control. However, the complete elimination of LSCSF is contradictory to preserving its current "values." It is unclear how the project will provide "greater storm damage prevention and flood control functions" when the coastal floodplain is gone.... It is MassDEP's opinion that raising sites above the current floodplain elevation may displace and deflect floodwaters onto adjacent properties and has the potential to increase channelization and flood velocities that could cause adverse impacts."

**Commented [A2]:** NAIOP suggests this change to state the outright goals.

**Commented [A3]:** NAIOP is concerned that in many situations prohibiting new buildings without exceptions would create a land-taking. NAIOP strongly encourages the Department to consider exceptions to this, particularly where it can be shown that modeled wave heights are not likely to damage structures. In addition, projects should have the option of modifying the V-zone through structural means (e.g. wave fences or barriers) and building structures based on the A-zone standards.

The Moderate Wave Action (MoWA) Zone is inland of the V-Zone and contains wave heights equal to or greater than 1.5 feet but less than 3 feet. Damage to buildings has also been documented to occur in the MoWA Zone, attributable to siting and alterations within the Resource Area. Buildings on solid foundations and elevated structures below flood elevation can redirect waves and obstruct flows during storms, increasing flood velocity, elevation, and volume to other properties. Where buildings are damaged during storms, debris can further obstruct flows and damage Land Subject to Coastal Storm Flowage and other Resource Areas, reducing their ability to perform the functions of flood control and storm damage prevention. Therefore, new buildings in the MoWA must be elevated on Open Piles to allow flood water to flow across the floodplain and preserve the Resource Area's ability to reduce impacts to landward areas. To protect Land Subject to Coastal Storm Flowage and other Resource Areas, these regulations require buildings in the MoWA Zone to be elevated an additional two feet above the base flood elevation, which provides a margin of error due to the effects of climate change and for uncertainty in determining flood elevations. Such additional elevation (sometimes called "freeboard") is used by many states to account for sea level rise, shoreline erosion, topographic and bathymetric changes, and changes in land use that may increase flood elevations and are not reflected in the base flood elevation shown on the FIRM. Although other coastal Resource Areas are generally governed by their own performance standards, the elevation requirements are to apply across all coastal Resource Areas. Within the V-Zones and MoWA Zones, where wave energy poses the greatest potential for damage to buildings and to Resource Areas, the performance standards are designed to ensure that any activities will have no adverse effect on the Resource Area.

Land Subject to Coastal Storm Flowage also includes the landward coastal floodplain called the Minimum Wave Action (MiWA) Zone where waves are less than 1.5 feet and flooding occurs at varying depths. In this area, NFIP standards require elevation of new buildings above the base flood elevation, but solid foundations may be allowed. Elevating structures in this area as required by the Building Code and these wetlands regulations accounts for the effects of climate change and uncertainty in determining flood elevations in the MiWA Zone to ensure protection of the flood control and storm damage interests in the future. Additional elevation or an open foundation may be required when a building is proposed where wave action may occur within the Buffer Zone of another Resource Area. The performance standards for the MiWA Zone are designed to minimize adverse effects on the Resource Area by preserving soils and vegetation and reducing impervious surfaces to decrease the velocity of flood waters and increase infiltration. Structures or changes in topography must not increase flood velocities, volume, or elevations causing damage to other properties. Applicants must provide mitigation for alterations that would redirect flood waters or would increase flood velocity, volume, or elevations within a topographic depression or confined basin where a manmade or natural feature significantly impedes or prevents the return flow of flood waters to the ocean.

Much of Land Subject to Coastal Storm Flowage along the Massachusetts coast is developed, including areas within several cities. The regulations contain provisions for Redevelopment, similar to those for Riverfront Area, recognizing that Redevelopment may raise different concerns than new construction in undisturbed areas. In fact, existing development often exacerbates storm damage or flooding. The provisions require, at a minimum, an improvement in existing conditions to promote resiliency as part of any Redevelopment. Elevation, with the exception of Historic Structures, is a

primary means of preserving, protecting, or improving the function of the Resource Area and is required for buildings with new foundations, substantial improvement, or repair of substantial damage. Determinations as to the condition of buildings under the State Building Code are to be made by the building official rather than the Issuing Authority, as building officials have jurisdiction for their decisions under the Code. Specific provisions allow flood control projects.

Finally, the draft regulations include a provision intended to enable Salt Marsh and Coastal Dune migration into Land Subject to Coastal Storm Flowage. Salt Marsh is widely considered the most important of the Commonwealth's wetland Resource Areas, and the most at risk from sea level rise. Coastal Dunes will naturally tend to migrate inland, and both Salt Marsh and Coastal Dunes protect inland areas from storm damage. The Department is proposing a provision which would allow owners of Land Subject to Coastal Storm Flowage, particularly when adjacent to these other Resource Areas, to prepare or set aside land for landward migration. Although the area of land on individual parcels may be small, the pace of migration slow, and knowledge of how best to accommodate migration currently limited, the Department seeks to provide a pathway that will be available to interested landowners to participate in this resource protection effort. The provision for ecological restoration projects remains available for applicants proposing work in other Resource Areas.



***NOTE TO REVIEWERS:***

*MassDEP IS SETTING FORTH IN THIS DOCUMENT PROPOSED AMENDMENTS TO THE CURRENT REGULATION AT 310 CMR 10.00 IN REDLINE AND STRIKEOUT FORMAT. REDLINES SHOW ADDITIONS TO THE CURRENT REGULATORY TEXT AND STRIKEOUTS SHOW PROPOSED DELETIONS. SINCE THE REGULATION IS VERY LONG, MassDEP IS PUBLISHING ONLY THOSE PORTIONS OF THE REGULATION FOR WHICH THE AGENCY IS PROPOSING TO MAKE AMENDMENTS. MassDEP HAS INCLUDED TEXT JUST PRIOR TO (and in some cases text just after) NEW INSERTED TEXT TO MAKE IT CLEAR WHERE THE NEW TEXT IS PROPOSED TO BE INSERTED INTO THE CURRENT REGULATIONS. REVIEWERS CAN FIND THE FULL UNOFFICIAL TEXT OF 310 CMR 10.00 IN ITS CURRENT FORM ON MassDEP'S WEBSITE AND THE OFFICIAL VERSION CAN BE PURCHASED THROUGH THE STATE HOUSE LIBRARY.*

**310 CMR 10.00: WETLANDS PROTECTION**

Section

Regulations for All Wetlands

- 10.01: Introduction and Purpose
- 10.02: Statement of Jurisdiction
- 10.03: General Provisions
- 10.04 : Definitions
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- 10.07 : Compliance with M.G.L. c. 30, §§ 61 through 62H
- 10.08: Enforcement Orders
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Project

- 10.12 : Notice of Intent for an Ecological Restoration Project
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Additional Regulations for Coastal Wetlands

- 10.21: Introduction
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10.30 : Coastal Banks  
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10.35: Banks of or Land under the Ocean, Ponds, Streams, Rivers, Lakes or Creeks that Underlie Anadromous/Catadromous (“Fish Run”)  
~~(10.36: Reserved: Variance Provision is found at 310 MCR 10.05(10))~~ Land Subject to Coastal Storm Flowage  
10.37: Estimated Habitats of Rare Wildlife (for Coastal Wetlands)

#### Additional Regulations for Inland Wetlands

10.51: Introduction  
10.52: Purpose  
10.53: General Provisions  
10.54: Bank (Naturally Occurring Banks and Beaches)  
10.55: Bordering Vegetated Wetlands (Wet Meadows, Marshes, Swamps and Bogs)  
10.56: Land under Water Bodies and Waterways (under any Creek, River, Stream, Pond or Lake)  
10.57: Land Subject to Flooding (Bordering and Isolated Areas)  
10.58: Riverfront Area  
10.59: Estimated Habitats of Rare Wildlife (for Inland Wetlands)  
10.60: Wildlife Habitat Evaluations

~~Appendices: Prefaces to Previous Regulatory Revisions  
Protection of Wildlife Habitat; 1987  
Rights of Way Management; 1987  
1983 Regulatory Revisions  
Fees; 1989  
Technical Changes; 1992  
Maintenance and Improvement of Land in Agricultural Use; 1993  
Preface to Wetlands Regulatory Revisions Effective January 1, 1994~~

#### **10.01 : Introduction and Purpose**

(1) Introduction. 310 CMR 10.00 is promulgated by the Commissioner of the Massachusetts Department of Environmental Protection pursuant to the authority granted under The Wetlands Protection Act, M.G.L. c. 131, § 40. 310 CMR 10.00 shall complement M.G.L. c. 131, § 40, and shall have the force of law.

310 CMR 10.01 through 10.10 provide definitions and procedures. 310 CMR 10.01 through 10.10 pertains to both inland and coastal areas subject to protection under M.G.L. c. 131, § 40. 310 CMR 10.21 through 10.60 provide standards for work within those areas. 310 CMR 10.21 through 10.37 pertains only to coastal areas and 310 CMR 10.51 through 10.57 and 10.60 pertains only to inland areas. Riverfront Area at 310 CMR

10.58 may be coastal or inland. A project may be subject to regulation under 310 CMR 10.00 in which case compliance with all applicable regulations is required.

(2) Purpose. M.G.L. c. 131, § 40 sets forth a public review and decision-making process by which activities affecting Areas Subject to Protection under M.G.L. c. 131, § 40 are to be regulated in order to contribute to the following interests:

- protection of public and private water supply
- protection of ground water supply
- flood control
- storm damage prevention
- prevention of pollution
- protection of land containing shellfish
- protection of fisheries
- protection of wildlife habitat

The purpose of 310 CMR 10.00 is to define and clarify that process by establishing standard definitions and uniform procedures by which conservation commissions and the Department may carry out their responsibilities under M.G.L. c. 131, § 40. Applicants and issuing authorities shall use forms provided by the Department to implement 310 CMR 10.00.

310 CMR 10.00 is intended solely for use in administering M.G.L. c. 131, § 40; nothing contained in 310 CMR 10.00 should be construed as preempting or precluding more stringent protection of wetlands or other natural resource areas by local by-law, ordinance or regulation.

#### **10.02 : Statement of Jurisdiction**

(1) Areas Subject to Protection under M.G.L. c. 131, § 40. The following areas are subject to protection under M.G.L. c. 131, § 40:

- |     |                         |           |             |
|-----|-------------------------|-----------|-------------|
| (a) | Any bank,               |           | the ocean   |
|     | any freshwater wetland, |           | any estuary |
|     | any coastal wetland,    |           | any creek   |
|     | any beach,              | bordering | any river   |
|     | any dune,               | on        | any stream  |
|     | any flat,               |           | any pond    |
|     | any marsh,              |           | or any lake |
|     | or any swamp            |           |             |
- (b) Land under any of the water bodies listed above
- (c) Land subject to tidal action
- (d) Land subject to coastal storm flowage
- (e) Land subject to flooding
- (f) Riverfront area.

(2) Activities Subject to Regulation under M.G.L. c. 131, § 40.

(a) Activities Within the Areas Subject to Protection under M.G.L. c. 131, § 40.

Any activity proposed or undertaken within an area specified in 310 CMR 10.02(1), which will remove, fill, dredge or alter that area, is subject to Regulation under M.G.L. c. 131, § 40 and requires the filing of a Notice of Intent except:

1. minor activities within the ~~R~~iverfront ~~a~~Area and LSCSF meeting the requirement of 310 CMR 10.02(2)(b)1. and 2.; ~~and~~
2. activities conducted to maintain, repair or replace, but not substantially change or enlarge an existing and lawfully located structure or facility used in the service of the public and used to provide electric, gas, water, sewer, telephone, telegraph and other communication services, provided said work utilizes the Best Practical Measures to avoid or minimize impacts to wetland Resource Areas outside the footprint of said structure or facility. A project proponent claiming that work to remove, fill, dredge or alter an area specified in 310 CMR 10.02(1) does not require the filing of a Notice of Intent has the burden of establishing that the work is not subject to Regulation under M.G.L. c. 131, § 40; ~~and-~~

**Commented [A4]:** The listed activities are not likely to impact the interests of LSCSF, therefore NAIOP does not believe they should be subject to review.

**[INSERT NEW SUBSECTION 3. AS FOLLOWS:]**

3. minor activities in the Minimum Wave Action Zone of Land Subject to Coastal Storm Flowage as prescribed in 310 CMR 10.02(2)(a)3.a. through f.; provided that such minor activities are located outside any other areas subject to protection specified in 310 CMR 10.02(1)(a), (b), (c), (e), or (f) and any Buffer Zone:

- a. fencing with a minimum of 50% opening;
- b. sheds less than 100 sq. ft. in size;
- c. planting of native species of trees, shrubs or ground cover;
- d. vista pruning;
- e. conversion of impervious surfaces to pervious surfaces; or
- ~~—~~f. conversion of lawn to another vegetated use, such as a vegetable garden.

Any other work in Land Subject to Coastal Storm Flowage, and any work in any other coastal Resource Area, requires compliance with the procedures at 310 CMR 10.05 and any applicable performance standards.

(b) Activities Within the Buffer Zone. Any activity other than minor activities identified in 310 CMR 10.02(2)(b)2. proposed or undertaken within 100 feet of an area specified in 310 CMR 10.02(1)(a) (hereinafter called the Buffer Zone) which, in the judgment of the issuing authority, will alter an Area Subject to Protection under M.G.L. c. 131, § 40 is subject to regulation under M.G.L. c. 131, § 40 and requires the filing of a Notice of Intent. (See also 310 CMR 10.05(3)(a)2.). The areas subject to jurisdiction identified in 310 CMR 10.02(1)(b) through (f) do not have a buffer zone.

1. Minor activities, as described in 310 CMR 10.02(2)(b)2., within the buffer zone and outside any areas specified in 310 CMR 10.02(1)(a) through (e) are not otherwise subject to regulation under M.G.L. c. 131, §

40 provided that the work is performed: solely within the buffer zone, as prescribed in 310 CMR 10.02(2)(b)2.a. through ~~41~~, in a manner so as to reduce the potential for any adverse impacts to the resource area during construction, and with post-construction measures implemented to stabilize any disturbed areas. Factors to consider when measuring the potential for adverse impacts to resource areas include the extent of the work, the proximity to the resource area, the need for erosion controls, and the measures employed to prevent adverse impacts to resource areas during and following the work.

2. The following minor activities, provided that they comply with 310 CMR 10.02(2)(b)1., are not otherwise subject to regulation under M.G.L. c. 131, § 40:

- a. Unpaved pedestrian walkways less than 30 inches wide for private use and less than three feet wide for public access on conservation property;
- b. Fencing, provided it will not constitute a barrier to wildlife movement; stonewalls; stacks of cordwood;
- c. Vista pruning, provided the activity is located more than 50 feet from the mean annual high water line within a Riverfront Area or from Bordering Vegetated Wetland, whichever is farther. (Pruning of landscaped areas is not subject to jurisdiction under 310 CMR 10.00.);
- d. Plantings of native species of trees, shrubs, or groundcover, but excluding turf lawns;
- e. The conversion of lawn to uses accessory to residential structures such as decks, sheds, patios, pools, replacement of a basement bulkhead and the installation of a ramp for compliance with accessibility requirements, provided the activity, including material staging and stockpiling is located more than 50 feet from the mean annual high-water line within the Riverfront Area, Bank or from Bordering Vegetated Wetland, whichever is farther, and erosion and sedimentation controls are implemented during construction. The conversion of such uses accessory to existing single family houses to lawn is also allowed. (Mowing of lawns is not subject to jurisdiction under 310 CMR 10.00);
- f. The conversion of impervious to vegetated surfaces, provided erosion and sedimentation controls are implemented during construction;
- g. Activities that are temporary in nature, have negligible impacts, and are necessary for planning and design purposes (e.g., installation of monitoring wells, exploratory borings, sediment sampling and surveying and percolation tests for septic systems provided that resource areas are not crossed for site access);

- h. Installation of directly embedded utility poles and associated anchors, push braces or grounding mats/rods along existing paved or unpaved roadways and private roadways/driveways, and their existing maintained shoulders, or within existing railroad rights-of-way, provided that all work is conducted within ten feet of the road or driveway shoulder and is a minimum of ten feet from the edge of the Bank or Bordering Vegetated Wetland and as far away from resource areas as practicable, with no additional tree clearing or substantial grading within the buffer zone, and provided that all vehicles and machinery are located within the roadway surface during work;
- i. Installation of underground utilities (e.g., electric, gas, water) within existing paved or unpaved roadways and private roadways/driveways, provided that all work is conducted within the roadway or driveway and that all trenches are closed at the completion of each workday;
- j. Installation and repair of underground sewer lines within existing paved or unpaved roadways and private roadways/driveways, provided that all work is conducted within the roadway or driveway and that all trenches are closed at the end of completion of each workday;
- k. Installation of new equipment within existing or approved electric or gas facilities when such equipment is contained entirely within the developed/disturbed existing fenced yard;
- l. Installation of access road gates at public or private road entrances to existing utility right-of-way access roads, provided that all vehicles and machinery are located within the roadway surface during work;
- m. Removal of existing utility equipment (poles, anchors, lines) along existing or approved roadways or within existing or approved electric, water or gas facilities, provided that all vehicles and machinery are located within the roadway surface during work;
- n. Vegetation cutting for road safety maintenance, limited to the following:
  - i. Removal of diseased or damaged trees or branches that pose an immediate and substantial threat to driver safety from falling into the roadway;
  - ii. Removal of shrubbery or branches to maintain clear guardrails; such removal shall extend no further than six feet from the rear of the guardrail;
  - iii. Removal of shrubbery or branches to maintain sight distances at existing intersections; such removal shall be no

farther than five feet beyond the "sight triangles" established according to practices set forth in American Association of State Highway and Transportation Officials (AASHTO) A Policy on Geometric Design of Highways and Streets, 2011, 6th edition, and such removal is a minimum of ten feet from a resource area, other than Riverfront Area; and

iv. Removal of shrubbery, branches, or other vegetation required to maintain the visibility of road signs and signals.

Cuttings of shrubs and branches from mature trees will be performed with suitable horticultural equipment and methods that do not further damage the trees. To prevent the possible export of invasive plants, cut vegetation should be chipped and evenly spread on site, provided the chips are spread outside the buffer zone, and raked to a depth not to exceed three inches, clear of all drainage ways.

Alternatively, all cuttings and slash shall be removed from the site and properly disposed;

o. Installation, repair, replacement or removal of signs, signals, sign and signal posts and associated supports, braces, anchors, and foundations along existing paved roadways and their shoulders, provided that work is conducted as far from resource areas as practicable, and is located a minimum of ten feet from a resource area, any excess soil is removed from the project location, and any disturbed soils are stabilized as appropriate;

p. Pavement repair, resurfacing, and reclamation of existing roadways within the right-of-way configuration provided that the roadway and shoulders are not widened, no staging or stockpiling of materials, all disturbed road shoulders are stabilized within 72 hours of completion of the resurfacing or reclamation, and no work on the drainage system is performed, other than adjustments and/or repairs to respective structures within the roadway;

q. The repair or replacement of an existing and lawfully located driveway servicing not more than two dwelling units provided that all work remains within the existing limits of the driveway and all surfaces are permanently stabilized within 14 days of final grade.

r. Public Shared Use Path vegetation cutting for public safety and pavement repair and resurfacing in the Buffer Zone and Riverfront Area, limited to the following:

i. Removal of diseased or damaged trees or branches that pose an immediate and substantial threat to public safety from falling into the Public Shared Use Path;

**Commented [A5]:** Sidewalks are effectively public use shared paths, and these minor activities would seem appropriate for sidewalks; however, they are excluded under the definition of Public Shared Use Paths under 10.04.

ii. Removal of shrubbery or branches to maintain vertical clearances and horizontal trail edges and shoulders by trimming vegetation as needed to provide for public safety. Trimming and removal may occur up to six feet beyond the outer edge of the shoulder; and

iii. Removal of shrubbery, branches, or other vegetation required to maintain the visibility of Public Shared Use Path signs.

iv.

For activities described in 310 CMR 10.02(2)(b)2.r.i. through iii., cutting of shrubs and branches from mature trees will be performed with hand methods that do not further damage the trees. To prevent the possible export of invasive plants, cut vegetation may be chipped and evenly spread on the Project Site; provided that the chips are spread outside the Buffer Zone and not within a Resource Area, and raked to a depth not to exceed three inches, clear of all drainage ways, or alternatively, all cuttings and slash shall be removed from the Project Site and properly disposed.

v. Pavement repair, resurfacing, and reclamation of existing paved Public Shared Use Paths and bicycle paths; provided that the Public Shared Use Paths and bicycle paths are not widened, measures are implemented during milling and grinding to prevent any sidecast of asphalt or concrete dust to Resource Areas, no asphalt mulch is utilized, coal tar-based pavement sealants are not utilized, there is no staging or stockpiling of materials, all disturbed surfaces are fully stabilized within 72 hours of completion of the resurfacing or reclamation, and no work on any other than maintenance or repair to an existing component of a Stormwater Management System is performed, including but not limited to drainage swales.

**Commented [A6]:** NAIOP does not believe it was intended that this should exclude work on a stormwater management system.

3. Activities within the buffer zone which do not meet the requirements of 310 CMR 10.02(2)(b)1. and 2. are subject to preconstruction review through the filing of a Determination of Applicability to clarify jurisdiction or a Notice of Intent under the provisions of 310 CMR 10.05(4) and 10.53(1).

(c) Notwithstanding the provisions of 310 CMR 10.02(1) and (2)(a) and (b), stormwater management systems designed, constructed, installed, operated, maintained, and/or improved as defined in 310 CMR 10.04 in accordance with the *Stormwater Management Standards* as provided in the *Stormwater Management*



*Policy (1996)* or 310 CMR 10.05(6)(k)-~~1. through -11. through (q)~~ do not by themselves constitute Areas Subject to Protection under M.G.L. c. 131, § 40, or Buffer Zone provided that:

1. the system was designed, constructed, installed, and/or improved as defined in 310 CMR 10.04 on or after November 18, 1996; and
2. if the system was constructed in an Area Subject to Protection under M.G.L. c. 131, § 40, or Buffer Zone, the system was designed, constructed, and installed in accordance with all applicable provisions in 310 CMR 10.00.

(d) Activities Outside the Areas Subject to Protection under M.G.L. c. 131, § 40, and the Buffer Zone. Any activity proposed or undertaken outside the areas specified in 310 CMR 10.02(1) and outside the Buffer Zone is not subject to regulation under M.G.L. c. 131, § 40, and does not require the filing of a Notice of Intent unless and until that activity actually alters an Area Subject to Protection under M.G.L. c. 131, § 40. In the event that the issuing authority determines that such activity has in fact altered an Area Subject to Protection under M.G.L. c. 131, § 40, it may require the filing of a Notice of Intent and/or issuance of an Enforcement Order and shall impose such conditions on the activity or any portion thereof as it deems necessary to contribute to the protection of the interests identified in M.G.L. c. 131, § 40.

(3) Notwithstanding the provisions of 310 CMR 10.02(1) and (2), the maintenance of a stormwater management system constructed and/or improved as defined in 310 CMR 10.04 from November 18, 1996 through January 1, 2008, in accordance with the *Stormwater Management Standards*, as provided in the *Massachusetts Stormwater Policy*, issued by the Department on November 18, 1996 or on or after January 2, 2008, in accordance with the *Stormwater Management Standards* as provided in 310 CMR 10.05(6)(k)-~~1. through -11. through (q)~~ is not subject to regulation under M.G.L. c. 131, § 40, provided that:

- (a) if the system was constructed in an Area Subject to Protection under M.G.L. c. 131, § 40, or associated Buffer Zone, the system was constructed in accordance with all applicable provisions of 310 CMR 10.00;
- (b) the work to maintain the stormwater management system is limited to maintenance of a stormwater management system as defined in 310 CMR 10.04; and
- (c) said work utilizes ~~B~~est ~~P~~ractical ~~M~~asures to avoid and minimize impacts to wetland resource areas outside the footprint of the stormwater management system.

Notwithstanding the provisions of 310 CMR 10.02(1) and (2), any bordering vegetated wetland, bank, land under water, land subject to flooding, or riverfront area created solely for the purpose of stormwater management shall not require the filing of a Notice of Intent to maintain the stormwater management system, provided that:

1. the work to maintain the stormwater management system is limited to the maintenance of a stormwater management system as defined in 310 CMR 10.04;

2. the stormwater management system was proposed in a Notice of Intent filed before January 2, 2008, and conforms to an Order of Conditions issued after April 1, 1983;
3. the area is not altered for other purposes; and
4. said work utilizes ~~B~~best ~~P~~practical ~~M~~measures to avoid and minimize impacts to wetland resource areas outside the footprint of the stormwater management system.

(4) Notwithstanding anything to the contrary in 310 CMR 10.00, work other than maintenance that may alter or affect a stormwater management system (including work to repair or replace the stormwater management system, and any change to the site that increases the total or peak volume of stormwater managed by the system, directs additional stormwater to the system, and/or increases the volume of stormwater exposed to land uses with higher potential pollutant loads) that was designed, constructed, installed and/or improved after November 18, 1996, as defined in 310 CMR 10.04, and if constructed in an Area Subject to Protection under M.G.L. c. 131, § 40~~.~~ or Buffer Zone, as described in 310 CMR 10.02(1) and (2)(a) through (d), the system was constructed in accordance with all applicable provisions of 310 CMR 10.00, solely for the purpose of stormwater management, in accordance with the *Stormwater Management Standards* as provided in the *Stormwater Management Policy (1996)* or 310 CMR 10.05(6)(k)-~~1. through -11. through (q)~~, may be permitted through an Order of Conditions, or Negative Determination of Applicability provided that the work:

- (a) at a minimum provides the same capacity as the original design to attenuate peak discharge rates, recharge the ground water, and remove ~~T~~total ~~S~~suspended ~~S~~solids;
- (b) complies with the Stormwater Management Standards as provided in 310 CMR 10.05(6)(k)-~~1. through -11. through (q)~~; and
- (c) meets all the applicable performance standards for any work that expands the existing stormwater management system into an Area Subject to Protection under M.G.L. c. 131, § 40~~.~~ or Buffer Zone as described in 310 CMR 10.02(1) and (2)(a) through (d).

(5) For purposes of 310 CMR 10.02(2)(c) and (4), the applicant has the burden of proving that the proposed project involves a stormwater management system designed, constructed, installed, operated, maintained and/or improved as defined at 310 CMR 10.04 in accordance with the Stormwater Management Standards as provided in the *Stormwater Management Policy (1996)* or 310 CMR 10.05(6)(k)-~~1. through -11. through (q)~~ and that the system was designed, constructed, installed and/or improved on or after November 18, 1996. The applicant also has the burden of establishing whether said stormwater management system was installed in an Area Subject to Protection under M.G.L. c. 131, § 40~~.~~ or associated Buffer Zone, and, if so, that the system was constructed in accordance with all applicable provisions of 310 CMR 10.00. An applicant shall use the best evidence available to meet the burden of proof required. For purposes of 310 CMR 10.02(2)(c) and (4), the best evidence is the Order of Conditions, Order of Resource Area Delineation or Determination of Applicability for the project served by the stormwater management system together with the plans referenced in and accompanying such Order or Determination, and, if applicable, the Certificate of Compliance. If the best evidence is available, the date the system was designed shall be the date the Notice of Intent, Request for Determination or Notice of Resource Area Delineation was filed. If the best evidence is not

available, the applicant shall rely on other credible evidence to meet the required burden of proof such as local approval of the stormwater management system along with the plans referenced in and accompanying said approval and any wetland conservancy maps and wetland change maps for the relevant time period published by the Department on MassGIS.

#### Commentary

The Department has determined that activities within Areas Subject to Protection under M.G.L. c. 131, § 40 are so likely to result in the removing, filling, dredging or altering of those areas that preconstruction review is always justified, and that the issuing authority shall therefore always require the filing of a Notice of Intent for said activities.

The Department has determined that activities within 100 feet of those areas specified in 310 CMR 10.02(1)(a) are sufficiently likely to alter said areas that preconstruction review may be necessary. Therefore, a request for a Determination of Applicability must be filed for some activities within the Buffer Zone. The issuing authority shall then make a determination as to whether the activity so proposed will alter an Area Subject to Protection under M.G.L. c. 131, § 40 and, if so, shall require the filing of a Notice of Intent for said activities. The issuing authority shall not require the filing of a Notice of Intent if it determines that the activity proposed within the Buffer Zone will not alter an Area Subject to Protection under M.G.L. c. 131, § 40.

The Department has determined that activities outside the Areas Subject to Protection under M.G.L. c. 131, § 40 and outside the Buffer Zone are so unlikely to result in the altering of Areas Subject to Protection under M.G.L. c. 131, § 40 that preconstruction review is not required, and therefore the issuing authority shall not regulate said activities unless and until they actually result in the altering of an Area Subject to Protection under M.G.L. c. 131, § 40.

### **10.03: General Provisions**

#### **(1) Burden of Proof.**

(a) Any person who files a Notice of Intent to perform any work within an Area Subject to Protection under M.G.L. c. 131, § 40 or within the Buffer Zone has the burden of demonstrating to the issuing authority:

1. that the area is not significant to the protection of any of the interests identified in M.G.L. c. 131, § 40; or
2. that the proposed work within a resource area will contribute to the protection of the interests identified in M.G.L. c. 131, § 40 by complying with the general performance standards established by 310 CMR 10.00 for that area.
3. that proposed work within the buffer zone will contribute to the protection of the interests identified in M.G.L. c. 131, § 40, except that proposed work which lies both within the riverfront area and within all or a portion of the buffer zone to another resource area shall comply with the performance standards for riverfront areas at 310 CMR 10.58. For minor activities as specified in 310 CMR 10.02(2)b.1. within the riverfront area or the buffer zone to another resource area, the Department has determined that additional conditions are not necessary to contribute to the protection of the interests identified in M.G.L. c. 131, § 40.

(b) Any person who requests the issuing authority to regulate work taking place outside an Area Subject to Protection under M.G.L. c. 131, § 40 and outside the Buffer Zone has the burden of demonstrating to the satisfaction of the issuing authority that the work has in fact altered an Area Subject to Protection under M.G.L. c. 131, § 40.

(2) Burden of Going Forward. The burden of going forward means having to produce at least some credible evidence from a competent source in support of the position taken. This burden shall be upon the person contesting the Department's position when the Department has been requested to hold an adjudicatory hearing. In the event that under the provisions of 310 CMR 10.03 two or more persons have the burden of going forward, said burden may be placed on all or any number of them, in the discretion of the hearing officer.

(3) Presumption Concerning 310 CMR 15.000: The State Environmental Code, Title 5: Standard Requirements for the Siting, Construction, Inspection, Upgrade and Expansion of On-site Sewage Treatment and Disposal Systems and for the Transport and Disposal of Septage. A subsurface sewage disposal system that is to be constructed in compliance with the requirements of 310 CMR 15.000: *The State Environmental Code, Title 5: Standard Requirements for the Siting, Construction, Inspection, Upgrade and Expansion of On-site Sewage Treatment and Disposal Systems and for the Transport and Disposal of Septage*, or more stringent local board of health requirements, shall be presumed to protect the eight interests identified in M.G.L. c. 131, § 40, but only if none of the components of said system is located within the following resource areas:

(a) Coastal.

1. coastal bank;
2. coastal beach;
3. coastal dune;
4. salt marsh.

(b) Inland.

- |                |           |         |
|----------------|-----------|---------|
| 1. wet meadows |           | creek;  |
| 2. marsh       | bordering | river;  |
| 3. swamp       | on any    | stream; |
| 4. bog pond;   |           | lake.   |

and only if the soil absorption system of said system is set back at least 50 feet horizontally from the boundary of said areas, as required by 310 CMR 15.211: *Minimum Setback Distances*, or a greater distance as may be required by more stringent local ordinance, by-law or regulation. To protect wildlife habitat within riverfront areas, the soil absorption system shall not be located within 100 feet of the mean annual high-water line unless there is no alternative location on the lot which conforms to 310 CMR 15.000: *The State Environmental Code, Title 5: Standard Requirements for the Siting, Construction, Inspection, Upgrade and Expansion of On-site Sewage Treatment and Disposal Systems and for the Transport and Disposal of Septage* without requiring a variance as determined by the local Board of Health, with less adverse effects on resource areas.

This presumption, however, shall apply only to impacts of the discharge from a sewage disposal system, and not to the impacts from construction of that system, such as erosion and siltation from the excavation, placement of fill, or removal of vegetation. Impacts from construction shall be minimized by the placement of erosion and sedimentation controls during excavation, limiting the placement of fill, confining the removal of vegetation to that necessary for the footprint of the system, and taking other measures deemed necessary by the issuing authority.

The setback distance specified above shall be determined by measuring from the boundary of the area in question, from the contour at the mean annual flood elevation in inland areas, or from the top of a coastal bank or the contour at the highest spring tide elevation in coastal areas, whichever is further from the water body.

The setback distance specified above shall not be required for the renovation or replacement (but is required for the substantial enlargement) of septic systems constructed prior to the effective date of 310 CMR 10.00, provided no alternative location is available on the lot and such work has been approved by the local board of health or the Department, as required by law.

This presumption may be overcome only by credible evidence from a competent source that compliance with 310 CMR 15.000: *The State Environmental Code, Title 5: Standard Requirements for the Siting, Construction, Inspection, Upgrade and Expansion of On-site Sewage Treatment and Disposal Systems and for the Transport and Disposal of Septage* or more stringent local requirements will not protect the interests identified in M.G.L. c. 131, § 40.

(4) Presumption Concerning Point-source Discharges. If the Department has issued a permit pursuant to M.G.L. c. 21, § 43, ~~in conjunction with and/or the U.S. Environmental Protection Agency has issued~~ a federal NPDES (National Pollutant Discharge Elimination System) permit for any new point-source discharge of pollutants, or ~~either entity~~ will issue such a permit(s), prior to commencement of the discharge, the effluent limitations established in the permit(s) shall be presumed to protect the eight interests identified in M.G.L. c. 131, § 40, with respect to the effects of the discharge on water quality. The permit(s) and any subsequent ~~amendments-modification(s)~~ thereto shall be referenced in the Order and deemed incorporated therein.

This presumption shall apply only to impacts of the discharge from the source, and not to impacts from construction of the source.

This presumption may be overcome only by credible evidence from a competent source that said effluent limitations will not protect the interests identified in M.G.L. c. 131, § 40.

(5) Presumption of Significance. Each Area Subject to Protection under M.G.L. c. 131, § 40 is presumed to be significant to one or more of the interests identified in M.G.L. c. 131, § 40. These presumptions are rebuttable and are set forth in 310 CMR 10.21 through 10.60.

For riverfront areas, the issuing authority may find that the presumptions of significance are partially rebutted as provided in 310 CMR 10.58(3).

(6) Presumption Concerning Application of Herbicides.

(a) Any application of herbicides within any Area Subject to Protection under M.G.L. c. 131, § 40 or the Buffer Zone associated with a structure or facility which is:

1. existing and lawfully located;
2. used in the service of the public; and
3. used to provide electric, gas, water, sewer, telephone, telegraph and other telecommunication services

shall be presumed to constitute work performed in the course of maintaining such structure or facility, and shall be accorded the exemption of such work under M.G.L. c. 131, § 40, only if the application of herbicides to that structure or facility is performed in accordance with such plans as are required by the Department of Food and Agriculture pursuant to 333 CMR 11.00: *Rights of Way Management*, effective July 10, 1987.

(b) Any application of herbicides within the Buffer Zone, other than as provided in 310 CMR 10.03(6)(a), shall be presumed not to alter an Area Subject to Protection under M.G.L. c. 131, § 40, only if the work is performed in accordance with such plans as are required by the Department of Food and Agriculture pursuant to 333 CMR 11.00: *Rights of Way Management*, effective July 10, 1987. This presumption shall apply only if the person proposing such activity has requested and obtained a determination of the boundaries of the Buffer Zone and Areas Subject to Protection under M.G.L. c. 131, § 40 in accordance with 310 CMR 10.05(3)(a)1. and 2.; and has submitted that determination as part of the Vegetation Management Plan.

(c) Any application of herbicides for management of rights of way within a riverfront area not subject to 310 CMR 10.03(6)(a) or (b), provided the area is outside any other resource area and qualifies under the provisions of 310 CMR 10.58(6)(a), shall be accorded an exemption of such work under M.G.L. c. 131, § 40, provided that the application of herbicides is performed in accordance with such plans as are required by the Department of Food and Agriculture pursuant to 333 CMR 11.00: *Rights of Way Management*.

(7) Fees.

(a) General Fee Provisions.

1. Notices of Intent. All Notices of Intent filed pursuant to 310 CMR 10.00 shall be accompanied by a filing fee, the amount of which shall be determined by 310 CMR 4.00: *Timely Action Schedule and Fee Provisions* and a brief statement indicating how the applicant calculated the fee. 50% of any filing fee in excess of \$25.00 shall be made payable, by check or money order, to the Commonwealth of Massachusetts and shall be sent to the DEP Lock Box accompanied by the Notice of Intent Fee Transmittal Form. The remainder of said fee shall be made payable, by check or money order, to the city or town in which the work is proposed.

2. Requests for Action by the Department. Any person who files a Request for a Superseding Determination of Applicability (310 CMR 10.05(3)(c)), a Request for Superseding Order of Conditions or superseding Order of Resource Area Delineation (310 CMR 10.05(7)(a)), a Request for

Adjudicatory Hearing (310 CMR 10.05(7)(j)), a Request to Intervene in any Adjudicatory Hearing (310 CMR 1.01(9)(a)), or a Request for a Variance, (310 CMR 10.05(10)), (*see* also 310 CMR 10.03(7)(e)), shall simultaneously submit a filing fee, in the amount specified by 310 CMR 4.00: *Timely Action Schedule and Fee Provisions*. All such fees shall be paid by check or money order payable to the Commonwealth of Massachusetts and shall be sent to the DEP Lock Box, accompanied by the Request for Departmental Action Fee Transmittal Form. A copy of the Request for Departmental Action Fee Transmittal Form and a copy of the check shall accompany the request for Departmental action.

(b) Specific Provisions for Notice of Intent Fees. In accordance with General Instructions for Completing a Notice of Intent and Abbreviated Notice of Intent, the minimum submittal requirements shall include payment of the filing fee specified in 310 CMR 10.03(7)(c). A conservation commission shall notify, in writing, the appropriate Department Regional Office and the applicant when the correct filing fee has not been paid to the city or town and the filing is therefore incomplete. Said notification shall specify the correct fee amount. The Department shall also notify, in writing, the applicant and the conservation commission when the fee due to the Department has not been paid to the Department and the filing is therefore incomplete. Said notification shall specify the fee due to the Department. The fee will be based on the initial project design as proposed in the Notice of Intent.

1. Disputes over Notice of Intent Filing Fees. Whenever the conservation commission or the Department determines that an inadequate fee has been paid, the time period for the conservation commission or the Department to act shall be stayed until the balance of the fee is paid.

a. Where, in the opinion of the conservation commission or the Department, less than the full filing fee has been included with the Notice of Intent, the Notice shall be deemed complete (assuming all other minimum submittal requirements have been met), and the stay shall be lifted, upon payment of the additional fee specified by the Department or the conservation commission. If the applicant has disputed all or a part of the balance of the fee, after issuance of a Final Order which resolves the fee dispute, in favor of the applicant any disputed funds paid by the applicant in excess of the filing fee as determined in the Final Order shall be paid to the applicant by the Commonwealth and the city or town.

b. In *lieu* of paying any disputed amount of the filing fee, the applicant may file a Request for Determination of Applicability under 310 CMR 10.05(3)(a), with sufficient information to enable the conservation commission to determine the extent of the area, or the type and extent of the activity, subject to protection under M.G.L. c. 131, § 40.

When a Request for Determination of Applicability is filed by an Applicant to resolve a dispute over the filing fee, all proceedings under the Notice of Intent shall be stayed until all



appeal periods for the Determination have elapsed or, if the Determination is appealed until all proceedings before the Department have been completed.

A Final Determination of Applicability as to the area, or the type and extent of the activity, subject to protection under M.G.L. c. 131, § 40 shall be binding on all parties and shall be used in calculating the fee.

(c) Activities Subject to Notice of Intent Fees. The following activity descriptions are intended to include all activities subject to filing of a Notice of Intent under M.G.L. c. 131, § 40. The fees imposed by 310 CMR 10.03 are applicable only to those activities subject to jurisdiction under M.G.L. c. 131, § 40. The fee for work proposed under a single Notice of Intent that involves more than one activity noted below, shall be determined by adding the fees for each of the proposed activities. When the work involves activities within the riverfront area as well as another resource area or the buffer zone, the fee shall be determined by adding an additional 50% of the fee calculated for activities in another resource area(s) or the buffer zone to another resource area for each of the proposed activities within the riverfront area. When the work involves activities within the riverfront area but no other resource area, the fee shall be determined by adding the fees for each of the proposed activities within the riverfront area.

1. Category 1.

- a. Any work on a single family residential lot including a house addition, deck, garage, garden, pool, shed, or driveway. Activities excluded from Category 1 include driveways reviewable under 310 CMR 10.53(3)(e) (*See Category 2f.*); construction of an unattached single family house; and construction of a dock, pier, or other coastal engineering structure.
- b. Site preparation of each single family house lot, including removal of vegetation, excavation and grading, where actual construction of the house is not proposed under the Notice of Intent.
- c. Control of nuisance vegetation by removal, herbicide treatment or other means, from a resource area, on each single family lot, as allowable under 310 CMR 10.53(4).
- d. Resource improvement allowed under 310 CMR 10.53(4), other than removal of aquatic nuisance vegetation, as allowed under 310 CMR 10.53(4).
- e. Construction, repair, replacement or upgrading of a subsurface septic system or any part of such a system.
- f. Activities associated with installation of a monitoring well, other than construction of an access roadway thereto.
- g. New agriculture, including forestry on land in forest use (310 CMR 10.53(3)(r) and (s)), and aquacultural projects.

2. Category 2.

- a. Construction of each single family house (including single family houses in a subdivision), any part of which is in a buffer

zone or resource area. Any activities associated with the construction of said house(s), including associated site preparation and construction of retention/detention basins, utilities, septic systems, roadways and driveways other than those roadways or driveways reviewable under 310 CMR 10.53(3)(e) (*See* Category 2f.), shall not be subject to additional fees if all said activities are reviewed under a single Notice of Intent. (For apartment/condominium type buildings *See* Category 3.)

b. Parking lot of any size.

c. The placement of sand for purposes of beach nourishment.

d. Any projects reviewable under 310 CMR 10.24(7)(a) through (c).

e. Any activities reviewable under 310 CMR 10.53(3)(d) and (f) through (l), except for those subject to 310 CMR 10.03(7)(c)4.b.

Where more than one activity is proposed within an identical footprint (*e.g.*, construction of a sewer within the footprint of a new roadway), only one fee shall be payable.

f. Construction of each crossing for a driveway associated with an unattached single family house, reviewable under 310 CMR 10.53(3)(e).

g. Any point source discharge.

h. Control of nuisance vegetation, other than on a single family lot, by removal, herbicide treatment or other means, reviewable under 310 CMR 10.53(4).

i. Raising or lowering of surface water levels for flood control or any other purpose.

j. Any other activity not described in Categories 1, 3, 4, 5 or 6 (*e.g.*, the determination of whether a stream is perennial or intermittent).

k. The exploration for (but not development, construction, expansion, maintenance, operation or replacement of) public water supply wells or wellfields derived from groundwater, reviewable under 310 CMR 10.53(3)(o).

l. Test projects pursuant to 310 CMR 10.05(11) and Scientific Research Projects pursuant to 310 CMR 10.05(12).

3. Category 3.

a. Site preparation, for any development other than an unattached single family house(s), including the removal of vegetation, excavation and grading, where actual construction is not proposed in the Notice of Intent.

b. Construction of each building for any commercial, industrial, institutional, or apartment/condominium/townhouse-type development, any part of which is in a buffer zone or resource area. Any activities associated with the construction of said building, including associated site preparation and construction of retention/detention basins, septic systems, parking lots, utilities,

point source discharges, package sewage treatment plants, and roadways and driveways other than those roadways or driveways reviewable under 310 CMR 10.53(3)(e), shall not be subject to additional fees if all said activities are reviewed under a single Notice of Intent.

c. Construction of each roadway or driveway, not reviewable under 310 CMR 10.53(3)(e), and not associated with construction of an unattached single family house.

d. Any activity associated with the clean up of hazardous waste, except as otherwise noted in Category 4, including excavation, destruction of vegetation, change in subsurface hydrology, placement of collection wells or other structures for collection and treatment of contaminated soil and/or water.

e. The development, construction, expansion, maintenance, operation, or replacement of (but not exploration for) public water supply wells or wellfields derived from groundwater, reviewable under 310 CMR 10.53(3)(o).

4. Category 4.

a. Construction of each crossing for a limited project access roadway or driveway reviewable under 310 CMR 10.53(3)(e) associated with a commercial, industrial, or institutional development or with any residential construction (other than a roadway or driveway associated with construction of an unattached single family house).

b. Construction, modification, or repair of a flood control structure such as a dam, reservoir, tidegate, sluiceway, or appurtenant works.

c. Creation, operation, maintenance or expansion of a public or private landfill.

d. Creation, operation, maintenance or expansion of a public or private sand and/or gravel operation including but not limited to excavation, filling, and stockpiling.

e. Construction of new railroad lines or extensions of existing lines, including ballast area, placement of track, signals and switches and other related structures.

f. Construction, reconstruction, expansion, or maintenance of any bridge, except to gain access to a single family house lot.

g. Any alteration of a resource area(s) to divert water for the clean up of a hazardous waste site, for non-exempt mosquito control projects, or for any other purpose not expressly identified elsewhere in this fee schedule.

h. Any activities, including the construction of structures, associated with a dredging operation conducted on land under a waterbody, waterway, or the ocean. If the dredging is directly associated with the construction of a new dock, pier or other

structure identified in Category 5, only the Category 5 fee shall apply.

i. Construction of, or the discharge from, a package sewage treatment plant.

j. Airport vegetation removal projects reviewable under 310 CMR 10.24(7)(c)5. and 10.53(3)(n).

k. Landfill closure projects reviewable under 310 CMR 10.24(7)(c)4. and 10.53(3)(p).

l. Any activities, including the construction of structures, associated with the assessment, monitoring, containment, mitigation, and remediation of, or other response to, a release or threat of release of oil and/or hazardous material reviewable under 310 CMR 10.24(7)(c)6. or 10.53(3)(q).

5. Category 5. Construction, reconstruction, repair or replacement of docks, piers, revetments, dikes, or other engineering structures on coastal or inland resource areas, including the placement of rip rap or other material on coastal or inland resource areas.

6. Category 6. The linear delineation (e.g. bordering vegetated wetland, riverfront area, bordering land subject to flooding) of each resource area under an Abbreviated Notice of Resource Area Delineation constitutes a separate activity. The fee associated with each resource area delineation proposed under an Abbreviated Notice of Resource Area Delineation shall be determined by adding the fees for each type of resource area delineation.

(d) Requests for Action by the Department. Any person's request for action by the Department will not be deemed complete and time periods, if any, shall not commence, unless the person making the request has paid the appropriate filing fee specified in 801 CMR 4.02: *Fees of Licenses, Permits, and Services to Be Charged by State Agencies* (310).

(e) Fees for Requests for Action by Department. The following requests for action by the Department are subject to the fees established in 310 CMR 4.00: *Timely Action Schedule and Fee Provisions*.

1. Request for a Superseding Determination of Applicability.
2. Request for a Superseding Order of Conditions.
3. Request for an Adjudicatory Hearing or for a Variance which is necessary to avoid an unconstitutional taking.
4. Request to Intervene in an Adjudicatory Proceeding.
5. Request for a Variance, except where necessary to avoid an unconstitutional taking.

(f) Waivers and Exemptions. See 310 CMR 4.00: *Timely Action Schedule and Fee Provisions* for provisions concerning waivers or exemptions from the requirements of 310 CMR 10.03(7).

#### **10.04: Definitions**

**[NOTE TO REVIEWERS: MassDEP is proposing to amend, add or delete definitions in this section 310 CMR 10.04 as indicated by the redlining and strikeout in this document. If a definition is shown without any redlining or stricken text, then it is used in this document only to indicate the order of insertion of new definitions. Any definitions without redline or strikeout in this draft and all other definitions in the current regulations at 310 CMR 10.04 that are not included in this document are to remain the same as in the current document.]**

Abutter means the same as owner of land abutting the activity.

Act means the Wetlands Protection Act, M.G.L. c. 131, § 40.

Activity means any form of draining, dumping, dredging, damming, discharging, excavating, filling or grading; the erection, reconstruction or expansion of any buildings or structures; the driving of pilings; the construction or improvement of roads and other ways; the changing of run-off characteristics; the intercepting or diverging of ground or surface water; the installation of drainage, sewage and water systems; the discharging of pollutants; the destruction of plant life; and any other changing of the physical characteristics of land.

Aggrieved means the same as person aggrieved.

Agriculture. For the purposes of 310 CMR 10.04 the following words and phrases have the following meanings:

(a) Land in Agricultural Use means land within resource areas or the Buffer Zone presently and primarily used in producing or raising one or more of the following agricultural commodities for commercial purposes:

1. animals, including but not limited to livestock, poultry, and bees;
2. fruits, vegetables, berries, nuts, maple sap, and other foods for human consumption;
3. feed, seed, forage, tobacco, flowers, sod, nursery or greenhouse products, and ornamental plants or shrubs; and
4. forest products on land maintained in forest use, including but not limited to biomass, sawlogs, and cordwood, but not including the agricultural commodities described in 310 CMR 10.04: Agriculture(a)1. through 3.

Additionally, land in agricultural use means land within resource areas or the Buffer Zone presently and primarily used in a manner related to, and customarily and necessarily used in, producing or raising such commodities, including but not limited to: existing access roads and livestock crossings; windbreaks; hedgerows; field edges; bee yards; sand pits; landings for forest products; fence lines; water management projects such as reservoirs, farm ponds, irrigation systems, field ditches, cross ditches, canals/channels, grass waterways, dikes, sub-surface drainage systems, watering facilities, water transport systems, and water storage systems; agricultural composting sites; agricultural storage and work areas; and land under farm structures.

Land in agricultural use may lie inactive for up to five consecutive years unless it is under a United States Department of Agriculture (USDA) contract for a longer term pursuant to the Conservation Reserves Program (the Food Securities Act of 1985, as amended by the Food, Agriculture, Conservation and Trade Act of 1990; and 7 CFR 1410), or it is used for the forestry

purposes described in 310 CMR 10.04: Agriculture(b)14. through 17. The issuing authority may require appropriate documentation, such as a USDA Farm Plan or aerial photography, to demonstrate agricultural use.

(b) Normal Maintenance of Land in Agricultural Use, which in all cases does not include placing substantial amounts of fill in Bordering Land Subject to Flooding or filling or dredging a Salt Marsh, means the following activities, without enlargement as to geographical extent, that are occurring on land in agricultural use, when directly related to production or raising of the agricultural commodities referenced in 310 CMR 10.04: Agriculture(a), when undertaken in such a manner as to prevent erosion and siltation of adjacent water bodies and wetlands, and when conducted in accordance with federal and state laws:

1. all crop management practices, not to include drainage in a Bordering Vegetated Wetland, customarily employed to enhance existing growing conditions, including but not limited to: tillage, trellising, pruning, mulching, shading, and irrigating; and all customary harvesting practices such as digging, picking, combining, threshing, windrowing, baling, curing, and drying;
2. the use of fertilizers, manures, compost materials, and other soil amendments; pesticides and herbicides; traps; and other such materials;
3. the repair or replacement of existing access roads and livestock crossings;
4. the maintenance of:
  - a. existing forest boundary lines up to five feet wide limited to cutting vegetation within the existing boundary lines;
  - b. windbreaks;
  - c. hedgerows; and
  - d. fire breaks on land maintained in forest use and owned by the Metropolitan District Commission, the Department of Environmental Management, or the Department of Fisheries, Wildlife, and Environmental Law Enforcement;
5. the management of existing field edges, limited to within 100 feet from the land in production, including the following practices:
  - a. mowing;
  - b. burning;
  - c. brush cutting; and
  - d. removing trees.

The management of any field edge that falls within a Bordering Vegetated Wetland is not intended to allow the conversion of Bordering Vegetated Wetland into cropland. Therefore, the field management practices described in 310 CMR 10.04: Agriculture (b)(5)a. through d. may occur in a Bordering Vegetated Wetland provided that:

- i. the cutting or removal of trees and understory vegetation shall not occur within 25 feet of the bank of a water body that is not managed within the land in production (field ditches, cross ditches, grass waterways, irrigation systems, and farm ponds are examples of managed water bodies) unless the trees or understory vegetation are removed to control alternative hosts but no more than 50% of the canopy may be removed, or except to maintain existing dikes;

- ii. slash, branches, and limbs resulting from the cutting and removal operations shall not be placed within 25 feet of the bank of a water body that is not managed within the land in production; and
  - iii. no tilling, filling, excavation, or other change in the existing topography shall occur within the field edge;
6. the maintenance and repair of existing fences and the management of temporary fence lines;
  7. the cleaning, clearing, grading, repairing, dredging, or restoring of existing man-made or natural water management systems such as reservoirs, farm ponds, irrigation systems, field ditches, cross ditches, canals/channels, grass waterways, dikes, sub-surface drainage systems, watering facilities, water transport systems, vents, and water storage systems, all in order to provide drainage, prevent erosion, provide more effective use of water, or provide for efficient use of equipment, and all for the purpose of maintaining favorable conditions for ongoing growing or raising of agricultural commodities;
  8. the maintenance and repair of ongoing agricultural composting sites, storage areas, and work areas and the storage of fertilizers, pesticides, manures, compost materials, and other soil amendments, provided that such storage occurs only in the Buffer Zone or Bordering Land Subject to Flooding;
  9. the repair and maintenance of existing farm structures;
  10. the seeding of eroded or disturbed areas;
  11. maintaining the flow of existing natural waterways;
  12. the keeping of livestock and poultry and the management of beehives;
  13. the cultivation of cranberries, including the following practices:
    - a. the activities described in 310 CMR 10.04: Agriculture(b)1. through 11.;
    - b. the application of sand to existing bogs and the excavation of sand from sand pits;
    - c. the repair and reconstruction of water control structures including flumes, pumps, dikes, and piping above and below the ground;
    - d. the regrading, including modification of drainage, and replanting of existing cranberry bogs;
    - e. the repair and replacement of dikes;
    - f. water harvesting activities; and
    - g. flooding and flood release;
  14. the cutting and removal of trees for the purpose of selling the trees or any products derived therefrom, when carried out in accordance with a Forest Cutting Plan approved by the Department of Environmental Management (DEM) under the provisions of M.G.L. c. 132, §§ 40 through 46, and subject to the following:
    - a. the cutting and removal of trees within Bordering Vegetated Wetland shall be limited to no more than 50% of the basal area of the area to be cut and the work shall be conducted when the soil is frozen, dry or otherwise stable to support the equipment used;



- b. except for the construction or maintenance of access described in 310 CMR 10.04(b)16., there shall be no filling, excavation, or other change in topography or hydrology of resource areas;
- c. all soils that are exposed during or after any work described in 310 CMR 10.04: Agriculture(b)14. shall be stabilized to prevent the soils from eroding into Bordering Vegetated Wetlands beyond the work area or into open water bodies, in accordance with the Massachusetts Forestry Best Management Practices Manual;
- d. the person claiming the exemption shall submit by certified mail or hand delivery at the same time to the conservation commission and the appropriate DEM Regional Office not less than ten days prior to the commencement of the activity, a copy of the Forest Cutting Plan that describes the proposed cutting and removal of trees and any activity within resource areas or the Buffer Zone. The conservation commission shall have the opportunity to comment to DEM on the plan;
- e. landings for forest products shall not be located in Bordering Vegetated Wetland or Bank; and
- f. any Forest Cutting Plan that is not affirmatively approved by DEM under M.G.L. c. 132, §§ 40 through 46 but instead is deemed approved due to the expiration of some period of time following the submittal of the plan to DEM for approval shall not be considered "approved" by DEM for the purposes of 310 CMR 10.04.

15. notwithstanding the use of the words "for commercial purposes" in the first sentence of 310 CMR 10.04: Agriculture(a), the cutting of trees within resource areas and the Buffer Zone by owners for their own use, not to exceed 5,000 board feet or ten cords of wood during any 12 month period without an approved Forest Cutting Plan or the cutting of trees within resource areas of greater than 5,000 board feet or ten cords but less than 10,000 board feet or 20 cords of wood during any 12 month period with an approved Forest Cutting Plan, provided that:

- a. after the cutting, the remaining trees in the resource area (and the Buffer Zone, if the activity is being conducted without an approved Forest Cutting Plan) shall be evenly distributed throughout the area where cutting occurred and the crown cover shall not be less than 50%. Crown cover is determined as the percent of the ground's surface that would be covered by a vertical projection of foliage from trees with a diameter at breast height of five inches or greater, where minor gaps between branches are disregarded and areas of overlapping foliage are counted only once;
- b. the cutting and removal of trees shall occur only during those periods when the ground is sufficiently frozen, dry, or otherwise stable to support the equipment used;
- c. the cutting, removal, or other destruction of trees and understory vegetation without a Forest Cutting Plan shall not occur within 25 feet of the Bank, except for the purpose of providing access for the activities described in 310 CMR 10.04: Agriculture(b)15.;
- d. the placement of slash, branches, and limbs resulting from the cutting and removal operations shall not occur within 25 feet of Bank;

- e. no filling, excavation, or other change shall occur in the existing topography or hydrology of a resource area;
- f. landings for forest products shall not be located in Bordering Vegetated Wetland or Bank; and
- g. any Forest Cutting Plan that is not affirmatively approved by DEM under M.G.L. c. 132, §§ 40 through 46, but instead is deemed approved due to the expiration of some period of time following the submittal of the plan to DEM for approval shall not be considered "approved" by DEM for the purposes of 310 CMR 10.04.

16. the construction of new temporary access or the maintenance of existing legally constructed access for forestry activities described in 310 CMR 10.04:

Agriculture(b)14. or 15. provided that:

- a. every practicable effort shall be made to avoid access, including stream crossings, and the construction of landings through and in resource areas;
- b. where access, including stream crossings, through resource areas cannot be avoided, every practicable effort shall be made to minimize impacts resulting from construction of new access including, but not limited to, maintaining and improving (but not enlarging) existing access. Activities shall be conducted when the soil is frozen, dry, or otherwise stable to support the equipment used;
- c. where DEM has determined through its review and approval of the Forest Cutting Plan that access is impracticable without constructing new access or stream crossings:
  - i. access shall be designed, constructed, and maintained in accordance with the Massachusetts Forestry Best Management Practices Manual;
  - ii. stream crossings shall be stabilized to prevent erosion using methods described in the Massachusetts Forestry Best Management Practices Manual. When crossings involve fill, culverts or other structures that will obstruct flow, they shall be designed, constructed, and maintained in accordance with the Massachusetts Forestry Best Management Practices Manual to allow the unobstructed passage of existing flows for at least the 25 year storm;
  - iii. access or stream crossings shall be removed within one year of completion of the work described in the approved Forest Cutting Plan;
  - iv. following removal of access, the topography and site conditions shall be substantially restored to allow pre-existing vegetation to be reestablished; and
  - v. activities shall be conducted when the soil is frozen, dry, or otherwise stable to support the equipment used.

17. non-harvest management practices for forest products on land maintained in forest use limited to pruning, pre-commercial thinning or planting of tree seedlings.

(c) Normal Improvement of Land in Agricultural Use, which in all cases does not include filling or dredging a Salt Marsh, includes but is not limited to:

1. the following activities when they occur on land in agricultural use or when they occur within the Buffer Zone or Bordering Land Subject to Flooding that is not land in agricultural use, when they are directly related to production or raising of the agricultural commodities referenced in 310 CMR 10.04: Agriculture(a), and when they are undertaken in such a manner as to prevent erosion and siltation of adjacent water bodies and wetlands and the activity is conducted in accordance with federal and state laws:

- a. the installation of permanent fencing, windbreaks, hedgerows, or the cutting of vegetation to create forest boundaries up to five feet wide;
- b. the installation of dikes within a cranberry bog;
- c. the construction of farm structures, not including habitable dwellings, provided that the footprint of the farm structure does not exceed 4,000 square feet and no filling of Bordering Land Subject to Flooding occurs beyond the footprint of the building;
- d. the squaring-off of fields and bogs, provided that the activity does not alter a Bordering Vegetated Wetland, there is no increase in the amount of land in production beyond the minimum increase necessarily resulting from making the boundary of any field or bog more regular, and no fill is placed within Bordering Land Subject to Flooding;
- e. the construction of by-pass canals/channels and tail water recovery systems;
- f. a change in commodity other than from maple sap production or forest products to any other commodity, provided that there is no filling of Bordering Vegetated Wetland and drainage ditches or the subsurface drainage system are not increased or enlarged;
- g. the construction of a water management system such as a reservoir, farm pond, irrigation system, field ditch, cross ditch, canal/channel, grass waterway, dike, sub-surface drainage system, watering facility, water transport system, vent, or water storage system, or of a livestock access; and
- h. the construction of composting and storage areas.

For the activities described in 310 CMR 10.04: Agriculture(c)(1)d. through h. there shall be no net loss of flood storage capacity; and

2. the reconstruction of existing dikes, the reconstruction and expansion of existing ponds and reservoirs, and the construction of tailwater recovery ponds and by-pass canals/channels occurring partly or entirely within a Bordering Vegetated Wetland, when directly related to production or raising of the agricultural commodities referenced in 310 CMR 10.04: Agriculture(a), in accordance with the following:

- a. Prior to performing the work, the person claiming the exemption shall submit to the conservation commission for its review at a public meeting that portion of a certified farm Conservation Plan (CP) which relates to the work to be conducted in a Bordering Vegetated Wetland. The CP must be prepared in cooperation with the U.S.D.A. Natural Resource Conservation

- Service (NRCS), Memorandum of Understanding (MOU) between the Department and NRCS concerning CPs;
- b. The conservation commission may, within 21 days of receiving the CP, provide the person claiming the exemption with written notification containing specific comments detailing the manner in which the CP has not been prepared in compliance with the terms of the MOU;
  - c. The person claiming the exemption shall provide SCS with a complete copy of the notification;
  - d. All revisions to the CP that relate to the delineation of Bordering Vegetated Wetlands shall be submitted to the conservation commission in accordance with 310 CMR 10.04: Agriculture(c)2.;
  - e. All work shall be done in accordance with the CP; and
  - f. The maximum amount of Bordering Vegetated Wetland which may be altered by the above activities is:
    - i. 5,000 square feet for reconstruction of an existing dike;
    - ii. 10,000 square feet for expansion of an existing pond or reservoir;
    - iii. 10,000 square feet for construction of a tailwater recovery pond; and
    - iv. 5,000 square feet for construction of a by-pass canal/channel.

Alter means to change the condition of any Area Subject to Protection under M.G.L. c. 131, § 40. Examples of alterations include, but are not limited to, the following:

- (a) the changing of pre-existing drainage characteristics, flushing characteristics, salinity distribution, sedimentation patterns, flow patterns and flood retention areas;
- (b) the ~~lowering-changing~~ of the water level or water table; unless due to infiltration/recharge or other stormwater management required at 3.10 CMR 10.05 (6)(k)
- (c) the destruction of vegetation;
- (d) the changing of water temperature, biochemical oxygen demand (BOD), and other physical, biological or chemical characteristics of the receiving water;
- (e) ~~increasing of the volume of untreated stormwater runoff directed to a wetland Resource Area.~~

Provided, that when the provisions of 310 CMR 10.03(6) and 10.05(3) or 333 CMR 11.03(9) have been met, the application of herbicides in the Buffer Zone in accordance with such plans as are required by the Department of Food and Agriculture pursuant to 333 CMR 11.00: *Right of Way Management*, effective July 10, 1987, is not an alteration of any Area Subject to Protection under M.G.L. c. 131, § 40.

Applicant means any person who files a Notice of Intent, or on whose behalf such a notice is filed.

Aquaculture.

- (a) Land in Aquacultural Use means land presently and primarily used in the growing of aquatic organisms under controlled conditions, including one or more of the following uses: raising, breeding or producing a specified type of animal or vegetable life including, but not limited to, municipal shellfish propagation, finfish such as carp, catfish, black

**Commented [A7]:** Currently, there are no performance standards in the Wetlands Protection Act relative to changes in water level or groundwater table. If there are no performance standards relative to these changes, then the presumption will be that any change is an impact and will not be allowed. Stormwater discharges/recharge are transient/temporary and will not significantly the resource area and typically dissipate over a short period of time. One of the stated goals of the regulation updates is to increase recharge presumably to improve the base flow for rivers, streams and wetlands. By not allowing for any change to the water level or water table it will not be possible to meet the goals of enhancing base flow that is critical to these wetland resources.

As such, NAIOP suggests maintaining the current definition, retaining the word “lowering” or alternatively, revising the definition as suggested in blue.

**Commented [A8]:** It is unclear if a SCM treats 1-inch of runoff and achieves the treatment requirement of the regulations (say 90% TSS and 60% phosphorous for new developments) and any flow greater than the 1-inch bypasses the treatment SCM is the bypass considered treated or untreated?

There may also be sites where where one part of the site is treated and one part is untreated yet the calculations demonstrate that the combined flow to the design point exceed 90% TSS and 60% phosphorous removal.

Given the uncertainty around real-world impacts and examples, NAIOP suggests that line (e) be struck in its entirety.

bass, flatfishes, herring, salmon, shad, smelt, sturgeon, striped bass, sunfishes, trout, whitefish, eel, tilapia; shellfish such as shrimp, crabs, lobster, crayfish, oysters, clams, periwinkles, scallops, mussels, squid; amphibians such as frogs; reptiles such as turtles; seaweeds such as irish moss and dulse; and edible freshwater plants.

(b) Normal Maintenance or Improvement of land in aquacultural use means the following activities, when done in connection with the production of aquatic organisms as defined above: draining, flooding, heating, cooling, removing, filling, grading, compacting, raking, tilling, fertilizing, seeding, harvesting, filtering, rafting, culverting or applying chemicals in conformance with all state and federal laws; provided, however, that such activities are clearly intended to improve and maintain land in aquacultural use and that Best Available Measures are utilized to ensure that there will be no adverse effect on wetlands outside the area in aquacultural use, and further provided that removing, filling, dredging or altering of a salt marsh is not to be considered normal maintenance or improvement of land in aquacultural use.

Area Subject to Protection under M.G.L. c. 131, § 40 means any area specified in 310 CMR 10.02(1). It is used synonymously with Resource Area, each one of which is defined in greater detail in 310 CMR 10.21 through 10.66.

Bank (Coastal) is defined in 310 CMR 10.30(2).

Bank (Inland) is defined in 310 CMR 10.54(2).

Beach (Barrier) is defined in 310 CMR 10.29(2).

Beach (Coastal) is defined in 310 CMR 10.27(2).

Beach (Inland), a naturally occurring inland beach, means an unvegetated bank as defined in 310 CMR 10.54(2).

Bedrock means solid rock exposed at the surface or overlain by unconsolidated gravel, sand, silt and/or clay. Bedrock includes weathered or saprolitic components thereof.

Best Available Measures means the most up-to-date technology or the best designs, measures or engineering practices that have been developed and that are commercially available.

Best Management Practices (BMPs) means, for purposes of stormwater management (310 CMR 10.05(6)(k)-(q)), construction period erosion and sedimentation control practices and post-construction good housekeeping practices, including but not limited to: source controls; pollution prevention measures; operating procedures and practices to control site runoff; spillage or leaks; sludge or waste disposal; or drainage from raw material storage. For purposes of post-construction stormwater management, see 310 CMR 10.04, definition of Stormwater Control

Measure. For purposes of forestry management, BMPs include those described in the Massachusetts Forestry Best Management Practices Manual, dated 2013.

Best Practical Measures means technologies, designs, measures or engineering practices that are in general use to protect similar interests.

Bordering means touching. An area listed in 310 CMR 10.02(1)(a) is bordering on a water body listed in 310 CMR 10.02(1)(a) if some portion of the area is touching the water body or if some portion of the area is touching another area listed in 310 CMR 10.02(1)(a) some portion of which is in turn touching the water body.

Bordering Vegetated Wetland is defined in 310 CMR 10.55(2).

Boundary means the boundary of an Area Subject to Protection under M.G.L. c. 131, § 40. A description of the boundary of each area is found in the appropriate section of 310 CMR 10.00. For coastal areas, *see* 310 CMR 10.21 through 10.37; for inland areas, *see* 310 CMR 10.51 through 10.60.

Breeding Areas mean areas used by wildlife for courtship, mating, nesting or other reproductive activity, and rearing of young.

Buffer Zone means that area of land extending 100 feet horizontally outward from the boundary of any area specified in 310 CMR 10.02(1)(a).

Certificate of Compliance means a written determination by the issuing authority that work or a portion thereof has been completed in accordance with an Order. It shall be made on Form 8.

Coastal Wetlands are defined in M.G.L. c. 131, § 40, para. 76.

Cold-water Fishery means waters in which the mean of the maximum daily temperature over a seven day period generally does not exceed 68°F (20°C) and, when other ecological factors are favorable (such as habitat) are capable of supporting a year round population of cold-water stenothermal aquatic life such as trout. Waters designated as cold-water fisheries by the Department in 314 CMR 4.00: *Massachusetts Surface Water Quality Standards* and waters designated as cold-water fishery resources by the Division of Fisheries and Wildlife are cold-water fisheries. Waters where there is evidence based on a fish survey that a cold-water fish population and habitat exist are also cold-water fisheries. Cold-water fish include but are not limited to brook trout (*Salvelinus fontinalis*), rainbow trout (*Oncorhynchus mykiss*), brown trout (*Salmo trutta*), creek chubsucker (*Erimyzon oblongus*) and fallfish (*semotilus corporalis*).

Combined Application means an application that may serve as a Notice of Intent pursuant to 310 CMR 10.00, an application for a 401 Water Quality Certification pursuant to 314 CMR 9.00: *401 Water Quality Certification for Discharge of Dredged or Fill Material, Dredging, and Dredged Material Disposal in Waters of the United States Within the Commonwealth*, and/or an application for a Chapter 91 license, permit or other written approval for a water dependent use;

~~pursuant to 310 CMR 9.00: *Waterways*. Notwithstanding the foregoing, a Combined Application may not serve as an application for an annual permit for a mooring, float, raft or small structure accessory to a residence in accordance with 310 CMR 9.07: *Activities Subject to Annual Permit*, an application for a Chapter 91 license for a small structure accessory to a residence in accordance with the simplified process set forth in 310 CMR 9.10: *Simplified Procedures for Small Structures Accessory to Residences* or the certification submitted as an application for a General License in accordance with 310 CMR 9.29: *Permitting of Test Projects*.~~

~~Combined Permit means a decision issued in response to a Combined Application that serves as two or more of the following: a Superseding Order of Conditions issued pursuant to 310 CMR 10.00; a 401 Water Quality Certification issued pursuant to 314 CMR 9.00: *401 Water Quality Certification for Discharge of Dredged or Fill Material, Dredging, and Dredged Material Disposal in Waters of the United States Within the Commonwealth*; and/or a Chapter 91 permit, license or other written approval issued pursuant to 310 CMR 9.00: *Waterways*. Commissioner means the Commissioner of the Department of Environmental Protection~~

~~Commissioner means the Commissioner of the Department of Environmental Protection pursuant to St. 1989, c. 240, § 101.~~

~~Compacted Gravel or Soil means, for purposes of stormwater management (310 CMR 10.05(6)(k)-(q)), gravel roads, gravel parking lots, dirt roads, dirt parking lots, and unvegetated areas that have historically provided or have been designed to provide a compacted surface for use by vehicles, pedestrians, bicycles and/or animals. Compacted gravel and soil do not include lawns, roadway median strips, landscaped areas, and natural turf athletic fields. The presumption that a soil is compacted can be overcome by a showing that the soil strength is less than 10 bars of pressure (approximately 145 pounds per square inch or 10<sup>6</sup> pascals).~~

~~Conditions means those requirements set forth in a written Order issued by a conservation commission or the Department for the purpose of permitting, regulating or prohibiting any activity that removes, fills, dredges or alters an Area Subject to Protection under M.G.L. c. 131, § 40. (See also 310 CMR 10.05(6).)~~

~~Confined Disposal Facility means a facility created in open water or wetlands consisting of confinement walls or berms built up or extending into existing land and is a “confined disposal facility” as defined in 314 CMR 9.02: *Definitions*.~~

~~Conservation Commission means that body comprised of members lawfully appointed pursuant to M.G.L. c. 40, § 8C. For the purposes of M.G.L. c. 131, § 40 and 310 CMR 10.00, it shall also mean a mayor or board of selectmen, where no conservation commission has been established under M.G.L. c. 40, § 8C.~~

~~Creek means the same as a stream, as defined in 310 CMR 10.04.~~

~~Critical Areas mean Outstanding Resource Waters as designated in 314 CMR 4.00: *Massachusetts Surface Water Quality Standards*; Special Resource Waters as designated in 314 CMR 4.00: *Massachusetts Surface Water Quality Standards*; recharge areas for public water~~

**Commented [A9]:** A uniform crushed stone is typically more porous than gravel and may be highly permeable despite “soil strength exceeding the threshold in the definition. Soil strength is not correlated to the permeability/impermeability of a soil.

Rather than soil strength, NAIOP suggests that hydraulic conductivity at the soil’s maximum dry density should be used to determine whether a compacted gravel or soil area is classified as impervious. NAIOP further recommends that the hydraulic conductivity should align with the minimum hydraulic conductivity allowed for recharge (0.17 in/hr).



supplies as defined in 310 CMR 22.02: *Definitions* (Zone Is, Zone IIs, and Interim Wellhead Protection Areas for ground water sources and Zone As for surface water sources); ~~bathing beaches as defined in 105 CMR 445.000: *State Sanitary Code Chapter VII: Minimum Standards for Bathing Beaches*; (State Sanitary Code: Chapter VII), Cold-water Fisheries; and Shellfish Growing Areas.~~

Dam means for the purposes of 310 CMR 10.11 through 310 CMR 10.14, 310 CMR 10.24(8), and 10.53(4) any artificial barrier placed across a watercourse that raises or has the potential to raise the level of water or which impounds and/or diverts water.

Date of Issuance means the date an Order is mailed, as evidenced by a postmark, or the date it is hand delivered.

Date of Receipt means the date of delivery to an office, home or usual place of business by mail or hand delivery.

Densely Developed Area means a riverfront area that has been designated by the Secretary of the Executive Office of Energy and Environmental Affairs at the request of a city or town, limited to an area of ten acres or more that is being utilized, or includes existing vacant structures or vacant lots formerly utilized as of January 1, 1944 or sooner, for intensive industrial, commercial, institutional, or residential activities or combinations of such activities, including, but not limited to the following: manufacturing, fabricating, wholesaling, warehousing, or other commercial or industrial activities; retail trade and service activities; medical and educational institutions; residential dwelling structures at a density of three or more per two acres; and mixed or combined patterns of the above. Land which is zoned for intensive use but is not utilized for such use as of January 1, 1997 shall not be designated as a densely developed area. Rivers within the municipalities identified in 310 CMR 10.58(2)(a)3.a. also have 25 foot riverfront areas.

Department (or MassDEP) means the Department of Environmental Protection, and shall include the Commissioner and any other person employed by said Department, pursuant to St. 1989, c. 240, § 101.

Designated Port is defined in 310 CMR 10.26(2)

Determination.

(a) a Determination of Applicability means a written finding by a conservation commission or the Department as to whether a site or the work proposed thereon is subject to the jurisdiction of M.G.L. c. 131, § 40. It shall be made on Form 2.

(b) a Determination of Significance means a written finding by a conservation commission, after a public hearing, or by the Department, that the area on which the proposed work is to be done, or which the proposed work will alter, is significant to one or more of the interests identified in M.G.L. c. 131, § 40. It shall be made as part of the Order, on Form 5.

(c) a Notification of Non-significance means a written finding by a conservation commission, after a public hearing, or by the Department, that the area on which the

proposed work is to be done, or which the proposed work will alter, is not significant to any of the interests of M.G.L. c. 131, § 40. It shall be made on Form 6.

Direct Case means the evidence that a party seeks to introduce in support of its position, as well as any legal argument the party wishes to provide. The Direct Case may include, but is not limited to, statements under oath by lay witnesses and expert witnesses, technical reports, studies, memoranda, maps, plans, and other information that a party seeks to have the Presiding Officer review as part of the adjudicatory proceeding.

Disposal Site means a structure, well, pit, pond, lagoon, impoundment, ditch, landfill, or other place or area, excluding ambient air or surface water, where uncontrolled oil or hazardous material has come to be located as a result of any spilling, leaking, pouring, ponding, emitting, emptying, discharging, injecting, escaping, leaching, dumping, discarding or otherwise disposing of such oil or hazardous material and is a “disposal site” as defined in M.G.L. c. 21E.

Dredge means to deepen, widen or excavate, either temporarily or permanently, land below the mean high tide line in coastal waters and below the high water mark for inland waters. The term dredge shall not include activities in Salt Marsh, and Bordering Vegetated Wetlands or isolated vegetated wetlands.

Dune means coastal dune, as defined in 310 CMR 10.28(2).

Ecological Restoration Project means a project whose primary purpose is to restore or otherwise improve the natural capacity of a Resource Area(s) to protect and sustain the interests identified in M.G.L. c. 131, § 40, when such interests have been degraded or destroyed by anthropogenic influences. The term Ecological Restoration Project shall not include projects specifically intended to provide mitigation for the alteration of a Resource Area authorized by a Final Order or Variance issued pursuant to 310 CMR 10.00 or a 401 Water Quality Certification issued pursuant to 314 CMR 9.00: *401 Water Quality Certification for Discharge of Dredged or Fill Material, Dredging, and Dredged Material Disposal in Waters of the United States Within the Commonwealth* other than projects implemented pursuant to a US Army Corps of Engineers approved in-lieu fee program.

Ecological Restoration Limited Project means an Ecological Restoration Project that meets the eligibility criteria set forth in 310 CMR 10.24(8) or 10.53(4).

Effective Impervious Cover Reduction means the reduction of impervious cover for accounting purposes from the total area of impervious cover on a Project Site for purposes of stormwater management (310 CMR 10.05(6)(k)-(q)) due to the use of practices that effectively disconnect stormwater from the drainage system. Impervious cover is deducted for accounting purposes when the following are utilized: tree canopy enhancement, rain barrels/cisterns, and green roofs, recognizing that these practices more closely mimic pervious surfaces. The impervious cover deducted for accounting purposes is the area of tree canopy, or roof top. For example, if a 200 square foot roof has 50 square feet of green roof, then 50 square feet can be deducted from the size of the area that needs to be treated by the rest of the Stormwater Management System.

~~Estimated Habitat Map of State-listed Rare Wetlands Wildlife means the map of the estimated habitats of state-listed rare wetlands wildlife published by the Natural Heritage and Endangered Species Program (the Program or NHESP) in accordance with 321 CMR 10.12: Delineation of Priority Habitat of State-listed Species.~~

~~Environmental Protection Agency Performance Removal Curve (EPA-PRC) means the pollutant removal curves located in the BMP Accounting & Tracking Tool (BATT) published by the U.S. Environmental Protection Agency (EPA). These curves show percent reduction of various pollutants based on volume of stormwater runoff that is treated. The EPA-PRC results in the BATT tool are in tabular form. The BATT tool and user guide can be found at:~~

~~<https://www.epa.gov/npdes-permits/stormwater-tools-new-england#swbmp>~~

~~Graphical representations of the EPA-PRC are published in Appendix B of the Massachusetts Stormwater Handbook [2023 Edition] and may not reflect any future updates to the BATT.~~

~~Environmentally Sensitive Site Design (ESSD) means a suite of practices using nature-based solutions to treat stormwater while reducing or eliminating structural Stormwater Control Measures needed to meet certain Stormwater Management Standards. More specifically, ESSD means designs that incorporates ~~Low~~ ~~Impact~~ ~~Development~~ techniques ~~or practices~~ to prevent the generation of stormwater and non-point source pollution by reducing ~~Impervious~~ ~~Surfaces~~, disconnecting stormwater sheet flow paths and treating stormwater at its source, maximizing open space, minimizing disturbance, protecting natural features and processes, and/or enhancing wildlife habitat.~~

~~Environmentally Sensitive Site Design Credit (ESSD Credit) means a credit for the use of ESSD that counts towards compliance with requirements to: (i) attenuate the peak discharge rate pursuant to 310 CMR 10.05(6)(k)2.; (ii) recharge a depth of stormwater in inches pursuant to 310 CMR 10.05(6)(k)3.; or (iii) remove a percent of Total Suspended Solids and Total Phosphorus pursuant to 310 CMR 10.05(6)(k)4 and 310 CMR 10.05(6)(k)7.~~

~~Estimated Habitat Map of State-listed Rare Wetlands Wildlife means the map of the estimated habitats of state-listed rare wetlands wildlife published by the Natural Heritage and Endangered Species Program (the Program or NHESP) in accordance with 321 CMR 10.12: Delineation of Priority Habitat of State-listed Species.~~

Estuary means:

- (a) any area where fresh and salt water mix and tidal effects are evident; or
- (b) any partially enclosed coastal body of water where the tide meets the current of any stream or river.

Extension Permit means a written extension of time within which the authorized work shall be completed. It shall be made on Form 7.

FEMA means the Federal Emergency Management Agency, an agency of the United States Department of Homeland Security whose primary purpose is to coordinate response to disasters.

Fill means to deposit any material so as to raise an elevation, either temporarily or permanently.

Final Order means the Order issued by the Commissioner after an adjudicatory hearing or, if no request for hearing has been filed, the Superseding Order or, if no request for a Superseding Order has been filed, the Order of Conditions.

Flat (Tidal) is defined in 310 CMR 10.27(2)(b).

Flood Control means the prevention or reduction of flooding and flood damage.

Formerly or Presently Owned means owned by the same owner at any time on or after August 1, 1996.

Freshwater Wetlands are defined in M.G.L. c. 131, § ~~40~~<sup>7</sup>, para. ~~8~~<sup>7</sup>.

General Performance Standards means those requirements established by 310 CMR 10.00 for activities in or affecting each of the Areas Subject to Protection under M.G.L. c. 131, § 40. They are found in 310 CMR 10.25 through 10.3~~6~~<sup>5</sup>, 10.37, and 10.54 through 10.60.

Ground Water Supply means water below the earth's surface in the zone of saturation.

Highway Specific Considerations are design specifications and other measures that the Massachusetts Department of Transportation (MassDOT) may use to comply with or be presumed to comply with the Stormwater Management Standards. The Highway Specific Considerations include provisions in the Massachusetts Stormwater Handbook [2023 Edition] for use of linear SCMs for pollutant removal, recharge, and peak discharge rate reduction; specifications for deep sump catch basin inlet grates and hoods; and an operation and maintenance approach that will be presumed to meet the Stormwater Management Standards. Highway Specific Considerations also include use of the Macro-Approach and the Watershed-scale Accounting Method, as applicable, in order to meet the Stormwater Management Standards.

Historic Mill Complex means the mill complexes in, but not limited to, Holyoke, Taunton, Fitchburg, Haverhill, Methuen, and Medford in existence prior to 1946 and situated landward of the waterside facade of a retaining wall, building, sluiceway, or other structure existing on August 7, 1996. An historic mill complex also means any historic mill included on the *Massachusetts Register of Historic Places*. An historic mill complex includes only the footprint of the area that is or was occupied by interrelated buildings (manufacturing buildings, housing, utilities, parking areas, and driveways) constructed before and existing after 1946, used for any type of manufacturing or mechanical processing and including associated structures to provide water for processing, to generate water power, or for water transportation.

Hydrologic Unit Code 10 (HUC 10) means a fifth level sub-watershed delineated by the U.S. Geological Survey using a national standard hierarchical system based on surface hydrologic features.

Hydrologic Unit Code 12 (HUC 12) means a sixth level sub-watershed delineated by the U.S. Geological Survey using a national standard hierarchical system based on surface hydrologic features.

Illicit Discharge means a discharge that is not entirely comprised of stormwater, except pursuant to a National Pollutant Discharge Elimination System (NPDES) permit (other than the NPDES permit for discharges from a municipal separate storm sewer) and discharges resulting from fire fighting activities. Notwithstanding the foregoing, an illicit discharge does not include discharges from the following activities or facilities: firefighting, water line flushing, landscape irrigation, uncontaminated ground water, potable water sources, foundation drains, air conditioning condensation, footing drains, individual resident car washing, flows from riparian habitats and wetlands, dechlorinated water from swimming pools, water used for street washing and water used to clean residential buildings without detergents.

Impervious Surface means, for purposes of stormwater management (310 CMR 10.05(6)(k)-(q)), any surface that prevents or significantly impedes the infiltration of water into the underlying soil, including, but not limited to ~~artificial turf~~, Compacted Gravel or Soil, roads, building rooftops, solar arrays, parking lots, Public Shared Use Paths, bicycle paths, and sidewalks paved with concrete, asphalt, or other similar materials. For purposes of this definition, porous pavements and artificial turf are Impervious Surfaces in order ~~to size the depth of the underlying reservoir course~~ to meet recharge and Total Suspended Solids/Total Phosphorus removal requirements pursuant to 310 CMR 10.05(6)(k)3. and 4.

Important Wildlife Habitat Functions means important food, shelter, migratory or overwintering areas, or breeding areas for wildlife.

Impracticable for use in 310 CMR 10.05(6)(k)-(q) for purposes of stormwater management means ~~impossible in practice to do or carry out based solely on physical constraints~~, incapable of being executed taking into consideration costs, available technology, proposed use, logistics and potential adverse impacts/consequences.

Improvement of an Existing Public Roadway means, for purposes of Redevelopment stormwater management in 310 CMR 10.05(6)(k)7., activities undertaken to a roadway that increase the total impervious area by less than a single lane width. This can include activities such as, widening roadways (less than a single lane), adding shoulders, correcting substandard intersections, expansion or making other structural changes to an existing drainage system, and installing new sidewalks. Improvement of an Existing Public Roadway may include New Stormwater Discharges.

Innovative Technology means technology that has not been commercially deployed or is in limited deployment in Massachusetts, and includes, but is not limited to, energy technology that

**Commented [A10]:** It is unclear why artificial turf is considered impermeable. Most artificial turf fields are highly permeable. If the intent is to ensure that runoff is recharged and properly treated, NAIOP suggests revising the definition as show in blue.

**Commented [A11]:** NAIOP is concerned that setting a standard using “impossible” is subjective and does not account for very real considerations of time, financing, expertise available, to what extent impossible will be evaluated and by who, etc.

As such, NAIOP suggests that impracticable be used, and align with the definition of Practicable area as defined in 310 CMR 10.04 definitions.

**Commented [A12]:** There is no definition of Public Roadway within the draft regulations. NAIOP suggests using the following definition: **Public Roadway means any right of way, whether on public or private property, open to public use.**

obtains energy from the ocean, waterway, or conditions associated with the ocean or waterway, or other forms of renewable energy technology.

Interests Identified in M.G.L. c. 131, § 40 means public or private water supply, ground water supply, flood control, storm damage prevention, prevention of pollution, protection of land containing shellfish, protection of fisheries, and protection of wildlife habitat.

Interim Wellhead Protection Area (IWPA) is defined in 310 CMR 22.00: Drinking Water.

Issuing Authority means a conservation commission, mayor, the selectmen or the Department, whichever is applicable.

Lake means any open body of fresh water with a surface area of ten acres or more, and shall include great ponds.

Land Containing Shellfish is defined in 310 CMR 10.34(2).

Land Subject to Coastal Storm Flowage means the area landward of the mean low water line that is at or below the elevation of the flood that has a 1% chance of being equaled or exceeded in any given year. ~~land subject to any inundation caused by coastal storms up to and including that caused by the 100 year storm, surge of record or storm of record, whichever is greater.~~

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**Commented [A13]:** It is the elevation of the flood waters that matters, not the probability of the storm that causes the flood (e.g., 100-year storm). The surge/storm of record should be eliminated from the definition because there's no way to tell whether that event is a 1% annual chance event (could be a lower probability event), and it creates a moving target for the resource area. The FEMA data should prevail. Therefore, NAIOP suggests the change in blue.

Land Subject to Flooding is defined in 310 CMR 10.57(2).

Land Subject to Tidal Action means land subject to the periodic rise and fall of a coastal water body, including spring tides.

Land under Salt Ponds is defined in 310 CMR 10.33(2).

Land under Water Bodies and Waterways means the bottom of, or land under, the surface of the ocean or any estuary, creek, river, stream, pond, or lake. Land under the ocean and estuaries is further defined in 310 CMR 10.25(2); land under inland water bodies is further defined in 310 CMR 10.56(2).

Land Uses with Higher Potential Pollutant Loads mean the following land uses: land uses identified in 310 CMR 22.20B(2), 22.20C(2)(a) through (k) and (m), 22.21(2)(a)1. through 8., and (b)1. through 6.; areas within a site that are the location of activities that are subject to an individual National Pollutant Discharge Elimination System (NPDES) permit or the NPDES Multi-sector General Permit; auto fueling facilities (gas stations); exterior fleet storage areas; exterior vehicle service and equipment cleaning areas; marinas and boatyards; parking lots with high intensity use; confined disposal facilities and disposal sites.

Landowner means the owner of record of land or an interest in land that is subject of a Reviewable Decision.

Linear-shaped Project, for purposes of 310 CMR 10.05(4), means a project that is substantially longer than it is wide and is a project for the construction, reconstruction, or substantial

enlargement of facilities that will be used in the service of the public to provide electric, gas, sewer, water, telephone, telegraph and other communication services, a project by a public agency or authority for the construction, reconstruction, expansion, repair or maintenance of public roads, bike paths or other paths for pedestrians, or public railways.

Lot means an area of land in one ownership, with definite boundaries.

Low Impact Development (LID) Techniques means innovative stormwater management systems that are modeled after natural hydrologic features. LID techniques manages rainfall at the source using uniformly distributed, decentralized, micro-scale controls. LID techniques uses small, cost-effective landscape features located at the lot level. LID takes the form of techniques (e.g., porous pavement)–or practices (e.g., reduced front yard setback).

Macro-Approach means a compliance approach for new development or Redevelopment of highways where Stormwater Control Measures are implemented within the Project Locus rather than the Project Site.

Maintenance Log means, for purposes of 310 CMR 10.05(6)(k)9., a written log listing each Stormwater Management System maintenance activity and long-term pollution prevention plan measure that has occurred, with the corresponding date that the maintenance and pollution prevention measure occurred.

Maintenance of a Stormwater Management System means the work required to keep a stormwater management system functional and in good repair so that it may continue to operate as originally designed. Maintenance of a stormwater management system does not include work that:

- (a) reduces the capacity of the system to treat stormwater, provide recharge or attenuate peak flow;
- (b) increases the total and peak volume of the stormwater managed by the system;
- (c) directs additional stormwater discharges to the system; or
- (d) results in reduced use of above ground Stormwater Control Measures or Best Management Practices.

Maintenance of an Existing Public Roadway means activities undertaken to a roadway that do not increase impervious area. Such activities include, but are not limited to, grinding, scarifying, repaving, resurfacing, replacing existing drainage pipes, or resetting curbs or catch basin frames. Maintenance of an Existing Public Roadway does not include widening, installing new shoulders, installing new sidewalks, or creating New Stormwater Discharges from existing roads.

Major or Complex means an appeal of a Reviewable Decision issued for work in a resource area that will be so designated due to the complexity or novelty of the issues, the magnitude of the project, the potential for environmental harm or benefit, significant public interest or public



financing or other relevant consideration, as determined by the Commissioner or a Presiding Officer.

Majority means more than half of the members of the conservation commission then in office.

Marsh is defined in M.G.L. c. 131, § 40, para. 110.

Massachusetts Erosion and Sediment Control Guidelines means the *Massachusetts Erosion and Sediment Control Guidelines for Urban and Suburban Areas* originally prepared by the Franklin, Hampden, and Hampshire Conservation Districts in 1997, for the Massachusetts Executive Office of Environmental Affairs State Commission for Conservation of Soil, Water and Related Resources, the Massachusetts Department of Environmental Protection, the U.S. Environmental Protection Agency, Region I, and the Natural Resources Conservation Service, United States Department of Agriculture and reprinted in May 2003. This is now incorporated as Massachusetts Stormwater Handbook Appendix C [2023 Edition].

Massachusetts River and Stream Crossing Standards or the Stream Crossing Standards means the standards developed by the River and Stream Continuity Partnership as corrected on March 8, 2012 (<https://www.mass.gov/doc/massachusetts-river-and-stream-crossing-standards/download>).

Maximum Extent Practicable, for purposes of stormwater management (310 CMR 10.05(6)(k)-(q)), as defined at 310 CMR 10.05(6)(o).

Meadow (or Wet Meadow) is defined in M.G.L. c. 131, § 40, para. 109.

Mean Annual High-water Line is defined at 310 CMR 10.58(2).

MEPA means the Massachusetts Environmental Policy Act, M.G.L. c. 30, §§ 6 through 62H, and 301 CMR 11.00: *General Application and Administration Environmental Code, Title 1*.

Migratory Areas mean those areas used by wildlife moving from one habitat to another, whether seasonally or otherwise.

Mitigation means rectifying an adverse impact by repairing, rehabilitating or restoring the affected Resource Area or compensating for an adverse impact by enhancing or providing replacement Resource Areas.

Near means, for purposes of stormwater management (310 CMR 10.05(6)(k)(6)), where a stormwater discharge has a strong likelihood of causing a significant impact to Critical Area, taking into account site-specific factors. Issuing authorities may use their discretion to determine if a discharge is Near a Critical Area except that Near always includes any untreated or increased stormwater new stormwater discharge within a Buffer Zone, Riverfront Area or Bordering Land Subject to Flooding.

**Commented [A14]:** NAIOP is concerned that this definition is broad, open to interpretation and unlikely to be interpreted consistently in application. NAIOP suggests providing additional guidance to Conservation Commissions and reviewers to interpret the definition consistently.

New Stormwater Conveyance means a new, confined and discrete manmade component of a Stormwater Management System, which directs stormwater run-off to wetland Resource Areas, and includes but is not limited to pipes, pipe outlets (outfalls), curbs, gutters, scuppers, storm drains, constructed channels, swales, tunnels, aqueducts, or inlets to storm drains, pipes or catch basins.

New Stormwater Discharge means new or increased runoff directed to a Resource Area from new Impervious Surface or through a New Stormwater Conveyance. Increased runoff means additional stormwater volume or higher discharge rate than currently exists. Stormwater discharges can be from public or privately owned Impervious Surfaces or conveyances.

**Commented [A15]:** NAIOP is unclear as to where the definition for stormwater discharge can be found and suggests that this definition be consistent with the definition for Storm Water Discharges found in 314 CMR 3.04 (2) (a).

Notice of Intent means the written notice filed by any person intending to remove, fill, dredge or alter an Area Subject to Protection under M.G.L. c. 131, § 40. It shall be made on Form 3 or 4.

NRCS means the Natural Resources Conservation Service, an agency of the United States Department of Agriculture, formerly known as the Soil Conservation Service (SCS).

Ocean means the Atlantic Ocean and all contiguous waters subject to tidal action.

Offsite Mitigation for Redevelopment means, for purposes of 310 CMR 10.05(6)(k)7., a compliance approach where Stormwater Control Measures are implemented at a location other than the Project Site to meet the recharge and pollutant removal requirements of 310 CMR 10.05(6)(k)7. and 11.

Openness Ratio means the cross-sectional area of a structure opening divided by crossing length when measured in consistent units. For a box culvert, the openness ratio equals (height x width)/length. For crossing structures with multiple cells or barrels openness is calculated separately for each cell or barrel. The embedded portion of a culvert is not included in the calculation of the cross-sectional area.

Order means an Order of Conditions, Order of Resource Area Delineation, Superseding, Order or Final Order, whichever is applicable.

Order of Conditions means the document issued by a conservation commission containing conditions which regulate or prohibit an activity. It shall be made on Form 5.

Outstanding Resource Water means a surface water of the Commonwealth so designated in the Massachusetts Surface Water Quality Standards at 314 CMR 4.00: *Massachusetts Surface Water Quality Standards*.

Owner of Land Abutting the Activity means the owner of land sharing a common boundary or corner with the site of the proposed activity in any direction, including land located directly across a street, way, creek, river, stream, brook or canal.

Party to any proceeding before the Department means the applicant, the conservation commission and the Department, and pursuant to 310 CMR 10.05(7)(a) may include the owner of the site, any abutter, any person aggrieved, any ten residents of the city or town where the land is located and any ten persons pursuant to M.G.L. c. 30A, § 10A.

Person Aggrieved means any person who, because of an act or failure to act by the issuing authority, may suffer an injury in fact which is different either in kind or magnitude from that suffered by the general public and which is within the scope of the interests identified in M.G.L. c. 131, § 40. Such person must specify in writing sufficient facts to allow the Department to determine whether or not the person is in fact aggrieved.

Plans means such data, maps, engineering drawings, calculations, specifications, schedules and other materials, if any, deemed necessary by the issuing authority to describe the site and/or the work, to determine the applicability of M.G.L. c. 131, § 40 or to determine the impact of the proposed work upon the interests identified in M.G.L. c. 131, § 40. (*See* also General Instructions for Completing Notice of Intent (Form 3) and Abbreviated Notice of Intent (Form 4).)

Pond (Coastal) means Salt Pond as defined in 310 CMR 10.33(2).

Pond (Inland) means any open body of fresh water with a surface area observed or recorded within the last ten years of at least 10,000 square feet. Ponds may be either naturally occurring or human-made by impoundment, excavation, or otherwise. Ponds shall contain standing water except for periods of extended drought. Periods of extended drought for purposes of 310 CMR 10.00 shall be those periods, in those specifically identified geographic locations, determined to be at the “~~Advisory Level 1 – Mild Drought~~” or more severe drought level by the ~~Massachusetts Drought Management Task Force Secretary of~~, ~~as established by the Executive Office of Energy and Environmental Affairs and the Massachusetts Emergency Management Agency in 2001~~, in accordance with the Massachusetts Drought Management Plan ~~(MDMP)~~, ~~dated September 2019~~.

Notwithstanding the above, the following human-made bodies of open water shall not be considered ponds:

- (a) basins or lagoons which are part of wastewater treatment plants;
- (b) swimming pools or other impervious human-made basins; and
- (c) individual gravel pits or quarries excavated from upland areas unless inactive for five or more consecutive years.

Practicable means available and capable of being done after taking into consideration costs, existing technology, proposed use, logistics and potential adverse consequences, (*e.g.*, degradation of Rare Species habitat, increased flood impacts to the built environment) in light of the overall project purposes and is permissible under existing federal and state statutes and regulations.

Pretreatment Practices means structural and nonstructural practices used as part of a treatment train, designed, operated, and maintained to remove an initial amount of a pollutant such as Total Suspended Solids from stormwater runoff prior to discharge to a Terminal Treatment Practice. Examples of Pretreatment Practices are deep sump catch basins and proprietary manufactured separators (structural) and street cleaning (nonstructural). Pretreatment Practices are not Terminal Treatment Practices.

Prevention of Pollution means the prevention or reduction of contamination of surface or ground water.

Primary Frontal Dune or Primary Dune means a continuous or nearly continuous mound or ridge of sediment with relatively steep seaward and landward slopes immediately landward and adjacent to the beach and subject to erosion and overtopping from high tides and waves during coastal storms. The Primary Frontal Dune is the dune closest to the beach. The inland limit of the Primary Frontal Dune occurs at the point where there is a distinct change from a relatively steep slope to a relatively mild slope.

Private Water Supply means any source or volume of surface or ground water demonstrated to be in any private use or demonstrated to have a potential for private use.

Project Locus means the lot on which an applicant proposes to perform an activity subject to regulation under M.G.L. c. 131, § 40.

Project Purpose means the general, functional description of an activity proposed within the riverfront area (e.g., construction of a single family house, expansion of a commercial development).

Project Site means the area within the Project Locus that comprises the limit of work for activities, including but not limited to, the dredging, excavating, filling, grading, the erection, reconstruction or expansion of a building or structure, the driving of pilings, the construction or improvement of roads or other ways, and the installation of drainage, stormwater treatment, Eenvironmentally Ssensitive Site Design practices, sewage systems, and water systems.

Protection of Fisheries means protection of the capacity of an Area Subject to Protection under M.G.L. c. 131, § 40:

- (a) to prevent or reduce contamination or damage to fish; and
- (b) to serve as their habitat and nutrient source. Fish includes all species of fresh and salt water finfish and shellfish.

See also the definition of Marine Fisheries contained in 310 CMR 10.23(15).

Protection of Land Containing Shellfish means protection of the capacity of an Area Subject to Protection under M.G.L. c. 131, § 40:

- (a) to prevent or reduce contamination or damage to shellfish; and
- (b) to serve as their habitat and nutrient source.

See also the definitions of Shellfish and Land Containing Shellfish in 310 CMR 10.34(2).

Public Shared Use Paths means accessible paved and unpaved paths restricted solely to pedestrian and non-motorized vehicle travel (with the exception of wheelchairs, other power-driven mobility devices by individuals with a mobility disability, electric bicycles and electric scooters, emergency vehicles, and vehicles performing periodic maintenance). They are located either on public property or on private property pursuant to an easement that provides for public access. Accessible means a surface that complies with the Americans with Disabilities Act regulations, 28 CFR Part 35 and Part 36. Public Shared Use Paths do not include sidewalks intended solely for pedestrian use and do not include parking areas for motorized vehicles.

Public Water Supply means any source or volume of surface or ground water demonstrated to be in public use or approved for water supply pursuant to M.G.L. c. 111, § 160 by the Drinking Water Program ~~Division of Water Supply~~ of the Department, or demonstrated to have a potential for public use.

Qualifying Pervious Areas (OPA) means, for purposes of stormwater management (310 CMR 10.05(6)(k)-(q)), fully stabilized natural or vegetated areas where stormwater discharge is directed via sheet flow and not as a point source discharge.

Rare Species mean those vertebrate and invertebrate animal species officially listed as endangered, threatened, or of special concern by the Massachusetts Division of Fisheries and Wildlife under 321 CMR 10.60.

Redevelopment means replacement, rehabilitation, or expansion of existing structures, ~~Improvement of an Existing Public Roadways~~ or reuse of ~~degraded or~~ previously developed areas for purposes of 310 CMR 10.58, governing work in the ~~Riverfront Area~~, and 310 CMR 10.36, governing work in Land Subject to Coastal Storm Flowage.

For purposes of the Stormwater Management Standards as provided in 310 CMR 10.05(6)(k)-~~through (q)~~, ~~through (q)~~, Redevelopment is defined to include the following projects:

- (a) ~~maintenance and~~ improvement of ~~an Existing Public Roadways~~; including widening less than a single lane, adding shoulders, correcting substandard intersections, and improving existing drainage systems and repaving;
- (b) development, rehabilitation, expansion and phased projects on previously developed sites provided the Redevelopment results in no net increase in impervious area; and
- (c) remedial projects specifically designed to provide improved stormwater management such as projects to separate storm drains and sanitary sewers ~~and stormwater retrofit projects~~.

Remove means to take away any type of material, thereby changing an elevation, either temporarily or permanently.

Request for Determination of Applicability means a written request made by any person to a conservation commission or the Department for a determination as to whether a site or work thereon is subject to M.G.L. c. 131, § 40. It shall be submitted on Form 1.

**Commented [A16]:** There is no definition of a Public Roadway within the regulations. NAIOP suggests using the following definition: **Public Roadway means any right of way, whether on public or private property, open to public use.**

**Commented [A17R16]:** This new definition deletes the portion of the previous iteration of the definition, which included the redevelopment, rehabilitation, replacement, or expansion of “roads” without reference to private or public (and therefore, would include private subdivision roads and private rights of ways). This amendment therefore eliminates a substantial classification of redevelopment that used to be included within the definition, meaning those types of activities would no longer be classified as “Redevelopment” within the meaning of the amendments. It should be noted that many roads remain private due to the reluctance of municipalities to accept subdivision roads.

The term “Redevelopment” is defined in Section 10.36(8) using slightly different language: “Redevelopment means the replacement, rehabilitation, or expansion of existing structures, Improvement of an Existing Public Roadway, or reuse of previously developed areas. A previously developed area is one that contains structures or portions of structures, fill or other vertical impediments to flow, construction debris or pavement.”

A later sentence appears in Section 10.36(8) that reads: “Activities shall conform to the standards specified in [Sections 10.36(4) through (7)] when a site was previously developed but is not currently developed.” Here again, there is no accompanying definition clarifying what it means if a site is “previously” but “not currently” developed. To provide adequate notice of what is – and what is not – covered by these regulations, and to avoid misinterpretation by applicants and local conservation commissions, these definitions should be consolidated into a single definition, and then that single definition should be utilized uniformly in all other provisions.

Resource Area means any of the areas specified in 310 CMR 10.25 through 10.36~~5~~ and 10.54 through 10.58. It is used synonymously with Area Subject to Protection under M.G.L. c. 131, § 40, each one of which is enumerated in 310 CMR 10.02(1).

Restoration Order of Conditions means an Order of Conditions issued pursuant to 310 CMR 10.05(6) and 10.14 for a project that meets the eligibility criteria set forth in 310 CMR 10.13.

Retrofit Projects means, for purposes of stormwater management (310 CMR 10.05(6)(k)-(q)), projects that make site-specific changes designed solely to improve water quality, reduce peak discharge rates, increase recharge, or reduce or eliminate combined sewer overflows (CSO). Retrofit Projects are not new development or maintenance.

Reviewable Decision means a ~~MassDEP~~Department decision that is a superseding order of condition or superseding denial of an order of conditions, a superseding determination of applicability, and/or a superseding order of resource area delineation, or a variance.

River means any natural flowing body of water that empties to any ocean, lake, pond, or other river and which flows throughout the year. River is defined further at 310 CMR 10.58(2).

Riverfront Area is defined at 310 CMR 10.58(2).

Rocky Intertidal Shore is defined in 310 CMR 10.31(2).

Salt Marsh is defined in 310 CMR 10.32(2).

Saturated Hydraulic Conductivity Test means a field test to determine the rate at which water percolates through saturated soils to transmit a volume of water per unit time in the vertical direction in a defined area as determined by one of the following methods: constant head Guelph permeameter - ASTM D5126-16e1 Method; Falling head permeameter – ASTM D5126-16e1 Method; Double ring permeameter or infiltrometer - ASTM D3385-18, D5093-15e1, D5126-16e1 Methods; ~~or~~ constant head Amoozemeter or Amoozegar permeameter; or other method approved by the issuing authority. A Title 5 percolation test, as defined at 310 CMR 15.002, is not an acceptable Saturated Hydraulic Conductivity Test for purposes of stormwater management (310 CMR 10.05(6)(k)-(q)).

Seasonal High Groundwater Elevation ~~means, for purposes of stormwater management (310 CMR 10.05(6)(k)-(q)), the highest elevation of soil or rock that is seasonally or permanently saturated. The elevation shall be determined based on:~~

- a. Soil color using the Munsell system, the abundance, size and contrast of redoximorphic features, if present; or
- b. When redoximorphic features are not present, the following methods may be utilized:

**Commented [A18]:** NAIOP does not believe that requirements or recommendations for specific test methodology should be codified in the regulations, and instead believes they should be referenced within the Stormwater Handbook. As such, NAIOP suggests the changes in blue to allow for flexibility for additional test methodologies that may be available or developed in the future.

1. observation of actual water table during times of annual high water table (typically March or April) compared to long-term USGS observation wells located within the same major river basin; or
2. use of the USGS Frimpter method which is described in the following publications: 1) Frimpter, M.H. "Probable High Ground-Water Levels in Massachusetts," Open File Report 80-1205, USGS; 2) Frimpter, M.H. and G.C. Belfit, 2006, "Estimation of High Ground-Water Levels for Construction and Land Use Planning, A Cape Cod, Massachusetts, Example," Barnstable, MA, Cape Cod Commission Technical Bulletin 92-001, updated 2006; 3) Barclay, J.R., and Mullaney, J.R., 2020, "Updating Data Inputs, Assessing Trends, and Evaluating a Method to Estimate Probable High Groundwater Levels in Selected Areas of Massachusetts," U.S. Geological Survey Scientific Investigations Report 2020-5036; 45 p.; and 4) Barclay, J.R., and Mullaney, J.R., 2020, "Data on Well Characteristics and Well-Pair Characteristics for Estimating High Groundwater Levels in Selected Areas of Massachusetts: U.S. Geological Survey data release."

Setback means the distance of a structure, Impervious Surface or other developed feature from a wetland Resource Area or other feature (such as Critical Areas, Water Supply Wells, or septic system).

Severe Weather Emergency Declaration is a declaration issued by the Commissioner, following a destructive weather event, which authorizes widespread emergency recovery, debris cleanup, or roadway or utility repair, necessary for the protection of the health or safety of the residents of the Commonwealth, without filing a Notice of Intent or requesting an emergency certification or authorization pursuant to 310 CMR 10.06(1) through (7).

Sediment, for the purpose of dredging, means all inorganic or organic matter including detritus situated under tidal waters below the mean high water line as defined in 310 CMR 10.23, and for inland waters, below the upper boundary of a bank, as defined in 310 CMR 10.54(2).

Shellfish Growing Area means land under the ocean, tidal flats, rocky intertidal shores and marshes and land under salt ponds when any such land contains shellfish. Shellfish Growing Areas include land that has been identified and shown on a map published by the Division of Marine Fisheries as a Shellfish Growing Area including any area identified on such map as an area where shellfishing is prohibited. Shellfish growing areas shall also include land designated by the Department in 314 CMR 4.00: *Massachusetts Surface Water Quality Standards* as suitable for shellfish harvesting with or without depuration. In addition, Shellfish Growing Areas shall include Shellfish Growing Areas designated by the local shellfish constable as suitable for shellfishing based on the density of shellfish, the size of the area and the historical and current importance of the area for recreational and commercial shellfishing.



Shellfish Suitability Area means an area located within land containing shellfish and identified on maps prepared in May 2011 by the Massachusetts Division of Marine Fisheries with input from local Shellfish Constables and commercial fishermen as suitable for shellfish. The areas covered include sites where shellfish have been observed since the mid 1970s but may not currently support shellfish and thus represent both existing and potential shellfish habitat areas.

Shelter means protection from the elements or predators

Significant means plays a role. A Resource Area is significant to an interest identified in M.G.L. c. 131, § 40 when it plays a role in the provision or protection, as appropriate, of that interest. Within the context of the protection of the riverfront area, no significant adverse impact means the level of protection of the performance standards provided under 310 CMR 10.58.

Soil Absorption System means a system of trenches, galleries, chambers, pits, field(s) or bed(s) together with effluent distribution lines and aggregate which receives effluent from a septic tank or treatment system.

Special Flood Hazard Area means the area of land in the flood plain that is subject to a 1% chance of flooding in any given year as determined by the best available information, including, but not limited to, the currently effective or preliminary Federal Emergency Management Agency (FEMA) Flood Insurance Study or Rate Map (except for any portion of a preliminary map that is the subject of an appeal to FEMA) for Land Subject to Coastal Storm Flowage, the Velocity Zone as defined in 310 CMR 10.04, and the Flood Insurance Study for Bordering Land Subject to Flooding as defined in 310 CMR 10.57.

Special Resource Water means a surface water of the Commonwealth so designated in 314 CMR 4.00: *Massachusetts Surface Water Quality Standards*.

Spring Tides means those tides which occur with the new and full moons, and which are perceptibly higher and lower than other tides.

State-listed Species mean the same as rare species, as defined in 310 CMR 10.04.

Storm Damage Prevention means the prevention of damage caused by water from storms, including, but not limited to, erosion and sedimentation, damage to vegetation, property or buildings, or damage caused by flooding, water-borne debris or water-borne ice.

Stormwater Best Management Practice means a structural or nonstructural technique for managing stormwater to prevent or reduce non-point source pollutants from entering surface waters or ground waters. A structural stormwater best management practice includes a basin, discharge outlet, swale, rain garden, filter or other stormwater treatment practice or measure either alone or in combination including without limitation any overflow pipe, conduit, weir control structure that:

**Commented [A19]:** No Special Resource Waters are identified in 314 CMR 4.00. it is unclear if any waters are intended to be classified as Special Resource Waters. The definition and designation of Special Resource Waters is unclear in 314 CMR 4.00. Could the Department provide clarification on whether or not any waters have been designated to date as Special Resource Waters.

- ~~(a) is not naturally occurring;~~
  - ~~(b) is not designed as a wetland replication area; and~~
  - ~~(c) has been designed, constructed, and installed for the purpose of conveying, collecting, storing, discharging, recharging, or treating stormwater.~~
- ~~Nonstructural stormwater best management practices include source control and pollution prevention measures.~~

Stormwater Control Measure (SCM) means a structural or nonstructural technique for managing stormwater to prevent or reduce point or non-point source pollutants from entering surface waters or ground waters. A Nonstructural Stormwater Control Measure includes but is not limited to source control, Environmentally Sensitive Site Design, some Low Impact Development techniques or practices, street cleaning and pollution prevention measures. A structural Stormwater Control Measure includes, but is not limited to, a basin, discharge outlet, swale, rain garden, filter, some Low Impact Development techniques or practices, or other stormwater treatment practice or measure either alone or in combination, including without limitation, any overflow pipe, conduit, weir control structure that:

- ~~(a) is not naturally occurring;~~
- ~~(b) is not designed as a wetland replication area; and~~
- ~~(c) has been designed, constructed, and installed for the purpose of conveying, collecting, storing, discharging, recharging or treating stormwater.~~

Stormwater Management Standards means the regulations specified at 310 CMR 10.05(6)(k)1. through 11.

Stormwater Management System means a system for conveying, collecting, storing, discharging, recharging or treating stormwater on-site including ~~S~~stormwater Control Measures or Best Management Practices and any pipes and outlets intended to transport and discharge stormwater to the ground water, a surface water or a municipal separate storm sewer system.

Stormwater Management System Improvement means:

- (a) expansion of a stormwater management system beyond its existing geographic footprint to provide treatment for additional stormwater volume, provide additional groundwater recharge or enhance groundwater recharge or pollutant removal capability such as the addition of treatment train components; or
- (b) modification to, or addition of, features within the existing geographic footprint of a stormwater management system to enhance groundwater recharge or pollutant removal capability, such as modifying outlet control structures.

Stream means a body of running water, including brooks and creeks, which moves in a definite channel in the ground due to a hydraulic gradient, and which flows within, into or out of an Area Subject to Protection under M.G.L. c. 131, § 40. A portion of a stream may flow through a culvert or beneath a bridge. Such a body of running water which does not flow throughout the year (*i.e.*, which is intermittent) is a stream except for that portion upgradient of all bogs, swamps, wet meadows and marshes.

Substitute EPA-PRC means a percent removal of Total Suspended Solids and Total Phosphorus that has been approved by MassDEP in instances where EPA has not listed an EPA-PRC in the BATT Tool. The percent removal is credited to SCMs pursuant to 310 CMR 10.05(6)(k)4 and 310 CMR 10.05(6)(k)7. All Substitute EPA-PRC approved by MassDEP are listed in Table 1 Crosswalk.

Superseding Determination means a determination of applicability, of significance or of non-significance, as the case may be, issued by the Department. It shall be made on Form 2.

Superseding Order means a document issued by the Department containing conditions which regulate or prohibit an activity. It shall be made on Form 5.

Surface Waters means all waters other than ground water within the jurisdiction of the Commonwealth including, without limitation, rivers, streams, lakes, ponds, springs, impoundments, estuaries, wetlands, and coastal waters.

Swamp is defined in M.G.L. c. 131, § 40, para. 98.

Terminal Treatment Practices mean structural and nonstructural practices used as part of a treatment train, designed, operated, and maintained to remove pollutants such as Total Suspended Solids and Total Phosphorus from stormwater runoff prior to discharge to a Resource Area or Waters of the Commonwealth. Examples of Terminal Treatment Practices include but are not limited to are infiltration basins and constructed stormwater treatment wetlands (structural) and Environmental Sensitive Site Design (nonstructural). ~~Terminal Pretreatment practices are not Treatment Practices are not Pretreatment Terminal Treatment Practices.~~

Test Project means the installation or deployment of water dependent Innovative Technology in situ for purposes of evaluating its performance and environmental effects.

Time of Year Restriction means the date ranges established by the Massachusetts Department of Fish and Game, Division of Fisheries and Wildlife and Division of Marine Fisheries, to provide protection to resources including inland streams, rare species habitat and marine resources in Massachusetts during times when there is a higher risk of known or anticipated significant lethal, sublethal, or behavioral impacts.

Total Impervious Area Reduction means the reduction of impervious area on a Project Site. For example, if 200 square feet of parking lot pavement is replaced with a vegetated surface, then 200 square feet can be deducted from the size of the area that needs to be treated by the Stormwater Management System.

Total Maximum Daily Load (TMDL) means the sum of a receiving water's individual waste load allocations and load allocations and natural background, which, together with a margin of safety

that takes into account any lack of knowledge concerning the relationship between effluent limitations and water quality, represents the maximum amount of a pollutant that a waterbody can receive and still meet water quality standards in all seasons. TMDLs are developed by MassDEP to meet the Surface Water Quality Standards at 314 CMR 4.00: *Massachusetts Surface Water Quality Standards*, and are approved by EPA. Alternative TMDLs are pathways approved by MassDEP to attain and maintain Surface Water Quality Standards that may not be numerical.

Total Phosphorus (TP) means the total phosphate content in stormwater including all particulate and dissolved phosphorus, in both organic and inorganic forms.

Total Suspended Solids (TSS) means solids suspended in stormwater, determined using EPA Method 160.2 (1971).

Underground Injection Control Program or UIC Program means the Underground Injection Control Program under Part C of the Federal Safe Drinking Water Act, 42 U.S.C. §§ 300f *et seq.*, which is implemented and enforced in Massachusetts by the Department pursuant to 310 CMR 27.00: *Underground Injection Control Regulations*.

USGS means the United States Geological Survey, within the United States Department of the Interior.

Velocity Zone or V-~~z~~Zone also known as the Coastal High Hazard Area means an area within the Special Flood Hazard Area that is subject to high velocity wave action from storms or seismic sources. The Velocity Zone Boundaries are determined by reference to the currently effective or preliminary Flood Insurance Rate Map (FIRM) prepared by the Federal Emergency Management Agency (FEMA), ~~whichever is more recent~~ (except for any portion of a preliminary map that is the subject of an appeal to FEMA), ~~or at a minimum to the inland limit of the Primary Frontal Dune, whichever is farther landward.~~

Vernal Pool Habitat means confined basin depressions which, at least in most years, hold water for a minimum of two continuous months during the spring and/or summer, and which are free of adult fish populations, as well as the area within 100 feet of the mean annual boundaries of such depressions, to the extent that such habitat is within an Area Subject to Protection under M.G.L. c. 131, § 40 as specified in 310 CMR 10.02(1). These areas are essential breeding habitat, and provide other extremely important wildlife habitat functions during non breeding season as well, for a variety of amphibian species such as wood frog (*Rana sylvatica*) and the spotted salamander (*Ambystoma maculatum*), and are important habitat for other wildlife species.

Vista Pruning means the selective thinning of tree branches or understory shrubs to establish a specific "window" to improve visibility. Vista pruning does not include the cutting of trees which would reduce the leaf canopy to less than 90% of the existing crown cover and does not include the mowing or removal of understory brush.

Wastewater Residuals Landfill means a facility or part of a facility approved by the Department for the disposal of wastewater residuals into or on land, but not including a site where

wastewater residuals are land applied in accordance with 310 CMR 32.00: *Land Application of Sludge and Septage*.

Water-dependent Uses mean those uses and facilities which require direct access to, or location in, marine, tidal or inland waters and which therefore cannot be located away from said waters, including but not limited to: marinas, public recreational uses, navigational and ~~commercial~~commercial fishing and boating facilities, water-based recreational uses, navigation aids, basins, and channels, industrial uses dependent upon waterborne transportation or requiring large volumes of cooling or process water which cannot reasonably be located or operated at an upland site, crossings over or under water bodies or waterways (but limited to railroad and public roadway bridges, tunnels, culverts, as well as railroad tracks and public roadways connecting thereto which are generally perpendicular to the water body or waterway), and any other uses and facilities as may further hereafter be defined as water-dependent in 310 CMR 9.00: *Waterways*.

Waters of the Commonwealth means all waters within the jurisdiction of the Commonwealth, including without limitation, rivers, streams, lakes, ponds, springs, impoundments, estuaries, wetlands, coastal waters and ground waters.

Water Supply Well means any public or private source of groundwater used for human consumption, including but not limited to, a source approved for such use by the local board of health or the Department.

Watershed means any region or area measured in a horizontal topographic divide which directs water runoff from precipitation, normally by gravity, into a stream, a body of impounded surface water, or a coastal embayment, or any region or area measured by a groundwater divide which directs groundwater into a stream, a body of impounded surface water, or a coastal embayment.

Watershed-scale Accounting Method means a Highway Specific Consideration under which MassDOT Redevelopment may comply with the Stormwater Management Standards by implementing Stormwater Control Measures within the HUC 10, rather than or in addition to meeting them on the Project Site. The Watershed-scale Accounting Method may be used only when the Macro-Approach and Offsite Mitigation for Redevelopment are not practicable. Under the Watershed-scale Accounting Method, Stormwater Control Measures must be implemented within a three-year period from issuance of the final Order.

Wildlife means all mammals, birds, reptiles and amphibians and, for the purposes of 310 CMR 10.37 and 10.59, all vertebrate and invertebrate animal species which are officially listed in 321 CMR 8.00: *Endangered Wildlife and Wild Plants* as endangered, threatened, or of special concern.

Wildlife Habitat means an Area Subject to Protection under M.G.L. c. 131, § 40, which due to its plant community, composition and structure, hydrologic regime or other characteristics provides important food, shelter, migratory or overwintering areas or breeding areas for wildlife.

Wildlife Specialist means an individual with at least a masters degree in wildlife biology or ecological science from an accredited college or university, or other competent professional with at least two years experience in wildlife habitat evaluation.

Work means the same as activity.

Zone I means the protective radius required around a public water supply well or wellfield, as defined in 310 CMR 22.00: *Drinking Water*.

Zone II means that area of an aquifer which contributes water to a well under the most severe pumping and recharge conditions that can realistically be anticipated, as defined in 310 CMR 22.00: *Drinking Water*.

Zone A, as defined in 310 CMR 22.00: *Drinking Water*, means (a) the land area between the surface water source and the upper boundary of the bank; (b) the land area within a 400 foot lateral distance from the upper boundary of the bank of a Class A surface water used as a drinking water source, as defined in 314 CMR 4.00: *Massachusetts Surface Water Quality Standards*; and (c) the land area within a 200 foot lateral distance from the upper boundary of the bank of a tributary or associated surface water body.

#### 10.05: Procedures

**[NOTE TO REVIEWERS; MassDEP IS SETTING FORTH IN THIS DOCUMENT PROPOSED AMENDMENTS TO THE CURRENT REGULATION AT 310 CMR 10.00 IN REDLINE AND STRIKEOUT FORMAT. REDLINES SHOW ADDITIONS TO THE CURRENT REGULATORY TEXT AND STRIKEOUTS SHOW PROPOSED DELETIONS. SINCE THE REGULATION IS VERY LONG, MassDEP IS PUBLISHING ONLY THOSE PORTIONS OF THE REGULATION FOR WHICH THE AGENCY IS PROPOSING TO MAKE AMENDMENTS. MassDEP HAS INCLUDED TEXT JUST PRIOR TO (and in some cases text just after) NEW INSERTED TEXT TO MAKE IT CLEAR WHERE THE NEW TEXT IS PROPOSED TO BE INSERTED INTO THE CURRENT REGULATIONS. THERE ARE NO EDITS TO SECTIONS 10.05(1), 10.05(2) or 10.05(3) and the EXISTING REGULATION LANGUAGE FOR THESE SECTIONS WILL REMAIN THE SAME.]**

...

#### (4) Notices of Intent.

(a) Any person who proposes to do work that will remove, fill, dredge or alter any Area Subject to Protection under M.G.L. c. 131 § 40, shall file a Notice of Intent on Form 3 and other application materials in accordance with the submittal requirements set forth in the *General Instructions for Completing Notice of Intent (Form 3)*. If the applicant is not a landowner of the Project Locus, the applicant shall obtain written permission from the landowner(s) prior to filing a Notice of Intent for proposed work, except for work proposed on Great Ponds or Commonwealth tidelands. A construction period erosion, sedimentation and pollution prevention plan prepared in accordance with 310 CMR 10.05(6)(b) and 310 CMR 10.05(6)(k)8. shall accompany the Notice of Intent for all

**Commented [A20]:** NAIOP believes that the definition of tributary in 310 CMR 22.00 requires clarification. Per the existing definition any channel within the watershed of a drinking water supply would be classified as Zone A whether there is a continuous surface connection to the Zone A or not. NAIOP suggests modifying the definition as follows:

“Tributary means any body of running, or intermittently running, water which moves in a definite channel, naturally or artificially created, in the ground due to a hydraulic gradient, and with a continuous surface connection to which ultimately flows into a Class A Surface Water Source, as defined in 314 CMR 4.05(3)(a): Class A.”

**Commented [A21]:** NAIOP questions whether or not it is necessary to have the long-term pollution prevention plan separate from the operation and maintenance plan. The long-term pollution prevention plan (LTTP) should be incorporated into the operation and maintenance (O&M) plan as the O&M plan should incorporate maintenance of site elements beyond the stormwater management system including: snow removal, use of deicing agent, fertilizers, pesticides and herbicides)

Activities. For projects subject to the Stormwater Management Standards (310 CMR 10.05(6)(k)1. through 11.), the following shall also be included with the Notice of Intent: stormwater report checklist stamped by a registered professional engineer, long-term pollution prevention plan, operation and maintenance plan, and no illicit discharge compliance statement. For Redevelopment projects, for the purposes of the Stormwater Management Standards, the following submittals shall also be included with the Notice of Intent: the Redevelopment checklist, and the written alternatives analysis, when needed. Two copies of the completed Notice of Intent with supporting plans and documents shall be sent by certified mail or hand delivery to the conservation commission, and one copy of the same shall be sent concurrently in like manner to the Department. ~~If the project requires a 401 Water Quality Certification pursuant to 314 CMR 9.00: 401 Water Quality Certification for Discharge of Dredged or Fill Material, Dredging, and Dredged Material Disposal in Waters of the United States Within the Commonwealth and/or is a water-dependent use project that requires a permit, license or written approval pursuant to 310 CMR 9.00: Waterways the applicant may file a Notice of Intent that is a Combined Application. In that event, an additional copy of the Combined Application shall be sent to the Department's Boston Office.~~

Concurrent with the filing of the Notice of Intent, the applicant shall provide notification to all Abutters. Notwithstanding the foregoing, the requirement to provide Abutter notification is subject to the following limits. An applicant is required to provide notification to an Abutter whose Lot is separated from the Project Locus by a public or private street or body of water only if the Abutter's Lot is within 100 feet from the property line of the Project Locus. An applicant who proposes work solely within Land under Water Bodies or Waterways, or solely within a Lot with an area greater than 50 acres, is required to provide notification only to Abutters whose Lot is within one hundred feet from the Project Site. An applicant proposing a Linear- shaped Project greater than 1,000 feet in length is required to provide notification only to Abutters whose Lot is within 1,000 feet from the Project Site. Abutter notification is not required for projects proposed by the Massachusetts Department of Transportation Highway Division pursuant to St. 1993, c. 472 as approved on January 13, 1994. The applicant shall provide notification at the mailing addresses shown on the most recent applicable tax list from the municipal assessor. Notification shall be at the applicant's expense. The notification shall state where within the municipality copies of the Notice of Intent may be examined or obtained and where information on the date, time, and location of the public hearing may be obtained. To ensure compatibility with local procedures, applicants must comply with any rules of the local conservation commission pertaining to the location for examining or obtaining the Notice of Intent and information about the hearing. The applicant shall provide written notification to all Abutters required to be notified by hand delivery or certified mail, return receipt requested, or by certificates of mailing. Mailing at least seven days prior to the public hearing shall constitute timely notice. The applicant shall present either the certified mail receipts or certificate of mailing receipts for all Abutters at the beginning of the public hearing. The presentation of the receipts for all abutters required to be notified as identified on the tax list shall constitute compliance with Abutter notification requirements. The conservation commission shall determine whether the applicant has complied with Abutter notification requirements. The Department will dismiss Requests for Action based on allegations of

**Commented [A22]:** Given that since COVID, many commissions no longer require two copies, NAIOP suggests revising this language to one copy. Commissions can request additional copies as needed.



failure to comply with Abutter notification requirements, absent a clear showing by an Abutter seeking Department action that the applicant failed to notify the Abutter.

An applicant submitting a Notice of Intent for a project that is also subject to 310 CMR 9.00: *Waterways* and/or 314 CMR 9.00: *401 Water Quality Certification for Discharge of Dredged or Fill Material, Dredging, and Dredged Material Disposal in Waters of the United States Within the Commonwealth* may provide joint public notice by appending to the public notice required by 310 CMR 9.13: *Public Notice and Participation Requirements* and/or 314 CMR 9.00: *Submission of an Application*, as applicable, notification that a Notice of Intent is pending before the issuing authority, provided the notification complies with 310 CMR 10.05(4). ~~An applicant may provide a joint public notice, even if the Notice of Intent is not a Combined Application.~~

(b) For certain purposes, other forms of Notices may be used.

1. For certain projects, applicants may at their option use the Abbreviated Notice of Intent. This latter form may only be used when all three of the following circumstances exist:

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...

(h) The issuing authority may require that supporting plans and calculations be prepared and stamped by a registered professional engineer (PE) when, in its judgment, the complexity of the proposed work warrants this professional certification. The issuing authority may also require the preparation of supporting materials by other professionals including, but not limited to, registered landscape architect, registered land surveyor, environmental scientist, geologist or hydrologist when in its judgment the complexity of the proposed work warrants the relevant specialized expertise. The issuing authority may require a delineation in an Abbreviated Notice of Resource Area Delineation to be performed by a professional with relevant specialized expertise. ~~If the Notice of Intent is a Combined Application, the supporting plans and calculations shall also conform to the requirements of 310 CMR 9.11(3)(b) and 314 CMR 9.05(1): Application Requirements to the extent they are applicable.~~

(5) Public Hearings by Conservation Commissions.

(a) A public hearing shall be held by the conservation commission within 21 days of receipt of the minimum submittal requirements set forth in the General Instructions for Completing Notice of Intent (Form 3), Abbreviated Notice of Intent (Form 4) and Abbreviated Notice of Resource Area Delineation, and shall be advertised in accordance with M.G.L. c. 131, § 40 and the requirements of the open meeting law, M.G.L. c. 39, § 23B.

(b) Public hearings may be continued as follows:

1. without the consent of the applicant to a date, announced at the hearing, within 21 days, of receipt of the Notice of Intent;
2. with the consent of the applicant, to an agreed-upon date, which shall be announced at the hearing; or
3. with the consent of the applicant for a period not to exceed 21 days after the submission of a specified piece of information or the occurrence of a specified action.

The date, time and place of said continued hearing shall be publicized in accordance with M.G.L. c. 131, § 40, and notice shall be sent to any person at the hearing who so requests in writing.

(6) Orders of Conditions Regulating Work and Orders of Resource Area Delineation.

(a) Within 21 days of the close of the public hearing, the conservation commission shall either:

1. make a determination that the area on which the work is proposed to be done, or which the proposed work will remove, fill, dredge or alter, is not significant to any of the interests identified in M.G.L. c. 131, § 40, and shall so notify the applicant and the Department on Form 6;
2. make a determination that the area on which the work is proposed to be done, or which the proposed work will remove, fill, dredge or alter, is significant to one or more of the interests identified in M.G.L. c. 131, § 40, and shall issue an Order of Conditions for the protection of said interest(s), on Form 5. If the issuing authority also determines that the project meets the eligibility criteria for issuance of a Restoration Order of Conditions set forth in the applicable provisions of 310 CMR 10.00, the Order of Conditions for the project shall be a Restoration Order of Conditions; or
3. make a determination that bordering vegetated wetland and other resource areas subject to jurisdiction have been identified and delineated according to the definitions in 310 CMR 10.00 and shall issue an Order of Resource Area Delineation to confirm or modify the delineations submitted. The Order of Resource Area Delineation shall be effective for three years.

The standards and presumptions to be used by the issuing authority in determining whether an area is significant to the interests identified in M.G.L. c. 131, § 40, are found in 310 CMR 10.21 through 10.37 (for coastal wetlands) and 10.51 through 10.60 (for inland wetlands).

(b) The Order of Conditions shall impose such conditions as are necessary to meet the performance standards set forth in 310 CMR 10.21 through 10.60 for the protection of those areas found to be significant to one or more of the interests identified in M.G.L. c. 131, § 40, and the Stormwater Management Standards provided in 310 CMR 10.05(6)(k) 1. through -

~~11, through (q).~~ The Order shall prohibit any work or any portion thereof that cannot be conditioned to meet said standards.

The Order shall impose conditions only upon work or the portion thereof that is to be undertaken within an Area Subject to Protection under M.G.L. c. 131, § 40, or within the Buffer Zone. The Order shall impose conditions to control erosion and sedimentation within Resource Areas and the Buffer Zone. The Order shall impose conditions setting limits on the quantity and quality of discharge from ~~a~~ point sources (both closed and open channel) and non-point sources, when said limits are necessary to protect the interests identified in M.G.L. c. 131, § 40; provided, however, that the point of discharge falls within an Area Subject to Protection under M.G.L. c. 131, § 40, or within the Buffer Zone, and further provided that said conditions are consistent with the limitations set forth in 310 CMR 10.03(4).

Notwithstanding the foregoing, when the issuing authority has determined that an Activity outside the Areas Subject to Protection under M.G.L. c. 131, § 40 and outside the Buffer Zone has in fact altered an Area Subject to Protection under M.G.L. c. 131, § 40, it shall impose such conditions on any portion of the activity as are necessary to contribute to the protection of the interests identified in M.G.L. c. 131, § 40.

When the Issuing Authority determines that a project meets the eligibility criteria for a Restoration Order of Conditions, the Issuing Authority shall impose only the conditions set forth in the applicable provisions of 310 CMR 10.00 for that Restoration Order of Conditions. A Restoration Order of Conditions may reference the plans and specifications approved by the issuing authority. ~~If the Department issues a Combined Permit, the Department may append to the Restoration Order of Conditions any conditions that the Department has authority to impose pursuant to 310 CMR 9.00: Waterways and 314 CMR 9.00: 401 Water Quality Certification for Discharge of Dredged or Fill Material, Dredging, and Dredged Material Disposal in Waters of the United States Within the Commonwealth to the extent they are applicable. The requirement that an Order shall impose conditions only upon work or the portion thereof that is to be undertaken within an Area Subject to Protection under M.G.L. c. 131, § 40, or within the Buffer Zone does not restrict the authority of the Department to append to a Combined Permit any conditions that the Department has authority to impose under 310 CMR 9.00: Waterways and 314 CMR 9.00: 401 Water Quality Certification for Discharge of Dredged or Fill Material, Dredging, and Dredged Material Disposal in Waters of the United States Within the Commonwealth to the extent they are applicable.~~

(c) If the conservation commission finds that the information submitted by the applicant is not sufficient to describe the site, the work or the effect of the work on the interests identified in M.G.L. c. 131, § 40, it may issue an Order prohibiting the work. The Order shall specify the information which is lacking and why it is necessary.

(d) Except as provided in M.G.L. c. 131, § 40 for maintenance dredging, an Order of Conditions, Order of Resource Area Delineation, or Notification of Non-significance shall be valid for three years from the date of its issuance; provided, however, that the issuing authority may issue an Order for up to five years where special circumstances warrant and where those special circumstances are set forth in the Order. An Order of Resource Area Delineation shall be valid for three years, and may be extended by the issuing authority for one or more years up to three years each under 310 CMR 10.05(8) upon written confirmation by a professional with relevant expertise that the resource area delineations remain accurate.

(e) The Order or Notification of Non-significance shall be signed by a majority of the conservation commission and shall be mailed by certified mail (return receipt requested) or hand delivered to the applicant or his or her agent or attorney, and a copy mailed or hand delivered at the same time to the Department. If the Order imposes conditions necessary to meet any performance standard contained in 310 CMR 10.37 or 10.59, a copy shall be mailed or hand delivered at the same time to the Massachusetts Natural Heritage and Endangered Species Program.

(f) A copy of the plans describing the work and the Order shall be kept on file by the conservation commission and by the Department, and shall be available to the public at reasonable hours.

(g) Prior to the commencement of any work permitted or required by the Final Order, including a Final Order of Resource Area Delineation, or Notification of Non-significance, the Order or Notification shall be recorded in the Registry of Deeds or the Land Court for the district in which the land is located, within the chain of title of the affected property. In the case of recorded land, the final order shall also be noted in the Registry's Grantor Index under the name of the owner of the land upon which the proposed work is to be done. In the case of registered land, the final order shall also be noted on the Land Court Certificate of Title of the owner of the land upon which the proposed work is to be done. Certification of recording shall be sent to the issuing authority on the form at the end of Form 5. If work is undertaken without the applicant first recording the Order, the issuing authority may issue an Enforcement Order (Form 9) or may itself record the Order of Conditions.

(h) Notwithstanding the provisions contained in 310 CMR 10.10(1) and (3), any Order of Conditions not containing an expiration date, issued for work proposed in a Notice of Intent filed under M.G.L. c. 131, § 40 prior to November 18, 1974, shall expire on April 17, 1986.

(i) An Order of Conditions does not grant any property rights or any exclusive privileges; it does not authorize any injury to private property or invasion of property rights.

(j) Failure to comply with conditions stated in the Order and with all related statutes and other regulatory measures shall be deemed cause to revoke or modify the Order of Conditions.

(k) ~~No Area Subject to Protection under M.G.L. c. 131, § 40 other than bordering land subject to flooding, isolated land subject to flooding, land subject to coastal storm flowage, or riverfront area may be altered or filled for the impoundment or detention of stormwater, the control of sedimentation or the attenuation of pollutants in stormwater discharges, and the applicable performance standards shall apply to any such alteration or fill.~~ Except as expressly provided, stormwater runoff from all industrial, commercial, institutional, office, residential and transportation projects that are subject to regulation under M.G.L. c. 131, § 40 ~~including site preparation, construction, and redevelopment~~ and all point and non-point source stormwater discharges from said projects within an Area Subject to Protection under M.G.L. c. 131, § 40 or within the Buffer Zone shall be provided with Environmentally Sensitive Site Design (ESSD) and Low Impact Development (LID) techniques or stormwater best management practices to attenuate pollutants ~~and to provide a setback from the receiving waters and wetlands unless it is impracticable, and to provide a Ssetback from the receiving waters and wetlands in accordance with the following Stormwater Management Standards as further defined and specified in the Massachusetts Stormwater Handbook~~ Other types of Stormwater Control Measures (SCMs) and related stormwater Best Management Practices (BMPs) shall only be used to meet those portions

of the Stormwater Management Standards that cannot be fully met by ESSD or LID to attenuate pollutants and by providing a Setback. ESSD, LID, SCMs, and related stormwater BMPs, will be presumed to meet the Stormwater Management Standards if they are designed, constructed and maintained to the specifications listed in the *Massachusetts Stormwater Handbook* [2023 Edition] and its appendices (e.g., *SCM Specifications - Appendix A, Massachusetts Erosion and Sediment Control Guidelines for Urban and Suburban Areas – Appendix C*). All components of ESSD, LID, SCMs, BMPs, and stormwater discharges shall be set back from wetland Resource Areas in accordance with 310 CMR 10.05(6)(q), however, a Setback reduced in accordance with the *Massachusetts Stormwater Handbook* [2023 Edition] will be presumed to meet the Setback requirement in 310 CMR 10.05(6)(q). Soil evaluation must be performed to meet 310 CMR 10.05(6)(k)2. through 4., and 7. The soil evaluation shall include a site investigation and shall consist of identifying the U.S. NRCS Soil Series, NRCS soil texture, the Hydrologic Soil Group, depth to the Seasonal High Groundwater Elevation, and the saturated hydraulic conductivity of the soil. A soil evaluation conducted in accordance with the *Massachusetts Stormwater Handbook* [2023 Edition] shall be presumed to meet this requirement. Additionally, no Area Subject to Protection under M.G.L. c. 131, § 40, other than Bordering Land Subject to Flooding, isolated land subject to flooding, Land Subject to Coastal Storm Flowage, or Riverfront Area, may be altered or filled for the impoundment or detention of stormwater, infiltration, the control of sedimentation or the attenuation of pollutants in stormwater discharges, and the applicable performance standards shall apply to any such alteration or fill in the aforementioned other areas. MassDOT may use the Highway Specific Considerations, including the Macro-Approach and the Watershed-scale Accounting Method, to comply with or be presumed to comply with applicable Stormwater Management Standards. MassDOT will be presumed to comply with applicable Stormwater Management Standards when applicable Highway Specific Considerations are implemented in accordance with Section 5.7 of the *Massachusetts Stormwater Handbook* [2023 Edition]. MassDOT-funded municipal roadway projects where MassDOT has approved the design may use the Highway Specific Considerations except for the operation and maintenance approach and the Watershed-scale Accounting Method.

All projects shall be designed, constructed, and operated to comply with the following Stormwater Management Standards:

1. No New Stormwater Conveyances (e.g., outfalls) may discharge untreated stormwater directly to or cause erosion or scour to in wetlands or Waters of the Commonwealth.
2. Stormwater Management Systems shall be designed so that post-development peak discharge rates do not exceed pre-development peak discharge rates. This standard is to be met on the Project Site at each point of discharge. This standard may shall be waived for stormwater discharges to coastal resource areas as defined in 310 CMR 10.21 to 10.3604, where no downstream culvert or bridge exists or the project can demonstrate that the increase in peak rate generated by the development project does not increase off-site flooding during the 2,10, and 100 year 24-hour rainfall storm events, be waived for stormwater discharges to coastal Resource Areas land subject to coastal storm flowage as defined in 310 CMR 10.21 to 10.3604, unless the discharge is to a coastal Resource Area located up gradient of an existing or proposed stream crossing, culvert or bridge. The post-development peak discharge rate must be designed to be equal to or less than the pre-development rate from the 2-year, and 10-year, and 100 year 24-hour storms to avoid an increase in peak discharge rate from the Project Site. The peak discharge rate computations must be conducted using the NRCS Technical Release WinTR20 Project Formulation Method (Version 3.20 or later versions are permissible) or WinTR55 Small Watershed Hydrology Method (Version 1.00.10 or later versions are permissible). When calculating the peak discharge rate, The upper confidence of the precipitation

**Commented [A23]:** The proposed standard has been revised to require that the stormwater management system be designed for the 100-year storm. This will require that the Stormwater Management System, inlets, pipes/conveyances and detention/retention be sized for the 100-year storm. The current standard requires Proponents to evaluate the impact of peak discharges from the 100-year 24-hour storm. If this evaluation shows that increased off-site flooding will result from peak discharges from the 100-year 24-hour storms, BMPs must also be provided to attenuate these discharges...The evaluation may show that retaining the 100-year 24-hour storm event is not needed. In some cases, retaining stormwater from the 100-year 24-hour storm event onsite may aggravate downstream impacts, because of the project's location within the watershed and the timing of the release of stormwater.

frequencies listed in the National Oceanic and Atmospheric Administration (NOAA) Atlas 14 Volume 10 (Version 3.0 or later versions are permissible) multiplied by 0.9 shall be utilized. ~~The NOAA Type C or D storm distribution (NRCS Engineering Field Handbook Chapter 2, National Engineering Handbook Part 650, Massachusetts Supplement for the Implementation of NOAA Atlas 14, Volume 10 Rainfall Data, dated June 17, 2016) or a customized storm distribution developed using the NOAA Atlas 14 upper confidence multiplied by 0.9 shall be utilized.~~

3. Loss of annual recharge to ground water shall be avoided or minimized through the use of infiltration measures including ESSD, LID techniques or practices, SCMs, BMPs, and good operation and maintenance practices. To meet this recharge standard, ESSD or LID techniques or practices must be used unless demonstrated to be Impracticable based on a written alternatives analysis to be submitted with the Notice of Intent. Other types of SCMs shall only be used to meet those portions of the recharge standard that cannot be fully met by ESSD and LID. ESSD, LID, and, where necessary, SCMs, should be dispersed throughout a Project Site. This recharge standard must be met on the Project Site. At a minimum, the annual recharge from the post-development site shall approximate the annual recharge from the pre-development conditions based on soil type.

This standard is met when underlying soils have a saturated hydraulic conductivity rate of at least 0.01 inch/hour, the recharge practice is designed to infiltrate the runoff into the ground fully within 72 hours, stormwater management system is designed to infiltrate the required recharge volume as determined in accordance with the Massachusetts Stormwater Handbook and a volume of at least one inch of runoff multiplied by the impervious area is designed to infiltrate the runoff into the ground. Mounding analysis is required when the vertical separation from the bottom of an exfiltration system to Seasonal High Groundwater Elevation is less than four feet and the recharge system is proposed to attenuate the peak discharge from a 10-year or higher 24-hour storm (e.g., 10-year, 25-year, 50-year, or 100-year 24-hour storm). The mounding analysis must demonstrate that the seasonal high groundwater does not elevate into the infiltration practice, rise above the ground surface, or elevate the water surface of any Resource Areas over a 72-hour period. The 1-inch volume of infiltration is presumed to be provided when the recharge system is sized using one or more of the following methods described in the Massachusetts Stormwater Handbook [2023 Edition]:

- a. The Static Method;
- b. The Simple Dynamic or Dynamic Field Methods using in-situ Saturated Hydraulic Conductivity Tests;
- c. The Continuous Simulation Method using in-situ Saturated Hydraulic Conductivity Tests where the static volume designed to be infiltrated represents at least 70% of the average annual precipitation at the three closest weather stations for which annual precipitation data is available through the NOAA National Centers for Environmental Information (formerly the National Climatic Data Center) within the same major river basin using a weighted average method, for the climate normal period 1991-2020, demonstrated through continuous simulation by using an automated spreadsheet provided by MassDEP in the Massachusetts Stormwater Handbook [2023 Edition].

**Commented [A24]:** NAIOP believes that this is guidance that should be deleted from the regulations and instead incorporated into the handbook.

**Commented [A25]:** NAIOP does not believe it is necessary to match the peak discharge rates at the discharge points from the Project site. Design points of interest (property line, wetland resource area, municipal drainage system) may be outside the limits of the project site and contained within the project locus or applicable easements.

Further, as written in this section the applicant must demonstrate that there are no existing or proposed stream crossing, culvert or bridge downgradient of the coastal resource area. Not all crossings create a restriction to flow. Based on the revised standard a discharge to the Taunton River upstream of the Braga Bridge or to the Mystic River just upstream of the Tobin Bridge would not be eligible for the waiver.

Finally NAIOP is concerned about codifying the model requirements into the Standards. If new methodologies or approaches are developed, they will not be able to be used until the regulations are updated. New applications are available that incorporate SWMM and other models that allow seamless hydrologic and hydraulic analysis for stormwater systems; these models will not be allowed based on these revisions. **NAIOP suggests that the modeling requirements be included in the Stormwater Handbook as guidance.**



a.d. When Project Sites are composed entirely of NRCS Hydrologic Soil Group D Soil, bedrock within 2-feet of the existing ground surface, hazardous waste sites or solid waste landfill closures, the standard is met when ~~one inch~~ 1-inch to the Maximum Extent Practicable is provided.

4. Stormwater management systems for new development shall be designed to remove 80% 90% of the average annual post-construction load of Total Suspended Solids (TSS) and 60% of the average annual post-construction load of Total Phosphorus (TP). To meet this TSS/TP removal standard, ESSD or LID must be used unless demonstrated to be Impracticable based on a written alternatives analysis to be submitted with the Notice of Intent. Other SCMs and related stormwater Best Management Practices shall only be used to meet those portions of this TSS/TP removal Standard that cannot be fully met by ESSD and LID. ESSD, LID and, where necessary, SCMs and related stormwater Best Management Practices should be dispersed throughout a Project Site. A long-term pollution prevention plan (LTPPP) shall be prepared to eliminate or reduce the generation of runoff of TSS, TP, pathogens, nutrients and other contaminants. This standard is to be met on the Project Site.

This ~~s~~Standard is met when:

- a. Suitable practices for source control and pollution prevention are identified in a LTPPP that is submitted with the Notice of Intent and thereafter are implemented and maintained.
- b. Structural stormwater best management practices are sized to capture the required water quality volume determined in accordance with Massachusetts Stormwater Handbook; and The LTPPP incorporates source reduction measures to eliminate or reduce the generation and runoff of TSS, TP, pathogens, nutrients, and other contaminants such as polycyclic aromatic hydrocarbons. Furthermore, the LTPPP must address measures to properly dispose of snow outside of wetland Resource Areas and minimize snow disposal in the Buffer Zone. Source reductions and pollution prevention measures to be incorporated into the LTPPP include, but are not limited to, restricting fertilizer use, properly covering any solid waste stored exterior to a building so it does not come in contact with runoff, prohibiting use of coal tar-based pavement sealants which contain polycyclic aromatic hydrocarbons, restricting use of winter sand application to paved surfaces, and prohibiting use of oil application to unpaved roads and automotive parking areas. To reduce further nutrient loading, the LTPPP shall prohibit fertilizers that contain phosphorus, in accordance with 330 CMR 31.00: *Plant Nutrient Application Requirements for Agricultural Land and Non-Agricultural Turf and Lawns*; and shall prohibit fertilizers to be applied when precipitation greater than 0.5 inches is forecast in the next 48 hours. The LTPPP shall be presumed to meet these requirements when it includes the source control and pollution prevention measures specified in this regulation and the additional measures listed in the *Massachusetts Stormwater Handbook* [2023 Edition].
- c. Pretreatment is provided in accordance with the Massachusetts Stormwater Handbook. ESSD, LID techniques or practices, SCMs and related stormwater BMPs are sized:

**Commented [A26]:** Nearly all soil in Massachusetts has a saturated hydraulic conductivity greater than 0.01 in/hr. A more reasonable minimum saturated hydraulic conductivity should be used in lieu of 0.01 in/hr. If one inch of rain fell on an infiltration basin with a saturated hydraulic conductivity of 0.01 in/hr it would take more than 100 hours for that volume of water to recharge. That's well beyond the 72 hours drawdown requirement and that's not including any additional runoff that may be directed to the basin. If you assume a typical depth of recharge volume in a basin of approximately 4 feet the saturated hydraulic conductivity would need to be 0.67 in/hr to infiltrate within the 72 hours. Based on the Rawls Rate this falls somewhere between a sandy loam (1.02 in/hr) and a loam (0.52 in/hr). **NAIOP suggests using a minimum saturated hydraulic conductivity no lower than 0.17 in/hr consistent with the current handbook.**

**Commented [A27R26]:** Not all soils are capable of recharging one inch of rainfall. The Standard should be updated to reflect the variability of soils. Some sands may be capable of recharging more than one-inch while sandy loams or loam will recharge much less. NAIOP suggests revising the standard to provide a range in recharge requirements that targets more recharge in soils capable of accepting recharge (Sand) while maintaining Maximum Extent Practicable approach for soils less conducive to recharge (Sandy-Loam/Loam). NAIOP has provided a table in our letter to accompany this comment.

**Commented [A28R26]:** NAIOP believes that clarification is needed regarding the mounding analysis. Stormwater recharge is transient/temporary and typically will not impact the seasonal high groundwater; any impact to the groundwater elevation is only temporary and any increase in groundwater elevation will dissipate over a short period of time. The mounding analysis should demonstrate that the infiltration practice dewater within 72 hours after the end of the 10-year storm and that the recharge waters do not break out at grade or within a regulated resource area or into nearby structures or utilities. More detailed guidance regarding mounding analysis procedures can be included in the Handbook.

**Commented [A29R26]:** NAIOP again urges the Department not to include design/analysis methodologies in the regulations and instead suggests that they be referenced in the Handbook.

**Commented [A30R26]:** Finally, NAIOP urges the adoption of additional relief from the recharge requirement be provided for sites with C/D soils or bedrock. When you factor in the depth of the invert of the catch basin (say 3 feet, pipe slope/length of run and depth of storage), the bottom of an infiltration practice will be located 6-10 feet below grade well into the unsuitable soils or the bedrock. It's not practicable to construct functioning infiltration practices in these conditions. NAIOP suggests that recharge be provided to the maximum extent practicable as allowed by the Issuing Authority when unfavorable recharge conditions are demonstrated by the applicant.



- ~~i. to capture-recharge, or store and treat the volume required to meet the 90% TSS and 60% TP pollutant reduction standard using the EPA-PRC or other Substitute EPA- PRC approved by MassDEP elisted in 310 CMR 10.05(6)(k)4. Table 1 MassDEP Crosswalk;~~
    - ~~ii. to capture the requiredrecharge or store and treat one-inch water quality volume when discharges are Near or discharge to Critical Areas; from Land Uses with Higher Potential Pollutant Loads, or when no EPA-PRC or other Substitute EPA-PRC approved by MassDEP is listed in 310 CMR 10.05(6)(k)4. Table 1 MassDEP Crosswalk, except for ESSD; or~~
    - ~~iii. to meet the TSS and TP pollutant removal reduction standard for the ESSD Credits listed in 310 CMR 10.05(6)(k)4. Table 1 MassDEP Crosswalk. The credits are presumed to be provided when the ESSD is sized in accordance with the dimensional specifications of the Massachusetts Stormwater Handbook Appendix A [2023 Edition].~~
  - d. Pretreatment for TSS removal is provided in accordance with 310 CMR 10.05(6)(k)4.d.i. through iii. Use of EPA-PRC requires that pretreatment be provided, however, the credit for the pretreatment is already incorporated into the EPA-PRC. Therefore, pretreatment must be provided but no additional TSS pretreatment credits shall be applied to meet the 90% TSS removal for those SCMs that have an EPA-PRC. For other SCMs listed in 310 CMR 10.05(6)(k)4. Table 1 MassDEP Crosswalk that require pretreatment, TSS removal credit shall be provided and applied to meet the 90% TSS removal.
    - i. At least 44% TSS pretreatment is required prior to discharge to an infiltration structure if the discharge is: within a Zone II or Interim Wellhead Protection Area; Near an Outstanding Resource Water or Special Resource Water; Near a Shellfish Growing Area, Cold-water Fishery, or bathing beach; from Land Uses with Higher Potential Pollutant Loads; or within an area with a rapid infiltration rate (greater than 2.4 inches per hour).
    - ii. At least 25% TSS pretreatment is required for all other discharges to structural treatment SCMs, including infiltration structures, except for rooftop runoff directed ~~to a dry well or roof dripline filters.~~infiltration practices.
    - iii. Metals pretreatment is provided for runoff from metal roofs located within Zone II or the Interim Wellhead Protection Area of a public water supply and/or an industrial site by a SCM capable of removing metals, such as a sand filter, organic filter or filtering bioretention area. Metal roofs are galvanized steel or copper, regardless if they are coated or painted.
  - e. When a proprietary manufactured separator, proprietary media filter, or other treatment practice is proposed for which no TSS or TP removal credit has been designated at 310 CMR 10.05(6)(k)4. Table 1 MassDEP Crosswalk, written documentation shall be submitted to the Issuing Authority with the Notice of Intent substantiating the removal percentages being claimed and that the structure will treat the 1-inch water quality volume through submission of a computation converting the 1-inch water quality volume to a peak flow rate.

**Commented [A31]:** NAIOP recommends that the Department clarify the term “to capture”. The intent appears that SCMs and BMPs should be sized to recharge, or store and treat the volume required to meet the treatment standard. NAIOP also respectfully asks the Department to clarify if this standard precludes the use of proprietary filters that are typically sized base on flow rate.

Additionally, not all SCMs of BMPS will provide 90% TSS and 60% phosphorous removal when treating one-inch of runoff.

**Commented [A32]:** How is the rate for rapid infiltration determined? Is this based on in-situ testing (with or without a factor of safety or reduction factor), from Table 6-2 in the Stormwater Handbook based on Hydrologic Soil Group or by textural classification and Rawls Rates? NAIOP suggests using Rawls Rates. If using Rawls Rates is the intent that soils classified as Loamy Sand (2.41 in/hr) and Sand (8.41 in/hr) are considered area of rapid infiltration? If so, NAIOP suggests changing the standard to **greater than or equal to 2.41 inches/hr.**

**Commented [A33R32]:** Is the intent that roof runoff to infiltration practices other than dry wells and roof dripline filters require pretreatment? NAIOP suggests changing the standard to read: **except for rooftop runoff directed to infiltration practices.**

**Commented [A34R32]:** NAIOP asks that the Department evaluate if there is research data that suggest coated or painted metal roofs and solar panels contribute additional pollutants. NAIOP does not believe that pretreatment of roof runoff should be required.

The peak flow rate for the computations must be based on the upper confidence of the precipitation frequencies listed in the National Oceanic and Atmospheric Administration (NOAA) Atlas 14 Volume 10 (Version 3.0 or later versions are permissible) multiplied by 0.9. Computations based on the U.S. Weather Bureau Technical Paper 40 are not acceptable. Storm distribution must be based on National Oceanic and Atmospheric Administration (NOAA) Atlas 14 Volume 10 (Version 3.0 or later versions are permissible) multiplied by 0.9. Use of the NRCS Type III storm is not acceptable to meet the computation requirement. Computations converting the 1-inch water quality volume to a peak flow rate that are performed in accordance with Appendix D of the Massachusetts Stormwater Handbook [2023 Edition] will be presumed to demonstrate that the structure can treat the 1-inch water quality volume. The Issuing Authority shall review the written documentation on a case-by-case basis and determine whether the use of the proposed Stormwater Control Measure will meet or partially meet the TSS and TP pollutant requirements specified at 310 CMR 10.05(6)(k)4. or 10.05(6)(k)7.c., and for proprietary manufactured pretreatment practices, 310 CMR 10.05(6)(k)4.d. However, proprietary manufactured practices designated as pretreatment practices shall only be used for pretreatment. Said proprietary manufactured practices shall be sized to treat at least the first 1-inch of runoff multiplied by the impervious area. The written documentation to be submitted to the Issuing Authority shall consist of scientific studies that adhere to the *Technology Acceptance Reciprocity Partnership (TARP) Protocol for Stormwater Best Management Practices Demonstrations*, August 2001, updated July 2003, published on MassDEP's website and endorsed by the States of California, Massachusetts, Maryland, New Jersey, Pennsylvania, and Virginia (<https://www.mass.gov/files/documents/2016/08/rd/swprotoc.pdf>). All studies must be conducted in the field. Laboratory studies are not acceptable. The procedures specified in the *Massachusetts Stormwater Handbook* [2023 Edition] for review of Proprietary Manufactured Stormwater Control Measures provide guidance to Issuing Authorities about how to review scientific studies conducted pursuant to the *Technology Acceptance Reciprocity Partnership (TARP) Protocol for Stormwater Best Management Practices Demonstrations*.

310 CMR 10.05(6)(k)4. Table 1 MassDEP Crosswalk (Note that all EPA Performance Removal Curves (EPA-PRC) referenced in this Table can be found at the EPA-PRC BATT Tool and Appendix B of the *Massachusetts Stormwater Handbook* [2023 Edition]. See 310 CMR 10.04: Definitions. In certain cases where an EPA-PRC is not available, MassDEP has approved Substitute EPA-PRCs in 310 CMR 10.05(6)(k)4. and 310 CMR 10.05(6)(k)7., Table 1 MassDEP Crosswalk (below). The credits are presumed to be provided when the SCM or ESSD is sized in accordance with the dimensional specifications of the *Massachusetts Stormwater Handbook* [2023 Edition] Appendix A.

**Commented [A35]:** NAIOP recommends that this guidance be removed from the regulations and instead incorporated into the Stormwater Handbook. The updated regulation states that NRCS Type III Storm Distribution is not acceptable to meet the computation requirement, however, Appendix D: Standard Method to Convert Water Quality Volume to Discharge Rate Figure C-1 Unit Peak Discharge and Time of Concentration includes NRCS Type III Storm Distribution. The treatment structure may need to treat more than one-inch of water to meet TSS and P reduction requirements.

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<u>MassDEP SCM</u>	<u>Credit Method</u>	<u>Does SCM Require Pretreatment?</u>	<u>Pollutant Removal Credit</u>	
			<u>TSS</u>	<u>TP</u>
<u>Non-Structural</u>				
<u>Street Cleaning</u>	<u>MassDEP-</u>	<u>No</u>	<u>3% to 16% depending on type of cleaner and frequency</u>	<u>2% to 7% depending on type of cleaner and frequency</u>
<u>ESSD Credits</u>				
<u>Credit 1: General ESSD</u>	<u>MassDEP</u>	<u>No</u>	<u>90%</u>	<u>60%</u>
<u>Credit 2: Solar ESSD</u>	<u>MassDEP</u>	<u>No</u>	<u>90%</u>	<u>60%</u>
<u>Credit 3: Roof Runoff to Qualifying Pervious Area A, B and C soils for Hydrologic Soil Group</u>	<u>EPA-PRC</u>	<u>No</u>	<u>90% when Impervious Area (IA) to Pervious (PA) Ratio for HSG A is 1:1 to 1:50; for HSG B is 1:1 to 1:50; and HSG C 1:2 to 1:50.</u>	<u>60% when Impervious Area (IA) to Pervious (PA) Ratio for HSG A is 1:1 to 1:50; for HSG B is 1:1 to 1:50; and HSG C 1:2 to 1:50.</u>
<u>Credit 4: Road Runoff to Qualifying Pervious Area Hydrologic Soil Group A, B and C soils</u>	<u>EPA-PRC</u>	<u>No</u>	<u>90% when Impervious Area (IA) to Pervious (PA) Ratio for HSG A is 1:1 to 1:50; for HSG B is 1:1 to 1:50; and HSG C 1:2 to 1:50.</u>	<u>60% when Impervious Area (IA) to Pervious (PA) Ratio for HSG A is 1:1 to 1:50; for HSG B is 1:1 to 1:50; and HSG C 1:2 to 1:50.</u>
<u>Credit 5: Tree Canopy</u>	<u>MassDEP</u>	<u>No</u>	<u>Effective Impervious Cover Reduction</u>	<u>Effective Impervious Cover Reduction</u>
<u>Credit 6: Reduce Impervious Area</u>	<u>MassDEP</u>	<u>No</u>	<u>Total Impervious Area Reduction</u>	<u>Total Impervious Area Reduction</u>
<u>Credit 7: Buffer Zone Improvement</u>	<u>EPA-PRC</u>	<u>No</u>	<u>90% when Impervious Area (IA) to Pervious (PA) Ratio for HSG A is 1:1 to 1:50; for HSG B is 1:1 to 1:50; and HSG C 1:2 to 1:50.</u>	<u>60% when Impervious Area (IA) to Pervious (PA) Ratio for HSG A is 1:1 to 1:50; for HSG B is 1:1 to 1:50; and HSG C 1:2 to 1:50.</u>
<u>Structural Pretreatment</u>				
<u>Deep Sump Catch Basin</u>	<u>MassDEP</u>	<u>No</u>	<u>25%</u>	<u>No Treatment</u>
<u>Oil/Grit Separator</u>	<u>MassDEP</u>	<u>No</u>	<u>25%</u>	<u>No Treatment</u>
<u>Proprietary Manufactured Separator</u>	<u>MassDEP</u>	<u>No</u>	<u>44% minimum, higher credit if determined by Issuing Authority in accordance with 310 CMR 10.05(6)(k)4.e.</u>	<u>No Treatment minimum, higher credit if determined by Issuing Authority in accordance with 310 CMR 10.05(6)(k)4.e.</u>
<u>Sediment Forebay</u>	<u>MassDEP</u>	<u>No</u>	<u>25%</u>	<u>No Treatment</u>
<u>Vegetated Filter Strip (≥ 25-ft length)</u>	<u>MassDEP</u>	<u>No</u>	<u>25%</u>	<u>No Treatment</u>
<u>Vegetated Filter Strip (≥ 50-ft length)</u>	<u>MassDEP</u>	<u>No</u>	<u>45%</u>	<u>No Treatment</u>
<u>Pea Gravel Diaphragm</u>	<u>MassDEP</u>	<u>No</u>	<u>45% Pretreatment, only used for</u>	<u>No Treatment</u>

**Commented [A36]:** Enhanced Bioretention with Internal Storage Reservoir is not included in the Crosswalk. NAIOP suggests that Enhance Bioretention with Internal Storage Reservoir be added to the Crosswalk as it is included in the EPA curves.

**Commented [A37]:** Credit 6 of the Crosswalk includes credit for total impervious area reduction. NAIOP recommends additional incentive to reduce impervious area further.

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<u>MassDEP SCM</u>	<u>Credit Method</u>	<u>Does SCM Require Pretreatment?</u>	<u>Pollutant Removal Credit</u>	
			<u>TSS</u>	<u>TP</u>
			<u>Bioretention Areas, Infiltration Trenches, ESSD Credit 3, ESSD Credit 4 and ESSD Credit 7</u>	
<u>Grass / Gravel Combination</u>	<u>MassDEP</u>	<u>No</u>	<u>45% Pretreatment, only used for Bioretention Areas, Infiltration Trenches, ESSD Credit 3, ESSD Credit 4 and ESSD Credit 7</u>	<u>No Treatment</u>
<u>Structural Treatment</u>				
<u>Bioretention Area (Exfiltrating)</u>	<u>Substitute-EPA-PRC</u>	<u>Yes</u>	<u>EPA infiltration Basin Curve</u>	<u>EPA infiltration Basin Curve</u>
<u>Bioretention Area (Filtering)</u>	<u>Substitute EPA-PRC</u>	<u>Yes</u>	<u>EPA Biofiltration Curve</u>	<u>EPA Biofiltration Curve</u>
<u>Constructed Stormwater Wetland</u>	<u>Substitute EPA-PRC</u>	<u>Yes</u>	<u>EPA Gravel Wetland Curve</u>	<u>EPA Gravel Wetland Curve</u>
<u>Extended Dry Detention Basin</u>	<u>EPA-PRC</u>	<u>Yes</u>	<u>EPA Dry Pond Curve</u>	<u>EPA Dry Pond Curve</u>
<u>Gravel Wetland</u>	<u>EPA-PRC</u>	<u>Yes</u>	<u>EPA Gravel Wetland Curve</u>	<u>EPA Gravel Wetland Curve</u>
<u>Proprietary Media Filter</u>	<u>MassDEP</u>	<u>Yes</u>	<u>60% minimum, higher credit if determined by Issuing Authority in accordance with 310 CMR 10.05(6)(k)4.e.</u>	<u>30% minimum, higher credit if determined by Issuing Authority in accordance with 310 CMR 10.05(6)(k)4.e.</u>
<u>Sand/Organic Filter</u>	<u>EPA-PRC</u>	<u>Yes</u>	<u>EPA Sand Filter Curve</u>	<u>EPA Sand Filter Curve</u>
<u>Tree Box Filter (Exfiltrating)</u>	<u>Substitute EPA-PRC</u>	<u>No</u>	<u>EPA Infiltration Trench Curve</u>	<u>EPA Infiltration Trench Curve</u>
<u>Tree Box Filter (Filtering)</u>	<u>Substitute EPA-PRC</u>	<u>No</u>	<u>EPA Biofiltration Curve</u>	<u>EPA Biofiltration Curve</u>
<u>Wet Basin</u>	<u>EPA-PRC</u>	<u>Yes</u>	<u>EPA Wet Pond Curve</u>	<u>EPA Wet Pond Curve</u>
<u>Roof Dripline Filter (exfiltrating type)</u>	<u>Substitute EPA-PRC</u>	<u>No, except for metal roofs in industrial sites in Zone II</u>	<u>EPA Infiltration Trench Curve</u>	<u>EPA Infiltration Trench Curve</u>
<u>Roof Dripline Filter (filtering type)</u>	<u>Substitute EPA-PRC</u>	<u>No, except for metal roofs in industrial sites in Zone II</u>	<u>EPA Infiltration Trench Curve</u>	<u>EPA Infiltration Trench Curve</u>
<u>Structural Conveyance</u>				
<u>Drainage Channel</u>	<u>MassDEP</u>	<u>No</u>	<u>No Treatment</u>	<u>No Treatment</u>
<u>Grass Channel (Biofilter Swale)</u>	<u>Substitute EPA-PRC</u>	<u>Yes</u>	<u>EPA Grass Swale Curve</u>	<u>EPA Grass Swale Curve</u>
<u>Water Quality Swale (Dry/Wet)</u>	<u>MassDEP</u>	<u>Yes</u>	<u>70%</u>	<u>No Treatment</u>
<u>Structural Infiltration</u>				
<u>Dry Well</u>	<u>Substitute EPA-PRC</u>	<u>Varies</u>	<u>EPA Infiltration Trench Curve</u>	<u>EPA Infiltration Trench Curve</u>
<u>Infiltration Basin</u>	<u>EPA-PRC</u>	<u>Yes</u>	<u>EPA Infiltration Basin Curve</u>	<u>EPA Infiltration Basin Curve</u>

MassDEP SCM	Credit Method	Does SCM Require Pretreatment?	Pollutant Removal Credit	
			TSS	TP
Infiltration Trench	EPA-PRC	Yes	EPA Infiltration Trench Curve	EPA Infiltration Trench Curve
Leaching Catch Basin	Substitute EPA-PRC	Yes	EPA Infiltration Basin Curve	EPA Infiltration Basin Curve
Porous pavement	EPA-PRC	Yes	EPA Porous Pavement Curve	EPA Porous Pavement Curve
Subsurface Infiltrator	Substitute EPA-PRC	Yes	EPA Infiltration Basin Curve	EPA Infiltration Basin Curve
<b>Structural Other</b>				
Dry Detention Basin	MassDEP	No	No Treatment	No Treatment
Green Roof	MassDEP	No	Effective Impervious Cover Reduction	Effective Impervious Cover Reduction
Rain Barrels & Cisterns	MassDEP	No	Effective Impervious Cover Reduction	Effective Impervious Cover Reduction

5. For Land Uses with Higher Potential Pollutant Loads, source control and pollution prevention shall eliminate or reduce the discharge of stormwater runoff from such land uses to the Maximum Extent Practicable. The written Long Term Pollution Prevention Plan ~~(LTPPP)~~ required by 310 CMR 10.05(6)(k)4.a.-shall address source controls and pollution measures. This standard will be presumed to be met if source control and pollution prevention measures listed in the LTPPP are proposed to be implemented in accordance with the *Massachusetts Stormwater Handbook [2023 Edition]* ~~to eliminate or reduce the discharge of stormwater runoff from such land uses to the maximum extent practicable. If through source control and/or pollution prevention, All L and U~~ses with Higher Potential Pollutant Loads ~~must~~ cannot be completely protected from exposure to rain, snow, snow melt and stormwater runoff through source control and pollution prevention measures. This standard shall be presumed to be met when the proponent ~~shall use~~ the specific structural stormwater BMPs, source control and pollution prevention practices determined by the Department to be suitable for such use as provided in the *Massachusetts Stormwater Handbook [2023 Edition]*. Stormwater discharges from Land Uses with Higher Potential Pollutant Loads shall also comply with the requirements of the Massachusetts Clean Waters Act, M.G.L. c. 21, §§ 26 through 53, and the regulations promulgated thereunder at 314 CMR 3.00: *Surface Water Discharge Permit Program*, 314 CMR 4.00: *Massachusetts Surface Water Quality Standards* and 314 CMR 5.00: *Ground Water Discharge Permit Program*.
6. When sStormwater discharges are within the Zone II or Interim Wellhead Protection Area of a public water supply ~~or and stormwater discharges. Near or that discharge~~ to any other Critical Area, structural and non-structural SCM's shall be implemented to remove pathogens and reduce the temperature of the stormwater being discharged. The written LTPPP required by 310 CMR 10.05(6)(k)4.a. shall address source controls and pollution measures to prevent direct and indirect alterations to Critical Areas. When SCMs and BMPs specifically described in the Massachusetts Stormwater Handbook [2023 Edition] as appropriate for Critical Areas are provided, this portion of the standard is presumed to be met. ~~when require the use of the specific SCMs~~source control

~~and pollution prevention measures and the specific structural stormwater best management practices, as well as and Best Management Practices determined by the Department to be suitable for managing discharges to such area described in as provided in the Massachusetts Stormwater Handbook [2023 Edition] as suitable for Critical Areas, are provided. A discharge is near a critical area, if there is a strong likelihood of a significant impact occurring to said area, taking into account site specific factors. Stormwater discharges and all components of structural and nonstructural SCMs, located Near or that discharge to Outstanding Resource Waters, and Special Resource Waters, and Cold-water Fisheries Critical Areas, shall be removed and set back from the receiving water or wetland in accordance with 310 CMR 10.05(6)(q) and receive the highest and best practical method of treatment. Unless a discharge to a Cold-water Fishery is infiltrated or an ESSD practice measure is used, the temperature of the stormwater shall not exceed 68 degrees F at the discharge point to ensure that there will be no thermal impact to the existing ambient temperature of the receiving water. A “storm water discharge” as defined in 314 CMR 3.04(2)(a) or (b) to an Outstanding Resource Water or Special Resource Water shall comply with 314 CMR 3.00: Surface Water Discharge Permit Program and 314 CMR 4.00: Massachusetts Surface Water Quality Standards. Stormwater Management Systems located in and S stormwater discharges to a Zone I or Zone A are prohibited, unless essential to the operation of the public water supply.~~

7. ~~Redevelopment Projects shall be subject to the following:-~~

a. ~~A R~~edevelopment project is required to meet the following Stormwater Management Standards only to the ~~M~~maximum ~~E~~extent ~~P~~practicable: ~~Standard 2310 CMR 10.05(6)(k)2., Standard 3310 CMR 10.05(6)(k)3., and the pretreatment and structural S stormwater C control M measures and related stormwater B best M management P practice requirements of 310 CMR 10.05(6)(k) Standards 4., 310 CMR 10.05(6)(k)5, and 6, and the Setback requirements at 310 CMR 10.05(6)(q).~~ Existing stormwater discharges shall comply with ~~Standard 4310 CMR 10.05(6)(k)1.~~ only to the ~~M~~maximum ~~E~~extent ~~P~~practicable.

b. ~~A R~~edevelopment projects shall ~~also~~ comply with all other requirements of the Stormwater Management Standards and improve existing conditions ~~by reducing the peak discharge rate, increasing stormwater recharge, and removing pollutants such as Total Suspended Solids (TSS) and Total Phosphorus (TP) from the discharge.~~

c. ~~All provisions of 310 CMR 10.05(6)(k)4. apply to Redevelopment Projects, except that Stormwater Management Systems for R redevelopment shall be designed to remove 80% of the average annual post-construction load of TSS and 50% of the average annual post-construction load of TP. This standard is to be met on the Project Site unless Impracticable as demonstrated by a written alternatives analysis, in which case Offsite Mitigation for Redevelopment may must be implemented to achieve the removal standard of 80% TSS and 50% TP. Offsite Mitigation for Redevelopment may be used to fully meet the 80% TSS and 50% TP removal standard, or to meet the portion of the 80% TSS and 50% TP removal standard that cannot be fully met on the Project Site. Offsite Mitigation for Redevelopment may also be allowed for the requirements of 310 CMR 10.05(6)(k)3 and 310 CMR 10.05(6)(k)11.d. when the written alternatives analysis determines Maximum Extent Practicable cannot be achieved on the Project Site.~~

**Commented [A38]:** Given specific targets are outlined in paragraph b, NAIOP does not believe that the language removing pollutants such as TSS and TP is needed. Additionally, NAIOP requests that the Department clarify if there are minimum targets for reducing peak discharge rate and increasing recharge.

**Commented [A39]:** Access to implement offsite improvements may not be feasible or may not exist. NAIOP suggests the inclusion of “may” to allow for project-specific responsiveness.



d. Offsite Mitigation for Redevelopment shall be evaluated in the following order: same Project Site, same Project Locus, adjacent site, same wetland Resource Area, same municipality, and the same stream reach within the Hydrologic Unit Code (HUC) 12 sub-watershed. All instances of Offsite Mitigation for Redevelopment shall be within the same HUC 42 sub-watershed. MassDOT may use the Watershed-scale Accounting Method within the HUC 10 within a three-year period after the final Order is issued to meet the requirements of 310 CMR 10.05(6)(k)7. The Watershed-scale Accounting Method may be used rather than or in addition to meeting 310 CMR 10.05(6)(k)7 on the Project Site, through the Macro-Approach, or by using Offsite Mitigation for Redevelopment, if these options are Impracticable. The implementation of SCMs through the Watershed-scale Accounting Method must be tracked by an annual report available to the Issuing Authority and to MassDEP.

e. Retrofit Projects shall comply with 310 CMR 10.05(6)(k)1., 5., 6., 8., 9., and 10. Retrofit Projects shall not have to comply with 310 CMR 10.05(6)(k)2., 3., 4., and 11., except they must improve existing conditions for at least peak discharge rate, recharge, or water quality treatment.

8. A plan to control construction-related impacts including erosion, sedimentation and other pollutant sources during construction and land disturbance activities (construction period erosion, sedimentation and pollution prevention plan) shall be developed and implemented. This standard shall be presumed to be met when the construction period erosion, sedimentation and pollution prevention plan is prepared in accordance with the Massachusetts Stormwater Handbook [2023 Edition]. No construction period runoff may be directed to the post construction SCMs or other BMPs. The construction period erosion, sedimentation and pollution prevention plan shall be submitted with the Notice of Intent for review and approval by the Issuing Authority. A condition shall be included in the Order of Conditions that specifies that failure to comply with the construction period erosion, sedimentation and pollution prevention plan as approved in the Order of Conditions shall be deemed to be noncompliance. Field inspections of construction period BMPs identified in the construction period erosion, sedimentation and pollution prevention plan shall be performed at least once every seven calendar days during the construction period and maintenance or corrective actions shall be taken to ensure compliance. Inspections and maintenance or corrective actions shall be documented in a report and made available to the issuing authority upon request.

9. A long-term operation and maintenance plan shall be developed and implemented to ensure that the stormwater management system functions as designed. This standard is presumed to be met when the maintenance proposed in the long-term operation and maintenance plan occurs with the frequencies listed in Appendix A of the Massachusetts Stormwater Handbook [2023 Edition] and when the plan is otherwise prepared in accordance with the Handbook. The long-term operation and maintenance plan shall be submitted with the Notice of Intent, for review and approval by the Issuing Authority. After a Certificate of Compliance has been issued or the Order of Conditions has expired, a Maintenance Log shall list the maintenance activities and LTPPP measures that have occurred and the specific dates of the maintenance and pollution prevention activities. The Maintenance Log shall be kept up-to-date. The Maintenance Log shall be made available to the Issuing Authority no later than 5 business days after any request.

**Commented [A40]:** Projects that exceed 1-acre of disturbance are required to obtain coverage under the NPDES Construction General Permit (CGP) and provide a Stormwater Pollution Prevention Plan (SWPPP) that will govern construction period erosion and sedimentation control. This plan is developed in conjunction with the Owner, General Contractor and Site Contractor. Typically, the general contractor and site contractor are not onboard during the permitting process. Any SWPPP prepared during permitting will be draft only and subject to change pending coordination with the General Contractor and Site Contractor.

NAIOP suggests that the SWPPP be submitted to the Issuing Authority for record only prior to the start of construction.

**Commented [A41]:** NAIOP urges the Department to issue further clarification on this requirement. The location of SCMs and BMPs are typically sited at low points on-site and during construction temporary sedimentation basins or other BMPs may be constructed in the location of the SCMs because runoff is being directed to these locations. Once the site is generally stabilized the construction of the SCMs or BMPs is completed. On smaller project sites or redevelopment sites it may be impossible to comply with this condition as there may be limited locations to install temporary/construction phase BMPs.

Alternatively, NAIOP suggests that the requirement be removed from the regulations.



10. ~~All Illicit Discharges~~ to Waters of the Commonwealth ~~and/or~~ the Stormwater Management System are prohibited.

11. If the project will discharge stormwater to a wetland Resource Area for which a TMDL has been approved by EPA, or an Alternative TMDL has been accepted by EPA, for phosphorus, nitrogen, pathogens, and/or metals, Source Control Measures shall be identified in the LTPPP required by 310 CMR 10.05(6)(k)4. to eliminate or reduce such pollution and shall thereafter be implemented. The Stormwater Management System, including ESSD and LID, shall be presumed to meet this standard when:

- a. SCMs listed in the Massachusetts Stormwater Handbook [2023 Edition] that specifically address any applicable TMDL or Alternative TMDL are implemented;
- b. A LTPPP is implemented;
- c. For new development, the Stormwater Management System is designed to comply with 310 CMR 10.05(6)(k)3. and 4.; and
- d.

For Redevelopment, the Stormwater Management System is designed to comply with 310 CMR 10.05(6)(k)7. for recharge to the Maximum Extent Practicable, and the SMS provides water quality treatment for 80% TSS and 50% TP removal and adequate pretreatment.

(l) The Stormwater Management Standards shall not apply to the following:

1. A single-family house;
2. Housing development and Redevelopment projects comprised of detached single-family dwellings on four or fewer lots, provided that there are no stormwater discharges that may potentially affect a Critical Area;
3. Multi-family housing development and Redevelopment projects, with four or fewer units, including condominiums, cooperatives, apartment buildings and townhouses, provided that there are no stormwater discharges that may potentially affect a Critical Area; and
4. Emergency repairs to roads or their drainage systems; provided that Emergency Certification is obtained pursuant to 310 CMR 10.06; and  
~~Gardens; provided that there are no new Impervious Surfaces. Gardens do not include greenhouses.~~

5.

(m) The Stormwater Management Standards shall apply to the Maximum Extent Practicable to the following:

1. Housing development and Redevelopment projects comprised of detached single-family dwellings on four or fewer lots that have a stormwater discharge that may potentially affect a Critical Area;
2. Multi-family housing developments and Redevelopment projects with four or fewer units, including condominiums, cooperatives, apartment buildings, and townhouses, that have a stormwater discharge that may potentially affect a Critical Area;
3. Housing development and Redevelopment projects comprised of detached single-family dwellings, on five to nine lots, provided there is no stormwater discharge that may potentially affect a Critical Area;
4. Multi-family housing development and Redevelopment projects, with five to nine

**Commented [A42]:** NAIOP urges the Department to clarify the standard for adequate pretreatment and whether or not it will be consistent with the EPA-PRC.

units, including condominiums, cooperatives, apartment buildings and townhouses, provided there is no stormwater discharge that may potentially affect a ~~Ceritical~~ Area;

5. ~~Marinas and boatyards provided that the hull maintenance, painting and service areas are protected from exposure to rain, snow, snowmelt, and stormwater runoff; and~~

6. ~~Unpaved~~ Footpaths, unpaved and paved bicycle ~~kepaths,~~ and other unpaved or paved paths for pedestrian and/or nonmotorized vehicle access (with the exception of wheelchairs, other power-driven mobility devices by individuals with a mobility disability, electric bicycles and electric scooters, emergency vehicles, and vehicles performing periodic maintenance), not including paved sidewalks located near or adjacent to private or public roads.

7. Maintenance of an Existing Public Roadway.

(n) ~~For phased projects the determination of whether the Stormwater Management Standards apply is made on the entire project as a whole including all phases.~~ ~~When proposing a development or R~~ edvelopment project subject to the Stormwater Management Standards, proponents shall utilize Environmentally Sensitive Site Design (ESSD) and Low Impact Development (LID) techniques or practices unless Impracticable. Other SCMs and related stormwater BMPs shall only be used to meet those portions of the Stormwater Management Standards that cannot be fully met by ESSD or LID. consider environmentally sensitive site design that incorporates low impact development techniques in addition to stormwater best management practices.

(o) ~~Project proponents seeking to demonstrate compliance with some or f~~ all of the Stormwater Management Standards to the M ~~maximum~~ Extent ~~P~~ racticable shall demonstrate that:

1. ~~They have made all reasonable efforts to meet each of the s~~ Standards;
2. ~~They have made a~~ written alternatives analysis complete evaluation ~~of possible stormwater management measures including ESSD and LID T~~ techniques or practices ~~that minimize land disturbance and I~~ mpervious S ~~urfaces, structural SCMs, BMPs, pollution prevention, erosion and sedimentation control, and proper operation and maintenance of stormwater B~~ est M ~~anagement P~~ ractices BMPs, physical constraints (e.g., high groundwater), and costs; and
3. ~~If full compliance with the s~~ Standards cannot be achieved, the written alternatives analysis makes a clear showing that ~~they are implementing the~~

highest practicable level of stormwater management.

~~(p) Notwithstanding anything to the contrary in 310 CMR 10.00, stormwater runoff from all industrial, commercial, institutional, office, residential and transportation projects subject to regulation under M.G.L. c. 131, § 40, including site preparation, construction, and redevelopment, and all point source stormwater discharges from said projects within an Area Subject to Protection under M.G.L. c. 131, § 40, or within the Buffer Zone, for which a Notice of Intent or Notice of Resource Area Delineation has been filed prior to January 2, 2008 shall be managed according to the Stormwater Management Standards as set forth in the Stormwater Policy issued by the Department on November 18, 1996.~~

~~(p)~~ (q) ~~Compliance with the Stormwater Management Standards set forth in 310 CMR 10.05(6)(k) -1. through -11. through (q)~~ does not relieve a discharger of the obligation to comply with all applicable Federal, State, and local laws, regulations and permits including without limitation

all applicable provisions of 310 CMR 10.00, 314 CMR 3.00: *Surface Water Discharge Permit Program*, 314 CMR 4.00: Massachusetts Surface Water Quality Standards, 314 CMR 5.00: Ground Water Discharge Permit Program, 314 CMR 9.00: 401 Water Quality Certification for Discharge of Dredged or Fill Material, Dredging, and Dredged Material Disposal in Waters of the United States Within the Commonwealth, local land use controls adopted to comply with 310 CMR 22.21: *Ground Water Supply Protection* or the NPDES General Permit for Small Municipal Separate Storm Sewer Systems, the requirements of the NPDES General Stormwater permits such as the Construction General Permit, and the Multi-sector General Permit.

(q) The following minimum Setbacks from any component of a Stormwater Management System shall be met. Horizontal Setbacks for purposes of stormwater management (310 CMR 10.05(6)(k)-(q)) must be measured from the outermost portions of Stormwater Control Measures to the Resource Area boundary. Vertical Setbacks must be measured from the lowest engineered portion of a Stormwater Control Measure to the Seasonal High Groundwater Elevation. However, a Setback reduced in accordance with the *Massachusetts Stormwater Handbook* [2023 Edition] shall be presumed to meet this minimum Setback requirement:

<u>Resource</u>	<u>Minimum Setback from any component of a Stormwater Management System to Resource (all Setbacks horizontal except as otherwise stated)</u>
<u>Zone I, Interim Wellhead Protection Area (IWPA) to a Public Water Supply Well, Zone A, ORWs, and Special Resource Waters</u>	<u>Setback at least 10 feet outside Zone I, 4WPA, Zone A, ORWs, and Special Resource Waters, except within Zone I and Zone A when essential to operation of public water supply.</u>
<u>Certified Vernal Pools, Shellfish Growing Areas, bathing beaches, and Cold-water Fisheries</u>	<u>100 feet</u>
<u>All wetland Resource Areas except for Bordering Land Subject to Flooding (BLSF), Isolated Land Subject to Flooding (ILSF), Land Subject to Coastal Storm Flowage (LSCSF), and Riverfront Area</u>	<u>Setback at least 10 feet outside of all wetland Resource Areas except for BLSF, ILSF, LSCSF, and Riverfront Area. There is no Setback for BLSF, ILSF, LSCSF, and Riverfront Area.</u>
<u>Surface Waters (including but not limited to BVW, salt marsh, land under water bodies and waterways, and land under ocean)</u>	<u>50 feet (additional Setback may be necessary to prevent groundwater mound from breaking upward into recharge practice, ground outside of recharge practice, or Resource Area)</u>
<u>Property Line</u>	<u>10 feet</u>
<u>Soil Absorption System and any component of septic system</u>	<u>50 feet</u>

**Commented [A43]:** NAIOP suggests that these setbacks only be included in the Stormwater Handbook as guidance and the table be removed from the regulations.

Rather than providing setback distances the Stormwater Handbook should include performance standards (demonstrate that recharge will not breakout, impact abutting structures, etc.) It is more important to know whether there are downgradient impacts. This flexibility allows the opportunity for the applicant to demonstrate that specific site conditions and constraints paired with prudent engineering design can yield a design that provides sufficient protection of the resource area.

What is the rationale for requiring a 10ft setback outside of a Zone I (and IWPA)? The current regulations simply require it to be outside Zone I. Why the change?

The offset for ORWs and Special Resource waters conflicts with the setbacks for surface waters. The setback for surface waters and wetland resources also appear to conflict. Is the setback from bordering vegetated wetlands 10 feet or 50 feet?

The setbacks from soil absorption systems and any component of a septic system is not consistent with the Title V requirements and is more conservative. Again, a performance standard would be more appropriate here. Demonstrate that recharge will not raise groundwater below the soil absorption system. Other components of the septic system such as septic tanks are watertight and setback to these components could be lesser than those to the soil absorption system.

In urban projects SMSs are often within a building or immediately adjacent. These elements are carefully designed by the project team and are a key contributor to how projects can achieve compliance with local and/or state stormwater regulations. Requiring them to be outside the building and outside the 10ft building envelope would be a hardship, especially in dense/urban areas.

SMS elements such as roof drain header pipes, permeable pavement systems, bioretention areas are often utilized in areas within 10 feet of a building. If this is considered in the development of a project design and engineered appropriately, why would a 10ft minimum be necessary?

This setback table requires SMSs to be located outside IWPA. In many cases these areas are developed and already contain existing SMSs. A provision should be added to address existing SMSs and redevelopment within IWPA. IWPA are usually more similar to a Zone II showing the extent of the draw for a particular well. These areas tend to be very large and encompass large areas of previous developed land, including streets, highways, buildings, subdivisions, and parking lots. How can SCM now not be allowed in this type of Zone. This provision may render sites entirely within IWPA as undevelopable as currently drafted – effectively becoming a “taking” of the property.

NAIOP believes that enhanced Bioretention with Internal Storage Reservoirs should be included in the list of SCMs exempted from the 2-foot separation to groundwater.

The 100 ft setback requirement from 5% slopes is impossible to comply with on most sites. By strict interpretation of the standard the side slopes of an infiltration basin will need to

<u>Resource</u>	<u>Minimum Setback from any component of a Stormwater Management System to Resource (all Setbacks horizontal except as otherwise stated)</u>
<u>Building Foundation</u>	10 feet, except for roof drip line filter.
<u>Seasonal High Groundwater Elevation</u>	2 feet vertical separation from lowest engineered portion of SCM (includes media), except for constructed stormwater wetlands, wet basins and wet water quality swales
<u>Bedrock (only applies to structural infiltration practices)</u>	2 feet vertical separation from lowest engineered portion of SCM (includes media)
<u>Well that is not a Public Water Supply</u>	100 feet
<u>Slope</u>	100 feet from any slope greater than 5% to an infiltration basin, surface exposed or underground infiltration trench, or infiltrating bioretention area.

(7) Requests for Actions by the Department (Appeals).

[NOTE TO REVIEWERS: MassDEP IS SETTING FORTH IN THIS DOCUMENT PROPOSED AMENDMENTS TO THE CURRENT REGULATION AT 310 CMR 10.00 IN REDLINE AND STRIKEOUT FORMAT. REDLINES SHOW ADDITIONS TO THE CURRENT REGULATORY TEXT AND STRIKEOUTS SHOW PROPOSED DELETIONS. SINCE THE REGULATION IS VERY LONG, MassDEP IS PUBLISHING ONLY THOSE PORTIONS OF THE REGULATION FOR WHICH THE AGENCY IS PROPOSING TO MAKE AMENDMENTS. MassDEP HAS INCLUDED TEXT JUST PRIOR TO (and in some cases text just after) NEW INSERTED TEXT TO MAKE IT CLEAR WHERE THE NEW TEXT IS PROPOSED TO BE INSERTED INTO THE CURRENT REGULATIONS. THERE ARE NO EDITS TO SECTIONS 10.05(7)(a) through 10.05(7)(h) and the EXISTING REGULATION LANGUAGE FOR THESE SECTIONS WILL REMAIN THE SAME.]

...

- (i) After receipt of a request for a Superseding Determination or Order, the Department may conduct an informal meeting and may conduct an inspection of the site. In the event an inspection is conducted, all parties shall be invited in order to present any information necessary or useful to a proper and complete review of the proposed activity and its effects upon the interests identified in M.G.L. c. 131, § 40. Any party presenting information as a result of such a meeting shall provide copies to the other parties.

Based upon its review of the Notice of Intent, the Order, any informal meeting or site inspection, and any other additional plans, information, or documentation submitted under 310 CMR 10.05(7)(f) or (g), the Department shall issue a Superseding Order for the protection of the interests identified in M.G.L. c. 131, § 40. The Superseding Order shall impose such conditions

as are necessary to meet the performance standards set forth in 310 CMR 10.21 through 10.60 and stormwater standards set forth at 301 CMR 10.05(6)(k) for the protection of those interests. The Superseding Order shall prohibit any work or any portions thereof that cannot be conditioned to protect such interests. The Department may issue a Superseding Order which affirms the Order issued by the conservation commission. The Department shall issue a Restoration Order of Conditions as the Superseding Order of Conditions in the event it determines that the project meets the eligibility criteria for a Restoration Order of Conditions. ~~If the applicant submitted a Combined Application for a project that requires a 401 Water Quality Certification pursuant to 314 CMR 9.00: 401 Water Quality Certification for Discharge of Dredged or Fill Material, Dredging, and Dredged Material Disposal in Waters of the United States Within the Commonwealth, or a water-dependent use project that requires a Chapter 91 license, permit or other written approval pursuant to 310 CMR 9.00: Waterways, the Department may issue a Combined Permit that serves as the Superseding Order of Conditions, the 401 Water Quality Certification, and/or the Chapter 91 permit, license or other written approval, whichever is applicable, provided the Department determines that the project meets the requirements for obtaining such Order, Certification, permit, license or other written approval.~~

(j) Administrative Hearings.

[NOTE TO REVIEWERS: MassDEP IS SETTING FORTH IN THIS DOCUMENT PROPOSED AMENDMENTS TO THE CURRENT REGULATION AT 310 CMR 10.00 IN REDLINE AND STRIKEOUT FORMAT. REDLINES SHOW ADDITIONS TO THE CURRENT REGULATORY TEXT AND STRIKEOUTS SHOW PROPOSED DELETIONS. SINCE THE REGULATION IS VERY LONG, MassDEP IS PUBLISHING ONLY THOSE PORTIONS OF THE REGULATION FOR WHICH THE AGENCY IS PROPOSING TO MAKE AMENDMENTS. MassDEP HAS INCLUDED TEXT JUST PRIOR TO (and in some cases text just after) NEW INSERTED TEXT TO MAKE IT CLEAR WHERE THE NEW TEXT IS PROPOSED TO BE INSERTED INTO THE CURRENT REGULATIONS. THERE ARE NO EDITS TO SECTIONS 10.05(7)(j)1. through 10.05(7)(j)9. and the EXISTING REGULATION LANGUAGE FOR THESE SECTIONS WILL REMAIN THE SAME.]

...

10. Coordination of Appeals. ~~The Department may coordinate adjudicatory hearings under 310 CMR 10.05(7)(j), 310 CMR 9.17: Appeals, and 314 CMR 9.10: Appeals or other administrative appeals.~~

- a. If a 401 Water Quality Certification been issued pursuant to 314 CMR 9.00: 401 Water Quality Certification for Discharge of Dredged or Fill Material, Dredging, and Dredged Material Disposal in Waters of the United States Within the Commonwealth and/or a permit, license or other written approval has been issued pursuant to 310 CMR 9.00: Waterways, the Department may exclude issues solely within the jurisdiction of 314 CMR 9.00: 401 Water Quality Certification for Discharge of Dredged or Fill Material, Dredging, and Dredged Material Disposal in Waters of the United States Within the Commonwealth and/or 310 CMR 9.00: Waterways at an adjudicatory hearing held under 310 CMR 10.05(7)(j).

b. If an adjudicatory hearing has been requested in accordance with 310 CMR 9.17: Appeals and/or 314 CMR 9.10: Simplified Procedures for Small Structures Accessory to Residences, or another administrative appeal, the Department may consolidate the proceedings.

~~c. In the event that the Department has issued a Combined Permit that serves as a Superseding Order of Conditions and/or a 401 Water Quality Certification issued pursuant to 314 CMR 9.00: 401 Water Quality Certification for Discharge of Dredged or Fill Material, Dredging, and Dredged Material Disposal in Waters of the United States Within the Commonwealth and/or a permit, license or other written approval issued pursuant to 310 CMR 9.00: Waterways, the appeal may include issues solely within the jurisdiction of 314 CMR 9.00: 401 Water Quality Certification for Discharge of Dredged or Fill Material, Dredging, and Dredged Material Disposal in Waters of the United States Within the Commonwealth and/or 310 CMR 9.00: Waterways only as follows: The appeal may include issues solely within the jurisdiction of 314 CMR 9.00: 401 Water Quality Certification for Discharge of Dredged or Fill Material, Dredging, and Dredged Material Disposal in Waters of the United States Within the Commonwealth, only if the appeal has been requested in accordance with the requirements of 314 CMR 9.10: Simplified Procedures for Small Structures Accessory to Residences. The appeal may include issues solely with the jurisdiction of 310 CMR 9.00: Waterways, only if the appeal has been requested in accordance with the requirements of 310 CMR 9.17: Appeals.~~

(k) No work shall be undertaken until all administrative appeal periods from an Order or Notification of Non-significance have elapsed or, if such an appeal has been taken, until all proceedings before the Department have been completed.

(8) Extensions of Orders of Conditions and Orders of Resource Area Delineations.

(a) The issuing authority may extend an Order for one or more periods of up to three years each, except as otherwise provided in 310 CMR 10.05(11)(f) (extensions for Test Projects) ~~and 310 CMR 10.05(12)(f) (extensions for Scientific Research Projects)~~. Any extension granted by the issuing authority shall be made on Form 7. The request for an extension shall be made to the issuing authority at least 30 days prior to expiration of the Order.

(b) The issuing authority may deny the request for an extension and require the filing of a new Notice of Intent for the remaining work or a new Abbreviated Notice of Resource Area Delineation in the following circumstances:

1. where no work has begun on the project, except where such failure is due to an unavoidable delay, such as appeals, in the obtaining of other necessary permits;
2. where new information, not available at the time the Order was issued, has become available and indicates that the Order is not adequate to protect the interests identified in M.G.L. c. 131, § 40; or
3. where incomplete work is causing damage to the interests identified in M.G.L. c. 131, § 40;
4. where work has been done in violation of the Order or 310 CMR 10.00; or
5. where a resource area delineation or certification under 310 CMR 10.02 (2)(b)2. in an Order of Resource Delineation is no longer accurate.

(c) If issued by the conservation commission, the Extension Permit shall be signed by a majority of the commission. A copy of the Extension Permit shall be sent to the conservation commission or the Department, whichever is appropriate, by the issuing authority.



(d) The Extension Permit shall be recorded in the Land Court or the Registry of Deeds, whichever is appropriate. Certification of recording shall be sent to the issuing authority on the form at the end of Form 7. If work is undertaken without the applicant so recording the Extension Permit, the issuing authority may issue an Enforcement Order (Form 9) or may itself record the Extension Permit.

(9) Certificates of Compliance.

(a) Upon completion of the work described in a Final Order of Conditions, but not later than the three year term of an Order of Resource Area Delineation or any extension thereunder, the applicant shall request in writing the issuance of a Certificate of Compliance stating that the work has been satisfactorily completed. Upon written request by the applicant, a Certificate of Compliance shall be issued by the issuing authority within 21 days of receipt thereof, and shall certify on Form 8 that the activity or portions thereof described in the Notice of Intent and plans has been completed in compliance with the Order. If issued by the Conservation Commission, the Certificate of Compliance shall be signed by a majority of the commission. A copy of the Certificate of Compliance shall be sent to the conservation commission or the Department, whichever is appropriate, by the issuing authority.

(b) Prior to the issuance of a Certificate of Compliance, a site inspection shall be made by the issuing authority, in the presence of the applicant or the applicant's agent. If the Department is the issuing authority, it shall notify the conservation commission of the request and the date of the site inspection.

(c) If the issuing authority determines, after review and inspection, that the work has not been done in compliance with the Order, it may refuse to issue a Certificate of Compliance. Such refusal shall be issued within 21 days of receipt of a request for a Certificate of Compliance, shall be in writing and shall specify the reasons for denial.

(d) If a project has been completed in accordance with plans stamped by a registered professional engineer, architect, landscape architect or land surveyor, a written statement by such a professional person certifying substantial compliance with the plans and setting forth what deviation, if any, exists from the plans approved in the Order shall accompany the request for a Certificate of Compliance.

(e) If the final order contains conditions which continue past the completion of the work, such as maintenance or monitoring, the Certificate of Compliance shall specify which, if any, of such conditions shall continue. The Certificate shall also specify to what portions of the work it applies, if it does not apply to all the work regulated by the Order.

(f) The Certificate of Compliance shall be recorded in the Land Court or Registry of Deeds, whichever is appropriate. Certification of recording shall be sent to the issuing authority on the form at the end of Form 8. Upon failure of the applicant to so record, the issuing authority may do so.

(10) Variance.

(a) The Commissioner may waive the application of any regulation(s) in 310 CMR 10.21 through 10.60 when he or she finds that:

1. there are no reasonable conditions or alternatives that would allow the project to proceed in compliance with 310 CMR 10.21 through 10.60;
2. that mitigating measures are proposed that will allow the project to be conditioned so as to contribute to the protection of the interests identified in M.G.L. c. 131, § 40; and



3. that the variance is necessary to accommodate an overriding community, regional, state or national public interest; or that it is necessary to avoid an Order that so restricts the use of property as to constitute an unconstitutional taking without compensation.

(b) Procedure. A request for a variance shall be made in writing and shall include, at a minimum, the following information:

1. a description of alternatives explored that would allow the project to proceed in compliance with 310 CMR 10.21 through 10.60 and an explanation of why each is unreasonable;
2. a description of the mitigating measures to be used to contribute to the protection of the interests identified in M.G.L. c. 131, § 40; and
3. evidence that an overriding public interest is associated with the project which justifies waiver of 310 CMR 10.21 through 10.60, or evidence that the Superseding Order so restricts the use of the land that it constitutes an unconstitutional taking without compensation.

The request for a variance shall be sent to the Department by certified mail or hand delivered and a copy thereof shall at the same time be sent by certified mail or hand delivered to the conservation commission and any other parties.

The Department will place a notice in the *Environmental Monitor* published by the Massachusetts Environmental Policy Act Office of the Executive Office of Energy and Environmental Affairs to solicit public comments on the request. The Department shall conduct a public hearing on a request for a variance. After reviewing the information submitted with the request for a variance and any other information submitted by any party within the public comment period, the Commissioner shall issue a decision as to whether to grant the variance. Within ten days of the date of issuance of the Commissioner's decision on the variance, any person who submitted comments during the public comment period may, according to the procedures specified in 310 CMR 10.05(7)(j), request an adjudicatory hearing on the decision. On a request for a variance based on overriding public interest, the Commissioner may dismiss the request to hold an adjudicatory hearing if the request repeats matters adequately considered in the variance decision, renews claims or arguments previously raised, or attempts to raise new claims or arguments not raised during the public comment period. On a request for a variance to avoid restrictions that would constitute an unconstitutional taking, the Commissioner shall hold an adjudicatory hearing. If an adjudicatory hearing is held, the applicant has the burden of demonstrating that the project meets the criteria necessary for a variance. Other parties to the adjudicatory hearing may introduce evidence either in favor of or opposing the request for a variance.

For projects in which all of the proposed work will be undertaken on land within the boundaries of one city or town, the request for a variance shall not be filed until the applicant first files a Notice of Intent with the Conservation Commission. The Commission shall review the project in accordance with the procedures set forth in 310 CMR 10.01 through 10.10 and issue an Order of Conditions consistent with 310 CMR 10.21 through 10.60. Within ten days of the issuance of the Order of Conditions, the applicant may request the Department to issue a Superseding Order. The Department staff shall review the project in accordance with the procedures set forth in 310 CMR 10.01 through 10.10 and shall issue a Superseding Order consistent with the provisions of 310 CMR 10.21 through 10.60. Within ten days of the issuance of the Superseding Order, the applicant may request an adjudicatory

hearing on that order and/or a variance under 310 CMR 10.05(10) according to the procedure previously described.

For projects in which the proposed work will be undertaken on land within the boundaries of more than one city or town, the applicant may file a request for a variance directly with the Commissioner, with a copy to each affected conservation commission. If, after public notice, the Commissioner finds that a project meets the variance criteria, he shall specify which regulation(s) has been waived and what general requirements or conditions must be met to satisfy the variance criteria listed in 310 CMR 10.05(10)(a). The applicant shall then file a Notice of Intent with the appropriate conservation commissions in accordance with the procedures contained in 310 CMR 10.01 through 10.10. The conservation commissions shall issue Orders of Conditions consistent with all provisions of 310 CMR 10.21 through 10.60 except those waived by the Commissioner and containing any additional conditions or requirements imposed by the Commissioner in the variance. The usual procedures contained in 310 CMR 10.01 through 10.10 for requesting Superseding Orders and adjudicatory hearings remain applicable.

#### Commentary

310 CMR 10.05(10), which provides that the Commissioner may waive the application of one or more of the regulations on the basis of overriding public benefit, is intended to be employed only in rare and unusual cases. The provision authorizing a variance request directly to the Commissioner for projects on land within more than one city or town is intended to apply to projects that involve functionally related work in several contiguous towns (e.g., transportation and energy transmission facilities) and to provide for a single uniform determination concerning alternative locations and the other variance criteria.

#### (11) Permitting of Test Projects.

(a) General. The purpose of 310 CMR 10.05(11) is to establish procedures for permitting Test Projects to promote the development of potential new renewable energy technologies and other Innovative Technologies. Innovative Technologies must be proven through field testing before any large scale commercial deployment can occur in order to develop the data and information needed to support siting and full-scale deployment in a cost-effective manner. 310 CMR 10.05(11) will facilitate and encourage the development, testing and demonstration of Innovative Technologies, including water dependent renewable energy technologies, through review procedures for Test Projects. Given their limited scope and duration, these projects are expected to have minimal adverse environmental impacts and, therefore, are permissible under 310 CMR 10.05(11), provided that the applicant provides for adequate post-installation monitoring to identify any unanticipated adverse environmental impacts that occur in the course of the project. The issuing authority may require the alteration or removal of the project if the monitoring study or other information indicates that the project has unexpected or more than minimal adverse environmental impacts. Pre-application consultation with the issuing authority is recommended. Proposed Test Projects that do not meet the eligibility criteria in 310 CMR 10.05(11)(b) may be permitted provided they meet all applicable requirements of 310 CMR 10.24 through 10.36.

for projects in coastal ~~R~~esource ~~A~~reas and 310 CMR 10.54 through 10.58 and 10.60 for projects in inland ~~R~~esource ~~A~~reas.

(b) Eligibility Criteria. Notwithstanding the provisions of 310 CMR 10.24 through 10.36~~5~~, 10.53 through 10.58, and 10.60, the issuing authority may issue an Order of Conditions, and impose such conditions as will contribute to the interests identified in M.G.L. c. 131, § 40, to permit Test Projects (although no such project may be permitted which will have any adverse effect on specified habitat sites of Rare Species, as identified by procedures established under 310 CMR 10.37 and 10.59) provided:

1. the applicant documents the readiness of the device or technology for in situ testing with the results of laboratory testing, modeling, technical evaluations, or similar forms of supporting material;
2. the structures associated with the project will not be located in specified habitat sites of Rare Species located within a resource area or Buffer Zone;
3. the structures associated with the project are not located within a salt marsh or seagrass bed; and
4. any structures associated with the project can be easily and quickly removed with minimal disruption to resource areas.

(c) Application Requirements. For the purpose of authorizing eligible Test Projects pursuant to 310 CMR 10.05(11), the following provisions shall apply:

1. In lieu of plans prepared by a Registered Professional Engineer or Registered Land Surveyor a Notice of Intent for a Test Project may include documentation that appropriate laboratory testing and/or modeling has occurred and show the proposed location of the project on a plan designating all project components by coordinates referenced to the Massachusetts State Plane Coordinate System.
2. In addition to the documentation provided in 310 CMR 10.11(c)1., a Notice of Intent for a Test Project shall include the following:
  - a. a description of the device or technology to be tested and the purpose of the project;
  - b. a description of the installation process and schedule for installation, testing, and removal of the devices, technologies and associated equipment;
  - c. a demonstration that the project complies with the eligibility requirements of 310 CMR 10.05(11)(b)1. through 4.;
  - d. a plan for the restoration of all disturbed resource areas to pre-existing conditions and a schedule for completing the restoration before the Order of Conditions expires;
  - e. an environmental monitoring plan sufficiently broad to ensure the project meets all applicable regulatory standards; and
  - f. a plan for prompt removal of the components of the project if the Department or conservation commission determines that the project threatens public health, safety or the environment.

(d) Order of Conditions. At a minimum, the Order of Conditions authorizing a Test Project pursuant to 310 CMR 10.05(11) shall require the applicant to implement the monitoring plan and the restoration plan submitted with the Notice of Intent as approved by the issuing authority. The Order of Conditions shall also provide that if the Department or the conservation commission determines that the Test Project threatens the public health, safety or the environment, the applicant shall implement the removal plan submitted with the Notice of Intent as approved by

the issuing authority, or modify the project as directed by the conservation commission or the Department.

(e) Term. Notwithstanding the provisions of 310 CMR 10.05(6)(b), an Order of Conditions for a Test Project issued under 310 CMR 10.05(11) shall be valid for no more than one year.

(f) Extension Permits. An Order of Conditions for a Test Project issued in accordance with 310 CMR 10.05(11) may be extended for one additional year upon written application by the applicant in accordance with 310 CMR 10.05(8)(a). The issuing authority may deny a request for an extension, if it determines that: the project objectives have not been advanced during the initial term; the continuation of the project would not adequately protect public health, safety, or the environment; or the extension should be denied based on the one or more of the circumstances identified in 310 CMR 10.05(8)(c). An extension permit issued for a Test Project in accordance with 310 CMR 10.05(11) is subject to the provisions of 310 CMR 10.05(8)(d) and (e).

(g) Appeals. The provisions governing Department action and adjudicatory hearings set forth in 310 CMR 10.05(7) shall apply to decisions authorizing Test Projects pursuant to 310 CMR 10.05(11). In the event that the Department issues a Superseding Order of Conditions denying a Test Project on the ground that it does not meet the eligibility criteria set forth in 310 CMR 10.05(11)(b), the applicant may file a Notice of Intent seeking authorization for the Test Project under the applicable provisions of 310 CMR 10.24 through 10.37, 10.53 through 10.58 and 10.60 in lieu of requesting an adjudicatory hearing.

(12) Scientific Research Projects.

(a) General. The purpose of 310 CMR 10.05(12) is to establish procedures and standards for permitting Scientific Research Projects that are solely intended to gather information or test hypotheses on the ability of coastal wetland Resource Areas to respond to the effects of climate change or sea level rise. Scientific Research Projects must be supported by reliable field, laboratory, or modelling data in order to demonstrate that the intended study will be credible and will have a negligible or no adverse effect on the Resource Area's ability to protect the interests identified in M.G.L. c. 131, § 40. The project shall be designed and conducted by an individual with the requisite expertise in environmental science. Given their limited scope and duration, these projects are expected to have negligible or no adverse effect, and therefore are permissible under 310 CMR 10.05(12); provided that the project design includes appropriate post-installation monitoring to identify any unanticipated adverse environmental impacts that occur in the course of the project. The Issuing Authority shall require the alteration or removal of the project if the monitoring study or other information indicates that the project has more than negligible adverse effects. Pre-application consultation with the Issuing Authority and other relevant environmental agencies is recommended. The Issuing Authority or the Department may require the applicant to consult with the Office of Coastal Zone Management or the Division of Marine Fisheries prior to the issuance of a file number when it determines such assistance is necessary and it may require the applicant to incorporate any recommendations made through such consultation in the Notice of Intent.

(b) Eligibility Criteria. Notwithstanding the provisions of 310 CMR 10.25 to 10.28 and 10.30 to 10.36, the Issuing Authority may issue an Order of Conditions and impose such conditions as will contribute to the interests identified in MGL c. 131, §40, to permit Scientific Research Projects; provided that:

1. the Applicant is an established entity or institution, such as a college/university, environmental agency, or an environmental nonprofit organization that demonstrates it has the requisite expertise in environmental science necessary to design and conduct the research;
2. the project must have as its sole goal the collection of data or testing of hypotheses directly related to the ability of coastal wetland Resource Areas to respond to climate change or sea level rise through associated changes in salinity, sediment distribution, flow patterns, chemistry of soils or water, changes in vegetation, or the capacity to reduce flooding and prevent storm damage;
3. the Applicant must demonstrate the readiness of the project to be subject to field testing with the results of laboratory testing, modeling, technical evaluations, historical research, peer reviewed research or similar forms of supporting material and/or data;
4. the project shall be limited in duration to no longer than one year;
5. the Project Site of the project shall be limited in geographic extent to the minimum necessary to accomplish the research goal, and no more than 1,000 square feet of Salt Marsh, 100 linear feet of Coastal Bank, and 1,000 square feet of any other coastal Resource Area;
6. the project shall have no more than negligible adverse effects and no permanent impacts on wetland Resource Areas, including no changes to hydraulic or hydrologic characteristics that could result in indirect or secondary alterations beyond the Project Site. Any structures associated with the project, including but not limited to elements and materials used in the project itself, must be easily and quickly removed if adverse effects should occur and shall be entirely removed upon completion of data gathering; and any structures associated with the project may not be located within Barrier Beach, an area with a recorded Restriction Order, or seagrass bed, or have any adverse effect on specified habitat sites of Rare Species as identified under the procedures established at 310 CMR 10.37.

(c) Application Requirements. For the purpose of authorizing eligible Scientific Research Projects pursuant to 310 CMR 10.05(12), the following provisions also shall apply:

1. At least 14 days prior to the filing of a Notice of Intent for a Scientific Research Project, the Applicant shall submit written notification of the proposed filing for publication in the Environmental Monitor. The notification shall include a brief description of the project, the Conservation Commission which will review the project, and the anticipated date of filing. Comments on the project shall be sent to the Conservation Commission and the Department.
2. If the proposed Scientific Research Project will take place within a coastal waterbody, the applicant shall obtain from the Division of Marine Fisheries a determination whether the project requires a Time of Year Restriction or is compatible with the requirements of a fish run.
3. The Notice of Intent shall include the following information:
  - a. plans and details showing the location of the Project Site and the boundaries of all Resource Areas within the Project Site, as well as all other information required in the Notice of Intent form issued by the Department;

- b. a demonstration that the eligibility criteria of 310 CMR 10.05(12)(b)1. through 6. have been met;
- c. a description of the hypothesis or method to be tested, the project purpose and all supporting information and data;
- d. plans showing the pre-project conditions of wetland Resource Areas within the Project Site including but not limited to elevations, contours, cross-sections and vegetative cover;
- e. a description of the installation process and schedule of installation, testing, reporting and removal of the components and any related equipment;
- f. a plan for restoration of all disturbed Resource Areas to pre-existing conditions and a schedule for completing the restoration before the Order of Conditions expires; and
- g. a monitoring plan and a contingency plan that includes a description of the applicant's capacity, including expected funding, to ensure prompt removal of all components of the project prior to completion if the Conservation Commission or the Department determines that the project threatens public health, safety or the environment, or results in more than a negligible adverse effect on the Resource Area's ability to protect the interests identified in M.G.L. c. 131, § 40.

(d) Order of Conditions. At a minimum, the Order of Conditions authorizing a Scientific Research Project pursuant to 310 CMR 10.05(12) shall require the Applicant to implement the monitoring plan and the restoration plan submitted with the Notice of Intent as approved by the Issuing Authority. The Order of Conditions shall also provide that if the Department or the Conservation Commission determines that the project threatens the public health, safety or the environment, the Applicant shall implement the removal plan submitted with the Notice of Intent as approved by the Issuing Authority, or modify the project as directed by the Conservation Commission or the Department. The Applicant shall provide on-going, post-installation monitoring and reporting to ensure  
that any restored vegetation is stabilized and to identify any unanticipated adverse environmental impacts that occur in the course of the project. The Order shall require that the Applicant submit a copy of the findings of the research project to the Conservation Commission and the Department;

(e) Term. Notwithstanding the provisions of 310 CMR 10.05(6)(b), an Order of Conditions for a Scientific Research Project issued under 310 CMR 10.05(12) can be for no more than three years, of which no more than one year may be research, with site restoration completed within the following two years. A Certificate of Compliance shall not be issued until any areas of disturbed vegetation are reestablished with indigenous wetlands plant species and non-vegetated areas are restored.

(f) Extensions. An Order of Conditions for a Scientific Research Project issued in accordance with 310 CMR 10.05(12) may be extended for no more than one additional year upon written application by the applicant in accordance with 310 CMR 10.05(8)(a). The request shall state the status of the research and progress toward completion. The Issuing Authority may deny a request for an extension if it determines that the project objectives have not been advanced during the initial term; the continuation of the project would not adequately protect public health, safety or the environment; or the extension

should be denied based on one or more of the circumstances identified in 310 CMR 10.05(8)(b). An extension permit issued for a Scientific Research Project is subject to the provisions of 310 CMR 10.05(8)(c) and (d).

(g) Notice of Intent for Project based on Scientific Research. An applicant may file Notice of Intent under the procedures of 310 CMR 10.05(1) through (10) to leave in place work allowed under an Order of Conditions for a Scientific Research Project either during the year allowed for research, or during an extension approved under 310 CMR 10.05(12)(f). The Issuing Authority shall review the Notice of Intent based upon the applicable performance standards for the Resource Areas at the site or the provisions at 310 CMR 10.11 through 10.14 if applicable.

(h) Appeals. The provisions governing Department action and adjudicatory hearings set forth in 310 CMR 10.05(7) shall apply to decisions authorizing Scientific Research Projects pursuant to 310 CMR 10.05(12).

**[NOTE TO REVIEWERS: MassDEP IS SETTING FORTH IN THIS DOCUMENT PROPOSED AMENDMENTS TO THE CURRENT REGULATION AT 310 CMR 10.00 IN REDLINE AND STRIKEOUT FORMAT. REDLINES SHOW ADDITIONS TO THE CURRENT REGULATORY TEXT AND STRIKEOUTS SHOW PROPOSED DELETIONS. SINCE THE REGULATION IS VERY LONG, MassDEP IS PUBLISHING ONLY THOSE PORTIONS OF THE REGULATION FOR WHICH THE AGENCY IS PROPOSING TO MAKE AMENDMENTS. MassDEP HAS INCLUDED TEXT JUST PRIOR TO (and in some cases text just after) NEW INSERTED TEXT TO MAKE IT CLEAR WHERE THE NEW TEXT IS PROPOSED TO BE INSERTED INTO THE CURRENT REGULATIONS. THERE ARE NO EDITS TO SECTIONS 10.06 (Emergencies) or Section 10.07 (Compliance with M.G.L. c. 30 §§ 61 through 62H) and the EXISTING REGULATION LANGUAGE FOR THESE SECTIONS WILL REMAIN THE SAME. ]**

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#### **10.08: Enforcement Orders**

- (1) When the conservation commission, the Department or the Office of Law Enforcement of the Executive Office of Energy and Environmental Affairs determines that an activity is in violation of M.G.L. c. 131, § 40, 310 CMR 10.00 or a Final Order, the conservation commission, Department or the Office of Law Enforcement may issue an Enforcement Order. Violations include:
  - (a) failure to comply with a Final Order, Final Determination, Emergency Declaration, or Emergency Certification, such as failure to observe a particular condition or time period specified in the Order, Declaration, or Certification;
  - (b) failure to complete work described in a Final Order or Final Determination, Emergency Declaration, or Emergency Certification when such failure causes damage to the interests identified in M.G.L. c. 131, § 40;
  - (c) failure to obtain a valid Final Order or Extension Permit prior to conducting an Activity Subject to Regulation under M.G.L. c. 131, § 40 as defined in 310 CMR 10.02(2);



(d) making any false, inaccurate, or misleading statements in any certification filed under 310 CMR 10.00, including any certification that the requirements of 310 CMR 10.02(2)(b)2. will be met.

(e) failure to comply with any certification on project plans or eligibility under 310 CMR 10.02(2)(b)2.

(f) leaving in place unauthorized fill or otherwise fail to restore illegally altered land to its original condition, or the continuation of any other activity in violation of M.G.L. c. 131, § 40.

(g) failure to provide any information requested by the Department pursuant to 310 CMR 10.00 or a permit, approval or order issued pursuant to 310 CMR 10.00.

The conservation commission, its members and agents, and Department employees may enter upon privately owned land for the purpose of performing their duties under M.G.L. c. 131, § 40, subject to constitutional limitations.

(2) A Final Order, Emergency Declaration, or Emergency Certification may be enforced by either the conservation commission or the Department regardless of which is the issuing authority. The members, officers, employees and agents of the conservation commission and the Department may enter upon privately owned land for the purpose of performing their duties under M.G.L. c. 131, § 40, and 310 CMR 10.00.

(3) An Enforcement Order issued by a conservation commission shall be signed by a majority of the commission. In a situation requiring immediate action, an Enforcement Order may be signed by a single member or agent of the commission, if said Order is ratified by a majority of the members at the next scheduled meeting of the commission.

#### **10.09: Severability**

If any provision of any part of 310 CMR 10.00 or the application thereof, is held to be invalid, such invalidity shall not affect any other provision of 310 CMR 10.00.

#### **10.10 : Effective Date**

(1) 310 CMR 10.01 through 10.10 and 10.51 through 10.60 shall take effect on April 1, 1983 and shall apply to all Notices of Intent filed on or after that date and any subsequent procedures related to such filings made on or after that date. 310 CMR 10.01 through 10.10 and 10.51 through 10.60 shall not apply to any Notice of Intent filed prior to the effective date of 310 CMR 10.00, or to any extensions of any Order of Conditions the Notice of Intent for which was filed prior to said effective date, except as otherwise provided in 310 CMR 10.05(4)(g) and (h).

(2) The effective date of 310 CMR 10.21 through 10.37 is August 10, 1978. 310 CMR 10.21 through 10.37 shall not apply to any Notice of Intent filed prior to August 10, 1978, or to any extensions to an Order of Conditions when the Notice of Intent upon which such Order was based was filed prior to August 10, 1978.

(3) All proceedings and actions commenced under M.G.L. c. 131, § 40 prior to the effective date of 310 CMR 10.00 shall remain in full force and effect under the prior applicable regulations, except as otherwise provided in 310 CMR 10.05(4)(g) and (6)(h).

(4) The amendments to 310 CMR 10.00 concerning application of herbicides to rights of way contained in 310 CMR 10.03(6), 10.04: Alter, 10.05(3)(a)2., (b)1. and (d)1. shall be effective on July 10, 1987.

(5) The amendments to 310 CMR 10.00 published in the Massachusetts Register on October 16, 1987, concerning primarily the protection of wildlife habitat, shall take effect on November 1, 1987, and shall apply to all Notices of Intent filed on or after that date and any subsequent procedures related to such filing made on or after that date. The amendments to 310 CMR 10.00, concerning primarily the protection of wildlife habitat, shall not apply to any Notice of Intent filed prior to November 1, 1987, or to any extensions of any Order of Conditions the Notice of Intent for which was filed prior to November 1, 1987, except as otherwise provided in 310 CMR 10.05(4)(g) and (6)(h). All proceedings and actions commenced under M.G.L. c. 131, § 40 prior to November 1, 1987, and shall remain in full force and effect under the prior applicable regulations, except as otherwise provided in 310 CMR 10.05(4)(g) and (6)(h).

(6) The amendment to 310 CMR 10.55 concerning work in Bordering Vegetated Wetlands that are within an Area of Critical Environmental Concern contained in 310 CMR 10.55(4)(e) shall be effective on April 23, 1993, and shall not apply to any Notice of Intent filed prior to the effective date.

(7) The amendments to 310 CMR 10.00 concerning normal maintenance and improvement of land in agricultural use contained in 310 CMR 10.04: -Agriculture, 10.06(6), and 10.53(5) shall be effective on May 21, 1993, and shall not apply to any Notice of Intent filed prior to the effective date.

(8) The provisions of 310 CMR 10.03(7)(c)2.k., 3.e., and 4.j. through l., 10.06(7), 10.24(7)(c)4. through 6., 10.53(3)(m) through (q), and the revisions to 310 CMR 10.03(7)(c)2.e., and 4.b., 10.06(3) and (5), and 10.53(3)(i) promulgated on December 3, 1993, shall take effect on January 1, 1994. They shall not apply to any Notice of Intent filed before January 1, 1994, nor to any extensions to an Order of Conditions when the Notice of Intent upon which such Order was based was filed prior to that date.

(9) The effective date of 310 CMR 10.55(1) and (2) is June 30, 1995.

(10) The revisions to 310 CMR 10.02 through 10.05, 10.21, 10.53, 10.58, and 10.60 to incorporate St. 1996, c. 258 amendments to M.G.L. c. 131, § 40, and the deletion of 310 CMR 10.99, shall be effective on October 6, 1997 and shall apply to Requests for Determination of Applicability and Notices of Intent filed after that date. Applicants who have received an Order of Conditions before August 7, 1996 or filed a Notice of Intent before August 7, 1996 and received a Final Order of Conditions before August 7, 1997, or later pending resolution of an adjudicatory hearing, shall not be subject to the

requirements of 310 CMR 10.58 for the work permitted by the Order. A Determination of Applicability issued before August 7, 1996 is valid only for the resource areas specified in the Determination and not for the riverfront area.

(11) The amendments to 310 CMR 10.00 concerning drought (found at 310 CMR 10.04: Pond; 310 CMR 10.58(2)(a)1.f.) and perennial and intermittent streams (found at 310 CMR 10.58(2)(a)) shall take effect on December 20, 2002 and shall not apply to any Request for Determination of Applicability, Abbreviated Notice of Resource Area Delineation, Abbreviated Notice of Intent, or Notice of Intent filed prior to the effective date.

(12) The provisions of 310 CMR 10.00 promulgated in 2005 shall take effect on March 1, 2005. They shall not apply to any Notice of Intent or and Notice of Resource Area Delineation filed prior to March 1, 2005.

(13) The revised procedures for wetland appeals set forth 310 CMR 10.05(7)(j) take effect on October 31, 2007 and shall apply to all wetland appeals for which a notice of claim is filed on or after October 31, 2007.

(14) The amendments to 310 CMR 10.00 concerning Combined Applications, Combined Permits, Restoration Order of Conditions, Ecological Restoration Limited Projects and procedures for filing a Notice of Intent shall apply to Notices of Intent filed on or after October 24, 2014.

- (15) The amendments to 310 CMR 10.00 concerning Stormwater Management and Land Subject to Coastal Storm Flowage at [List all the locations to which amendments ultimately apply] shall apply only to Notices of Intent, Requests for Determination of Applicability, Abbreviated Notices of Resource Area Delineation, and Abbreviated Notices of Intent filed more than six months after [the effective date of these regulations]. Notwithstanding the foregoing, Notices of Intent, Requests for Determination of Applicability, Abbreviated Notices of Resource Area Delineation, and Abbreviated Notices of Intent shall be considered under the standards and criteria in effect prior to [the effective date] if the project was included in an environmental notification form that was submitted pursuant to M.G.L. c. 30, § 61-62B, on or before [the effective date of these regulations] and a final certificate was issued by the Secretary prior to the submission of any filing under the Wetlands Protection Act.
- (16) Notwithstanding 310 CMR 10.10(15), such filings under the Wetlands Protection Act shall be considered under the standards and criteria in effect prior to [the effective date] if the project was included in an environmental impact report that was submitted pursuant to M.G.L. c. 30, § 62B, on or before [the effective date of these regulations] and a final certificate was issued by the Secretary prior to the submission of any filing under the Wetlands Protection Act.

(15) The amendments to 310 CMR 10.00 concerning Stormwater Management at 310 CMR 10.04; 10.05(6)(k) (q); and 10.58 shall apply to Notices of Intent filed more than six months after [the effective date of these regulations]. The amendments concerning Public Shared Use Paths at 310 CMR 10.02(2)(b)2.r., 10.24(7)(e)8., and 10.53(3)(u); Bordering Land Subject to Flooding at 310 CMR 10.57(2)(a)3. – 6.; Extended Drought at 310 CMR 10.04: Pond and 310 CMR 10.58(2)(a)1.f.; and perennial and intermittent streams at 310 CMR 10.58(2)(a)1.f., shall not apply to any Request for Determination of

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~~Applicability, Abbreviated Notice of Resource Area Delineation, Abbreviated Notice of Intent, or Notice of Intent filed prior to [the effective date of these regulations]. Any Notice of Intent submitted to the Department prior to six months after [the effective date] shall be considered under the standards and criteria in effect prior to [the effective date].~~

~~The amendments to 310 CMR 10.00 concerning Land Subject to Coastal Storm Flowage shall apply to Requests for Determinations of Applicability, Abbreviated Notices of Resource Area Delineation, and Notices of Intent filed on or after [the effective date of these regulations], except when a draft environmental impact report was submitted pursuant to M.G.L. c. 30, § 62B, on or before [one year prior to date of promulgation], and the project received a certificate on the final environmental impact report or a building permit was issued on or before [six months prior to promulgation].~~

**10.11 : Actions Required Before Submitting a Notice of Intent for an Ecological Restoration Project**

An applicant shall take the following actions before filing a Notice of Intent for an Ecological Restoration Project that meets the eligibility criteria for a Restoration Order of Conditions set forth in 310 CMR 10.13 or for approval as an Ecological Restoration Limited Project pursuant to 310 CMR 10.24(8) or 10.53(4).

(1) At least 14 days prior to the filing a Notice of Intent for an Ecological Restoration Project, the applicant shall submit written notification of the proposed filing for publication in the Environmental Monitor. At a minimum, the written notification shall contain a brief description of the proposed project, the anticipated date of submission of the Notice of Intent, the name and address of the conservation commission that will review the Notice of Intent and shall state where copies of the Notice of Intent may be examined or obtained and where information on the date, time, and location of the public hearing may be obtained.

(2) If the project will impact an area located within estimated habitat which is indicated on the most recent *Estimated Habitat Map of State-listed Rare Wetlands Wildlife* published by the Natural Heritage and Endangered Species Program (the Program), the applicant shall obtain a written preliminary determination from the Program as to whether the Rare Species identified on the aforementioned map are likely to continue to be located on or near the project and, if so, whether the Resource Area to be altered by the proposed project is in fact part of the habitat of the Rare Species. If the Program issues a preliminary determination that the Resource Area that would be altered by the proposed project is in fact within the habitat of a Rare Species, the preliminary determination shall identify the Rare Species whose habitat would be altered and recommend any changes or conditions that are necessary to ensure that the project will have no short or long term adverse effect on the habitat of the local population of the Rare Species or the project will be carried out in accordance with a habitat management plan that has been approved in writing by the Natural Heritage and Endangered Species Program and submitted with the Notice of Intent.

(3) If the project will occur within a coastal waterbody with a restricted Time of Year, as identified in Appendix B of the Division of Marine Fisheries Technical Report TR 47 *Marine Fisheries Time of Year Restrictions (TOYs) for Coastal Alteration Projects* dated April 2011, the applicant shall obtain a written determination from the Division of Marine Fisheries as to whether the proposed work requires a TOY restriction, and if so, the written determination shall specify the recommended TOY restriction and any other recommended conditions on the proposed work.

(4) If the project may affect a diadromous fish run as identified in the Division of Marine Fisheries Technical Reports TR 15 through 18, dated 2004, the applicant shall obtain a written determination from the Division of Marine Fisheries as to whether the design specifications and operational plan for the project are compatible with the passage requirements of the fish run.

(5) If the project involves silt-generating, in-water work that will impact a non-tidal perennial river or stream, the in-water work shall either occur between May 1<sup>st</sup> and August 30<sup>th</sup> or the applicant shall obtain a determination from the Division of Fisheries and Wildlife as to whether the proposed work requires a TOY restriction, and if so, the written determination shall specify the recommended TOY restriction and any other recommended conditions on the proposed work.

(6) If the Ecological Restoration Project involves dredging of 100 cubic yards or more in a Resource Area or dredging of any amount in an Outstanding Resource Water, the applicant shall ~~obtain~~ file an application for a Water Quality Certification pursuant to 314 CMR 9.00: 401 *Water Quality Certification for Discharge of Dredged or Fill Material, Dredging, and Dredged Material Disposal in Waters of the United States Within the Commonwealth* prior to submitting a Notice of Intent.

#### **10.12 : Notice of Intent for an Ecological Restoration Project**

A Notice of Intent for an Ecological Restoration Project that meets the eligibility criteria for a Restoration Order of Conditions set forth in 310 CMR 10.13, or for approval as an Ecological Restoration Limited Project in accordance with 310 CMR 10.24(8) or 10.53(4), shall comply with the requirements of 310 CMR 10.12(1) and (2).

(1) At a minimum, a Notice of Intent for an Ecological Restoration Project shall include the following:

- (a) the project's ecological restoration goals;
- (b) the location of the Ecological Restoration Project;
- (c) the construction sequence for completing the project;
- (d) a map of the Areas Subject to Protection under M.G.L. c. 131, § 40, that will be temporarily or permanently altered by the project or include habitat for Rare Species, Habitat of Potential Regional and Statewide Importance, eel grass beds, or Shellfish Suitability Areas;
- (e) an evaluation of any flood impacts that may affect the built environment, including without limitation, buildings, wells, septic systems, roads or other man-made structures or infrastructure as well as any proposed flood impact mitigation measures;
- (f) a plan for invasive species prevention and control;
- (g) any preliminary written determinations obtained from the Natural Heritage and Endangered Species Program in accordance with 310 CMR 10.11(2);
- (h) any Time of Year restrictions and/or other conditions recommended by the Division of Marine Fisheries or the Division of Fisheries and Wildlife in accordance with 310 CMR 10.11(3) through (5);
- (i) proof that notice was published in the Environmental Monitor as required by 310 CMR 10.11(1);
- (j) a certification by the applicant under the penalties of perjury that the project meets the eligibility criteria set forth in 310 CMR 10.13, 10.24(8) or 10.53(4), whichever is applicable;

~~(k)~~ if the Ecological Restoration Project involves the construction, repair, replacement or expansion of infrastructure, an operation and maintenance plan to ensure that the infrastructure will continue to function as designed;

~~(l)~~ If the project involves dredging of 100 cubic yards or more or dredging of any amount in an Outstanding Resource Water, demonstration that an application for a Water Quality Certification ~~issued by the Department~~ pursuant to 314 CMR 9.00: *401 Water Quality Certification for Discharge of Dredged or Fill Material, Dredging, and Dredged Material Disposal in Waters of the United States Within the Commonwealth*; has been submitted to the Department.

~~(m)~~ if the Ecological Restoration Project involves work on a stream crossing, information sufficient to make the showing required by 310 CMR 10.24(10) for work in a coastal resource area and 310 CMR 10.53(8) for work in an inland resource area; and

~~(n)~~ if the Ecological Restoration Project involves work on a stream crossing, baseline photo-points that capture longitudinal views of the crossing inlet, the crossing outlet and the upstream and downstream channel beds during low flow conditions. The latitude and longitude coordinates of the photo-points shall be included in the baseline data.

~~(2) If the Notice of Intent for an Ecological Restoration Project is a Combined Application that serves as the application for a license, permit or other written approval for a water dependent use project pursuant to 310 CMR 9.00 Waterways, the Notice of Intent shall also state:~~

~~(a) whether the project has the potential to impact any docks, piers or boat ramps and, if so, describe the nature of those impacts and any necessary mitigation;~~

~~(b) whether the project involves any structures that have been authorized under Chapter 91; and~~

~~(c) whether the project has the potential to impact private water supply wells including agricultural or aquacultural wells or surface water withdrawal points.~~

~~(23)~~ Notwithstanding the provisions of 310 CMR 10.54(4)(a)5., 10.56(4)(a)4., and 10.60, a person submitting a Notice of Intent for an Ecological Restoration Project that meets the requirements of 310 CMR 10.12(1) and (2) is exempt from the requirement to perform a wildlife habitat evaluation in accordance with 310 CMR 10.60.

#### **10.13 : Eligibility Criteria for Restoration Order of Conditions**

Notwithstanding the provisions of 310 CMR 10.25 through 10.3~~6~~<sup>5</sup>, 10.54 through 10.58, and 10.60, an Ecological Restoration Project shall be permitted by a Restoration Order of Conditions provided that the project meets all applicable eligibility criteria in 310 CMR 10.13. Ecological Restoration Projects permitted by a Restoration Order of Conditions may result in the temporary or permanent loss of Resource Areas and/or the conversion of one Resource Area to another when such loss and/or conversion is necessary to the achievement of the project's ecological restoration goals.

(1) An Ecological Restoration Project shall be permitted by a Restoration Order of Conditions if it meets all of the following eligibility criteria:

(a) The project is an Ecological Restoration Project as defined in 310 CMR 10.04, is a project type listed in 310 CMR 10.13(2) through (7), and the applicant has submitted a Notice of Intent that meets all applicable requirements of 310 CMR 10.12.



(b) The project will further at least one of the interests identified in M.G.L. c. 131, § 40.  
(c) The project will not have any short-term or long-term adverse effect, as identified by the procedures established by 310 CMR 10.11, on specified habitat sites of Rare Species located within the Resource Areas that may be affected by the project or will be carried out in accordance with a habitat management plan that has been approved in writing by the Natural Heritage and Endangered Species Program and submitted with the Notice of Intent.

(d) To the maximum extent practicable, the project will:

1. avoid adverse impacts to Resource Areas and the interests identified in M.G.L. c. 131, § 40, that can be avoided without impeding the achievement of the project's ecological restoration goals;
2. minimize adverse impacts to Resource Areas and the interests identified in M.G.L. c. 131, § 40, that are necessary to the achievement of the project's ecological restoration goals; and
3. utilize best management practices such as erosion and siltation controls and proper construction sequencing to prevent and minimize adverse construction impacts to Resource Areas and the interests identified in M.G.L. c. 131, § 40

(e) The project will not have significant adverse effects on the interests of flood control and storm damage prevention in relation to the built environment (*i.e.*, the project will not result in a significant increase in flooding or storm damage affecting buildings, wells, septic systems, roads or other human-made structures or infrastructure).

(f) If the project will involve the dredging of 100 cubic yards of sediment or more or dredging of any amount in an Outstanding Resource Water, the Notice of Intent includes a demonstration that an application for a Water Quality Certification issued by the Department in accordance with pursuant to 314 CMR 9.00: 401 Water Quality Certification for Discharge of Dredged or Fill Material, Dredging, and Dredged Material Disposal in Waters of the United States Within the Commonwealth has been submitted to the Department.

(g) The project will not substantially reduce the capacity of a Resource Area to serve the habitat functions identified in 310 CMR 10.60(2). A project will be presumed to meet this eligibility criteria if the project as proposed in the Notice of Intent will be carried out in accordance with any time of year restrictions or other conditions recommended by the Division of Marine Fisheries for coastal waters, and by the Division of Fisheries and Wildlife for inland waters in accordance with 310 CMR 10.11(3) through (5). As set forth in 310 CMR 10.12(3), a person submitting a Notice of Intent for an Ecological Restoration Project that meets the requirements of 310 CMR 10.12(1) and (2) is exempt from the requirement to perform a wildlife habitat evaluation in accordance with 310 CMR 10.60.

(h) If the Ecological Restoration Project involves work on a stream crossing, the stream crossing has been designed in accordance with 310 CMR 10.24(10) for work in coastal resource areas and 310 CMR 10.53(8) for work in inland resource areas, as applicable.

(i) The Ecological Restoration Project will not result in a discharge of dredged or fill material within 400 feet of the high water mark of a Class A surface water (exclusive of its tributaries) unless the project is conducted by a public water system under 310 CMR 22.00: *Drinking Water* or a public agency or authority for the maintenance or repair of existing public roads or railways in accordance with 314 CMR 4.06(1)(d)1.

- (j) The Ecological Restoration Project will not result in a discharge of dredged or fill material to a vernal pool certified by the Division of Fisheries and Wildlife.
- (k) The Ecological Restoration Project will not result in a point source discharge to an Outstanding Resource Water.
- (l) The Ecological Restoration Project will not involve the armoring of a Coastal Dune or Barrier Beach.

(2) Additional Eligibility Criteria for Dam Removal Projects. If the Ecological Restoration Project is a dam removal project, the project shall be presumed to meet the eligibility criteria set forth in 310 CMR 10.13(1)(d), if the project is consistent with the Department's guidance entitled *Dam Removal and the Wetlands Regulations*, dated December 2007. If the Ecological Restoration Project is a dam removal project, the Ecological Restoration Project shall be approved by a Restoration Order of Conditions, provided that in addition to the eligibility criteria set forth in 310 CMR 10.13(1), the project meets all of the following eligibility criteria:

- (a) The project will not involve the removal of a dam that was constructed or is managed for flood control by a municipal, state or federal agency.
- (b) The project will not adversely impact public water supply wells or water withdrawals permitted or registered under the Water Management Act, M.G.L. c. 21G, and 310 CMR 36.00: *Massachusetts Water Resources Management Program* within the reach of the stream impacted by the impoundment.
- (c) The project will not adversely impact private water supply wells including agricultural or aquacultural wells or surface water withdrawal points.
- (d) The project provides for the removal of the full vertical extent of the dam such that no remnant of the dam will remain at or below the streambed as determined prior to commencement of the dam removal project, or if such determination cannot be made at that time, as determined during construction of the project.
- (e) The project provides for the removal of enough of the horizontal extent of the dam such that after removal no water will be impounded during the 500 year flood event.
- (f) The project will not involve a hydroelectric facility requiring a Federal Energy Regulatory Commission (FERC) license or an amendment to a FERC license.
- (g) The applicant has obtained from the Department of Conservation and Recreation Office of Dam Safety a written determination that the dam is not subject to the jurisdiction of the Office under 302 CMR 10.00: *Dam Safety*, a written determination that the dam removal does not require a permit under 302 CMR 10.00: *Dam Safety* or a permit authorizing the dam removal in accordance with 302 CMR 10.00: *Dam Safety* has been issued.
- (h) If the project is exempt from the requirement to obtain a license or permit under 310 CMR 9.05(3)(n), the project will not have an adverse effect on navigation or on any docks, piers or boat ramps authorized under 310 CMR 9.00: *Waterways*.

(3) Additional Eligibility Criteria for Freshwater Stream Crossing Repair and Replacement Projects. If the Ecological Restoration Project is a freshwater stream crossing repair or replacement project, the Ecological Restoration Project shall be approved by a Restoration Order of Conditions, provided that in addition to the eligibility criteria set forth in 310 CMR 10.13(1), the project meets all of the following eligibility criteria:

- (a) The width of the structure will be at least 1.2 times bankfull width to facilitate the movement of fish and other aquatic organisms and wildlife species that may utilize riparian corridors.
- (b) The structure will be an open-bottom span where practicable or if an open-bottom span is not practicable, the structure bottom will be embedded in a substrate that matches the substrate of the stream channel and that shall be designed to maintain continuity of aquatic and benthic elements of the stream including appropriate substrates and hydraulic characteristics within the culvert (water depths, turbulence, velocities, and flow patterns).
- (c) The structure will have an Openness Ratio of at least 0.82 feet, or as close to 0.82 feet as is practicable.

(4) Additional Eligibility Criteria for Stream Daylighting Projects. If the Ecological Restoration Project is a stream daylighting project, the Ecological Restoration Project shall be approved by a Restoration Order of Conditions, provided that in addition to the eligibility criteria set forth in 310 CMR 10.13(1), the project meets all of the following eligibility criteria:

- (a) The project will meet the applicable performance standards for Bank, 310 CMR 10.54, and Land under Water Bodies and Waterways, 310 CMR 10.56. As set forth in 310 CMR 10.12(3), a person submitting a Notice of Intent that meets the requirements of 310 CMR 10.12 (1) and (2) for a stream daylighting project is exempt from the requirement to perform a wildlife habitat evaluation in accordance with 310 CMR 10.60, notwithstanding the provisions of 310 CMR 10.54(4)(a)5., 10.56(4)(a)4., and 10.60.
- (b) To the maximum extent practicable, the project is designed to include the revegetation of all disturbed areas with noninvasive indigenous species appropriate to the site.

(5) Additional Eligibility Criteria for Tidal Restoration Projects. If the Ecological Restoration Project is a Tidal Restoration Project designed to restore tidal flow that has been restricted or blocked by a man-made structure, the Ecological Restoration Project shall be approved by a Restoration Order of Conditions, provided that in addition to the eligibility criteria set forth in 310 CMR 10.13(1), the project meets all of the following eligibility criteria:

- (a) If the project will involve work in a Coastal Dune and/or a Coastal Beach, the project meets the applicable performance standard(s) at 310 CMR 10.27 and/or 10.28.
- (b) The project will not include a new or relocated tidal inlet/breach through a Barrier Beach or additional armoring of a Barrier Beach, but may include the modification, replacement or enlargement of an existing culvert or inlet through a Barrier Beach.
- (c) The project will not involve installation of new water control devices (*i.e.*, tide gates, flash boards and adjustable weirs) or a change in the management of existing water control devices, when the existing or proposed function of said devices is to prevent flooding or storm damage impacts to the built environment, including without limitation, buildings, wells, septic systems, roads or other human-made structures or infrastructure.
- (d) The project's physical specifications are compatible with passage requirements for diadromous fish runs identified at the project location by the Division of Marine Fisheries.

(6) Additional Eligibility Criteria for Rare Species Habitat Restoration. If the Ecological Restoration Project is a Rare Species habitat restoration project, the Ecological Restoration Project shall be approved by a Restoration Order of Conditions, provided that in addition to the

eligibility criteria set forth in 310 CMR 10.13(1), the project meets all of the following eligibility criteria:

- (a) The project is exempt from review under 321 CMR 10.00: *Massachusetts Endangered Species Act Regulations* as a project that involves the active management of Rare Species habitat for the purpose of maintaining or enhancing the habitat for the benefit of Rare Species. A project that involves the active management of Rare Species habitat and is exempt from review under 321 CMR 10.00: *Massachusetts Endangered Species Act Regulations* may include without limitation the mowing, cutting, burning or pruning of vegetation or the removal of exotic or invasive species.
- (b) The project is carried out in accordance with a Habitat Management Plan that has been approved in writing by the Natural Heritage and Endangered Species Program and submitted with the Notice of Intent.

(7) Additional Eligibility Criteria for Restoring Fish Passageways. If the Ecological Restoration Project involves the restoration or repair of a fish passageway as identified by the Division of Marine Fisheries in its Marine Fisheries Technical Reports, TR 15 through 18, dated 2004, the Ecological Restoration Project shall be approved by a Restoration Order of Conditions, provided that in addition to the eligibility criteria set forth in 310 CMR 10.13(1), the applicant has submitted a Fishway Permit Application to the Division of Marine Fisheries, pursuant to M.G.L. c. 130, §§ 1 and 19, and 322 CMR 7.01(4)(f) and (14)(m), and the fish passageway will be operated and maintained in accordance with an Operation and Maintenance Plan approved by the Division of Marine Fisheries.

#### **10.14: Restoration Order of Conditions**

If after reviewing a Notice of Intent for an Ecological Restoration Project, the issuing authority determines that the Ecological Restoration Project meets the eligibility criteria in 310 CMR 10.13(1) and the applicable provisions of 310 CMR 10.13(2) through (7), the issuing authority shall issue a Restoration Order of Conditions that contains the general conditions set forth in 310 CMR 10.14(1), and all applicable special conditions set forth in 310 CMR 10.14(2) through (7). The Restoration Order of Conditions may reference the plans and specifications for the Ecological Restoration Project approved by the issuing authority. ~~If the Restoration Order of Conditions is issued in response to a Combined Application for an Order of Conditions pursuant to 310 CMR 10.00, a 401 Water Quality Certification pursuant to 314 CMR 9.00: 401 Water Quality Certification for Discharge of Dredged or Fill Material, Dredging, and Dredged Material Disposal in Waters of the United States Within the Commonwealth, and/or a Chapter 91 license, permit or other written approval pursuant to 310 CMR 9.00: Waterways, the Department may append to the Restoration Order of Conditions any conditions that the Department has authority to impose pursuant to 310 CMR 9.00: Waterways and/or 314 CMR 9.00: 401 Water Quality Certification for Discharge of Dredged or Fill Material, Dredging, and Dredged Material Disposal in Waters of the United States Within the Commonwealth.~~ A Restoration ~~Project~~ Order of Conditions is subject to the provisions of 310 CMR 10.05 that apply to any Order of Conditions except as expressly provided otherwise is 310 CMR 10.00.

(1) General Conditions Applicable to all Ecological Restoration Projects. The Restoration Order of Conditions shall contain the following general conditions:

- (a) Failure to comply with all conditions stated herein and with all related statutes and other regulatory measures shall be deemed cause to revoke or modify this Restoration Order of Conditions.
- (b) This Restoration Order of Conditions does not grant any property rights or any exclusive privileges; it does not authorize any injury to private property or invasion of private rights.
- (c) This Restoration Order of Conditions does not relieve the permittee or any other person of the necessity of complying with all applicable federal, state or local statutes, ordinances, bylaws or regulations.
- (d) The work authorized under this Restoration Order of Conditions shall be completed within three years from the date of issuance of this General Order unless the General Order is extended in accordance with 310 CMR 10.05(6)(d) or by operation of law.
- (e) This Restoration Order of Conditions may be extended by the issuing authority for one or more periods of up to three years upon application to the issuing authority at least 30 days prior to the expiration date of this Restoration Order.
- (f) Any fill used in connection with this project shall be clean fill. Any fill shall contain no trash, refuse, rubbish or debris, including but not limited to lumber, bricks, plaster, wire, lath, paper, cardboard, pipe, trees, ashes, refrigerators, motor vehicles or parts of any of the foregoing.
- (g) This Restoration Order of Conditions is not final until all administrative appeal periods from this Restoration Order have elapsed or if such an appeal has been taken, until all proceedings before the Department have been completed.
- (h) No work shall be undertaken until the Restoration Order of Conditions has become final and has been recorded in the Registry of Deeds or the Land Court for the district in which the land is located within the chain of title to the affected property. In the case of recorded land, the Final Restoration Order of Conditions shall also be noted in the Registry's Grantor index under the name of the owner of the land upon which the proposed work is done. The recording information shall be submitted to the Issuing Authority prior to commencement of the work.
- (i) A sign that is not less than two square feet or more than three square feet shall be displayed at the site. The sign shall bear the words "Massachusetts Department of Environmental Protection" and include the File Number.
- (j) Where the Department is requested to issue a Superseding Order, the Conservation Commission shall be a party to all agency proceedings and hearings before the Department.
- (k) Upon completion of the work described herein, the applicant shall submit a Request for a Certificate of Compliance to the issuing authority.
- (l) The work shall conform to the plans and special conditions referenced in this Restoration Order of Conditions.
- (m) Any change to the plans approved in this Restoration Order of Conditions shall require the applicant to inquire of the Issuing Authority in writing whether the change is significant enough to require the filing of a new Notice of Intent.
- (n) Representatives of the Conservation Commission and the Department of Environmental Protection shall have the right to enter and inspect the area subject to this Restoration Order of Conditions at reasonable hours to evaluate compliance with the conditions set forth in this Restoration Order of Conditions and may require the submittal

of any data deemed necessary by the Conservation Commission or the Department for that evaluation.

(o) This Restoration Order of Conditions shall apply to any successor in interest or successor in control of the property subject to this Restoration Order of Conditions and to any contractor or other person performing work conditioned by this Order.

(p) Prior to the start of work, and if the project involves work adjacent to a Bordering Vegetated Wetland or Salt Marsh, the boundary of the wetland in the vicinity of the proposed work area shall be marked by wooden stakes or flagging. Once in place, the wetland boundary markers shall be maintained until a Certificate of Compliance has been issued by the issuing authority.

(q) All sedimentation barriers shall be maintained in good repair, until all disturbed areas have been fully stabilized with vegetation or other means. During construction, the applicant or his or her designee shall inspect the erosion controls on a daily basis and shall remove accumulated sediments as needed. The applicant shall immediately control any erosion problems that occur at the site and shall also immediately notify the issuing authority. The Issuing Authority reserves the right to require any additional erosion and/or damage prevention controls it deems necessary. Sedimentation barriers shall serve as the limit of work unless another limit of work line has been approved by this Order.

(r) The project shall be conducted in accordance with any preliminary written determination obtained from the Natural Heritage and Endangered Species Program as set forth in 310 CMR 10.11(2) and any time of year restrictions or other conditions recommended in writing by the Division of Marine Fisheries (for projects in coastal Resource Areas) and the Division of Fisheries and Wildlife (for projects in inland Resource Areas) as set forth in 310 CMR 10.11(3) through (5).

(s) The applicant shall implement the plan submitted with the Notice of Intent as approved by the Issuing Authority to prevent and control invasive species.

(t) If the project involves the dredging of 100 cubic yards or more in a Resource Area or dredging of any amount in an Outstanding Resource Water, the dredging and Dredged Material management shall be performed in accordance with the Water Quality Certification submitted with the Notice of Intent.

(u) If the project involves infrastructure, the owner shall operate and maintain the infrastructure in accordance with the operation and maintenance plan submitted with the Notice of Intent as approved by the Issuing Authority. Implementation of the operation and maintenance plan as approved by the Issuing Authority shall be a continuing condition that shall be set forth in the Certificate of Compliance.

(2) Special Conditions for Dam Removal Projects. If the Ecological Restoration Project involves dam removal, the Restoration Order of Conditions shall contain the following special conditions in addition to the general conditions set forth in 310 CMR 10.14(1):

(a) An as-built plan and a written statement from a registered professional engineer or other environmental professional expert in ecological restoration certifying substantial compliance with the design plan and construction specifications approved in the Restoration Order of Conditions shall be submitted to the Issuing Authority within 90 days of completion of the dam removal.

(b) The applicant shall monitor the dam removal site during the first two years following completion of the dam removal. Said monitoring shall include a topographic survey of



the longitudinal profile and stream cross-sections from downstream of the former dam through the upstream end of the former impoundment. The survey reference point shall comprise a permanent marker or recoverable survey point with known coordinates, such as a fixed point shown on the as-built plan, an existing bench mark, or a new benchmark. That marker should be identified or referenced on the plans and on the as-built plans. The applicant shall establish at least two photo-points for pre- and post-restoration monitoring at the dam removal site. At least one photo-point location shall be chosen to document a view of the dam pre-restoration and to document the same site after the dam is removed. A second location shall be chosen to document a view of the impoundment pre- and post-restoration. Photos shall be taken for two years after the dam removal is completed.

(c) The applicant shall submit a report detailing the results of this monitoring within six months of the completion of the two year post-construction monitoring period, or within 30 months after the dam removal is complete whichever is sooner. The report shall include a comparison of post-restoration survey data with pre-restoration survey data as illustrated by the photos taken during the monitoring period.

(3) Special Conditions for Freshwater Stream Crossing Repair and Replacement Projects. If the Ecological Restoration Project involves freshwater crossing repair or replacement, the Restoration Order of Conditions shall contain the following special conditions in addition to the general conditions set forth in 310 CMR 10.14(1):

(a) An as-built plan and/or a written statement from a registered professional engineer or other environmental professional expert in ecological restoration certifying substantial compliance with the design plans and construction specifications approved in the Restoration Order of Conditions shall be completed within 90 days of completion of construction. The as-built plan shall include the dimensions of the structure, the invert elevation of the upstream and downstream ends of the structure and the road or other surface elevation above the structure.

(b) The applicant shall monitor the site by collecting sufficient data within 12 months after construction is complete to evaluate the effect of the structure. At a minimum, when a Certificate of Compliance is requested, the applicant shall provide post-construction photo-points that capture longitudinal views of the crossing inlet, the crossing outlet and the upstream and downstream channel beds during low flow conditions. The photo-points shall be located at the same geographic photo-point latitude and longitude coordinates as required in the Notice of Intent per 310 CMR 10.12(1)(n). The applicant shall submit a report to the Issuing Authority detailing the results of this monitoring within 18 months after construction is complete. The report shall include a comparison of the post-restoration data with pre-restoration data.

(4) Special Conditions for Stream Daylighting Projects. If the Ecological Restoration Project involves stream daylighting, the Restoration Order of Conditions shall include the following special conditions in addition to the general conditions set forth in 310 CMR 10.14(1):

(a) An as-built plan and a written statement from a registered professional engineer or other environmental professional expert in ecological restoration certifying substantial compliance with the design plan and construction specifications approved in the Restoration Order of Conditions shall be submitted to the Issuing Authority within 90 days of completion of the project. At a minimum, when a Certificate of Compliance is



requested, the applicant shall provide post-construction photo-points that capture longitudinal views of the upstream and downstream channel beds of the daylighted reach during low flow conditions.

(b) The applicant shall conduct photo-point monitoring by establishing at least three photo-points for pre- and post-restoration monitoring at the stream daylighting site. One photo-point location shall be chosen to document the upstream end of the site and one photo-point location shall be chosen to document the downstream end of the site. A third photo-point shall be chosen to document conditions in the restored channel. Photos shall be taken during high flow and low (summer) flow of each year during the two years following completion of the project.

(c) Within 30 months after the completion of the project, the applicant shall submit a report describing the ecological changes observed at the ~~P~~project ~~S~~site during the two years following completion of the project, as illustrated by the photos.

(5) Special Conditions for Tidal Restoration Projects. If the Ecological Restoration Project involves restoration of tidal influence, the Restoration Order of Conditions shall contain the following special conditions in addition to the general conditions set forth in 310 CMR 10.14(1):

(a) If the project is a culvert or bridge replacement or repair project, an as-built plan and a written statement from a registered professional engineer or other environmental professional expert in ecological restoration certifying substantial compliance with the design plans and construction specifications approved in the Restoration Order of Conditions shall be submitted to the Issuing Authority within 90 days of completion of construction. The as-built plan shall include the dimensions of the structure, the invert elevation of the upstream and downstream ends of the structure and the road or other surface elevation above the structure.

(b) The applicant shall monitor pre- and post-construction tidal conditions upstream and downstream of the tidal restriction with water level readings measured at an interval no greater than every ten minutes over a minimum of a one-week period that includes a spring tide. Pre- and post-construction water level readings shall be taken at approximately the same locations and shall be referenced to the same vertical elevation datum. The applicant shall prepare a report detailing the results of this monitoring within 12 months after construction is complete. The report shall include and compare pre- and post-construction tidal elevation monitoring data to assess attainment of the project's predicted post-restoration tidal conditions.

(6) Special Conditions for Rare Species Habitat Restoration. If the Ecological Restoration Project is a Rare Species Habitat Restoration Project, the Restoration Order of Conditions shall in addition to the general conditions set forth in 310 CMR 10.14(1) include the following special conditions:

(a) An as-built plan and a written statement from a registered professional engineer or other environmental professional expert in ecological restoration certifying substantial compliance with the design plan, construction specifications, and the Habitat Management Plan submitted with the Notice of Intent as approved in the Restoration Order of Conditions shall be submitted to the Issuing Authority within 90 days of completion of the project.

(b) The applicant shall establish at least two photo-points for pre- and post-restoration monitoring at the ~~P~~project ~~S~~site. Photos shall be taken for two years after construction is complete. Within 30 months of completion of the project, the applicant shall submit to the Issuing Authority a report describing the ecological changes observed at the ~~P~~project ~~S~~site as illustrated by the photos.

(7) Special Conditions for Fish Passageway Restoration Projects. If the Ecological Restoration Project involves the repair or replacement of a fish passageway, the Restoration Order of Conditions shall in addition to the general conditions set forth in 310 CMR 10.14(1) contain the following special conditions:

- (a) The property owner is responsible for maintaining and repairing the fishway in good condition so that it will support safe and efficient fish passage in accordance with an operation and maintenance plan approved by the Division of Marine Fisheries. This requirement is a continuing condition that shall be set forth in the Certificate of Compliance.
- (b) A post-construction project summary using surveys, a narrative and photographs as needed, that confirm the fishway slope and entrance and exit elevations shall be submitted to and approved by the Division of Marine Fisheries, prior to submittal of a request for a Certificate of Compliance.

**[SECTIONS 10.15-10.20 DO NOT EXISTING IN THE EXISTING REGULATION.]**

#### **10.21 : Introduction**

310 CMR 10.21 through 10.37 apply to all work subject to M.G.L. c. 131, § 40, M.G.L. c. 131, § 40, which will alter, dredge, fill, or remove any coastal beach, coastal dune, tidal flat, coastal wetland, land subject to coastal storm flowage, coastal bank, land subject to tidal action, or land under an estuary, under a salt pond, under the ocean or under certain streams, ponds, rivers, lakes or creeks within the coastal zone that are anadromous/catadromous fish runs. This Part is in addition to and does not change the provisions set forth in 310 CMR 10.01 through 10.10. 310 CMR 10.21 through 10.37 are intended to ensure that development along the coastline is located, designed, built and maintained in a manner that protects the public interests in the coastal resources listed in M.G.L. c. 131, § 40. The proponent of the work must submit sufficient information to enable the issuing authority to determine whether the proposed work will comply with 310 CMR 10.21 through 10.37. Any proposed work may be subject to the requirements of sections concerning coastal beaches, coastal dunes and land containing shellfish. Thus, in order to determine which provisions apply to a proposed project, 310 CMR 10.00 must be read in its entirety. 310 CMR 10.21 through 10.37 are divided into 16 sections, 44 of which deal with specific coastal resources. Each coastal resource section begins with a preamble. In addition, the requirements for protection of the riverfront area in 310 CMR 10.58 apply within the coastal resource areas. The riverfront area may overlap other coastal resource areas and the performance standards for each resource area must be met. 310 CMR 10.24(7) applies to riverfront areas within coastal resource areas. The Preamble identifies the interests of M.G.L. c. 131, § 40 to which that resource is or is likely to be significant and describes the characteristics or factors of the resource which are critical to the protection of the interest to which the resource is significant. 310 CMR 10.21 through 10.37 are in the form of performance standards and shall

be interpreted to protect those characteristics and resources to the maximum extent permissible under M.G.L. c. 131, § 40.

The performance standards are intended to identify the level of protection the issuing authority must impose in order to contribute to the protection of the interests of M.G.L. c. 131, § 40. It is the responsibility of the issuing authority to order specific measures and requirements for each proposed project which will ensure that the project is designed and carried out consistent with the required level of protection. Such authority must then issue an Order of Conditions which is understandable and enforceable.

#### 10.22 : Purpose

310 CMR 10.21 through 10.37 are promulgated pursuant to M.G.L. c. 131, § 40 and are intended to implement it. They are further intended to establish criteria and standards for the uniform and coordinated administration of the provisions of M.G.L. c. 131, § 40; to ensure coordination between the Department and other Executive Office of Energy and Environmental Affairs agencies; and to ensure consideration by the Department of relevant policies, laws or programs of other Executive Office of Energy and Environmental Affairs agencies. 310 CMR 10.21 through 10.37 is, in addition, intended to be consistent with and form a part of the Commonwealth's Coastal Zone Management Program as it has been promulgated and defined by 301 CMR 21.00: *Coastal Zone Management Program Federal Consistency Review Procedures*. 310 CMR 10.21 through 10.37, however, are adopted independently under M.G.L. c. 131, § 40 and would remain in full force and effect in the absence of 301 CMR 20.00: *Coastal Zone Management Program*.

The interpretation and application of 310 CMR 10.21 through 10.37 shall be consistent with the policies of 301 CMR 20.00: *Coastal Zone Management Program* to the maximum extent permissible under M.G.L. c. 131, § 40. M.G.L. c. 21A, § 2 establishes the CZM policies as part of 301 CMR 20.00, and the Department recognizes these policies as state environmental policy, which it will carry out in accordance with M.G.L. c. 21A, § 2. Specifically, 301 CMR 20.99: *Severability*, Coastal Hazards Policy #1, and #2, Energy Policy #1, Habitat Policy #1, Ocean Resources Policy #1, Ports and Harbors Policy #1, #2 and #3, Protected Areas Policy #1 and Water Quality Policy #1 and #2 are applicable to the administration of M.G.L. c. 21A, § 2, but the provisions of the more specific regulations contained in the following sections shall govern, unless the Secretary, pursuant to the conflict resolution procedures of M.G.L. c. 21A, 301 CMR 20.00 of the CZM Regulations, has resolved any conflict and has determined that the CZM policies should or should not apply.

#### 10.23 : Additional Definitions for 310 CMR 10.21 through 10.37

The definitions contained in 310 CMR 10.23 apply to and are valid for 310 CMR 10.21 through 10.37. The following definitions are for terms used throughout 310 CMR 10.21 through 10.37. Other terms that are used only in specific sections of 310 CMR 10.21 through 10.37 are defined in those sections.

Act means the Wetlands Protection Act, M.G.L. c. 131, § 40.

Adverse Effect means a greater than negligible change in the resource area or one of its characteristics or factors that diminishes the value of the resource area to one or more of the specific interests of M.G.L. c. 131, § 40, as determined by the issuing authority.

Negligible means small enough to be disregarded.

Applicant means any person giving notice of intention to remove, fill, dredge or alter under M.G.L. c. 131, § 40.

Area of Critical Environmental Concern (ACEC) means an area which has been so designated by the Secretary in accordance with 301 CMR 12.00: *Areas of Critical Environmental Concern*. The term Area for Preservation or Restoration (APR) shall be synonymous with ACEC, as provided in the CZM Regulations.

Building means any residential, commercial, industrial, recreational or other similar structure. For the purposes of 310 CMR 10.00, building may be interpreted to include a large, substantial structure such as a utility tower.

Coastal Engineering Structure means, but is not limited to, any breakwater, bulkhead, groin, jetty, revetment, seawall, weir, riprap or any other structure that is designed to alter wave, tidal or sediment transport processes in order to protect inland or upland structures from the effects of such processes.

Coastal Zone means that area defined in 301 CMR 20.02: *Definitions*.

DMF means the Division of Marine Fisheries.

Grain Size means a measure of the size of a material or rock particle that makes up sediment.

Improvement Dredging means any dredging under a license in an area which has not previously been dredged or which extends the original dredged width, depth, length or otherwise alters the original boundaries of a previously dredged area.

Interests of the Act means the following eight interests specified in M.G.L. c. 131, § 40: public or private water supply, ground water supply, flood control, storm damage prevention, prevention of pollution, protection of land containing shellfish and protection of fisheries and wildlife habitat.

Issuing Authority means either a conservation commission or the Department, as appropriate.

Littoral Processes means the movement of sediment, including gravel, sand or cobbles, along the coast caused by waves or currents.

Maintenance Dredging means dredging under a license in any previously dredged area which does not extend the originally-dredged depth, width, or length but does not mean improvement dredging or backfilling.

Marine Fisheries means any animal life inhabiting the ocean or its adjacent tidal waters or the land thereunder that is utilized by man in a recreational and/or commercial manner or that is part of the food chain for such animal life.

Mean High Water Line means the line where the arithmetic mean of the high water heights observed over a specific 19-year metonic cycle (the National Tidal Datum Epoch) meets the shore and shall be determined using hydrographic survey data of the National Ocean Survey of the U.S. Department of Commerce.

Mean Low Water Line means the line where the arithmetic mean of the low water heights observed over a specific 19-year metonic cycle (the National Tidal Datum Epoch) meets the shore and shall be determined using hydrographic survey data of the National Ocean Survey of the U.S. Department of Commerce.

Minimize means to achieve the least amount of adverse effect that can be attained using ~~B~~best ~~A~~available ~~M~~measures or ~~B~~best ~~P~~practical ~~M~~measures, whichever is referred to in the pertinent section.

"Best ~~A~~available ~~M~~measures" means the most up-to-date technology or the best designs, measures or engineering practices that have been developed and that are commercially available. "Best Practical Measures" means technologies, designs, measures or engineering practices that are in general use to protect similar interests.

NPDES (National Pollutant Discharge Elimination System) Permit means the permit issued jointly by the federal and state governments, in accordance with 33 U.S.C. 1342 and M.G.L. c. 21, § 43, regulating liquid discharges from a point source.

Productivity means the rate of biomass production over a period of time.

Resource Area means any coastal bank; coastal wetland; coastal beach; coastal dune; tidal flat; or any land under the ocean or under an estuary or under a salt pond; land subject to tidal action or coastal 100 year storm flowage; or land under certain streams, ponds, rivers, lakes, or creeks within the coastal zone that are anadromous/catadromous fish runs.

Secretary means the Secretary of Energy and Environmental Affairs.

Significant. A resource area shall be found to be significant to an interest of M.G.L. c. 131, § 40 when such resource area plays a role in the provision or protection, as appropriate, of public or private water supply, ground water supply, flood control, storm damage prevention, prevention of pollution, land containing shellfish, fisheries, and/or wildlife habitat.

Turbidity means the amount of particulate matter suspended in water.

Water Circulation means the pattern of water movement in coastal waters.

#### **10.24 : General Provisions**

(1) If the issuing authority determines that a Resource Area is significant to an interest identified in M.G.L. c. 131, § 40 for which no presumption is stated in the Preamble to the applicable section, the issuing authority shall impose such conditions as are necessary to contribute to the protection of such interests.

(a) For work in the buffer zone subject to review under 310 CMR 10.02(2)(b)3., the issuing authority shall impose conditions to protect the interests of the Act identified for the adjacent Resource Area. The potential for adverse impacts to Resource Areas from work in the buffer zone may increase with the extent of the work and the proximity to the resource area. The issuing authority may consider the characteristics of the buffer zone, such as the presence of steep slopes, that may increase the potential for adverse impacts on Resource Areas. Conditions may include limitations on the scope and location of work in the buffer zone as necessary to avoid alteration of Resource Areas. The issuing authority may require erosion and sedimentation controls during construction, a clear limit of work, and the preservation of natural vegetation adjacent to the Resource Area and/or other measures commensurate with the scope and location of the work within the buffer zone to protect the interests of M.G.L. c. 131, § 40. Where a buffer zone has already been developed, the issuing authority may consider the extent of existing development in its review of subsequent proposed work and, where prior development is extensive, may consider measures such as the restoration of natural vegetation adjacent to the Resource Area to protect the interests of M.G.L. c. 131, § 40. The purpose of preconstruction review of work in the buffer zone is to ensure that adjacent Resource Areas are not adversely affected during or after completion of the work.

(b) For work in any coastal Resource Area or Buffer Zone along the shoreline within the 100-foot buffer to Coastal Bank, the Applicant shall consider, and the Issuing Authority may require, the restoration, enhancement, or creation of wetland Resource Areas through natural methods and materials as an alternative to coastal engineering structures to promote resiliency along the shoreline. In planning shoreline protection projects, Applicants shall consult the resilientma.org website for the most current mapping and other available information related to shoreline change and sea level rise or similarly reliable local data acceptable to the Issuing Authority. Applicants and Issuing Authorities shall confirm that the proposed project design takes into account the characteristics of the site, including existing Resource Areas, wave energy, tidal range, elevation, intertidal slope, bathymetry, and erosion rate. The Issuing Authority shall require projects be designed to protect or enhance Resource Areas seaward of a seawall or other coastal engineering structure wherever practicable. Notwithstanding the provisions of 310 CMR 10.24(2), the Issuing Authority may allow the conversion of one Resource Area to other Resource Areas to achieve greater shoreline resiliency, but there shall be no loss of Salt Marsh, no alteration of Primary Frontal Dune, and no cumulative net loss of or adverse effects on Resource Areas. The Issuing Authority shall confirm that the project will not cause an increase in flood velocity, volume, or elevation on other properties resulting in storm damage. The purpose of preserving and

**Commented [A44]:** NAIOP recommends that the Department define “shoreline protection projects.” NAIOP also urges the Department to acknowledge that “shoreline protection projects” are usually projects on the shoreline that protect upland areas.

**Commented [A45]:** Every structure placed in LSCSF will have some effect on velocity and volume of flood waters (elevation is irrelevant here) but it may not be measurable. Also, the existing or proposed conditions (e.g., ground cover type & condition) would greatly impact whether or not a specific increase in flood velocity or volume would in fact result in storm damage. The Department would need to provide data on the magnitude of increases in flood velocity and volume that would damage different types of surfaces or structures (and the degree to which it would do so) so that Commissions could make such a confirmation.

Further, there is a presumption here that damage to or effect on other properties is an interest that should be protected under the WPA. NAIOP does not believe it is the role of the Issuing Authority to determine whether or not there is a valid claim to damage to private property of abutting owners.

enhancing the adaptive capacities of Resource Areas whenever feasible is to provide coastal property owners with an effective means of shoreline protection in light of rising sea levels and increasing severity of coastal storms, while protecting the interests of M.G.L. c. 131, § 40.

- (2) When the issuing authority determines that a project in one ~~R~~resource ~~A~~area would adversely affect another ~~R~~resource ~~A~~area, the issuing authority shall impose such conditions as will protect the interest to which each resource are significant to the same degree as required in 310 CMR 10.00 concerning each ~~R~~resource ~~A~~area.
- (3) A determination which finds that a resource area is not significant to an interest to which it is presumed in 310 CMR 10.21 through 10.37 to be significant, or is significant to an interest to which it is presumed to be not significant, shall be made on Form 7. No such determination shall be effective unless a copy of this form and the accompanying written explanation for the determination required by 310 CMR 10.00 is sent on the day of issuance to the appropriate regional office of the Department.
- (4) (a) 310 CMR 10.21 through 10.37 do not change the requirement of any other Massachusetts statute or by-law. A proposed project must comply with all applicable requirements of other federal, state and local statutes and by-laws, in addition to meeting the requirements of 310 CMR 10.00. Examples of such laws which may be applicable are the Coastal Restrictions Act (M.G.L. c. 130, § 105), the Ocean Sanctuaries Act (M.G.L. c. 132A, §§ 13 through 16 and 18), the Mineral Resources Act (M.G.L. c. 21, §§ 54 through 58), the Massachusetts Clean Water Act (M.G.L. c. 21, §§ 26 through 53), the Waterways laws (M.G.L. c. 91), the Massachusetts Environmental Policy Act (M.G.L. c. 30, §§ 61 through 62H), the act establishing the Martha's Vineyard Commission (St. 1974, c. 637) and the Scenic Rivers Act (M.G.L. c. 21, § 2. 17B).
- (b) When the site of a proposed project is subject to a Restriction Order which has been duly recorded under the provisions of M.G.L. c. 130, § 105, such a project shall conform to 310 CMR 10.21 through 10.37.
- (c) If an NPDES permit for any new point-source discharge has or will be obtained prior to the commencement of the discharge, the effluent limitations established in such permit shall be deemed to satisfy the water quality standards established in any section of 310 CMR 10.21 through 10.37 relative to the effects of the new point-source discharge on water quality. Such effluent limitations shall be incorporated or shall be deemed to be incorporated into the Order of Conditions.
- (5) (a) When any area subject to 310 CMR 10.21 through 10.37 has been designated an Area of Critical Environmental Concern by the Secretary of Energy and Environmental Affairs pursuant to 301 CMR 20.00: *Coastal Zone Management Program*, and when the Secretary has made a finding of the significance of the area to one or more interests of M.G.L. c. 131, § 40, the issuing authority shall presume that such area is significant to those interests.
- (b) When any portion of a designated Area of Critical Environmental Concern is determined by the Issuing Authority to be significant to any of the interests of M.G.L. c. 131, § 40, any proposed project in or impacting that portion of the Area of Critical Environmental Concern shall have no adverse effect upon those interests, except as



provided under 310 CMR 10.25(4) for maintenance dredging, under 310 CMR 10.11 through 10.14, 10.24(8) and 10.53(4) for Ecological Restoration Projects, and under 310 CMR 10.25(3) for improvement dredging conducted by a public entity for the sole purpose of the maintenance or restoration of historic, safe navigation channels or turnaround basins of a minimum length, width, and depth consistent with a Resource Management Plan adopted by the municipality(ies) and approved by the Secretary of the Executive Office of Energy and Environmental Affairs.

(6) Where any section of 310 CMR 10.00 provides that a proposed project “may be permitted” in certain circumstances, no such project shall be undertaken until all of the usual procedures required by M.G.L. c. 131, § 40 and 310 CMR 10.21 through 10.37 have been followed and a Final Order has been issued approving the work. The Issuing Authority shall impose such conditions on such projects as may be necessary to contribute to the protection of the interests of M.G.L. c. 131, § 40. Notwithstanding the foregoing, when the Issuing Authority determines that a project meets the eligibility criteria for a Restoration Order of Conditions, the Issuing Authority shall impose only the conditions set forth in the applicable provisions of 310 CMR 10.00. As set forth in 310 CMR 10.05(6)(b), a Restoration Order of Conditions may reference the plans and specifications approved by the Issuing Authority. ~~If the Department is the Issuing Authority for a project that is the subject of a Combined Application, the Department may attach to the Restoration Order of Conditions any conditions that the Department has authority to impose pursuant to 310 CMR 9.00: Waterways and 314 CMR 9.00: 401 Water Quality Certification for Discharge of Dredged or Fill Material, Dredging, and Dredged Material Disposal in Waters of the United States Within the Commonwealth to the extent they are applicable.~~

(7) Notwithstanding the provisions of 310 CMR 10.25 through 10.35~~6~~, the issuing authority may issue an Order of Conditions and impose such conditions as will contribute to the interests identified in M.G.L. c. 131, § 40, permitting the limited projects listed in 310 CMR 10.24(7)(a) through (c), although no such project may be permitted which will have any adverse effect on specified habitat sites of Rare Species, as identified by procedures established under 310 CMR 10.37. In determining whether to exercise its discretion to approve the limited projects listed in 310 CMR 10.24(7)(a) through (c), the Issuing Authority shall consider the following factors: the magnitude of the alteration and the significance of the project to the interests identified in M.G.L. c. 131, § 40, the availability of reasonable alternatives to the proposed activity, and the extent to which adverse impacts are minimized and the extent to which mitigation measures including replication or restoration are provided to contribute to the protection of the interests identified in M.G.L. c. 131, § 40. Adverse effects to be minimized include without limitation any adverse impacts on the relevant interests of M.G.L. c. 131, § 40, due to changes in wave action or sediment transport or adjacent coastal banks, coastal beaches, coastal dunes, salt marshes or barrier beaches. The provisions of 310 CMR 10.24(7)(a) through (c) are not intended to prohibit the Issuing Authority from imposing such additional conditions as are necessary to contribute to the interests of M.G.L. c. 131, § 40 where the indicated minimizing measures are not sufficient.

(a) The construction, reconstruction, operation and maintenance of the following structures associated with and essential to an electric generating facility may be permitted as a limited project pursuant to 310 CMR 10.24(7) provided the project is proposed to be

constructed and operated in accordance with all applicable provisions of 310 CMR 10.24(1) through (6), (7)(a)1. through 6., and (9) and (10):

1. Conduits for cooling water intake or discharge, which may be emplaced by trenching with a minimum depth of four feet of cover below original grade, except where they traverse salt ponds, salt marshes and barrier beaches, in which cases they may be emplaced only by tunneling;

2. Headwalls and other essential structures appurtenant to 310 CMR 10.24(7)(a)1., except that these structures may not be constructed in salt marshes, salt ponds or barrier beaches;

3. Pipelines or other conduits for the transmission of utilities essential to the facility (water, fuel, sewage, and power), which may be emplaced by trenching with a minimum depth of four feet of cover below original grade, or which may be carried above grade on pilings or similar supports, but only if the applicant demonstrates that there will be no adverse effect on the ~~R~~esource ~~A~~rea by the construction, operation, and maintenance of such pipelines or other conduits. If such pipelines or conduits are emplaced through a ~~R~~esource ~~A~~rea which adverse effects are required to be minimized by 310 CMR 10.25 through 10.36~~5~~, then that standard shall be applied, except that in no case shall fuel or sewage lines be operated or be designed to be operated so that they will have an adverse effect on the ~~R~~esource ~~A~~rea.

4. Structures necessary for navigation, berthing and protection of such vessels and vessel movements as may be necessary to the operation of the facility, but only on coastal banks, coastal beaches, rocky intertidal shores or land under the ocean;

5. Structures for maritime dependent accessory activities essential to the facility, but only on coastal banks, coastal beaches, rocky intertidal shores or land under the ocean;

6. Coastal engineering structures necessary to the protection of such other structures as may be permitted under 310 CMR 10.24, but only on coastal banks, coastal beaches, rocky intertidal shores, or land under the ocean;

(b) The construction, reconstruction, operation and maintenance of underground and overhead public utilities, limited to electrical distribution or transmission lines, or communication, sewer, water and natural gas lines, may be permitted as a limited project pursuant to 310 CMR 10.24(7) provided that the project complies with all applicable provisions of 310 CMR 10.24(1) through (6), (9) and (10), and (7)(b)1. through 9.:

1. For local distribution or connecting lines not reviewed by the Energy Facilities Siting Council, the Issuing Authority determines that alternative routes with fewer adverse effects are not physically or legally feasible;

2. Adverse effects during construction are minimized using the ~~B~~est ~~A~~vailable ~~M~~asures, which may include such equipment as Bailey bridges and helicopters;

3. The surface vegetation and contours of the area are substantially restored;

4. When a trench is made in a Salt Marsh, all spoil is removed from the Salt Marsh upon excavation. Clean sand or other appropriate material shall be used to restore the level of the trench to that of the surrounding undisturbed Salt Marsh. The surface vegetation shall be restored substantially to its original condition by immediately transplanting appropriate marsh plant nursery stock once

construction is completed. Baffles of concrete, clay or other non porous material shall be placed in the trench, if necessary, to prevent groundwater excursion. During the first growing season, periodic maintenance of the marsh restoration area shall be required and shall include at least the replacement of non surviving transplants and the removal of all deposits of debris and organic litter. During construction, equipment such as Bailey bridges and helicopters shall be used to minimize, using ~~B~~best ~~A~~available ~~M~~measures, the adverse effects of construction on the Salt Marsh. All vehicles shall be used only on swamp mats or in such a way as to prevent tire marks, trenches, or ruts;

5. No utility shall traverse a Salt Marsh unless the applicant has shown that any thermal influence on the Salt Marsh of such line subsequent to the project being completed will not alter the natural freezing and thawing patterns of the top 24 inches of the Salt Marsh surface. Thermal sand, concrete or other suitable material may be used to backfill the trench to a point no less than 24 inches below grade. Above this level, clean sand shall be used to restore the level of the trench to that of the surrounding undisturbed Salt Marsh;

6. No permanent access roads shall be permitted except in Designated Port Areas; and

7. All sewer lines shall be constructed so as to be watertight so as to prevent inflow and leakage.

8. All fuel lines shall be double cased and watertight so as to prevent inflow and leakage.

9. The conduits or structures shall be designed to minimize, using the ~~B~~best ~~A~~available ~~M~~measures, adverse effects on the relevant interests of M.G.L. c. 131, § 40 due to changes in wave action or sediment transport or adjacent coastal banks, coastal beaches, coastal dunes, salt marshes or barrier beaches.

(c) The following projects may be permitted as a limited project pursuant to 310 CMR 10.24(7) provided the project complies with all applicable provisions of 310 CMR 10.24(1) through (6) and (9) and (10):

1. Maintenance and improvement of existing public roadways, but limited to widening less than a single lane, adding shoulders, correcting substandard intersections, and improving drainage systems. Existing public roadways may be elevated to reduce impacts from sea level rise or coastal storm flowage; provided that:

a. the width of the elevated roadway surface is the same as the existing roadway surface;

ii.b. unavoidable loss of Salt Marsh, if necessary for adjustment of the toe of slope, is mitigated by the restoration or creation of an equivalent area of Salt Marsh, with at least 75% of the area established with indigenous salt marsh plant species within two growing seasons, and, prior to the vegetative reestablishment, any exposed soil is temporarily stabilized to prevent erosion in accordance with standard NRCS methods;

iii.c. the existing hydrology up to and including the highest spring tide of the year between both sides of the roadway is maintained, there is no restriction of flow and no increase in flood stage or velocity, and the existing hydrology is improved where not adequately sustaining the Salt

**Commented [A46]:** NAIOP believes that it should be allowable to add sidewalks/bicycle facilities as part of this work. In many places an improvement to the public realm for non-motorized vehicles will be a major part of many roadway elevation projects, especially where compliance with MassDOT's (or municipal) Complete Streets standards is required. Private roadways should be included as well.

Marsh; provided the Issuing Authority has determined that no adverse flooding impacts to landward properties will occur; and  
ivd. the work avoids and minimizes alterations of other coastal Resource Areas to the maximum extent practicable.

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10.24(7)(c)

7. The construction of a new access roadway, or the improvement, repair and/or replacement of an existing access roadway, needed to transport equipment to a renewable energy ~~P~~project ~~S~~ite, provided that it is carried out in accordance with the following general conditions and any additional conditions deemed necessary by the issuing authority. Such projects shall be designed, constructed, implemented, operated, and maintained to meet all of the following standards to the maximum extent practicable:

- a. The work is limited to the following coastal resource areas or portions thereof: the portion of Land Subject to Coastal Storm Flowage that is outside the Velocity Zone, Designated Port Areas, and Banks of or Land under the Ocean, Ponds, Streams, Rivers, Lakes or Creeks that Underlie an Anadromous/Catadromous Fish Run.
- b. Hydrological changes to resource areas shall be minimized.
- c. Best management practices shall be used to minimize adverse impacts during construction. An applicant shall be presumed to use best management practices to minimize adverse impacts during construction if he or she implements erosion and sediment controls in accordance with the *Massachusetts Erosion and Sediment Control Guidelines*. This presumption may be rebutted by credible evidence from a competent source.
- d. No access road or other structure or activity shall restrict flows so as to cause an increase in flood stage or velocity.
- e. No change in the existing surface topography or the existing soil and surface water levels shall occur except for temporary access roads.
- f. Temporary structures and work areas in resource areas shall be removed within 30 days of completion of the work. Temporary alterations to resource areas shall be substantially restored to preexisting hydrology and topography. At least 75% of the surface of any area of disturbed vegetation shall be reestablished with indigenous wetland plant species within two growing seasons and prior to said vegetative reestablishment any exposed soil in the area of disturbed vegetation shall be temporarily stabilized to prevent erosion. Surface areas shall be presumed to be stabilized to prevent erosion if the applicant implements the procedures set forth in the *Massachusetts Erosion and Sediment Control*

*Guidelines.* This presumption may be rebutted by credible evidence from a competent source.

g. Work in resource areas shall occur only during those periods when the ground is sufficiently frozen, dry, or otherwise stable to support the equipment being used.

h. Slash, branches, and limbs resulting from cutting and removal operations shall not be placed within 25 feet of the bank of any water body.

8. Public Shared Use Paths within abandoned rail beds: The construction of a Public Shared Use Path of the minimum practical width within the footprint of the rail bed, or the minor improvement, repair, and/or replacement of an existing Public Shared Use Path within the footprint of the rail bed; provided that it is carried out in accordance with the following conditions and any additional conditions deemed necessary by the Issuing Authority. The Issuing Authority may approve a proposed route outside the footprint of the rail bed if a different alignment within the right-of-way is advantageous to reduce Resource Area alterations. Public Shared Use Paths are accessible paved and unpaved paths restricted solely to pedestrian and non-motorized vehicle travel (with the exception of wheelchairs, other power-driven mobility devices by individuals with a mobility disability, electric bicycles and electric scooters, emergency vehicles, and vehicles performing periodic maintenance). Accessible means a surface that complies with the Americans with Disabilities Act regulations, 28 CFR Part 35 and Part 36. Public Shared Use Paths do not include sidewalks intended solely for pedestrian use and do not include parking areas for motorized vehicles. Public Shared Use Paths shall be designed, constructed, operated, and maintained to meet all of the following standards:

a. Any portion of a salt marsh within a designated Area of Critical Environmental Concern is presumed to be significant to the interests of M.G.L. c. 131, § 40, and no proposed Public Shared Use Path projects shall have an adverse effect upon those interests.

b. No Public Shared Use Path, associated structure, or activity shall restrict flow so as to cause an increase in flood stage or velocity.

c. Compensatory flood storage shall be provided for all flood storage volume that will be lost within the Special Flood Hazard Area within any portion of a wetland Resource Area, for any work located upgradient of a stream or wetland crossing, culvert, or bridge.

d. Construction work in Resource Areas shall occur only during those periods when the ground is sufficiently frozen, dry, or otherwise stable enough to support the equipment being used.

e. During construction, slash, branches, and limbs resulting from cutting and removal operations shall not be placed within 25 feet of the bank or any body of water.

f. For any permanent alterations to Resource Areas, mitigation measures shall be implemented that contribute to the protection of the interests identified in M.G.L. c. 131 § 40, either in accordance with existing performance standards to the maximum extent practicable or an equivalent level of environmental protection where square footage is not a relevant measure, such as restoration or preservation. Mitigation may be offsite, but must be considered in the following order: same Project Site, same Project Locus, adjacent site, same wetland Resource Area, same municipality, and the same stream reach within the Hydrologic Unit Map (HUC) 12 sub-watershed. All instances of

**Commented [A47]:** These general provisions apply to LCSF, however NAIOP believes that compensatory flood storage should only be required in inland SFHAs.

Offsite Mitigation for Redevelopment shall be within the same HUC 12 sub-watershed.

g. All temporary alterations to Resource Areas and Buffer Zones shall be restored to preexisting hydrology and topography, and replanted with noninvasive native vegetation.

h. A separate NOI may be filed either concurrently to the filing of the NOI for the project, or after the OOC Order is issued, for vegetation management and other activities as defined in 310 CMR 10.02(2)(b)2.i.-v. in wetlands Resource Areas. Orders of Conditions shall be valid for five years and may be extended by the issuing authority for one or more years up to five additional years, pursuant to 310 CMR 10.05(8).

i. After a Certificate of Compliance is obtained, minor activities as defined at 310 CMR 10.02(2)(b)2. may take place in the Buffer Zone and Riverfront Area to provide for vegetation management; provided that any such work is restricted to hand methods to the maximum extent practicable. No snow clearing beyond the shoulder shall occur, and the application of deicing and anti-icing agents and sanding is prohibited.

j. Stormwater shall be managed to the Maximum Extent Practicable in accordance with 310 CMR 10.05(6)(m). A long-term operations and maintenance plan prepared in accordance with 310 CMR 10.05(6)(k)9. Shall also be provided.

k. Best Management Practices shall be used to minimize adverse impacts during construction, including prevention of erosion and siltation of adjacent water bodies and wetlands in accordance with the construction period erosion, sedimentation and pollution prevention plan (310 CMR 10.05(6)(k)8.).

9. The relocation of an existing public roadway, railway, or other public transportation infrastructure, and any associated utilities, when necessary to mitigate or avoid flooding or coastal storm damage; the relocation or reconfiguration of an existing Water-Dependent Use facility when necessary to mitigate or avoid flooding or coastal storm damage; or the construction, reconstruction, or reconfiguration of Water-dependent Use structures determined to be functionally dependent by the building official under 780 CMR: *Massachusetts State Building Code* and Referenced Standard ASCE 24-14. (Functionally dependent means a use which cannot perform its intended purpose unless it is located or carried out in close proximity to water. The term includes only docking facilities, port facilities that are necessary for the loading and unloading of cargo or passengers, and ship building and ship repair facilities, but does not include long-term storage or related manufacturing facilities.) The work shall be designed, constructed, implemented, operated, and maintained in accordance with the following general conditions and any additional conditions deemed necessary by the Issuing Authority:

a. Any work in a Salt Marsh shall meet the performance standards of 310 CMR 10.32, and shall not otherwise directly or indirectly impact the hydrology of a Salt Marsh;

b. The selection of a design shall be based on an alternatives analysis that evaluates all practicable alternatives to avoid and minimize adverse effects on Resource Areas and to minimize repetitive reconstruction. Alternatives shall include, at a minimum, improvement of an alternate route and relocation landward that avoids and minimizes adverse effects on other Resource Areas. When a road or facility is relocated, the former



site shall be restored to natural conditions, including the restoration or creation of any Resource Areas that naturally would occur at the site;

c. Best Management Practices shall be used to minimize adverse impacts during construction. Best Management Practices used in accordance with the Massachusetts Erosion and Sediment Control Guidelines will be presumed to meet this standard;

d. Construction shall not take place during Time of Year Restrictions as identified in 310 CMR 10.35(4);

e. No road, other structure, or activity shall restrict flows or cause an increase in flood stage or velocity; and

f. Temporary structures and work areas in Resource Areas shall be removed as soon as possible but no more than 30 days after the scheduled completion of the work. Temporary alterations to Resource Areas shall be restored to preexisting hydrology, topography, and vegetation.

**Commented [A48]:** 10.35(4) does not actually prohibit construction during a TOY. 10.35(4)(a)3. requires that "the applicant demonstrate that the project will be carried out in accordance with any time of year restrictions or other conditions recommended by the Division of Marine Fisheries for coastal waters and the Division of Fisheries and Wildlife in accordance with 310 CMR 10.11(3)," which subsection requires a written determination from DMF as to whether the proposed work requires a TOY and does not indicate a total prohibition.

(8) Ecological Restoration Limited Project.

(a) Notwithstanding the requirements of 310 CMR 10.25 through 10.36~~5~~, 10.54 through 10.58, and 10.60, the Issuing Authority may issue an Order of Conditions permitting an Ecological Restoration Project listed in 310 CMR 10.24(8)(e) as an Ecological Restoration Limited Project and impose such conditions as will contribute to the interests identified in M.G.L. c. 131, § 40, provided that:

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**10.32: Salt Marshes**

(1) Preamble. Salt marshes are significant to protection of marine fisheries, wildlife habitat, and where there are shellfish, to protection of land containing shellfish, and prevention of pollution and are likely to be significant to storm damage prevention and ground water supply.

A salt marsh produces large amounts of organic matter. A significant portion of this material is exported as detritus and dissolved organics to estuarine and coastal waters, where it provides the basis for a large food web that supports many marine organisms, including finfish and shellfish as well as many bird species. Salt marshes also provide a



spawning and nursery habitat for several important estuarine forage finfish as well as important food, shelter, breeding areas, and migratory and overwintering areas for many wildlife species.

Salt marsh plants and substrate remove pollutants from surrounding waters. The network of salt marsh vegetation roots and rhizomes binds sediments together.

The sediments absorb chlorinated hydrocarbons and heavy metals such as lead, copper, and iron. The marsh also retains nitrogen and phosphorous compounds, which in large amounts can lead to algal blooms in coastal waters.

The underlying peat also serves as a barrier between fresh ground water landward of the salt marsh and the ocean, thus helping to maintain the level of such ground water.

Salt marsh cord grass and underlying peat are resistant to erosion and dissipate wave energy, thereby providing a buffer that reduces wave damage.

When a proposed project involves the dredging, filling, removing or altering of a salt marsh, the issuing authority shall presume that such area is significant to the interests specified above. This presumption may be overcome only upon a clear showing that a salt marsh does not play a role in the protection of marine fisheries or wildlife habitat, prevention of pollution, ground water supply, or storm damage prevention, and if the issuing authority makes a written determination to such effect.

When a salt marsh is significant to one or more of the interests specified above, the following characteristics are critical to the protection of such interest(s):

- (a) the growth, composition and distribution of salt marsh vegetation, (protection of marine fisheries and wildlife habitat, prevention of pollution, storm damage prevention);
- (b) the flow and level of tidal and fresh water (protection of marine fisheries and wildlife habitat, prevention of pollution); and
- (c) the presence and depth of peat (ground water supply, prevention of pollution, storm damage prevention).

## (2) Definitions.

Salt Marsh means a coastal wetland that extends landward up to the highest high tide line, that is, the highest spring tide of the year, and is characterized by plants that are well adapted to or prefer living in, saline soils. Dominant plants within salt marshes typically include salt meadow cord grass (*Spartina patens*) and/or salt marsh cord grass (*Spartina alterniflora*), but may also include, without limitation, spike grass (*Distichlis spicata*), high-tide bush (*Iva frutescens*), black grass (*Juncus gerardii*), and common reedgrass (*Phragmites*). A salt marsh may contain tidal creeks, ditches and pools.

Spring Tide means the tide of the greatest amplitude during the approximately 14-day tidal cycle. It occurs at or near the time when the gravitational forces of the sun and the moon are in phase (new and full moons).

WHEN A SALT MARSH IS DETERMINED TO BE SIGNIFICANT TO THE PROTECTION OF MARINE FISHERIES, THE PREVENTION OF POLLUTION, STORM Effective 10/24/2014 310 CMR: DEPARTMENT OF ENVIRONMENTAL PROTECTION DAMAGE PREVENTION OR GROUND WATER SUPPLY, 310 CMR 10.32(3) THROUGH (6) SHALL APPLY:

(3) A proposed project in a salt marsh, on lands within 100 feet of a salt marsh, or in a body of water adjacent to a salt marsh shall not destroy any portion of the salt marsh and shall not have an adverse effect on the productivity of the salt marsh. Alterations in growth, distribution and composition of salt marsh vegetation shall be considered in evaluating adverse effects on productivity. 310 CMR 10.32(3) shall not be construed to prohibit the harvesting of salt hay.

(4) Notwithstanding the provisions of 310 CMR 10.32(3), a small project within a salt marsh, such as an elevated walkway or other structure which has no adverse effects other than blocking sunlight from the underlying vegetation for a portion of each day, may be permitted if such a project complies with all other applicable requirements of 310 CMR 10.21 through 10.37.

(5) Notwithstanding the provisions of 310 CMR 10.32(3), a project which will restore or rehabilitate a salt marsh, ~~or create a salt marsh,~~ may be permitted in accordance with 310 CMR 10.11 through 10.14, 10.24(8) and/or 10.53(4). Creation of a new salt marsh or conversion of another Resource Area to expand a salt marsh may be permitted; provided that the design is in accordance with Best Available Measures as defined in 310 CMR 10.04, notwithstanding the performance standards for the other Resource Area.

(6) Notwithstanding the provisions of 310 CMR 10.32(3) through (5), no project may be permitted which will have any adverse effect on specified habitat sites of Rare Species, as identified by procedures established under 310 CMR 10.37.

[NOTE TO REVIEWERS: MassDEP IS SETTING FORTH IN THIS DOCUMENT PROPOSED AMENDMENTS TO THE CURRENT REGULATION AT 310 CMR 10.00 IN REDLINE AND STRIKEOUT FORMAT. REDLINES SHOW ADDITIONS TO THE CURRENT REGULATORY TEXT AND STRIKEOUTS SHOW PROPOSED DELETIONS. SINCE THE REGULATION IS VERY LONG, MassDEP IS PUBLISHING ONLY THOSE PORTIONS OF THE REGULATION FOR WHICH THE AGENCY IS PROPOSING TO MAKE AMENDMENTS. MassDEP HAS INCLUDED TEXT JUST PRIOR TO (and in some cases text just after) NEW INSERTED TEXT TO MAKE IT CLEAR WHERE THE NEW TEXT IS PROPOSED TO BE INSERTED INTO THE CURRENT REGULATIONS. **THERE ARE NO EDITS TO SECTIONS 10.33, 10.34, OR 10.35 AND THESE SECTIONS WILL REMAIN THE SAME AS EXISTING REGULATION.**]

...

**(10.36: Reserved. Variance Provision is Found at 310 CMR 10.05(10))Land Subject to Coastal Storm Flowage**

(4) Preamble. Land Subject to Coastal Storm Flowage is likely to be significant to storm damage prevention and flood control. Land Subject to Coastal Storm Flowage reduces storm damage and flooding by diminishing and buffering the high energy effects of storms within the coastal floodplain. Velocity Zones (V-Zones) and Moderate Wave Action Zones (MoWA Zones), the seaward areas of Land Subject to Coastal Storm Flowage, are particularly subject to hazardous flooding, wave impact, erosion, backrush, sediment transport, and scour. ~~The V Zones and MoWA Zones within Land Subject to Coastal Storm Flowage are per se significant to storm damage prevention and flood control.~~

**Commented [A49]:** NAIOP believes that the this sentence is duplicative of the first sentence of the 7<sup>th</sup> paragraph, which states: "When a proposed activity involves dredging, filling, removal, or alteration of Land Subject to Coastal Storm Flowage within the V-Zone or MoWA Zone, these zones are per se significant to the interests of storm damage prevention and flood control."

Wave energy and flood water movement are affected by topography, soil, and sediment characteristics (e.g., roughness, composition, size, and density), and the erodibility, transportability, and permeability of the land surface within Land Subject to Coastal Storm Flowage. Vegetation helps to prevent erosion, slow moving water, and filter sediments. ~~Impervious surfaces and even smooth pervious surfaces can exacerbate wave energy and flooding by increasing the velocity of flood waters.~~ The low-lying topography of Land Subject to Coastal Storm Flowage allows flood waters to spread laterally and landward, dissipating wave energy.

**Commented [A50]:** Smooth surfaces do not increase the velocity of flood waters - they simply do not reduce the velocity.

The placement of solid fill structures or buildings within Land Subject to Coastal Storm Flowage may cause the refraction, diffraction, or reflection of waves, forcing wave energy and moving water onto adjacent properties. Development within V-Zones and MoWA Zones of Land Subject to Coastal Storm Flowage may increase the velocity and height of storm waves causing them to break further inland, increasing storm damage and flooding. Coastal flood water may be retained within basins which confine flood waters, preventing the return flow of the storm surge to the ocean and contributing to storm damage prevention and flood control.

Land Subject to Coastal Storm Flowage has a vertical dimension, extending from the ground to the base flood elevation of the 1% annual chance storm, storm of record, or surge of record. Where wave velocities are moderate, elevation of buildings on Open Piles above the base flood elevation can maintain more natural floodplain functions and provide a margin of safety for larger storms and sea level rise.

The V-Zone is the area within Land Subject to Coastal Storm Flowage that is most frequently subject to extreme wave action during coastal storms. The V-Zone may extend over other coastal Resource Areas, such as Coastal Beach, ~~and Coastal Dune, and Coastal Bank~~ and the shape and location of these Resource Areas may change seasonally, with storm events, and with sea level rise. In the V-Zone, where wave action is most frequent and intense, Open Piles necessary to support buildings and other structures are likely to cause scour from the turbulence of asymmetrical waves and swash.

~~Additionally, human activities associated with buildings typically result in loss of vegetation.~~ During and after storm events, these areas cannot naturally recover as readily as undisturbed flood zones, frequently resulting in storm surge waves breaking further landward. When this occurs, the V-Zone within Land Subject to Coastal Zone Flowage is more susceptible to erosion because it becomes less effective at absorbing wave energy. Except as otherwise provided in 310 CMR 10.36(4), to prevent these conditions and to protect the interests of flood control and storm damage protection, new buildings, even on Open Piles, are not allowed in the V-Zone under these regulations.

**Commented [A51]:** Redevelopment of previously developed areas does not typically result in loss of vegetation. In fact, it is more common to add vegetation. NAIOP believes that this would be a good place to introduce the concept of Previously Altered Areas, which is entirely missing from the preamble.

Other coastal and sometimes inland Resource Areas may be found within the boundaries of Land Subject to Coastal Storm Flowage and are regulated separately, with the exception of Rocky Intertidal Shore and Coastal Banks which are determined not to be significant to storm damage prevention or flood control because they do not supply sediment to Coastal Beach, Coastal Dune, or Barrier Beach. Except as otherwise provided in 310 CMR 10.36(4), the requirements for the elevation of structures on pile-supported foundations, which is required to dissipate the wave energy within V-Zones and MoWA Zones, apply within any coastal or inland Resource Areas within Land Subject to Coastal Storm Flowage. The area within 100 feet of other coastal or freshwater wetland Resource Areas is particularly important to protecting those Resource Areas due to potential adverse effects from development.

When a proposed activity involves dredging, filling, removal, or alteration of Land Subject to Coastal Storm Flowage within the V-Zone or MoWA Zone, these zones are per se significant to the interests of storm damage prevention and flood control. In other areas of Land

Subject to Coastal Storm Flowage, the Issuing Authority shall presume that the area is significant to the interests of storm damage prevention and flood control. This presumption may be overcome only upon a clear showing that such other areas of Land Subject to Coastal Storm Flowage do not play a role in storm damage prevention or flood control and if the Issuing Authority makes a written determination to that effect.

When Land Subject to Coastal Storm Flowage is significant to storm damage prevention and flood control, the following characteristics are critical to the protection of those interests:

(a) The ability of the area to dissipate wave energy and to decrease the velocity of moving water;

(b) The ability of the area to receive coastal flood waters that spread laterally and landward and percolate downward into the soil and sediment;

(c) The ability of the area to allow flood water to flow across the landform without redirecting or channeling flow or increasing the velocity of the flood waters;

(d) The ability of the vegetative cover in the area to slow moving water, thereby reducing erosion and sedimentation; and

(e) the ability of the area to store flood waters that are confined by a natural or manmade feature (e.g., seawall, culvert, bridge, dike, bulkhead, revetment, or topographic depression) until such time as it can slowly return to the ocean or infiltrate into the ground.

(f) Some portions of LCSF have been so extensively altered by human activity that their important storm damage prevention and flood control functions have been effectively eliminated. Such previously altered areas include paved and other impervious surfaces. Such areas are not likely to be significant to storm damage prevention and flood control.

(2) Definitions. (See also definitions at 310 CMR 10.04, e.g., Land Subject to Coastal Storm Flowage, Primary Frontal Dune, Fill, Velocity Zone or V-Zone, Special Flood Hazard Area, Redevelopment, and definitions at 310 CMR 10.23).

A Zone or AE Zone mean areas subject to inundation by a 1%-annual-chance flood with wave heights and/or wave run-up depths less than 3 feet. The “E” in AE indicates that a predicted elevation of water has been determined and is designated on the FIRM.

AO Zone means an overwash area, usually sheet flow on sloping terrain, for which flood depths range from 1 to 3 feet and flow velocities and paths vary.

FIRM means a Flood Insurance Rate Map, prepared by FEMA as part of the National Flood Insurance Program, that depicts flood zones.

Historic Structure means any structure that is listed individually in the National Register of Historic Places, preliminarily determined by the U.S. Secretary of the Interior as meeting the requirements for individual listing on the National Register, or certified or preliminarily determined by the U.S. Secretary of the Interior as contributing to the historical significance of a registered historic district or a district preliminarily determined by the U.S. Secretary of the Interior to qualify as a registered historic district. Historic Structure also means any structure individually listed on the Massachusetts Register of Historic Places or individually listed on a local inventory of historic places in communities with historic preservation programs that have been certified by the Massachusetts Historical Commission.

Minimal Wave Action Zone or MiWA Zone means the area of Land Subject to Coastal Storm Flowage where base flood wave heights are less than 1.5 feet.

**Commented [A52]:** LCSF does not function in any meaningful way to store flood waters. Unlike riverine floodplains, the still water flooding level is set essentially entirely by the elevation of the adjacent coastal waters. Loss of apparent storage will not increase flood elevations measurably.

Further, during a 1% annual chance coastal flood event, the small volume of water that may be retained through percolation is insignificant in comparison to the volume of seawater inundation. NAIOP believes that this item should be removed from list of critical characteristics, and from all other subsections where it is referenced.

**Commented [A53]:** There are areas of LCSF that are not likely to be significant to storm damage prevention and flood control. NAIOP recommends that those be listed out, similar to the way exceptions are identified for wildlife habitat in Bordering Land Subject to Flooding (10.57(1)(a)3).

Moderate Wave Action Area or MoWA Zone means the area of Land Subject to Coastal Storm Flowage where base flood wave heights are equal to or greater than 1.5 feet but less than 3 feet.

One-Percent-Annual-Chance Flood (or 1% Annual Chance Flood) means the flood elevation having a one percent chance of being equaled or exceeded in a given year (formerly referred to as the 100-year flood).

Open Piles means the vertical structures supporting an elevated building, without grade beams below the base flood elevation, without concrete footings or pads, and where the space below the building is free of obstruction.

Substantial Damage means as defined and determined by the building official under 780 CMR: Massachusetts State Building Code.

Substantial Improvement means as defined and determined by the building official under 780 CMR: Massachusetts State Building Code.

Substantial Repair of a Foundation means as defined and determined by the building official under 780 CMR: Massachusetts State Building Code.

(3) Boundaries. The boundaries of the V-Zone, MoWA Zone, and MiWA Zone within Land Subject to Coastal Storm Flowage shall be determined by reference to the currently effective or preliminary FIRM (after the FEMA appeal period has passed) prepared by FEMA (except for any portion of a preliminary map that is the subject of an appeal to FEMA), including any letter of map revision obtained by the Applicant issued from FEMA. The boundary between the MoWA Zone and the MiWA Zone may be referred to as the Limit of Moderate Wave Action (LiMWA) on the FIRM. These boundaries shall be presumed accurate. [This presumption is rebuttable and, to show flood zones are more landward or expansive, may be overcome by credible evidence from a competent source, such as the methods and calculations in the most recent FEMA Guidelines and Specifications for Flood Risk Analysis and Mapping, other FEMA operating guidance, or information from the U.S. Geologic Survey Flood Event Viewer.] The Issuing Authority may consider historical evidence relevant to the surge of record or storm of record greater than the 1% Annual Chance Flood to determine the landward boundary of Land Subject to Coastal Storm Flowage shown on the FIRM. The Issuing Authority shall use the best available information in determining the boundaries for purposes of applying the performance standards.

(4) Application of Performance Standards. The performance standards at 310 CMR 10.36(5)-(7) apply to new development work within areas that are not previously altered and the performance standards at 310 CMR 10.36(8) apply to work in areas that are previously altered. Redevelopment within Land Subject to Coastal Storm Flowage which does not overlie another coastal Resource Area, with certain additions and exceptions:

- (a) The construction of new buildings proposed within the MoWA Zone or an AO Zone adjacent to a V-Zone shall be designed to allow flood water to flow completely unobstructed under the building during the 1% annual chance storm, with a minimum of

**Commented [A54]:** NAIOP recommends that This should include that the presumption is rebuttable in either direction (that the LiMWA could be further landward or seaward) based on credible evidence as described.

**Commented [A55]:** The term “new development” is not defined in the primary Definitions section (Section 10.04), nor the Definitions included in the Coastal Regulations section (Section 10.23), nor in the Definitions within the new LCSF regs (Section 10.36(2)).

In order to understand what projects qualify as “new development” this term should be defined, particularly where the Performance Standards set forth for “new development” in Sections 10.36(5) through (7) apply to activities within not only the V-Zone, but also the MoWA Zone, AO Zones adjacent to V Zones, and MiWA Zone, all of which cover a substantial portion of the Massachusetts Coastline, thereby impacting extensive private and public development and infrastructure.

**Commented [A56R55]:** The term “Redevelopment” is defined in Section 10.04, as amended by the proposed amendments, to mean “replacement, rehabilitation, or expansion of existing structures” and to apply to the “improvement of an Existing Public Roadway or reuse of previously developed areas for purposes of [the Riverfront Area Regulations] and 310 C.M.R. 10.36 governing work in Land Subject to Coastal Storm Flowage.” The new definition deletes the portion of the previous iteration of the definition, which included the redevelopment, rehabilitation, replacement or expansion of “roads” without reference to private or public (and therefore, would include private subdivision roads and private rights of ways). This amendment therefore eliminates a substantial classification of redevelopment that used to be included within the definition, meaning those types of activities would no longer be classified as “Redevelopment” within the meaning of the amendments.

To add confusion, the term “Redevelopment” is also defined in Section 10.36(8) using slightly different language: “Redevelopment means the replacement, rehabilitation, or expansion of existing structures, Improvement of an Existing Public Roadway, or reuse of previously developed areas. A previously developed area is one that contains structures or portions of structures, fill or other vertical impediments to flow, construction debris or pavement.”

To complicate matters further, a later sentence appears in Section 10.36(8) that reads: “Activities shall conform to the standards specified in [Sections 10.36(4) through (7)] when a site was previously developed but is not currently developed.” Here again, there is no accompanying definition clarifying what it means if a site is “previously” but “not currently” developed. To provide adequate notice of what is – and what is not – covered by these regulations, and to avoid misinterpretation by applicants and local conservation ...

**Commented [A57]:** There is no definition of “new buildings” and it is not clear whether this is solely referencing new buildings proposed on previously undeveloped land, or if it includes new buildings within a “Redevelopment” project (i.e., raze and replacement projects), particularly where Redevelopment is now newly defined to include “replacement, rehabilitation and expansion of existing structures” and thus would necessarily include “new buildings” where they “replace” existing buildings.

two feet above the 1% annual chance base flood elevation, or the elevation required to meet the standards of 310 CMR 10.28 (Coastal Dunes) or 310 CMR 10.29 (Barrier Beaches), whichever elevation is higher. Open Piles shall not be considered an obstruction. The requirement to elevate new buildings two feet above the 1% annual chance base flood elevation may be waived for properties where ~~demonstration can be made~~ it is demonstrated that, due to topography or proximity of surrounding structures, such buildings will not contribute to loss of Land Subject to Coastal Storm Flowage function of flood control and storm damage prevention to the project site and adjacent properties. This waiver is intended to be employed only in exceptional cases. Reconstruction or Redevelopment of buildings in the V-Zone shall conform to 310 CMR 10.36(8). The construction of new buildings in the V-Zone is prohibited.

- (b) For work on a Coastal Bank that does not supply sediment to Coastal Beach, Coastal Dune, or Barrier Beach, the provisions of 310 CMR 10.36(5) through (8) and 310 CMR 10.30 shall apply.
- (c) For work on a Rocky Intertidal Shore, the provisions of 310 CMR 10.36(5) through (8) and 310 CMR 10.31 shall apply.
- (d) For work in a Designated Port Area related to water-dependent industrial uses as defined in 310 CMR 9.12(2)(b), the provisions of 310 CMR 10.36 shall not apply.

Any other work proposed within both Land Subject to Coastal Storm Flowage and another Coastal Resource Area that is not covered by 310 CMR 10.36(4)(a)-(c) shall meet the performance standards for the other Coastal Resource Area and not the standards at 310 CMR 10.36(5) through (8).

(5) Adverse Effects in the V-Zone and MoWA Zone. No activity within a V-Zone or MoWA Zone shall have an adverse effect on the critical characteristics identified in 310 CMR 10.36(1)(a) through (e) by:

- (a) Impeding the ability of the area to dissipate wave energy and decrease the velocity of moving water by altering the area's topography, vegetation, soil, and sediment characteristics (e.g., roughness, composition, size, shape and density of material) and the erodibility, transportability, and permeability of the soil and sediment;
- (b) Causing unnatural redirection, refraction, diffraction, and/or reflection of coastal flood waters that cause or exacerbate storm damage from erosion, scour, and backrush;
- (c) Adding fill or a structure that redirects or channelizes flow and increases velocity of the flood waters, which may cause erosion, scour, and increased storm damage to adjacent areas;
- (d) Interfering with the ability of the vegetative cover in the area to reduce erosion, sedimentation, and pollution, particularly to other Resource Areas; or
- (e) Increasing flood elevations within a topographic depressions or confined basin where a manmade or natural feature significantly impedes or prevents the return flow of coastal flood waters.

**Commented [A58]:** It is not clear whether the definition of "Redevelopment" can be applied to mean that the newly amended regulations allow for the "replacement" (i.e., the tear down and reconstruction) of an existing building or whether this section prohibits all "new buildings," whether they are part of a Redevelopment project or not

**Commented [A59]:** A "no adverse effect" standard is not achievable if any structure is placed in the MoWA or V Zone, so unless excepted below, this means no work is allowed.

**Commented [A60R59]:** NAIOP believes that replacement of CESs should be allowed as well if that is what is needed to ensure structural integrity.



(6) Activities in the V-Zone and MoWA Zone. New construction of a building, including on Open Piles, is prohibited in the V-Zone. Notwithstanding the provisions of 310 CMR 10.36(5), the Issuing Authority may permit the activities identified in 310 CMR 10.36(6)(a) through (e) in the V-Zone or MoWA Zone, and the activity identified in 310 CMR 10.36(6)(f) only in the MoWA Zone, provided that the Applicant demonstrates, to the satisfaction of the Issuing Authority, that Best Available Measures are utilized to minimize adverse effects on all critical characteristics of Land Subject to Coastal Storm Flowage, and provided that all other performance standards for underlying Resource Areas are met:

- (a) Plantings compatible with natural vegetative cover;
- (b) Pedestrian walkways, designed to minimize the disturbance to the vegetative cover;
- (c) Commercial or public boat launching facilities, elevated open rack boat storage facilities, navigational aids, piers, docks, wharves and dolphins;
- (d) Repair and maintenance of an existing coastal engineering structure to preserve its structural integrity;
- (e) Septic systems in compliance with 310 CMR 15.213; provided that fill for new mounded systems is not allowed; and
- (f) A building on Open Piles, consistent with the elevation requirements of 310 CMR 10.36(4)(a), may be allowed in the MoWA Zone or AO Zone.; provided that the structure and any alterations associated with the structure are located outside the V-Zone and as far landward on the lot as practicable. Alterations shall be minimized to the extent practicable and designed to preserve or restore the natural topography and vegetative cover. Limited areas for vehicle access shall use crushed stone, shells, or similar material, without curbing or walls.

Where an AO Zone shown on the FIRM borders a Velocity Zone, it shall be subject to the performance standards established for the MoWA Zone.

(7) Activities in the MiWA Zone. Any Applicant proposing development in the Minimum Wave Action (MiWA) Zone shall use Best Available Measures to minimize adverse effects on the critical characteristics of Land Subject to Coastal Storm Flowage identified in 310 CMR 10.36(1)(a) through (e) by:

- (a) Allowing flood waters to spread inland and laterally by avoiding fill, structures, or topographic alterations which would increase velocity or redirect flow and cause increased erosion, channelization, storm damage, or flooding;
- (b) Avoiding fill, structures, or topographic alterations that would, in the judgment of the Issuing Authority, contribute incrementally to an increase in flood velocity, volume, or

**Commented [A61]:** Because the terms “new construction” and “new building” are not defined, it is not clear whether this provisions applies to a project that involves the “new construction of a building” in the Redevelopment context.

**Commented [A62]:** NAIOP recommends that the Department replace this subsection with a simple reference to water dependent uses as defined in Ch.91 regulations. Boat launching should not be limited to commercial or public, private boat launches should be allowed as well. This list of water dependent activities is far too narrow.

**Commented [A63]:** NAIOP believes that this is unnecessarily prescriptive and suggests deleting the language re: “AO zone,” “paving materials” and “as far landward as possible.”



elevation on other properties resulting in storm damage;

(c) Avoiding, or mitigating through flood easements or other means, any fill, structure, or topographic alteration that would increase flood velocity to the extent it would have a scour impact, volume, or elevations within a topographic depression or confined basin that can be identified using LiDAR or on a USGS topographic map where a manmade or natural feature significantly impedes or prevents the return flow of coastal flood waters;

(d) Preserving soils and vegetation at the site to reduce erosion to the maximum extent practicable and allow coastal flood waters to percolate downward;

(e) Reducing impervious surfaces to increase permeability and avoid increasing the velocity of floodwater;

(f) Managing stormwater as required by 310 CMR 10.05(6)(k) through (q); and/or

(g) Elevating any building on Open Piles or a solid foundation as allowed under the Massachusetts State Building Code. When, in the judgment of the Issuing Authority, wave energy across the site may be significant and the Project Site is within the 100 foot Buffer Zone of another coastal Resource Area, the Issuing Authority may require the elevation of the building on Open Piles at least two feet above the 1% annual chance base flood elevation, elevation with an open foundation to allow lateral movement of floodwater, or location of the building landward on the lot.

(8) Redevelopment Within Previously Developed Land Subject to Coastal Storm Flowage. Notwithstanding the provisions of 310 CMR 10.36(5) through (7) which apply to new development, the Issuing Authority may allow work to redevelop a previously developed area within Land Subject to Coastal Storm Flowage; provided that the work promotes resiliency by improving existing conditions to the maximum extent practicable. Redevelopment means the replacement, rehabilitation, or expansion of existing structures, Improvement of an Existing Public Roadway, or reuse of previously developed areas. A previously developed area is one that contains structures or portions of structures, fill or other vertical impediments to flow, construction debris, or pavement. Activities shall conform to the standards specified in 310 CMR 10.36(4) through (7) when a site was previously developed but has been used or maintained for five or more years and is not currently developed. Work to redevelop Land Subject to Coastal Storm Flowage shall conform to the following criteria:

(a) At a minimum, proposed work shall result in an improvement over existing conditions of the capacity of the Land Subject to Coastal Storm Flowage to protect the interests of storm damage prevention and flood control to the maximum extent practicable. Existing conditions may be improved by topographical alterations to provide flood storage, planting of vegetation, reducing impervious surfaces, increasing permeability, removing vertical impediments to flowage, and restoring or creating coastal Resource Areas where they do not currently exist or are currently covered by impervious surfaces. Where a previously developed coastal Resource Area has not been regulated under the applicable performance standards to protect the interests of flood control and storm damage prevention, the proposed

**Commented [A64]:** Activities in the MiWA Zone: (7) Subsections (a) through (g) are written in such a way that projects must use all of the listed measures, with no flexibility for waivers or alternative methods. NAIOP recommends that the “and” at the end of (f) be changed to “or”. NAIOP further recommend that a new subsection (h) be added that reads “or other acceptable methods to the Commission and Department”.

**Commented [A65]:** NAIOP believes that this term should be defined in the definitions section (10.36(2)) rather than here.

**Commented [A66]:** NAIOP suggests that “previously developed” be defined in the definitions, not here.

Further, sites are often not uniform. There are sites that were previously developed where only portions are not “currently developed,” i.e., there are some areas with vegetated cover (either planted or voluntary). This should still be considered Previously Developed Land. Further, it is not clear what is meant by a previously developed area that is not currently developed. The prior sentence which describes a previously developed area does not require current active use.

**Commented [A67]:** NAIOP is concerned that this list of ways existing conditions may be improved is too limited and recommends that it be presented as a list of examples rather than a definitive list. NAIOP believes that it is important that the regulations not be overly prescriptive so that designers can solve for the goals of controlling floods and preventing storm damage.

work shall restore those interests to the extent practicable;

(b) Stormwater management is implemented as required by 310 CMR 10.05(6)(k) through (q);

(c) No portion of any proposed new building may be located within the V-Zone and no portion of any newly reconstructed building may be located more seaward than its previously developed location within the MoWA Zone area of the lot. A building in the V-Zone that has been substantially damaged or is undergoing substantial improvement may be reconstructed only if elevated on Open Piles as specified in 310 CMR 10.36(4)(a) and if the building was constructed and received an occupancy permit prior to the effective date of this regulation. No reconstructed building may be larger than the building it replaces, so that the overall area devoted to structures below the BFE building footprint on the site is not increased;

(d) Mitigation, such as flood easements or other means, is implemented for any fill, structure, or topographic alteration that would increase flood velocity, volume, or elevations within a confined basin that can be identified using LiDAR or on a USGS topographic map, where a manmade or natural feature significantly impedes or prevents the return flow of coastal flood waters;

(e) Additional elevation shall be provided in the MoWA and MiWA Zones where the building official has determined under 780 CMR: Massachusetts State Building Code that the project includes certain workany of the following:- This work includes: alteration of existing buildings with new foundations, replacement or Substantial Repair of a Foundation, repairs of Substantial Damage, or Substantial Improvement. Within the MoWA Zone, buildings shall be elevated to allow flood water to flow completely unobstructed under the building during the 1% annual chance storm, with a minimum of two feet above the 1% annual chance base flood elevation. Within the MiWA Zone, buildings shall be elevated with or without Open Piles as allowed under the Massachusetts State Building Code. When, in the judgment of the Issuing Authority, wave energy across the site may be significant and the Project Site is within the MiWA Zone and within another coastal Resource Area or the 100-foot Buffer Zone of another coastal Resource Area, the Issuing Authority may require the elevation of the building on Open Piles at least two feet above the 1% annual chance base flood elevation. Historic structures are exempt from the elevation requirements identified in 310 CMR 10.36(8);

(f) The placement of fill for flood control purposes may be allowed in a MiWA Zone where impervious surfaces have predominantly replaced the natural coastal floodplain; provided that there shall be no redirection of wave energy or of flood waters to other properties, and other requirements of 310 CMR 10.36(7) and (8) have been met with the exclusion of 310 CMR 10.36(7)(a) and 10.36(8)(a); and/or

(g) The elevation in height of an existing seawall or the construction of a berm with associated fill for flood control purposes in a V-Zone or a MoWA Zone of Land Subject to Coastal Storm Flowage in an area where impervious surfaces have predominantly replaced the natural coastal floodplain may be allowed when conducted by the public agency responsible for the infrastructure, or in the case of private seawalls or berms,

**Commented [A68]:** This implies that where a previously developed coastal resource area HAS been regulated under applicable performance standards (assuming this would happen at some point in the future when additional work is being proposed on a site for which an OOC was previously issued under these regulations), then the work is not required to restore the interests of flood control and storm damage prevention.

**Commented [A69]:** NAIOP requests that this section be clarified to distinguish a “new” reconstructed building versus new construction. This language appears to be saying that if an existing building lies within the V-Zone it cannot be torn down and reconstructed (i.e., replaced) with a new building; this is directly contradictory to the definition of Redevelopment, which includes the “replacement, rehabilitation, or expansion of existing structures”. See, Sections 10.04 and 10.36(4).

Notably, to comply with current building code provisions, new buildings in V Zones must be elevated. As such, when a property owner wishes to “redevelop” an existing building in a V zone, they can’t just rebuild in its existing footprint on its existing foundation, they must elevate it. In most instances to do this and meet code, the existing building is torn down and a “new building” constructed in its place on pilings. Yet, the proposed amendments prevent the construction of “new buildings” in V zones and thus effectively prevent the

**Commented [A70]:** This provision is directly contrary to the Redevelopment provisions (which envision the authorization of replacement structures), as well as the new Section 10.10(15), which states that the new LCSF regulations “shall apply to Requests for Determinations of Applicability, Abbreviated Notices of Resource Area Delineation and Notices of Intent filed on or after the

**Commented [A71]:** It is not clear whether this prohibition is applicable in all flood zones or merely V-Zones. It is also directly contrary to the definition of Redevelopment, which expressly allows for the “expansion” of existing buildings. Moreover, as has been repeatedly illustrated through application of the numerous local floodplain bylaw provisions enacted throughout the Commonwealth which

**Commented [A72]:** It is unclear to what elevation buildings shall be elevated. What is meant by “as allowed under” the MA Code? Does this mean that even non-residential buildings must be elevated to the BFE, and dry-floodproofing isn’t allowed? If so, this effectively eliminates any commercial construction and most other construction where (1) you have an elevator as the elevator pit will

**Commented [A73]:** It is unclear to NAIOP what methodology and criteria is available for a Commission to use to determine if the wave energy “may be significant”.

**Commented [A74]:** Areas that were filled as part of historic land-making efforts would never have constituted a natural coastal floodplain, whether they or not they are currently paved. How does this subsection apply to such areas?

It is possible that an activity categorized under (f) that would

**Commented [A75]:** NAIOP is concerned with this language because it is not possible for some activities categorized under (g) (and possibly under (f)) to meet this standard in the case that the activity would eliminate the resource area.

~~(g) when supported by the municipality. The Issuing Authority shall determine that the proposed work will achieve the objectives of promoting resiliency and effective flood control in the area while preserving floodplain functions to the extent practicable. The work shall not redirect wave energy or flood waters to other properties or impede the return flow of flood waters. The project shall meet other requirements of 310 CMR 10.36(8) and any public access requirements established under 310 CMR 9.00: Waterways; provided that there are no adverse effects on any Resource Area or adjacent properties. Salt Marsh or Coastal Dune created through passive or active migration shall be subject to the provisions of 310 CMR 10.32 or 310 CMR 10.28, respectively. Work in Salt Marsh or Coastal Dune may be proposed under 310 CMR 10.24(8): Ecological Restoration Limited Project.~~

(h) Or other methods acceptable to the Commission

(9) Salt Marsh and Coastal Dune Migration. Notwithstanding other provisions of 310 CMR 10.36(4) through (8), the Issuing Authority may issue an Order of Conditions permitting work to encourage the migration of Salt Marsh or Coastal Dune in Land Subject to Coastal Storm Flowage. Such work may be within the Buffer Zone of Salt Marsh or Buffer Zone of Coastal Dune where Land Subject to Coastal Storm Flowage overlies the Buffer Zone; provided that there are no adverse effects on any Resource Area or adjacent properties. Salt Marsh or Coastal Dune created through passive or active migration shall be subject to the provisions of 310 CMR 10.32 or 310 CMR 10.28, respectively. Work in Salt Marsh or Coastal Dune may be proposed under 310 CMR 10.24(8): Ecological Restoration Limited Project.

(10) Protection of Rare Species Habitat. Notwithstanding the provisions of 310 CMR 10.36(4) through (9), no project may be permitted which will have any adverse effect on specified habitat sites of rare vertebrate or invertebrate species, as identified by procedures established under 310 CMR 10.37.

### 10.37: Estimated Habitats of Rare Wildlife (for Coastal Wetlands)

If a project is within estimated habitat which is indicated on the most recent Estimated Habitat Map of State-listed Rare Wetlands Wildlife (if any) published by the Natural Heritage and Endangered Species Program (hereinafter referred to as the Program), a fully completed copy of the Notice of Intent (including all plans, reports, and other materials required under 310 CMR 10.05(4)(a) and (b)) for such project shall be sent to the Program via the U.S. Postal Service by express or priority mail (or otherwise sent in a manner that guarantees delivery within two days). Such copy shall be sent no later than the date of the filing of the Notice of Intent with the issuing authority. Proof of timely mailing or other delivery to the Program of the copy of such Notice of Intent shall be included in the Notice of Intent which is submitted to the issuing authority and sent to the Department's regional office.

Estimated Habitat Maps shall be based on the estimated geographical extent of the habitats of all state-listed vertebrate and invertebrate animal species for which a reported occurrence within the last 25 years has been accepted by the Program and incorporated into its official data base.

Within 30 days of the filing of such a Notice of Intent with the issuing authority, the Program shall determine whether any state-listed species identified on the

**Commented [A76]:** NAIOP suggests this revision based on the fact that the goal of the activities described in (g) is to eliminate the floodplain.

**Commented [A77]:** It is unlikely that an activity categorized under (g) could meet standard (8)(a) because the purpose of the activity would be to eliminate LSCSF.

NAIOP also hopes that the Department can clarify if the applicant only has to demonstrate that there are no adverse effects under current climate conditions? Or must they demonstrate that there would be no adverse effects in the future as well (and if so, at what date/amount of SLR)? While the preface "encourages" applicants to consult MC-FRM maps, it confirms that LSCSF is based on FEMA's maps of current flood risk. However, 10.24(b) states: "In planning shoreline protection projects, Applicants shall consult the resilientma.org website for the most current mapping and other available information related to shoreline change and sea level rise or similarly reliable local data acceptable to the Issuing Authority." What does this mean for applicants?

**Commented [A78]:** NAIOP suggests this deletion because these sentences are repeated in 10.36(9), which deals specifically with Salt March and Coastal Dune Migration and applies to previously developed as well as undeveloped areas.

**Commented [A79]:** Requiring private projects to get municipal support is an unnecessary burden and serves no purpose for WPA purposes. Either it meets the interests of the act or it does not, and municipal support should not be required.

**Commented [A80]:** NAIOP is concerned that (a) through (g) are written in such a way that projects must use all of the listed measures, with no flexibility for waivers or alternative methods. We recommend that the "and" at the end of (f) be changed to "or". NAIOP further recommend that a new subsection (h) be added that reads "or other methods acceptable to the Commission".

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aforementioned map are likely to continue to be located on or near the site of the original occurrence and, if so, whether the area to be altered by the proposed project is in fact part of such species' habitat. Such determination shall be presumed by the issuing authority to be correct. Any proposed project which would alter a resource area that is not located on the most recent Estimated Habitat Map (if any) provided to the conservation commission, shall be presumed not to be within a rare species' habitat. Both of these presumptions are rebuttable and may be overcome upon a clear showing to the contrary. If the issuing authority fails to receive a response from the Program within 30 days of the filing of such a Notice of Intent, a copy of which was received by the Program in a timely manner, it shall issue its Order of Conditions based on available information; however, the fact that a proposed project would alter a resource area that is located on an Estimated Habitat Map shall not be considered sufficient evidence in itself that such project is in fact within the habitat of a rare species.

If the Program determines that a resource area which would be altered by a proposed project is in fact within the habitat of a state-listed species, it shall provide in writing to the applicant and to the Conservation Commission and the Department, the identification of the species whose habitat would be altered by the proposed project, and all other relevant information which the Program has regarding the species' location and habitat requirements, insofar as such information may assist the applicant and the issuing authority to determine whether the project is or can be designed so as to meet the performance standard set in 310 CMR 10.37.

Notwithstanding 310 CMR 10.24(7) and 10.25 and 10.27 through 10.36~~5~~, if a proposed project is found by the issuing authority to alter a ~~R~~esource ~~A~~rea which is part of the habitat of a state-listed species, such project shall not be permitted to have any short or long term adverse effects on the habitat of the local population of that species. A determination of whether or not a proposed project will have such an adverse effect shall be made by the issuing authority. However, a written opinion of the Program on whether or not a proposed project will have such an adverse effect shall be presumed by the issuing authority to be correct. This presumption is rebuttable and may be overcome upon a clear showing to the contrary.

The conservation commission shall not issue an Order of Conditions under 310 CMR 10.05(6) regarding any such project for at least 30 days after the filing of the Notice of Intent, unless the Program before such time period has elapsed has either determined that the resource area(s) which would be altered by the project is not in fact within the habitat of a state-listed species or, if it has determined that such resource area(s) is in fact within rare species habitat, rendered a written opinion as to whether the project will have an adverse effect on that habitat.

Notwithstanding any other provision of 310 CMR 10.37, should an Environmental Impact Report be required for a proposed project under the M.G.L. c. 60, §§ 6 through 62H, as determined by 301 CMR 11.00: MEPA Regulations the performance standard established under 310 CMR 10.37 shall only apply to proposed projects which would alter the habitat of a rare species for which an occurrence has been entered into the official data base of the Massachusetts Natural Heritage and Endangered Species Program prior to the time that the Secretary of the Executive Office of Energy and Environmental Affairs has determined, in accordance with the provisions of 301

CMR 11.09(4), that a final Environmental Impact Report for that project adequately and properly complies with the M.G.L. c. 30, §§ 6 through 62H (unless, subsequent to that determination, the Secretary requires supplemental information concerning state-listed species, in accordance with the provisions of 301 CMR 11.17: *Transition Rules*).

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#### **10.53: General Provisions**

(1) If the Issuing Authority determines that a Resource Area is significant to an interest identified in M.G.L. c. 131, § 40 for which no presumption is stated in the Preamble to the applicable section, the Issuing Authority shall impose such conditions as are necessary to contribute to the protection of such interests. For work in the Buffer Zone subject to review under 310 CMR 10.02(2)(b)3., the Issuing Authority shall impose conditions to protect the interests of the Act identified for the adjacent Resource Area. The potential for adverse impacts to Resource Areas from work in the Buffer Zone may increase with the extent of the work and the proximity to the Resource Area. The Issuing Authority may consider the characteristics of the Buffer Zone, such as the presence of steep slopes, that may increase the potential for adverse impacts on Resource Areas. Conditions may include limitations on the scope and location of work in the Buffer Zone as necessary to avoid alteration of Resource Areas. The Issuing Authority may require erosion and sedimentation controls during construction, a clear limit of work, and the preservation of natural vegetation adjacent to the Resource Area and/or other measures commensurate with the scope and location of the work within the Buffer Zone to protect the interests of M.G.L. c. 131, § 40. Where a Buffer Zone has already been developed, the Issuing Authority may consider the extent of existing development in its review of subsequent proposed work and, where prior development is extensive, may consider measures such as the restoration of natural vegetation adjacent to a Resource Area to protect the interest of M.G.L. c. 131, § 40. The purpose of preconstruction review of work in the Buffer Zone is to ensure that adjacent Resource Areas are not adversely affected during or after completion of the work.



(2) When the site of a proposed project is subject to a Restriction Order which has been duly recorded under the provisions of M.G.L. c. 131, § 40A, such a project shall conform to both the provisions contained in that Order and 310 CMR 10.51 through 10.60.

(3) Notwithstanding the provisions of 310 CMR 10.54 through 10.58 and 10.60, the Issuing Authority may issue an Order of Conditions and impose such conditions as will contribute to the interests identified in M.G.L. c. 131, § 40 permitting the following limited projects (although no such project may be permitted which will have any adverse effect on specified habitat sites of Rare Species, as identified by procedures established under 310 CMR 10.59). In determining whether to exercise its discretion to approve the limited projects listed in 310 CMR 10.53(3), the Issuing Authority shall consider the following factors: the magnitude of the alteration and the significance of the project site to the interests identified in M.G.L. c. 131, § 40, the availability of reasonable alternatives to the proposed activity, the extent to which adverse impacts are minimized, and the extent to which mitigation measures, including replication or restoration, are provided to contribute to the protection of the interests identified in M.G.L. c. 131, § 40.

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...

(u) The construction of a Public Shared Use Path on an abandoned rail bed of minimal practical width within the footprint of the rail bed, or the minor improvement, repair, and/or replacement of an existing Public Shared Use Path within the footprint of the rail bed, provided that it is carried out in accordance with the following conditions and any additional conditions deemed necessary by the Issuing Authority. The Issuing Authority may approve a proposed route outside the footprint of the rail bed if a different alignment within the right-of-way is advantageous to reduce Resource Area alterations. Public Shared Use Paths are accessible paved and unpaved paths restricted solely to pedestrian and non-motorized vehicle travel (with the exception of wheelchairs, other power-driven mobility devices by individuals with a mobility disability, electric bicycles and electric scooters, emergency vehicles, and vehicles performing periodic maintenance). Accessible means a surface that complies with the Americans with Disabilities Act regulations, 28 CFR Part 35 and Part 36. Public Shared Use Paths do not include sidewalks intended solely for pedestrian use and do not include parking areas for

motorized vehicles. Such projects shall be designed, constructed, implemented, operated, and maintained to meet all of the following standards:

1. No Public Shared Use Path, associated structure or activity shall restrict flow so as to cause an increase in flood stage or velocity.
2. Compensatory flood storage shall be implemented in accordance with the standards of 310 CMR 10.57(4)(a)1. for all flood storage volume that will be lost within the Special Flood Hazard Area.
3. Construction work in Resource Areas shall occur only during those periods when the ground is sufficiently frozen, dry, or otherwise stable to support the equipment being used.
4. During construction, slash, branches, and limbs resulting from cutting and removal operations shall not be placed within 25 feet of the bank or any body of water.
- 4.5. For any permanent alterations to Resource Areas, mitigation measures shall be implemented that contribute to the protection of the interests identified in M.G.L. c. 131 § 40, either in accordance with existing performance standards to the maximum extent practicable or to an equivalent level of environmental protection where square footage is not a relevant measure, such as restoration or preservation. Mitigation may be offsite, but must be considered in the following order: same Project Site, same Project Locus, adjacent site, same wetland Resource Area, same municipality, and the same stream reach within the Hydrologic Unit Map (HUC) 12 sub-watershed. All instances of Offsite Mitigation for Redevelopment shall be within the same HUC 12 sub-watershed.
- 2-6. All temporary alterations to Resource Areas and Buffer Zones shall be restored to preexisting hydrology and, topography, and- replanted with noninvasive native vegetation.
7. The Applicant must demonstrate to the satisfaction of the Issuing Authority that any stream crossings meet the general performance standards for Bank in 310 CMR 10.54(4)(a) and Land under Water Bodies and Waterways (LUWW) in 310 CMR 10.56(4)(a).
8. A separate NOI may be filed either concurrently to the filing of the NOI for the project, or after the ~~QOC~~ Order is issued, for vegetation management and other activities as defined in 310 CMR 10.02(2)(b)2.r.i.-v. in wetland Resource Areas. Orders of Conditions shall be valid for five years and may be extended by the issuing authority for one or more years up to five additional years, pursuant to 310 CMR 10.05(8).
- 3-9. After a Certificate of Compliance is obtained, minor activities as defined at 310 CMR 10.02(2)(b)2. may take place in the Buffer Zone and Riverfront Area to provide for vegetation management; provided that any such work is restricted to hand methods to the maximum extent practicable. No snow clearing beyond the shoulder shall occur, and the application of deicing and anti-icing agents and sanding is prohibited.
10. Stormwater shall be managed to the Maximum Extent Practicable in accordance with 310 CMR 10.05(6)(m) and (o). A long-term operations and



maintenance plan prepared in accordance with 310 CMR 10.05(6)(k)9. Shall also be provided.

11. Best Management Practices shall be used to minimize adverse impacts during construction, including prevention of erosion and siltation of adjacent water bodies and wetlands in accordance with the construction period erosion, sedimentation and pollution prevention plan (310 CMR 10.05(6)(k)8.).

(4) Ecological Restoration Limited Projects.

**[NOTE TO REVIEWERS: MassDEP IS SETTING FORTH IN THIS DOCUMENT PROPOSED AMENDMENTS TO THE CURRENT REGULATION AT 310 CMR 10.00 IN REDLINE AND STRIKEOUT FORMAT. REDLINES SHOW ADDITIONS TO THE CURRENT REGULATORY TEXT AND STRIKEOUTS SHOW PROPOSED DELETIONS. SINCE THE REGULATION IS VERY LONG, MassDEP IS PUBLISHING ONLY THOSE PORTIONS OF THE REGULATION FOR WHICH THE AGENCY IS PROPOSING TO MAKE AMENDMENTS. MassDEP HAS INCLUDED TEXT JUST PRIOR TO (and in some cases text just after) NEW INSERTED TEXT TO MAKE IT CLEAR WHERE THE NEW TEXT IS PROPOSED TO BE INSERTED INTO THE CURRENT REGULATIONS. THERE ARE NO EDITS TO SECTIONS 10.53(4)(a) through 10.53(4)(e)3. AND THESE SECTIONS WILL REMAIN THE SAME AS EXISTING REGULATION.]**

...

(e) Types of Ecological Restoration Limited Projects.

...

4. Tidal Restoration Projects. A project that will restore tidal flow and that does not meet all the eligibility criteria set forth in 310 CMR 10.13 may be permitted as an Ecological Restoration Limited Project provided that in addition to the eligibility criteria set forth in 310 CMR 10.53(4)(a) through (d), the project, including any proposed flood mitigation measures, will not significantly increase flooding or storm damage to the built environment, including without limitation, buildings, wells, septic systems, roads or other man-made structures or infrastructure,

5. Other Restoration Projects. An Ecological Restoration Project that is not listed in 310 CMR 10.53(4)(e)2. through 4., that will improve the natural capacity of a Resource Area(s) to protect the interests identified in M.G.L. c. 131, s. 40, may be permitted as an Ecological Restoration Limited Project provided that the project meets the eligibility criteria set forth in 310 CMR 10.53(4)(a) through (d). Such projects include, but are not limited to, the restoration, enhancement or management of Rare Species habitat, the restoration of hydrologic and habitat connectivity, the removal of aquatic nuisance vegetation to retard pond and lake eutrophication, the thinning or planting of vegetation to improve habitat value, riparian corridor re-naturalization, river floodplain reconnection, in-stream habitat

enhancement, fill removal and regrading, flow restoration, and the installation of fish passage structures.

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#### **10.57: Land Subject to Flooding (Bordering and Isolated Areas)**

...

##### **(2) Definitions, Critical Characteristics and Boundaries.**

###### **(a) Bordering Land Subject to Flooding.**

1. Bordering Land Subject to Flooding is an area with low, flat topography adjacent to and inundated by flood waters rising from creeks, rivers, streams, ponds or lakes. It extends from the banks of these waterways and water bodies; where a bordering vegetated wetland occurs, it extends from said wetland.
2. The topography and location of Bordering Land Subject to Flooding specified in the foregoing 310 CMR 10.57(2)(a)1. are critical to the protection of the interests specified in 310 CMR 10.57(1)(a). Where Bordering Land Subject to Flooding is significant to the protection of wildlife habitat, the physical characteristics as described in the foregoing 310 CMR 10.57(1)(a)(3) are critical to the protection of that interest.
3. The boundary of Bordering Land Subject to Flooding is the estimated maximum lateral extent of flood water which will theoretically result from the statistical 1% annual chance flood (formerly referred to as the 100-year flood (the 1% annual chance flood)). ~~frequency storm~~. Said boundary shall be that determined by reference to the most recently available flood profile data prepared for the community within which the work is proposed under the National Flood Insurance Program (NFIP, currently administered by the Federal Emergency Management Agency, successor to the U.S. Department of

Housing and Urban Development). Said boundary, so determined, shall be presumed accurate. This presumption is rebuttable and may be overcome only by credible evidence from a registered professional engineer or other professional competent in such matters.

Where NFIP Profile data is unavailable, the boundary of Bordering Land Subject to Flooding shall be the maximum lateral extent of flood water which has been observed or recorded. In the event of a conflict, the issuing authority ~~shall~~<sup>may</sup> require the applicant to determine the boundary of Bordering Land Subject to Flooding by engineering calculations which shall be:

- a. based upon ~~a design storm of seven inches of precipitation in 24 hours~~ the upper confidence of the 100-year 24-hour storm precipitation frequencies listed in the National Oceanic and Atmospheric Administration (NOAA) Atlas 14 Volume 10 (Version 3.0 or later versions are permissible) multiplied by 0.9 at the geographic outlet of the river, stream, bordering vegetated wetland, lake, or pond, from which the Bordering Land Subject to Flooding arises. The NOAA Type C or D storm distribution (U.S. National Resources Conservation Service Engineering Field Handbook Chapter 2, National Engineering Handbook Part 650, Massachusetts Supplement for the Implementation of NOAA Atlas 14, Volume 10 Rainfall Data, dated June 17, 2016) or a customized storm distribution developed using the NOAA Atlas 14 upper confidence multiplied by 0.9 shall be utilized. (i.e., a ~~The Type III Rainfall, as defined by the U.S. Soil Conservation Service Natural Resource Conservation Service) shall not be utilized;~~
  - b. the hydrologic computations shall be based upon the standard methodologies set forth in ~~the U.S. Natural Resources Conservation Service (NRCS) Technical Release WinTR20 Project Formulation Method (Version 3.20 or later versions are permissible) or WinTR55 Small Watershed Hydrology Method (Version 1.00.10 or later versions are permissible). U.S. Soil Conservation Service Technical Release No. 55, Urban Hydrology for Small Watersheds and Section 4 of the U.S. Soil Conservation Service, National Engineering Hydrology Handbook.~~ The hydraulic computations shall be conducted using the U.S. Army Corps of Engineers Hydrologic Engineering Center River Analysis System (HEC-RAS) 6.0 or later versions are permissible, using steady state flow; and
  - c. prepared by a registered professional engineer or other professional competent in such matters.
4. The boundary of the ten-year floodplain is the estimated maximum lateral extent of the flood water which will theoretically result from the statistical ten-year frequency ~~storm~~<sup>flood</sup>. Said boundary shall be determined as specified under 310 CMR 10.57(2)(a)3., except that where NFIP Profile data is unavailable, the boundary shall be the maximum lateral extent of flood water which has been observed or recorded during a ten year frequency ~~flood~~<sup>storm</sup> and, in the event of

conflict, engineering calculations under 310 CMR 10.57(2)(a)3.a. shall be based on a design storm of 4.4 inches (4.8 inches) of precipitation in 24 hours. The upper confidence of the 10-year 24-hour storm precipitation frequencies listed in the National Oceanic and Atmospheric Administration (NOAA) Atlas 14 Volume 10 (Version 3.0 or later versions are permissible) multiplied by 0.9 at the geographic outlet of the river, stream, bordering vegetated wetland, lake, or pond, from which the Bordering Land Subject to Flooding arises, using the storm distribution, hydrologic methods, and hydraulic methods specified in 310 CMR 10.57(3)(a)-(c).

5. The only portions of this resource area which shall be presumed to be vernal pool habitat are those that have been certified as such by the Massachusetts Division of Fisheries and Wildlife, where said Division has forwarded maps and other information needed to identify the location of such habitat to the Conservation Commission and DEP prior to the filing of each Notice of Intent or Abbreviated Notice of Intent regarding that portion. Such presumption is rebuttable, and may be overcome upon a clear showing to the contrary. However, notwithstanding any other provision of 310 CMR 10.57, should an Environmental Impact Report be required for a proposed project as determined by 301 CMR 11.00: *MEPA Regulations* the performance standard established under this Section regarding vernal pool habitat shall only apply to proposed projects which would alter such habitats as have been identified prior to the time that the Secretary of the Executive Office of Energy and Environmental Affairs has determined, in accordance with the provisions of 301 CMR 11.09(4): *Eligible Projects*, that a final Environmental Impact Report for that project adequately and properly complies with the M.G.L. c. 30, § 6 through 62H (unless, subsequent to that determination, the Secretary requires supplemental information concerning vernal pool habitat, in accordance with the provisions of 301 CMR 11.17: *Transition Rules*).

6. The boundary of a vernal pool ~~habitat~~ is that certified by the Massachusetts Division of Fisheries and Wildlife. In the event of a conflict of opinion, or the lack of a clear boundary delineation certified by the Division of Fisheries and Wildlife, the applicant may submit an opinion-certified evidence from a competent source, such as evidence that would be sufficient to certify a pool if submitted to the Division of Fisheries and Wildlife, by a registered professional engineer, supported by engineering calculations, as to the ~~probable~~ extent of said ~~habitat~~ boundary of the certified or uncertified vernal pool based on field observations. Competent sources include Conservation Commissions, Department staff, and persons meeting the criteria specified in 310 CMR 10.60(1)(b). Said calculations shall be prepared in accordance with the general requirements set forth in 310 CMR 10.57(2)(a)3.a. through e., except that the maximum extent of said water shall be based upon the total volume (rather than peak rate) of run-off from the drainage area contributing to the vernal pool and shall be further based upon a design storm of 2.4 inches (2.6 inches) of precipitation in 24 hours. Vernal pool habitat shall include the area within 100 feet of the boundary of the

vernal pool itself, insofar as such area is contained within the boundaries of this  
Resource Area.

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#### **10.58: Riverfront Area**

**[NOTE TO REVIEWERS: MassDEP IS SETTING FORTH IN THIS DOCUMENT PROPOSED AMENDMENTS TO THE CURRENT REGULATION AT 310 CMR 10.00 IN REDLINE AND STRIKEOUT FORMAT. REDLINES SHOW ADDITIONS TO THE CURRENT REGULATORY TEXT AND STRIKEOUTS SHOW PROPOSED DELETIONS. SINCE THE REGULATION IS VERY LONG, MassDEP IS PUBLISHING ONLY THOSE PORTIONS OF THE REGULATION FOR WHICH THE AGENCY IS PROPOSING TO MAKE AMENDMENTS. MassDEP HAS INCLUDED TEXT JUST PRIOR TO (and in some cases text just after) NEW INSERTED TEXT TO MAKE IT CLEAR WHERE THE NEW TEXT IS PROPOSED TO BE INSERTED INTO THE CURRENT REGULATIONS. THERE ARE NO EDITS TO SECTIONS 10.58(1) AND THIS SECTION WILL REMAIN THE SAME AS EXISTING REGULATION.]**

...

#### **(2) Definitions, Critical Characteristics and Boundaries.**

(a) A Riverfront Area is the area of land between a river's mean annual high-water line and a parallel line measured horizontally. The riverfront area may include or overlap other Resource Areas or their buffer zones. The riverfront area does not have a buffer zone.

1. A river is any natural flowing body of water that empties to any ocean, lake, pond, or other river and which flows throughout the year. Rivers include streams (see 310 CMR 10.04: Stream) that are perennial because surface water flows within them throughout the year. Intermittent streams are not rivers as defined herein because surface water does not flow within them throughout the year. When surface water is not flowing within an intermittent stream, it may remain in isolated pools or it may be

absent. When surface water is present in contiguous and connected pool/riffle systems, it shall be determined to be flowing. Rivers begin at the point an intermittent stream becomes perennial or at the point a perennial stream flows from a spring, pond, or lake. Downstream of the first point of perennial flow, a stream normally remains a river except where interrupted by a lake or pond. Upstream of the first point of perennial flow, a stream is normally intermittent.

- a. A river or stream shown as perennial on the current United States Geological Survey (USGS) or more recent map provided by the Department is perennial.
- b. A river or stream shown as intermittent or not shown on the current USGS map or more recent map provided by the Department, that has a watershed size greater than or equal to one square mile, is perennial.
- c. A stream shown as intermittent or not shown on the current USGS map or more recent map provided by the Department, that has a watershed size less than one square mile, is intermittent unless:
  - i. The stream has a watershed size of at least  $\frac{1}{2}$  (0.50) square mile and has a predicted flow rate greater than or equal to 0.01 cubic feet per second at the 99% flow duration using the USGS Stream Stats method. The issuing authority shall find such streams to be perennial; or
  - ii. When the USGS StreamStats method cannot be used because the stream does not have a mapped and digitized centerline (including but not limited to streams located in the following basins: North Coastal Basin, Taunton Basin, Buzzards Bay Basin, Cape Cod and Islands Basin, and that portion of the South Coastal Basin that is south of the Jones River sub-basin), and the stream has a watershed size of at least  $\frac{1}{2}$  (0.50) square mile, and the surficial geology of the contributing drainage area to the stream at the ~~P~~roject ~~S~~ite contains 75% or more stratified drift, the issuing authority shall find such streams to be perennial. Stratified drift shall mean sand and gravel deposits that have been layered and sorted by glacial meltwater streams. Areal percentages of stratified drift may be determined using USGS surficial geologic maps, USGS Hydrological Atlases, Massachusetts Geographical Information System (MassGIS) surficial geology data layer, or other published or electronic surficial geological information from a credible source.
- d. Notwithstanding 310 CMR 10.58(2)(a)1.a. through c., the issuing authority shall find that any stream is intermittent based upon a documented field observation that the stream is not flowing. A documented field observation shall be made by a competent source and shall be based upon an observation made at least once per day, over four days in any consecutive 12 month period, during a non-drought period on a stream not significantly affected by drawdown from withdrawals of water supply wells, direct withdrawals, impoundments, or other human-made flow reductions or diversions. Field observations made after December 20, 2002 shall be documented by field notes and by dated photographs or video. Field observations made prior to December 20, 2002 shall be documented by credible evidence. All field observations shall be submitted to the issuing authority with a statement signed under the penalties of perjury attesting

to the authenticity and veracity of the field notes, photographs or video and other credible evidence. Department staff, conservation commissioners, and conservation commission staff are competent sources; issuing authorities may consider evidence from other sources that are determined to be competent.

e. Rivers include the entire length and width to the mean annual high-water line of the major rivers (Assabet, Blackstone, Charles, Chicopee, Concord, Connecticut, Deerfield, Farmington, French, Hoosic, Housatonic, Ipswich, Merrimack, Millers, Nashua, Neponset, Parker (Essex County), Quinebaug, Shawsheen, Sudbury, Taunton, Ten Mile, and Westfield).

f. Rivers include perennial streams that cease to flow during periods of extended drought. Periods of extended drought for purposes of 310 CMR 10.00 shall be those periods, in those specifically identified geographic locations, determined to be at the "~~Advisory Level 1 – Mild Drought~~" or more severe drought level by the ~~Massachusetts Drought Management Task Force, as established by Secretary of the Executive Office of~~ Energy and Environmental Affairs ~~and the Massachusetts Emergency Management Agency in 2001~~, in accordance with the Massachusetts Drought Management Plan ~~(MDMP), dated September 2019~~. Rivers and streams that are perennial under natural conditions but are significantly affected by drawdown from withdrawals of water supply wells, direct withdrawals, impoundments, or other human-made flow reductions or diversions shall be considered perennial.

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...

(4) General Performance Standard. Where the presumption set forth in 310 CMR 10.58(3) is not overcome, the applicant shall prove by a preponderance of the evidence that there are no practicable and substantially equivalent economic alternatives to the proposed project with less adverse effects on the interests identified in M.G.L. c.131 § 40 and that the work, including proposed mitigation, will have no significant adverse impact on the riverfront area to protect the interests identified in M.G.L. c. 131 § 40. In the event that the presumption is partially overcome, the issuing authority shall make a written determination setting forth its grounds in the Order of Conditions and the partial rebuttal shall be taken into account in the application of 310 CMR



10.58 (4)(d)1.a. and c.; the issuing authority shall impose conditions in the Order that contribute to the protection of interests for which the riverfront area is significant.

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...

(d) **No Significant Adverse Impact.** The work, including proposed mitigation measures, must have no significant adverse impact on the riverfront area to protect the interests identified in M.G.L. c. 131, § 40.

1. Within 200 foot riverfront areas, the issuing authority may allow the alteration of up to 5000 square feet or 10% of the riverfront area within the lot, whichever is greater, on a lot recorded on or before October 6, 1997 or lots recorded after October 6, 1997 subject to the restrictions of 310 CMR 10.58(4)(c)2.b.vi., or up to 10% of the riverfront area within a lot recorded after October 6, 1997, provided that:

a. At a minimum, a 100 foot wide area of undisturbed vegetation is provided. This area shall extend from mean annual high-water along the river unless another location would better protect the interests identified in M.G.L. c. 131 § 40. If there is not a 100 foot wide area of undisturbed vegetation within the riverfront area, existing vegetative cover shall be preserved or extended to the maximum extent feasible to approximate a 100 foot wide corridor of natural vegetation. Replication and compensatory storage required to meet other ~~R~~esource ~~A~~rea performance standards are allowed within this area; structural stormwater management measures may be allowed only when there is no practicable alternative. Temporary impacts where necessary for installation of linear site-related utilities are allowed, provided the area is restored to its natural conditions. Proposed work which does not meet the requirement of 310 CMR 10.58(4)(d)1.a. may be allowed only if an applicant demonstrates by a preponderance of evidence from a competent source that an area of undisturbed vegetation with an overall average width of 100 feet will provide equivalent protection of the riverfront area, or that a partial rebuttal of the presumptions of significance is sufficient to justify a lesser area of undisturbed vegetation;

b. Stormwater is managed according to standards established by the Department ~~in~~ ~~its Stormwater Policy~~ at 310 CMR 10.05(6)(k) through (q) ;

- c. Proposed work does not impair the capacity of the riverfront area to provide important wildlife habitat functions. Work shall not result in an impairment of the capacity to provide vernal pool habitat identified by evidence from a competent source, but not yet certified. For work within an undeveloped riverfront area which exceeds 5,000 square feet, the issuing authority may require a wildlife habitat evaluation study under 310 CMR 10.60.
  - d. Proposed work shall not impair groundwater or surface water quality by incorporating erosion and sedimentation controls and other measures to attenuate nonpoint source pollution. The calculation of square footage of alteration shall exclude areas of replication or compensatory flood storage required to meet performance standards for other resource areas, or any area of restoration within the riverfront area. The calculation also shall exclude areas used for structural stormwater management measures, provided there is no practicable alternative to siting these structures within the riverfront area and provided a wildlife corridor is maintained (e.g. detention basins shall not be fenced).
2. Within 25 foot riverfront areas, any proposed work shall cause no significant adverse impact by:
- a. Limiting alteration to the maximum extent feasible, and at a minimum, preserving or establishing a corridor of undisturbed vegetation of a maximum feasible width. Replication and compensatory storage required to meet other ~~R~~esource ~~A~~rea performance standards are allowed within this area; structural stormwater management measures shall be allowed only when there is no practicable alternative;
  - b. Providing stormwater management according to standards established by the Department ~~at 310 CMR 10.05(6)(k)1. through 11.~~;
  - c. Preserving the capacity of the riverfront area to provide important wildlife habitat functions. Work shall not result in an impairment of the capacity to provide vernal pool habitat when identified by evidence from a competent source but not yet certified; and
  - d. Proposed work shall not impair groundwater or surface water quality by incorporating erosion and sedimentation controls and other measures to attenuate nonpoint source pollution.

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...

(6) Notwithstanding the Provisions of 310 CMR 10.58(1) through (5), Certain Activities or Areas Are ~~Grandfathered or~~ Exempted from Requirements for the Riverfront Area:

(a) Any excavation, structure, road, clearing, driveway, landscaping, utility line, rail line, airport owned by a political subdivision, marine cargo terminal owned by a political subdivision, bridge over two miles long, septic system, or parking lot within the riverfront area in existence on August 7, 1996. Maintenance of such structures or areas is allowed (including any activity which maintains a structure, roads (limited to repairs, resurfacing, repaving, but not enlargement), clearing, landscaping, etc. in its existing condition) without the filing of a Notice of Intent for work within the riverfront area, but not when such work is within other ~~R~~esource ~~A~~reas or their buffer zones except as provided in 310 CMR 10.58(6)(b). Changes in existing conditions which will remove, fill, dredge or alter the riverfront area are subject to 310 CMR 10.58, except that the replacement within the same footprint of structures destroyed by fire or other casualty is not subject to 310 CMR 10.58.

(b) Certain minor activities as identified in 310 CMR 10.02(2)(b)1.

...

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**From:** [Nancy Doyle](#)  
**To:** [DEP Wetlands \(DEP\)](#); [Waterways, DEP \(DEP\)](#); [Patrick O'Connor](#); [Patrick.kearney@mahouse.gov](mailto:Patrick.kearney@mahouse.gov)  
**Subject:** Proposed regulatory changes by MA Dept. of Environmental Protection  
**Date:** Monday, April 29, 2024 6:26:21 PM

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CAUTION: This email originated from a sender outside of the Commonwealth of Massachusetts mail system. Do not click on links or open attachments unless you recognize the sender and know the content is safe.

A few days ago we suddenly became aware of proposed regulations drastically affecting the Massachusetts coastline.

No prior public information has been provided, to the best of our knowledge, nor has public input been sought.

Such drastic regulations require extensive research and public discussion. They should not be hastily implemented without consideration for the entire coastal community.

Nancy & Richard Doyle





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Amanda Loomis, AICP  
Director

**April 30, 2024**

Via Email: [dep.wetlands@mass.gov](mailto:dep.wetlands@mass.gov)

**RE: Wetlands-401 Resilience Comments  
Natick Conservation Commissions Comments on MassDEP'S Resilience 1.0 Draft  
Regulations and 2.0 Recommendations**

Dear MassDEP:

## Introduction and Appreciation

The Natick Conservation Commission (ConCom) greatly appreciates the opportunity to provide comment. This letter focuses on the general and inland wetland regulations. It provides ConCom's suggested modifications of the proposed "1.0" changes and our suggestions for the forthcoming "2.0" reg change package. Throughout the letter, underlining indicates topics and bold-face indicates specific requests.

We sincerely appreciate the effort that MassDEP put into creating these draft regulation changes and commend MassDEP for focusing on ways to make Massachusetts and its wetland resources more resilient to climate change. We see many of the proposed changes to the general and inland wetland regulations as valuable steps towards increased public safety and ecological health in the face of climate change. All the proposed changes to the general and inland wetland regulations on which we (and our colleagues) have not commented, we endorse and encourage you to promulgate swiftly.

## Overarching Concerns

The Natick ConCom feel that some of the proposed changes will be very challenging to implement and/or could lead to unintended detrimental consequences and so should be refined prior to promulgation. Many of our detailed comments can be summarized under four overarching concerns.

- The revised regulations must strike a reasonable balance between scientific precision and overly burdensome requirements that render them too difficult for a majority of volunteer conservation commissions and applicants to implement. In other words, they must be readily practicable.
- In the face of climate change and invasive species, the revised regulations must acknowledge and reflect the difference between "alterations" resulting from new development and "alterations" resulting from ecological restoration. Ecological



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restoration projects should be considered projects that support “public health and safety”, as mosquito control projects are.

- Regulation revisions must strive to create greater consistency of thresholds, exemptions/allowances, and requirements based on existing wetland functions and values and the potential impacts (or benefits) on those wetland functions and values of proposed projects, not on the user groups conducting the activity.
- MassDEP should **immediately engage stakeholders in the “Resilience 2.0” planning process**. Regulatory changes should be borne of **early and close coordination** with conservation commissions, conservation staff, and professional non-profit staff, **the people responsible for day-to-day interpretation and consistent implementation of these regulations**.

## Recommendations for the Proposed “1.0” Inland Regulations

The Natick ConCom urges MassDEP to give careful consideration to our detailed comments (and those of our colleagues), reach out with questions or for assistance, and make the necessary changes prior to promulgation.

### 310 CMR 10.02(2)(b) Minor Exemptions

- 10.02(2)(b)(2)(r). We agree that maintenance of shared use paths should be allowed without the need for permitting, so this new minor activity is appropriate, but it has too many details about means and methods and creates too narrow a management opportunity. We suggest the following revisions:
  - 10.02(2)(b)r.iv. The draft language is too detailed. The language as proposed creates implementation challenges since the means and methods are site-specific. We are concerned that the allowance of cutting shrubs and branches, and chipping and spreading this material in place may result in the unintended localized spread of invasive species. We recognize that the proposed language mirrors existing language in 10.02(2)(b)(2)n. (vegetation cutting for road safety maintenance). **We recommend deleting the language under 10.02(2)(b)4.iv. between “To prevent the possible export (...) disposed” and creating a guidance document or policy instead. We recommend that this type of specificity be removed from existing language under 10.02(2)(b)(2)n for similar reasons.**
  - 10.02(2)(b)r.v. We question why the language incorporates the provision that “(...) no work on any component of a Stormwater Management System is performed, including but not limited to drainage swales” occurs under this minor



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activity provision. This is contradictory to activities that are already exempt as maintenance of stormwater systems. **We are in favor of the new minor activity but request that the following proposed language be deleted: “(...) no work on any component of a Stormwater Management System is performed, including but not limited to drainage swales.”**

- 10.02(2)(b)n.iv. We recognize that MassDEP’s proposed language immediately above comes from this passage (10.02(2)(b)n.iv. Vegetation cutting for road safety maintenance), however, as noted above, we believe that the allowance for cutting and chipping in place of vegetation could lead to unintended consequences of spreading invasive species. **We urge MassDEP to revise this language through guidance on best management practices rather than keeping these details in the regulations.**

#### 310 CMR 10.04 Definitions

- Highway Specific Considerations. This gives one agency (MassDOT) special rights. Municipal DPWs often have control of roadways of similar size and undertake projects of similar scales, and so should be afforded similar allowances. **The regulations should not be based on the governing agency, but should be based on the size of the roadway, the scale of the proposed project, the intended public benefits, and the potential environmental impacts.**
- Impervious surface. Since solar arrays are often sited in fields and other entirely pervious areas, **there should be opportunities for applicants to utilize site-specific information on pre- and post-construction land cover and infiltration capacities to determine the need for stormwater management systems.**
- Maintenance of an Existing Public Roadway. **This definition should not include all instances of “replacing existing drainage pipes”.** Since some drainage pipes are deep beneath the paved surface, replacement might require extensive excavation, large spoil piles, and dewatering.
- Maintenance of an Existing Public Roadway. This new term adds confusion because of language in 10.02(2)(b)(2) and 10.53(3)(f).
- Public Shared Use Paths. The new definition in 10.04 states that the Path must be on “public property or on private property pursuant to an easement that provides for public access”. **MassDEP should afford all owners of publicly accessible land with Public Shared Use Paths the same allowances and requirements under the regulations.** This could include land trust and other permanently protected public or private property with public access.





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- The proposed definition of Zone A references 310 CMR 22 (Drinking Water), but the text does not match. The draft wetland regs use the term "surface water" where Drinking Water (22.00) uses the term "surface water source", which is defined therein as a public water supply. Surface water is not defined as a public water supply.
- Many New Terms or Definitions have been introduced and incorporated throughout the redline version (e.g., the multiple new definitions introduced in 10.36(2)). **All terms should have an entry in 10.04 with either a standalone definition or a reference to the section where the term is defined and used.** Examples of new terms include:
  - Limit of Moderate Wave Action (LiMWA)
  - Scientific Research Projects

### 310 CMR 10.05 Procedures

- 10.05(4)(a) Notices of Intent. The regulations should not require such a high level of stormwater management detail for every NOI filing. We recommend two possible alternatives.
  - **Strike the new sentence "A construction period .... Activities" and replace with "All projects must address erosion, sedimentation control, and pollution prevention with plans appropriate to and commensurate with the proposed alterations, even those projects otherwise exempt from the stormwater standards." OR**
  - **Strike the new sentence "A construction period .... Activities" and change the text in the general instructions for NOIs.**
  - **Please note there is a typo: "... operation and maintenance plan, and an illicit discharge compliance statement."**
- 10.05(6)(m)(6): Requiring unpaved footpaths in natural areas to comply with the Stormwater Management Standards seems unreasonable. Trails generally rely on country drainage and so do not "fit" the intentions of the Standards. **We ask MassDEP to include unpaved footpaths in natural areas as exempt activity under the Stormwater Management Standards 10.05(6)(l).**
- 10.05(6)(m)(7): This new provision now requires that Maintenance of an Existing Public Roadway comply with the Stormwater Standards to the maximum extent practicable, however, 10.02(2)(b)(2)(p) appears to exempt the same roadway maintenance from review.



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### 310 CMR 10.12 Notice of Intent for an Ecological Restoration Project

- **(2) The numbering underlined below needs to be fixed because the original (2) was stricken.** “Notwithstanding the provisions of 310 CMR 10.54(4)(a)5., 10.56(4)(a)4., and 10.60, a person submitting a Notice of Intent for an Ecological Restoration Project that meets the requirements of 310 CMR 10.12(1) and (2) is exempt ...”

### 310 CMR 10.13 Eligibility Criteria for Restoration Order of Conditions

- **(f)** We suggest using the word “evidence” in place of the word “demonstration”. **“If the project will involve the dredging of 100 cubic yards of sediment or more or dredging of any amount in an Outstanding Resource Water, the Notice of Intent includes a demonstration that an application ...”**

### 310 CMR 10.53 and 10.24 Limited Project Provisions

- **10.53(u)8. & 10.24 (7)(c)(8) Public Shared Use Paths**
  - **Delete the statement that a separate NOI may be filed either concurrently to the filing of the NOI for the project, or after the OOC is issued, for vegetation management and other activities as defined in 310 CMR 10.02(2)(b)2.r.i.-v. in wetland Resource Areas.** Applicants are always welcome to file NOIs.
  - **Delete “abandoned railbed” in first line.** “Public Shared Use Path” is already defined in 10.04. MassDEP should consider more broadly defining a Public Shared Use Path in this limited project provision. Municipal or land trust paths should be afforded the same limited project status.
- **10.53(4)(e)5. Typo: The letter “r” is missing from the word “through” in “...set forth in 310 CMR 10.53(4)(a) though (d)...”**

## 2. Coordinate on the Development of Regulatory Reform Package 2.0

As we all know, these draft regulation changes alone will not achieve our goal of true resilience. We appreciate that MassDEP has said that it is already working on regulatory reform package “2.0.” MSMCP has identified a number of issues that should be addressed in the next regulatory reform package. Many of these suggested revisions are straightforward. Some of these suggestions warrant additional discussion. We implement the wetland regulations on a daily basis and know what works well and what is challenging. We have a lot to offer to help make 2.0 a real success. **We urge MassDEP to begin a robust process of stakeholder engagement with consultants, field professionals, and conservation agents so that we may help you develop practical, strong, climate resilient regulations.** Here we provide some suggestions to begin the conversation.



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**310 CMR 10.02(2)(a) Activities Within the Areas Subject to Protection ...**

- **Trail Maintenance. We ask MassDEP to create a new section to exempt Maintenance of Existing Trails in use by the public.** This could be done by adding a new section “10.02(2)(a)3. Maintenance activities on trails that traverse Areas Subject to Protection under M.G.L. c. 131, § 40” which reads: “Activities conducted to maintain, repair or replace, but not substantially change or enlarge an existing public trail, provided said work utilizes the best practical measures to avoid or minimize impacts to wetland resource areas outside the footprint of said trail”. Boardwalks, puncheons, waterbars, and other basic trail infrastructure need to be routinely maintained or replaced. Land managers should be able to conduct this essential maintenance work to protect wetland resource areas without having to secure a permit.

**310 CMR 10.02(2)(b) Minor Exemptions**

- **10.02(2)(b)(a) Unpaved pedestrian walkways. We ask Mass MassDEP to define Conservation Property to include all these types of natural land onto which the public is invited.** Currently, unpaved pedestrian walkways (trails) less than 3 feet wide for public access on “Conservation Property” are exempt from the regulations. However, many trails traverse general municipal land, land trust properties, and private property with conservation restrictions affording public access. **Additionally, we urge MassDEP to consider increasing the 3-foot width to 4 feet because the state’s own guidance on [accessible trails](#) encourages trails are “at least 36” wide, and usually wider” (emphasis added).**
- **10.02(2)(b)(e) Conversion of lawn to uses accessory to residential structures such as decks, sheds, patios, pools. We ask MassDEP to remove inground swimming pools from this minor activity.** Construction of inground swimming pools involve significant excavation, large impervious areas around the pool, fencing, and often involves discharge of chlorinated water. Having no Conservation Commission oversight of these projects has often led to after-the-fact permitting due to erosion or other problems which have impacted wetland resource areas. Tree cutting and grading has occurred in concert with some pool projects when landowners misunderstood these activities were not part of the minor activity provision. As an exempt activity, there is no requirement for an O&M plan to ensure that chlorinated water is not discharged to wetland resources areas without first being dechlorinated. Requiring a wetland permit and preconstruction review of all inground pool projects in the buffer zone and Riverfront Area will result in better oversight and reduce the non-compliance we see problematic with exempting some inground pools from wetland permitting.
- **10.02(2)(b)(n) Vegetation cutting for road safety maintenance.**



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- **We ask MassDEP to update the AASHTO 2011 Policy to “7th edition, 2018 or most current”.**
- **10.02(2)(b)(n)(iv), We ask MassDEP to remove the detailed language: “To prevent the possible export .... Chipping, disposal method and spreading chips...”** This language is too detailed (means and methods are site-specific and creates some implementation challenges). We suggest working with a stakeholder group and creating a guidance document on appropriate vegetation cutting BMPs that could be applicable to this and other minor activities that involve vegetation cutting.
- **Cutting of certain high-risk trees. We ask MassDEP to add a new minor activity: allowing landowners to remove up to 5 unsafe trees over 6 inches that are in the buffer zone or riverfront area and are threatening structures or human safety.** Trees are suffering from the effects of climate change. Invasive pests like woolly adelgid and emerald ash borer are decimating many of our native hemlocks and ashes. Increases in the number and severity of storms have resulted in more damaged trees. We recognize that certain parameters need to be codified and suggest a guidance document could be created to define and address thresholds associated with minor land management activities and requirements for Conservation Commission notification for certain activities (e.g., giving the Commission 30 days to comment but not necessarily require a permit, akin to forest cutting plans).
- **Removal of invasive vegetation. We ask MassDEP to add a new minor activity to 310 CMR 10.02(2)(b)(2) which reads: “Removal of turf lawn and/or non-native invasive herbs, vines, and shrubs, provided: (1) the activity is located more than 50 feet from the mean annual high water line within Riverfront Area or from BVW, whichever is farther and (2) provided erosion and sedimentation controls are implemented until the area is stabilized with 75% coverage of native species”.** Invasive plants are one of the biggest threats to our native habitats. Quick and effective management of invasives is essential in controlling the spread of invasive plants.

**310 CMR 10.03(6)(b), 10.04 (Alter), 10.05(3)(2)(b), and 10.58(6) Application of Herbicides and Cutting in Rail Rights-of-Way**

- **Regulation of herbicides and cutting in railway rights-of-way. We ask that MassDEP clarify the requirements for permitting the use of herbicides and cutting to control vegetation in rail rights-of-way in Buffer Zones and Riverfront Area.** MBTA and Keolis routinely claim exemptions that do not seem to exist and many cases are now in litigation.



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### 310 CMR 10.04 Definitions

- **"Activity" and "Alter". We ask MassDEP to consider clarifying that "vegetation" used in the definitions of "Activity" and "Alter" applies only to NATIVE vegetation.** See the explanation below.
- **Definitions for "Vernal Pool" and "Vernal Pool Habitat". We ask MassDEP to create new definitions for "Vernal Pool" and "Vernal Pool Habitat".** Currently, Vernal pool habitat includes the definition of both the depression and the 100' jurisdictional area. **We also ask that MassDEP extend the jurisdiction to provide a 100-foot Buffer Zone to vernal pools, regardless of whether it falls within a resource area.** Suggested changes:
  - **"Vernal Pool"** is a basin or depression that typically holds water for at least two continuous months through the spring and is free of adult, reproducing fish populations. Vernal pools are essential breeding habitat for a variety of amphibian species such as Wood Frog (*Lithobates sylvaticus*) and the Spotted Salamander (*Ambystoma maculatum*) and provide other extremely important wildlife habitat functions during the non-breeding season for these species. Vernal pools are important habitat for other wildlife species. The boundary of a vernal pool is the maximum water level in such a basin or depression and is identified by direct observation or by field indicators of the maximum extent of flooding.
  - **"Vernal Pool Habitat"** is the area between the boundary of a vernal pool and the boundary of a jurisdictional resource area that contains the vernal pool, or 100 feet from the edge of the vernal pool boundary, whichever distance is greater.

### 310 CMR 10.05: Procedures

- **We ask MassDEP to add the following sentence in 10.05(8) "If requesting an ORAD Extension, the Applicant must submit written confirmation by a professional with relevant expertise that the resource area delineations remain accurate".** This language appears in 10.05(6)(d) however most Commissions and conservation professionals are unaware of this language since it appears in the wrong section in the regulations (it's placed in the Order of Conditions section and not the Extensions section).
- **We ask MassDEP to clarify which projects are subject to stormwater management.** Currently, any activity other than the 4 listed categories appear to be subject to stormwater management regulations, however, small projects (e.g., restoration, foot paths) appear to require stormwater management.
- **10.05(8) We ask MassDEP to: (1) move mention of rules associated with extensions from 10.05(6)(d) to 10.05(8); and (2) within 10.05(8) to allow 5-year extensions for any**



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**appropriate project** (i.e., “where special circumstances warrant and where those special circumstances are set forth in the Order.”)

### 310 CMR 10.06: Emergencies

- **We ask MassDEP to add new text 10.06(6): “An Emergency Certification issued by a conservation commission shall be signed by a majority of the commission. It may also be signed by a single member or agent of the commission, if said Certification is ratified by a majority of members at the next scheduled meeting of the Commission”, similar to language provided for Enforcement Orders.**

### 310 CMR 10.24 Limited Projects

- 10.24(1)(b). The nature-based resiliency requirement is non-binding. Having applicants merely “consider” these measures does not mean they will implement them. **MassDEP should consider stricter requirements for these measures.**
- 10.24(7)(c). Limited Projects in Coastal Areas at Risk from Sea Level Rise. Allowing the relocation of roads and railroads to avoid the impacts of sea level rise could result in damage to other ecosystems. **We ask MassDEP to postpone this proposed modification until completion of the Resilient Coasts plan.**

### 310 CMR 10.53 Limited Projects

- **We ask MassDEP to expand the Limited Project provisions to simplify permitting requirements for routine land management projects necessary to address the impacts of climate change.**
  - **We ask MassDEP to expand the Limited Project provisions to facilitate large scale invasive species work in wetland resource areas with specific regulatory review standards.** Some invasive species removal projects extend into wetlands and cover >5,000 s.f. There should be a simplified way of allowing landowners and other organizations to tackle invasive species removal projects without triggering complicated permitting processes.
  - **We ask MassDEP to add a limited project provision which specifically allows small- and medium-scale invasive species removal projects with specific regulatory review standards.** Non-native invasive plants pose a major threat to the health and survival of our native ecosystems, and are on the rise with climate change. Currently, invasive plant control work requires time-consuming, costly, and complex wetland permitting devised for construction projects. Quick identification and removal of invasive plants minimizes the dramatic negative effects of these plants and allows for the recovery of native species diversity and native wildlife habitat, a recognized wetland value.





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- **We ask MassDEP to expand the limited project provision in 10.53(j)(a) to allow: “The construction of new public footpaths and associated boardwalks/puncheons that are constructed close to the ground provided, however, that such structures are constructed on pilings, sills, or posts so as to permit the reasonably unobstructed flowage of water.”** Boardwalks and other basic trail infrastructure that cannot avoid wet environments serve to protect the wetland resource areas and their functions and values. Because most boardwalks and puncheons are only elevated 4-12” above the ground for safety reasons, shading is inevitable, and because many boardwalks and puncheons are built on sills, loss of vegetation under the sills is inevitable. Therefore, under the current regulations, all boardwalk and puncheon construction in BVW requires wetland replication. Our proposed minor modification (above) would allow Conservation Commissions to approve public boardwalks and puncheons as Limited Projects. This would reduce the need for inland wetland replication which generally results in the destruction of forested buffer zones in protected public open spaces. Larger public boardwalk/puncheon projects could still be required to undertake wetland replication based on the size, scope, and nature of the project and the opportunity for less impactful alternatives. Below in this letter are recommendations for a Guidance Document of Best Trail Management Practices (BTMPs) to ensure the health of wetland resource areas.

### 310 CMR 10.55 Bordering Vegetated Wetland Performance Standards

- **10.55(2). We ask that MassDEP modify the definition of BVW and how the boundary of a BVW is defined, to reflect the 2022 “Massachusetts Handbook for Delineation of Bordering Vegetated Wetlands” that was released in March 2023.**
- **10.55(4)(c). We ask that MassDEP simplify the permitting process for trail construction projects by adding to the Bordering Vegetated Wetland regulations a new section in 10.55(4)(c)(4) allowing Commissions to permit new trails in wetlands when: "said work involves the creation of a public trail for non-motorized use (i.e., hiking, skiing, mountain biking, etc.) which will alter less than 500 s.f. of BVW, provided alternatives that attempted to avoid and minimize impacts were considered and that the trail will permit the reasonably unobstructed flowage of water.”** Wetland trail construction should be subject to review under the WPA, but that review should be simplified. Narrow unpaved pedestrian walkways in publicly accessible open space often traverse wetlands. When wetland trails are properly constructed, they preserve wetland functions and values and help build a culture of appreciation and stewardship for these vital resources. (Note: Allowance for ADA compliance and motorized mobility devices must be considered.)





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**310 CMR 10.57 Land Subject To Flooding (Bordering and Isolated Areas)**

- **10.57(2)(a)5.** Vernal Pool Habitat should not necessarily need to be certified by DFW in order to be afforded protection. **We ask that MassDEP consider allowing field-based evidence submitted to the Conservation Commission by competent professionals as acceptable proof of vernal pool habitat.**
- **10.57(2)(a)6.** Vernal pools. **We ask that MassDEP revise the language to read: “The boundary of a certified or uncertified vernal pool shall be based on field observations of the maximum extent of flooding and delineated by a competent source meeting the criteria in 310 CMR 10.60(1)(b). Vernal pool habitat shall include the area within 100 feet of the boundary of the vernal pool itself.”** DFW does not certify the boundary of vernal pools, so we suggest removing those references. The application would be submitted with the applicant’s representative delineating the vernal pool boundary and the Conservation Commission or MassDEP, as the issuing authority, verifying that delineation. Conservation Commissions and MassDEP staff may meet the requirements under 10.60 but they may not; simply listing the reference to 10.60 would be adequate here.
- **10.57(2)(a)3.** **We ask MassDEP to change references from the software-based BLSF calculations to “listed in the National Oceanic and Atmospheric Administration (NOAA) Atlas 14 Volume 10 (version 3.0 or later version are permissible)” and any such references to using NOAA 14 throughout the proposed Wetland Protection Act Regulatory changes and Stormwater Handbook to “listed in the most recent “National Oceanic and Atmospheric Administration (NOAA) Atlas”. No changes have been proposed to the ILSF section, but ISLF calculations currently refer to BLSF. Changes to 10.57(2)(a)(3)a-c change to require a more comprehensive software to be used in the BLSF calculations, and reference NOAA Atlas 14. Using the most recent rainfall data available through NOAA promotes climate resilience and avoids the necessity to update the Regulations in the future. NOAA 15 is already in development.**

**10.57(2)(b) Isolated Land Subject to flooding**

- **We ask MassDEP to consider expanding the jurisdiction over small isolated wetlands by reducing the size of ILSF to account for loss of isolated wetland protections as a result of the Sackett Decision.**
- **We ask that MassDEP consider adding vernal pools as its own dedicated wetland resource area, with a 100-foot Buffer Zone.** Vernal pools truly are a vital wetland resource subject to flooding, as identified in the Act: “No person shall remove, fill, dredge or alter any bank, riverfront area, fresh water wetland, coastal wetland, beach, dune, flat, marsh, meadow or swamp bordering on the ocean or on any estuary, creek, river, stream, pond, or lake, or any land under said waters or any land subject to tidal



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action, coastal storm flowage, or flooding, other than in the course of maintaining..."  
(emphasis added).

**310 CMR 10.58: Riverfront Area Regulation Revisions**

- Many Conservation Commissions and Conservation Agents find it difficult to interpret many sections of the Riverfront Area sections. We are grateful for the hard work of the working groups who helped develop the regulations which were promulgated in 1996, however, after almost 30 years of implementing these regulations, we have discovered a number of challenges. We welcome discussions with MassDEP as the areas of concern are too complex to detail here. **We ask that MassDEP work to better address the following areas of concern.**
  - **Defining Mean Annual High Water**
  - **Interpreting "practical and economically equivalent"**
  - **Interpreting the Redevelopment requirements for mitigation/restoration for "non-compliance" of more than one performance standard**
  - **Clarifying the distinction, if any, between 310 CMR 10.58(5)(c) and (d)**
  - **Requiring an Alternatives Analysis for Redevelopment projects**
  - **How the regulations apply to large sites with small amounts of pre-existing development**

Thank you again for the opportunity to provide comment and for all of the work done today on these updates.

Sincerely,

Matthew Gardner  
Chair, Natick Conservation Commission



April 30, 2024

**VIA EMAIL**

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***Re: Wetlands & 401 Resilience Comments - National Grid***

Dear Ms. Rhodes:

On behalf of National Grid, thank you for the opportunity to provide comments on Massachusetts Department of Environmental Protection's ("MassDEP") proposed revisions to the *Wetlands Protection Act* ("WPA") *Regulations*, 310 CMR 10.00 ("Wetlands Regulations"), and the *401 Water Quality Certification Regulations*, 314 CMR 9.00 ("WQC Regulations"). National Grid provides energy to millions of customers in Massachusetts through a complex web of state-wide infrastructure, maintaining and operating over 2,700 miles of electric transmission and subtransmission lines, in addition to electric distribution and gas facilities. Environmental protection is a paramount concern for National Grid. National Grid also has strict obligations under federal and state law to ensure the reliability of the essential energy services it provides, as well as to control the costs passed on to its rate-paying customers.

The operation, maintenance, repair, and upgrades necessary to enhance reliability and resilience of this critically important public infrastructure often requires work within and adjacent to wetland Resource Areas, as defined by 310 CMR 10.02(1). National Grid works with dedicated internal environmental staff and outside consultants who have years of experience implementing the standards imposed under the current Wetlands and WQC Regulations. National Grid offers these comments to help MassDEP understand why certain proposed revisions pose serious concerns for public utilities, including severe consequences for utility operational safety, public safety, and increased environmental impacts.

National Grid, as a regulated public utility, has an obligation to its customers to maintain safe and reliable electric and gas service. This is largely achieved by the daily maintenance and repair of, as well as routine upgrades to, cross-county electric lines. Safe access for our construction crews is a necessity to perform these tasks and many of the existing gravel roads along our rights-of-way ("ROWs") are not in suitable condition to allow safe passage for construction vehicles, which may include cranes and concrete trucks. Maintenance or improvement of these roads is critical to

continuing our maintenance, repair, and upgrade work. Several of MassDEP's proposed revisions to the Wetland and WQC Regulations, specifically the proposed changes to the Stormwater Standards, will dramatically increase costs and impair our ability to provide permanent and reliable access on our ROWs. Furthermore, since National Grid is one of only a few utilities serving Massachusetts, the overall impact to utility ratepayers in Massachusetts could be extraordinary.

National Grid is also committed to working with the Commonwealth to achieve its net zero and other decarbonization goals. Electrification of the economy is essential to achieving these goals and will require an unprecedented and rapid build-out of new and upgraded electric infrastructure. To accomplish this, we need to work collaboratively to make environmental permitting both efficient and protective. While the proposed regulations will make permitting more difficult and time consuming, we believe that there are alternative approaches that will accomplish MassDEP's goals while also helping ensure that utility customers are not unduly burdened.

Below, we identify our key concerns and propose alternative approaches to effectively achieve the goals of the Wetlands and WQC Regulatory frameworks without compromising operational and public safety or creating unintended adverse environmental impacts.

**I. Comments on Defining “Impervious Surface” to Include “Compacted Gravel or Soil” at 310 CMR 10.04 and 314 CMR 9.02.**

MassDEP's proposed revisions to the Wetland and WQC Regulations classifying “compacted gravel” as “impervious” have far reaching and counterintuitive results for utility access roads. Utility access roads are unique among unpaved roads in the Commonwealth. Sited in remote locations, they are not open to the public, and are infrequently traveled after their initial construction – typically only a handful of times each year for routine maintenance, inspections, and emergency response. As applied to the Stormwater Standards, 310 CMR 10.05(6)(k) and 314 CMR 9.06(6)(a), the new definitions will result in greater environmental impacts without providing meaningful environmental benefits when applied to utility access roads. Projects with similar, minimal impacts (single-family residential) are exempt from the regulations and projects with greater impacts (highway projects) receive special considerations, resulting in an inconsistent and unreasonable burden on utility customers.

**Rendering gravel utility access roads “impervious” would result in greater alteration to more Resource Areas.** Stormwater Standard 3, 310 CMR 10.05(6)(k)(3) and 314 CMR 9.06(6)(a)(3), calculates required groundwater recharge rates as the product of one inch of rainfall multiplied by the impervious area within a project site. Utility access roads are almost always compacted gravel. The new infiltration infrastructure required under Standard 3 as applied to gravel utility access roads is disproportionate to actual project site runoff. And to meet Stormwater Standard 4, 310 CMR 10.05(6)(k)(4) and 314 CMR 9.06(6)(a)(4), the Low-Impact Development and Environmentally Sensitive Site Design techniques, along with the Stormwater Control Measures (“SCMs”) and Best Management Practices (“BMPs”) must be sized in accordance with the calculations specified in the revised *Stormwater Handbook*. These calculations are also a result of impervious area within a project site.

If all compacted gravel utility access roads are considered impervious, this results in a dramatic increase in the size and number of SCMs (*e.g.*, infiltration basins) required to meet Stormwater Standards 3 and 4, and in turn increases mandatory earth disturbance in Buffer Zone and near Resource Areas. Due to the challenges of maintaining SCMs along hundreds of miles of utility access roads in isolated locations, these structural SCMs would likely need to be constructed as unvegetated riprap systems (*i.e.*, stones). In effect, the regulations require the direct replacement of valuable vegetated areas with unvegetated stone infiltration systems, which runs counter to the purpose, intent, and spirit of the Wetlands Regulations. The conversion of vegetated areas to unvegetated stone basins forfeits wildlife habitat and forage supply. Moreover, replacement of native vegetation, including root structures, with riprap eliminates carbon sequestration processes naturally occurring within vegetated portions of rights-of-way; cumulatively, replicating this conversion of vegetated to unvegetated space throughout a project site will yield a net increase in carbon emissions. Such an effect is contrary not only to National Grid's commitment to climate change mitigation, but also to numerous net zero and carbon neutral commitments made by the Commonwealth in recent years.

We acknowledge MassDEP allows a soil pressure test to rebut the presumption that compacted gravel access roads are impervious. However, demonstrating this through field testing can only be accomplished after construction of the gravel access roads. This criterion does not allow for an applicant to demonstrate that a soil or gravel road can be considered pervious during permitting (*i.e.*, before construction), and can be anticipated to lead to confusion and inconsistent interpretations by Conservation Commissions.

**Designating gravel utility access roads as “impervious” yields no net environmental benefit.**

Utility access roads generate similar stormwater quantities to single-family residential developments, which are exempt from compliance with the Stormwater Standards. 310 CMR 10.05(6)(l)(1) and 314 CMR 9.06(6)(b)(1). National Grid modeled the stormwater impacts from gravel utility access roads and compared them to stormwater impacts from single-family housing developments and commercial developments of a similar size. National Grid prepared hydrologic and hydraulic models of the pre-construction conditions and resulting post-construction conditions of four sample transmission projects with associated access, in four model watersheds with Hydrologic Soil Groups (“HSG”) A, B, C and D. Hydrologic models were prepared in HydroCAD utilizing NOAA PLUS rainfall data consistent with the proposed changes to the Stormwater Standards. National Grid ran the four watershed models with three design storms each. For comparison, National Grid modeled various scenarios of single-family residential developments of up to four house lots each, considering 1/8 acre, 1/2 acre, and 1 acre lots in both HSG A and C rated soils. National Grid prepared models of example commercial developments of similar 2 acre size using HSG A and C rated soils. The analyses were performed with “urban commercial, 85% impervious” surface condition.

The modeling revealed a dramatic disparity between the development types. The increases in peak discharge rates from the single-family developments—a category of development exempt from Stormwater Standard compliance—from pre-to post-development ranged between 0.5 to 5 cubic feet per second (“cfs”), which was similar to the increase found for the example watersheds from



the transmission line access road projects. The increases in peak discharge rates from commercial developments of the same size were much higher—between 3.91 to 11.44 cfs. Because the increase in peak discharge from improving or maintaining National Grid’s utility access roads is similar to single-family residential developments of up to four lots, both types of projects should be afforded the same exemption from compliance with the Stormwater Standards.

The stormwater impacts from rural, seldom-traveled utility access roads are far more modest than those of public ways and highways, which also benefit from special considerations and can be “presumed to comply with applicable Stormwater Standards.” 310 CMR 10.05(6)(k), 314 CMR 9.06(6)(a). Exempting projects with both a greater magnitude of stormwater impact and risk of polluted runoff than compacted gravel utility access roads is inconsistent with the purpose of the regulations and places an unreasonable burden on utilities. National Grid’s modeling also illustrates that any benefit gained by treating gravel utility access roads as impervious is marginal because hydrological impacts of these projects are minor to begin with. Further, the scale of newly required stormwater management infrastructure design is disproportionate to the likely environmental benefit. Utility projects often span many miles. At least one soil test pit is required for each infiltration SCM, which results in potentially hundreds of soil test pits along a given ROW. SCMs used to comply with Stormwater Standards 3 and 4 will also require a long-term operation and maintenance plan (“O&M”). Based on the number of SCMs anticipated to comply with the new regulatory provisions, National Grid will need to implement additional O&M measures for SCMs across the Commonwealth. This will be both time-consuming and costly for our customers without resulting in commensurate environmental benefits.

A utility ROW with many more stormwater infiltration basins creates other concerns. Utility ROWs often have steep grades and undisturbed topography, and in some cases, utilities may not possess the easement rights to construct stormwater management features within or beyond the ROW. Additional required stormwater management features will need to fit within the limited ROW space, which will be challenging from a design and construction perspective. Additional required stormwater management features for the minor hydrological impacts from gravel utility access roads will yield little additional environmental benefit. This yield should be weighed against the potential impacts that may occur from the construction of these features in ROWs to wildlife habitat (rare, endangered, and threatened species and all species), cultural and historical resources, and other resources. The environmental gain should not be measured by minor improvements in stormwater management alone.

## **II. National Grid’s Proposed Alternative Approaches Would Effectively Manage Utility Access Road Stormwater with Fewer Adverse Impacts**

National Grid shares MassDEP’s commitment to avoiding, minimizing, and mitigating impacts to Resource Areas. The Stormwater Standards are an excellent way to mitigate impacts from projects with larger hydrological impact, like commercial developments. The same standards don’t translate well to utility access roads or have the same desired effect. We believe MassDEP can accomplish its stormwater management goals just as effectively, and with fewer unintended adverse effects for both the environment and utility operations, by implementing one or more of the following suggestions presented in order of preference:

**a. Exempt Utility Access Roads from Stormwater Standards 2, 3, and 4.**

MassDEP should revise the draft regulations so utility access roads are explicitly exempt from compliance with Stormwater Standards 2, 3, and 4. 310 CMR 10.05(k)(6)(2)-(4), 314 CMR 9.06(6)(a)(2)-(4). A utility access road exemption is consistent with MassDEP's careful balancing of minor stormwater impacts against appreciable public interests, such as the current exemptions for certain single-family and multi-family housing developments. 310 CMR 10.05(k)(6)(l). Similarly, public roadways receive special consideration under the Stormwater Standards because they are critical public infrastructure. 310 CMR 10.05(k)(6)(m)(7).

The regulations should recognize that utility access roads that facilitate energy system construction, maintenance, and emergency repair, are indispensable public infrastructure on which the Commonwealth's welfare and economic productivity depend. The same regulatory courtesies afforded to other essential infrastructure and public-interest motivated exemptions should be extended to the provision of essential utility services.

**b. Revise the Proposed Regulatory Changes to Include Provisions Tailored to Address Utility Access Road Compliance with Stormwater Standards.**

MassDEP should revise the regulations so that utility gravel roads that comply with tailored specifications satisfy the Stormwater Standards. MassDEP should consider a cooperative approach in which MassDEP works with utilities to identify a construction policy or material specification that meets the needs and addresses the concerns of both the regulated entities and regulators. A utility access road-specific provision will add predictability to design and implementation practices, and ensure that utilities receive consistent, uniform treatment from Conservation Commissions administering the Wetland Regulations across the state. MassDEP built this approach into the proposed regulations for public highways with Highway Specific Considerations, where "MassDOT will be presumed to comply with applicable Stormwater Management Standards when applicable Highway Specific Considerations are implemented in accordance with Section 5.7 of the Massachusetts Stormwater Handbook [2023 Edition]." 310 CMR 10.05(k), 314 CMR 9.06(6)(a). National Grid recommends MassDEP consider the Berkshire Regional Planning Commission's *Massachusetts Unpaved Roads Best Management Practices Manual* ("Unpaved Roads BMP Manual") to serve the same role for utility access roads, which provides reasonable practices on stormwater control for unpaved roads.

**c. Adopt a Policy Tailored to Address Utility Access Road Compliance with Stormwater Standards 3 and 4.**

MassDEP could also identify particular materials (e.g., a specific gravel gradation or size criteria) or utility access road design standards/measures that would be presumed to be presumptively pervious to meet Stormwater Standards 3 and 4. MassDEP should consult utilities and their contractors to ensure that whatever pervious materials and/or design standards it identifies for use in access roads are suitable in terms of utility operational and equipment safety. Soils and, in particular, gravels have varying degrees of permeability depending on particle size distribution in



addition to the level of compaction. Specific criteria for particle size distribution can be developed specifying a maximum percentage of fines (silt/clay particles passing the No. 200 sieve) and sand (passing the No. 4 sieve). This option provides clear direction for applicants and Conservation Commissions to evaluate. Alternatively, or in addition, applicants could be allowed to demonstrate through laboratory testing that the material specified for use exceeds a certain permeability or hydraulic conductivity rate.

Other New England states, like Vermont and Rhode Island, consider specific materials or mixes to be acceptable for use as utility access roads without demonstrating compliance with state stormwater standards by providing detailed hydrology and hydraulic calculations or stormwater designs. Through the Vermont Stormwater Permit, the Vermont Department of Environmental Conservation has accepted the use of the Vermont Agency of Transportation Standard Specification Material 704.06 “Dense Graded Crushed Stone” for projects involving constructed gravel roads and work pads without considering the material “impervious”. The Rhode Island Department of Environmental Management has also acknowledged that utility access roads constructed with crushed gravel do not need to meet the Rhode Island State Stormwater standards if appropriate erosion and sedimentation control BMPs are constructed.

In the alternative, National Grid urges MassDEP to revise the proposed definition of “Compacted Gravel or Soil” to explicitly exclude utility access roads.

### **III. Comments on “Alter” at 310 CMR 10.04.**

National Grid suggests MassDEP eliminate proposed subsection (e) in the definition of “alter,” which adds “increasing of the volume of untreated stormwater runoff directed to a wetlands Resource Area” as an example of an alteration. This new language directly contradicts the bounds of jurisdiction articulated in G.L. c. 131 § 40 and elsewhere in 310 CMR 10.00 *et seq.* The WPA Regulations provide, “[a]ny activity proposed or undertaken outside the areas specified in 310 CMR 10.02(1) and outside the Buffer Zone is not subject to regulation under M.G.L. c. 131, § 40 and does not require the filing of a Notice of Intent unless and until that activity **actually alters** an Area Subject to Protection under M.G.L. c. 131, § 40.” 310 CMR 10.02(2)(d) (emphasis supplied). The proposed change seems to imply that Resource Areas can be altered if stormwater is directed towards them from any distance, without that stormwater ever reaching a Buffer Zone or Resource Area itself. This proposed change infuses the regulations with confusion and inconsistency and imposes an immeasurable standard that appears to expand MassDEP’s jurisdiction beyond that authorized under the WPA.

### **IV. Comments on “Near” at 310 CMR 10.04, 314 CMR 9.02.**

MassDEP’s proposal to define “Near” in the Wetlands and WQC Regulations reduces clarity and adds opportunities for permitting inconsistency. MassDEP proposes to define “Near” as “where a stormwater discharge has a strong likelihood of causing a significant impact to [a] Critical Area... Near always includes any untreated or increased stormwater discharge within a Buffer Zone, Riverfront Area or Bordering Land Subject to Flooding.” 310 CMR 10.04, 314 CMR 9.02. The Stormwater Standards impose certain SCM sizing requirements when discharges are Near Critical

Areas. 310 CMR 10.05(6)(k)(4)(c)(i); 310 CMR 10.05(6)(k)(4)(d)(i). MassDEP's new definition does not describe the required relationship between a Critical Area and a Buffer Zone, Riverfront Area, or Bordering Land Subject to Flooding which triggers heightened compliance with the Stormwater Standards.

The proposed definition also vests considerable discretion in Conservation Commissions and issuing authorities to determine if a stormwater discharge has a "strong likelihood" of causing a "significant impact" to a Critical Area—two undefined terms— infusing the regulatory process with subjective analyses that will create uncertainty and inconsistency in implementation of the Wetlands Regulations. Utility transmission line work and maintenance often traverses multiple municipalities, so utilities could be subject to many different interpretations of "strong likelihood" and "significant impact" on a single project. This creates more than an additional procedural hurdle to utilities; there are concrete consequences on utility financial and planning capacities when permitting processes become less transparent and predictable, and these translate into a slower and costlier transition to a greener, more reliable electric grid.

#### **V. Comments on "Impracticable" at 310 CMR 10.04, 314 CMR 9.02.**

MassDEP should revise the proposed definition of "Impracticable" to include economic constraints for publicly funded utilities. The proposed new definition is narrowly defined to mean "impossible in practice to do or carry out based solely on physical constraints." While National Grid appreciates the intention of this new definition to maximize compliance with the stormwater regulations, MassDEP should also consider instances where the social, economic, or environmental costs of implementing a stormwater management measure outweigh any environmental benefit.

As drafted, MassDEP's proposed definition aligns more closely with "impossible" rather than "impracticable" – particularly where utilities are concerned. As discussed above, the costs of SCMs, both financial and in terms of additional impacts, are not likely to exceed the marginal benefit to Resource Areas from projected stormwater impacts. This is especially true for utilities, whose customers bear these added expenses through higher electricity and gas rates. Requiring measures that result in increased consumer utility costs and loss of habitat but yield low or no benefit to nearby Resource Areas is neither beneficial nor practical. If MassDEP is unwilling to revise the generally applicable definition, we ask that you provide an alternative standard of impracticability for customer-funded entities like public utilities.

#### **VI. Comments on LSCSF Performance Standard Application, 310 CMR 10.36.**

National Grid applauds MassDEP's proposal to add performance standards for Land Subject to Coastal Storm Flowage ("LSCSF") and urges MassDEP to reexamine the interplay between existing regulatory definitions and proposed performance standards to ensure a consistent and effective application of the new regulations. Because a utility tower is a building under the Wetland Regulations, the new LSCSF regulations prohibit the construction of utility towers in the Velocity Zone ("V-Zone"), and also require that reconstruction or redevelopment of existing utility towers in the V-Zone conform to a list of eight detailed conditions, one of which includes maintaining the

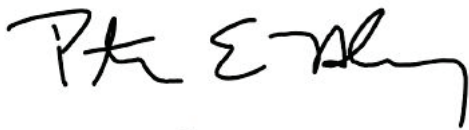
same building size and footprint. 310 CMR 10.23; 310 CMR 10.36(4)(a), 10.36(6), and 10.36(8). To the extent that National Grid has existing infrastructure located within the coastal floodplain, it must be able to maintain, repair, and—when necessary from an operational or safety standpoint—expand its existing electrical infrastructure.

Furthermore, these new conditions stipulate that any building, like a utility tower, undergoing repair or “substantial improvement” in the V-Zone may only be reconstructed on Open Piles, which are defined to specifically exclude “concrete footings or pads”. Utility towers often require concrete footings or pads to support the height and tension of overhead electrical lines. National Grid urges MassDEP to either clarify that it will not consider utility infrastructure as “buildings” for purposes of the new LSCSF regulations, or to provide a specific exemption for necessary utility infrastructure repairs.


## **VII. Concluding Remarks**

National Grid appreciates the opportunity to provide these comments and is committed to continuing to work with MassDEP on wetland protection. National Grid looks forward to working with MassDEP to find an approach to stormwater management that preserves the ability of the Commonwealth’s utilities to construct, maintain, and repair vital public infrastructure and will help us to achieve our mutual goal of meeting the Commonwealth’s decarbonization goals. Thank you for your consideration of our comments.

Please feel free to contact Andrea with any questions you may have at 781-906-3991 or [andrea.agostino@nationalgrid.com](mailto:andrea.agostino@nationalgrid.com).



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**Scott Taylor**

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New Hampshire Stormwater Center  
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Georgia Association of Water Professionals  
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Central Massachusetts Regional Stormwater Coalition  
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Iowa Stormwater Education Partnership  
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Maine Water Environment Association  
Montana MS4 Communities  
Minnesota Cities Stormwater Coalition  
Nebraska Floodplain & Stormwater Managers Association  
New Hampshire Stormwater Center  
Pennsylvania Water Environment Association  
Tennessee Stormwater Association  
Utah Stormwater Advisory Committee  
Virginia Municipal Stormwater Association  
Washington Stormwater Center  
Water Environment Association of Texas  
Water Environment Federation  
Wisconsin Stormwater Collaborative

**Seth Brown, PE, PhD**

National Municipal Stormwater Alliance  
*Executive Director*  
(e) [seth.brown@nationalstormwateralliance.org](mailto:seth.brown@nationalstormwateralliance.org)  
(c) 202.774.8097

April 30, 2024

Mass DEP – BWR Waterways Program  
Attn: Wetlands-401 Resilience Comments  
100 Cambridge Street, 9th Floor  
Boston, MA 02114

Submitted Electronically to: [dep.wetlands@mass.gov](mailto:dep.wetlands@mass.gov)

RE: Comments Concerning Draft Wetland Regulations\_310\_CM\_10.00

The National Municipal Stormwater Alliance (NMSA) appreciates the opportunity to provide comments on the draft Wetland Rules and Stormwater Handbook. Specifically, NMSA is writing in support of Mass DEP to consider deferring to the Stormwater Testing and Evaluation for Products and Practices (STEPP) program, which is a program being led by NMSA to provide a platform for consumers of stormwater infrastructure to obtain objective, third-party reviewed performance data on the efficacy of stormwater products and practices.

To provide context on NMSA, we are the only national-level organization solely focused on Municipal Separate Storm Sewer System (MS4) permit holders, with a special interest in the goal of enabling communities to make large-scale investments in stormwater infrastructure. Through our network of 4,400-plus communities with MS4-permitted stormwater programs across 26 states (including Massachusetts) in all regions of the country, NMSA stands ready to meet this goal by providing technical support through training, direct engagement, and analysis to communities, especially those most in need of support.

Currently, Massachusetts relies upon the Technology Acceptance Reciprocity Partnership (TARP) protocols for the evaluation and approval of stormwater manufactured treatment devices (MTDs). While this program was revolutionary in its time, the TARP program has remained stagnant since 2003, which limits the value of this program in the context of an evolving and dynamic industry like stormwater management. Emerging contaminants, such as PFAS and 6PPDq, are rising issues in stormwater management as are climate change and runoff infiltration. These topics were not envisioned when TARP was established.

STEPP is a program that leverages testing and verification programs, such as TARP, New Jersey's Corporation for Advanced Technology (NJCAT) / New Jersey Department of Environment Protection (NJDEP), and Washington State's Technology Assessment Protocol – Ecology (TAPE), to provide both lab- and field-based testing options for verification of stormwater MTD performance. Specifically, STEPP relies on ASTM testing standards that are based on NJCAT/NJDEP and TAPE protocols, to verify performance claims of stormwater control measures (SCMs), both proprietary products (MTDs) and public domain practices, such as ponds and bioretention facilities.

The Commonwealth clearly values a testing and verification program



for stormwater MTDs that is multi-state and that relies on standardized protocols and third-party unbiased and technically robust reviews. The national STEPP program meets all of these needs and is more current and dynamic than TARP as it is designed to be evergreen with ongoing updates made for processes, procedures, policies, testing standards, and an expanding universe of SCMs that can be verified and pollutants of interest that can be evaluated. STEPP will evolve as the issues as well as the technologies and practices in the stormwater sector evolve. Stormwater is a relatively young field where technologies, such as real-time adaptive controls and green-oriented MTDs, are becoming more common across the landscape.

STEPP launched in May 2024 and is currently providing verification services on the performance of trash capture technologies. The program will have the capacity to provide similar services for hydrodynamic separators and filters by the end of 2024 based upon lab-based testing. Once field-based testing performance testing standards are finalized within ASTM, STEPP will also integrate verification services based upon field-based testing as well. At that time, STEPP will have the capacity to verify SCMs to the level that all other state and regional programs across the U.S. can provide.

With this in mind, we request that Mass DEP consider utilizing STEPP by developing a process that utilizes STEPP-verified data to the degree possible in determining certification for use of SCMs within Massachusetts. A unified approach that is consistent across all permitted jurisdictions in the Commonwealth will greatly reduce confusion on the adoption of approved SCMs. The STEPP program has the capacity to work with states and jurisdictions to develop certification processes if this assistance is needed.

NMSA stands ready to work with Mass DEP to integrate the STEPP program within stormwater policies and processes. If you have questions or would like additional information, please contact Seth Brown, the executive director of the National Municipal Stormwater Alliance, at 202.774.8097 or [seth.brown@nationalstormwateralliance.org](mailto:seth.brown@nationalstormwateralliance.org).

Sincerely,

A handwritten signature in black ink, appearing to read "Seth P. Brown", is located below the "Sincerely," text.

Seth P. Brown, PE, PhD  
Executive Director, National Municipal Stormwater Alliance; Director, STEPP Center of Excellence of Stormwater Testing and Performance



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4/26/24

**To: MA Department of Environmental Protection**

**RE: Regarding the proposed wetland waterways regulation changes.**

We own and operate a marine business at the coast line in Massachusetts and we understand the need for climate change adaptation. However, we believe these proposed regulation changes need further review before becoming finalized as they could have significant adverse effects on marine businesses and waterfront properties in general. Many businesses rely on waterfront facilities for their livelihood.

It seems these regulations could prohibit re-building, maintenance, renovations and/or replacement of existing waterfront facilities, docks, and piers if these regulations are enacted. Renewal of expiring, existing operational permits and licenses could be in jeopardy which could be quite problematic for marina's trying to continue operating their facilities.

We urge you to hold more public hearings in order to gain more participant input as the idea of retreating from the coastline would eventually put many company's (such as marina's) out of businesses. The public also has a need to continued water access and they need a place to keep their boats.

Please consider the options allowed in Designated Port Area's be extended to all existing marinas, boatyards, and other water-dependent entities.

We appreciate you reviewing the points mentioned in this letter. We are concerned for all the many marine businesses in Massachusetts and their ability to continue conducting business.

Thank you,

Todd Walker  
President  
Nauset Marine  
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Bonnie Heiple, Commissioner  
Massachusetts Department of Environmental Protection  
100 Cambridge Street, Suite 900  
Boston, MA 02114

#### Officers & Board

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Milton*

*Bill Pastuszek,  
Colrain*

#### RE: Resilience 1.0 proposal: Wetlands-401 Regulations/Stormwater Handbook

Dear Commissioner Heiple:

The Neponset River Watershed Association is a member supported nonprofit organization dedicated to the improvement and protection of the Neponset River and its watershed. Included in that mission is a commitment to supporting resilience efforts throughout the region. It is with this mission in mind that we submit these comments on MassDEP's proposed changes to the Wetlands Protection Act regulations and the Stormwater Handbook.

First, thank you very much for your efforts towards updating these critical regulations. It is clear that MassDEP has diligently worked with stakeholders across the Commonwealth to prepare the draft regulatory updates. We also appreciate MassDEP's responsiveness to the public during the rollout of Climate Resilience 1.0, and hope that there will be a similar level of support given to educating conservation commissions and other practitioners on the final set of regulations.

The proposed update is an excellent first step towards a more resilient future for Massachusetts communities. Specifically, some of the proposals we are grateful to see include:

- Recognizing "artificial turf" as an impervious surface.<sup>1</sup> The chemicals, microplastics and solids that migrate from these surfaces significantly threaten water resources and the people and wildlife that rely on them.
- Permission for certain scientific research projects to advance.<sup>2</sup> These are necessary to ensure we can identify the most effective and efficient resilience measures for implementation.
- Increasing the recharge requirement to 1 inch for all soil types in new development under Standard 3, especially using the static sizing method.<sup>3</sup>
- The new requirement that nature-based projects be incorporated into coastal projects "as an alternative to coastal engineering structures to promote resiliency along the shoreline."<sup>4</sup>

<sup>1</sup> 310 CMR 10.04

<sup>2</sup> 310 CMR 10.05(12)

<sup>3</sup> Stormwater Handbook Standard 3

<sup>4</sup> 310 CMR 10.24(1)(b)

- Prohibition on new construction in the Velocity Zone.<sup>5</sup>
- Protection of migrating salt marsh and dunes.<sup>6</sup>
- Requirement that development projects include improvements to coastal flowage for resiliency to the “maximum extent practicable”.<sup>7</sup>
- Protection of rare species habitat and migration salt marsh and dune habitat.<sup>8</sup>
- Expansion of environmentally sensitive site design credits under the Stormwater Handbook Standard 4.<sup>9</sup>
- Exempting basic Shared Use Path maintenance from WPA permitting requirements.<sup>10</sup>
- Better coordination with MS4 permit requirements.
- The improvement of the stormwater handbook into a single consolidated and easy to use document.

Given the state of climate change, and the significant lasting impact of the built environment on community resilience, it’s imperative that MassDEP move the needle further than is proposed. Additionally, while these regulations are put into effect, we hope that MassDEP will immediately begin the Resilience 2.0 process to strengthen the provisions implemented in 1.0.

Some of the areas where Resilience 1.0 may be improved include:

**The nature-based resiliency requirement for coastal projects<sup>11</sup> must be made binding to be meaningful.** In the present proposal, this “requirement” is non-binding. Having applicants merely “consider” these measures does not ensure they will implement them. While the provision permits the Issuing Authority to require natural methods and materials, it is unclear under what circumstances MassDEP would do so. MassDEP must go further in requiring applicants analyze nature-based methods as their first option, and set a high threshold to establish impracticability based primarily on site considerations and not on cost.

**There should be alternatives analysis for rebuilding within the V-zone that demonstrates why building farther inland is not feasible.** Stricter scrutiny should be applied to whether certain locations should be rebuilt. Once existing structures are substantially damaged, there must be a strong case made that rebuilding is a necessity over non-structure based development or managed retreat.

**Resilient regulations must require the use of projected conditions, not current ones.** The updated data (NOAA14 + ) that MassDEP is proposing be tied to the Wetland Protection Act regulations<sup>12</sup> will be outdated soon. While this is a significant improvement over the ancient data currently used, projects planned under these regulations must be implemented to withstand

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<sup>5</sup> 310 CMR 10.36(6)

<sup>6</sup> 310 CMR 10.36(6)

<sup>7</sup> 310 CMR 10.36(7)

<sup>8</sup> 310 CMR 10.36(9-10)

<sup>9</sup> Stormwater Handbook Standard 4

<sup>10</sup> 310 CMR 10.02 (2)(b)(r)

<sup>11</sup> 310 CMR 10.24(1)(b)

<sup>12</sup> Stormwater Handbook Standard 2

future storms. There exist reliable models of future precipitation events, and those must be considered when permitting projects in the face of our rapidly changing climate.

While NOAA 14+ has been adopted by RMAT for Tier 1 reviews, Tier 1 does not adequately reflect the lifespan or criticality of flood-protection and climate change measures.<sup>13</sup> Moreover, using this standard is counterproductive given the costs associated with building this infrastructure. The state should require infrastructure to be designed around larger storm volumes. We recommend that MassDEP add language that includes “subsequent versions” of NOAA14+, or require the use of the NOAA 14+ upper confidence interval without the 0.9 modifier. Alternatively, MassDEP should use the EEA climate change projections as that have been published as part of the Resilient Mass initiative and are available on the Climate Change Projections Dashboard.<sup>14</sup>

Similarly, regarding the Land Subject to Coastal Storm Flowage delineations, MassDEP proposes relying on FEMA maps, rather than sea level rise. To meaningfully protect the health and safety of our coastal communities MassDEP must require the use of dynamic, forward-looking projections for precipitation.<sup>15</sup>

**Maintain required recharge volume at 1 inch.** MassDEP is proposing to change the recharge volume in the Stormwater Handbook from 1 inch to 0.8 inches.<sup>16</sup> Such a change would undermine climate resilience and should be rejected. The recharge volume should instead remain at 1 inch across the impervious area and favor static method rather than dynamic.

**MassDEP should clarify the language around which stormwater control measure (SCM) types are suitable for treating TMDL pollutants.** Currently in Table 2-6<sup>17</sup> of the draft handbook, some SCMs are listed as unlikely to provide significant reduction of target pollutants despite those SCMs being listed in the MS4 permit as approved structural controls for meeting nutrient load reductions (Appendix F, Attachment 3 of MS4 permit). We applaud the effort of MassDEP to align the regulatory documents and hope that this discrepancy will likewise be resolved to reduce confusion.

**MassDEP must accelerate the pace of restoration projects by simplifying the permitting process.** While the “Combined Application” option for WPA, Waterways, and Section 401 Water Quality Certifications has been stricken due to inefficiencies,<sup>18</sup> there is no proposed replacement. This is a missed opportunity to create a streamlined process to ensure that projects designed to restore natural areas and better protect our communities, directly advancing MassDEP’s resilience goals, can be implemented quickly and in a sustainable way.

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<sup>13</sup> See MassDEP MassDEP NOAA14 PLUS – Summary of Technical Review (November 15, 2022)

<sup>14</sup> <https://mass-eoeea.maps.arcgis.com/apps/dashboards/2e8534bc2a7849b0aa6f64d0f79a8937>

<sup>15</sup> Stormwater Handbook Standard 2

<sup>16</sup> Stormwater Handbook Standard 3

<sup>17</sup> Stormwater Handbook Standard 11

<sup>18</sup> 310 CMR 10.04

**The “Maximum Extent Practicable” (MEP) recharge standard for all soil types in redevelopment<sup>19</sup> is insufficient.** The standard will allow applicants to easily avoid meaningful compliance, undermining MassDEP’s intent to improve community resilience. MassDEP must hold recharge to a more stringent standard than MEP.

**MassDEP should reduce restrictions on Shared Use Path maintenance to allow a tailored, site-specific approach to these activities.** While we are pleased with the exemption of basic Shared Use Path maintenance from permitting requirements,<sup>20</sup> the directives of subsection (iv) are too prescriptive. Management methods must be designed to benefit the specifics of any given site. Therefore, we recommend that MassDEP develop a Best Management Practice or guidance document instead.

We also oppose the prohibition of “work on any component of a Stormwater Management System,” including drainage swales.<sup>21</sup> This restriction contradicts exemptions already made for stormwater management projects and undermines flood risk mitigation activities.

**The proposal to allow the relocation of roads and railroads as Limited Projects is problematic as written.<sup>22</sup>** While the location of roads and railroads along the coast must be reexamined in light of sea level rise, that reexamination needs to be done carefully. Specifically, it needs to take into consideration all other coastal infrastructure and ecosystems. The state has just begun to do this through the new ResilientCoasts Initiative, studying each coastal neighborhood’s assets and risks. Relocating roads and railroads will need to consider impacts on ecosystem function and habitat at the new locations. We therefore urge MassDEP remove Limited Project status for relocating roads and railroads until a greater, coastwide strategy and decision-making process are established.

As MassDEP considers it’s Resilience 2.0 proposal, we urge you to include...

**Establish an Advisory Board.** MassDEP should develop an external advisory board to speed the process of review and feedback of further regulations. Additionally, MassDEP should explore changes to the regulatory barriers that prevent regulation from referencing best current scientific data. The current process that requires revision to the regulation will always lag behind the best available science.

**Smaller projects should be incentivized to comply with the stormwater handbook, despite exemption.** MassDEP should incentivize compliance or encourage towns and municipalities to incentivize compliance with the stormwater handbook and ESSD/LID techniques for currently exempted single family houses as well as housing development and redevelopment projects with four or fewer units.<sup>23</sup> Incentivizing ESSD/LID beyond the minimum compliance standards should be a priority across the state as these types of infrastructure can provide important co-benefits

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<sup>19</sup> Stormwater Handbook Standard 3

<sup>20</sup> 310 CMR 10.02 (2)(b)(r)

<sup>21</sup> 310 CMR 10.02 (2)(b)(r)(v)

<sup>22</sup> 310 CMR 10.24 (7)(c)(9)

<sup>23</sup> Stormwater Handbook Chapter 2-2

including habitat for local species and wildlife, aesthetic value, and mitigation of heat island effects.

**We encourage MassDEP to create a corresponding ESSD Credit 1 for urban areas where lots have greater than 15% of total impervious cover.** We applaud MassDEP for encouraging ESSD/LID through the credit system. However, ESSD Credit 1<sup>24</sup> excludes almost all urban areas as they will not meet the minimum required criteria of having a 15% or less total impervious cover footprint area. It is important to recognize that ESSD/LID techniques can be adjusted to higher-density development and urbanized areas.

In sum, MassDEP's proposals move the Commonwealth towards better incorporating climate resilient strategies as communities grow and change. However, this first step could be significantly stronger to advance the stated goals of "Resilience 1.0." After finalizing these updates, we urge MassDEP to begin the "2.0" process immediately. We cannot afford to delay implementation of development regulations to ensure the long-term resilience of our communities.

Thank you for the considerable time and effort the Department has invested in developing the instant proposal. We look forward to continuing to work together to protect Massachusetts' rivers, ecosystems, and communities from the impacts of climate change.

Sincerely,



Kerry Snyder  
Managing Dir. for Community Resilience



Anna Yie  
Green Infrastructure Specialist

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<sup>24</sup> Draft Stormwater Handbook, Appendix A





# City of Newton, Massachusetts

## Conservation Commission

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Ruthanne Fuller  
Mayor

Barney S. Heath  
Director

April 26, 2024

### Thank You

We appreciate the opportunity to comment on the draft regulations. We thank MassDEP for focusing on ways to make Massachusetts more resilient to climate change and appreciate the following areas of the new regulations promulgated.

- Supporting greater use of nature-based solutions.
- Updating the precipitation calculations for stormwater designs.

### Recommendations for Changes to the Draft Regulations

- MassDEP should engage with day-to-day practitioners in their regulatory revision efforts: conservation agents, conservation commissioners, and other professional non-profit staff – the people responsible for interpretation and consistent implementation of these regulations.
- The regulations should provide performance standards that protect wetland functions and values and not specific methods and means of achieving those performance standards. Methods and means should be addressed in guidance documents.
- The revised regulations provide some excellent detail, but must strike a reasonable balance between scientific precision and overly complex or burdensome requirements that render them too difficult for a majority of volunteer conservation commissions and applicants to implement. The proposed stormwater requirements, for example, exceed the review capabilities of most conservation commissions.
- The new Stormwater Handbook is nicely organized, the new 860-page behemoth is far too complex to: (1) be usable by most conservation agents or commissions; and (2) facilitate efficient review and permitting. Many of the new details of stormwater management should be removed from the regulations to facilitate future updates.
- Referencing the NOAA14+ precipitation data is a great step in the right direction, but it does not factor in climate change. The Handbook could at least refer to the new EEA Climate change projections dashboard (part of Climate Resilient Mass) which provides town-specific precipitation projections using NOAA 14+).
- Provide frequent outreach and education about the new regulations once promulgated. Dissemination of detailed and multi-faceted explanations of these new regulations and the purposes and intents behind them for the Conservation Commissions and conservation professionals who will implement them will be essential. MSMCP welcomes the opportunity to assist MassDEP in these efforts.

## Requests for the Next Regulatory Change Package

We urge MassDEP to begin a robust process of stakeholder engagement with conservation agents and commissions so that we may help you develop practical, strong, climate resilient regulations. Here we provide some suggestions to begin the conversation.

- In the wetland regulations and Chapter 91, DEP must acknowledge and reflect the difference between wetland “alterations” resulting from new development and wetland “alterations” resulting from ecological restoration efforts and must streamline permitting for wetlands restoration projects to achieve the state’s resiliency goals by:
  - Reversing historic damage to our wetlands,
  - Addressing climate change, rising sea levels, ever-increasing invasive species,
  - Allowing for salt marsh migration,
  - Promoting carbon sequestration, improved water quality, and increased biodiversity, and
  - Promoting living shorelines and other nature-based solutions.
- Create new Minor Activities (in 310 CMR 10.02(2)(b)(2)) for routine work in Riverfront and Buffer Zone conducted by homeowners and land managers such as:
  - Cutting of certain high-risk trees.
  - Removal of invasive vegetation.
- Create new Limited Projects (310 CMR 10.24 and 10.53) and other provisions to simplify trail permitting and invasives species management in wetland resources areas.
- Work with Conservation Agents to update the Riverfront Area regulations to clarify some of the sections that are particularly difficult to interpret and lead to inconsistent implementation.
- Work with Conservation Agents to update and greatly simplify the WPA application and permit forms.
- Increase application fees. Wetland Fees do not cover the administrative costs for processing, reviewing, issuing, and mailing wetland permits.
- Develop guidance documents. Conservation commissions and conservation staff would benefit from guidance documents which provide more detail about various regulatory provisions.
- To account for their inherent value, particularly in the face of climate change, consider expanding Isolated Land Subject to Flooding (ILSF) jurisdiction to include small isolated wetlands by reducing the size of ILSF in 10.57(2)(b).
- Consider adding vernal pools as a new wetland resource area, with a 100-foot Buffer Zone.
- Provide some discretion for local conservation commissions to utilize an administrative approval process for activities in the buffer zone which will not impact wetland functions and values. We feel strongly that individuals who wish to undertake minor activities (such as the removal of a high-risk tree) should be able to receive local approval from their local Conservation Commission without filing for a state permit.

Thank you for the opportunity to share our comments.



Daniel Green  
For the Newton Conservation Commission



April 26, 2024

MassDEP BWR Wetlands Program  
Wetlands-401 Resilience Comments  
100 Cambridge Street, Suite 900  
Boston, MA 02114

RE: Wetlands-401 Resilience  
Comments

Dear Massachusetts Department of Environmental Protection BWR Wetlands Program:

Nitsch Engineering (Nitsch) has reviewed the Proposed Wetlands Resilience 1.0 Draft Regulations provided by the Massachusetts Department of Environmental Protection (MassDEP) including the proposed revisions to 310 CMR 9.00 and 310 CMR 10.00 and the associated Stormwater Management Handbook and Appendix A. Nitsch respectfully submits the following comments and recommendations for consideration:

### **310 CMR 9.00 Waterways**

1. **Reference:** 9.37(1)(d)

**Comment:** *Projects are required to use resilientma.org projections. How often does MassDEP anticipate projections on resilientma.org will be updated, and what will a project be required to do if they change during the design or permitting process?*

**Recommended Amendment:** Nitsch recommends clarifying the acceptable timeline for when a project should access and apply information from resilientma.org. Specifically, indicating at what stage in a project schedule a project team should time stamp use of resilientma.org to inform design.

### **310 CMR 10.00 Wetlands**

1. **Reference:** 10.04 Definitions

**Comment:** *'Impracticable' and 'practicable' have different qualifications in their definitions. The added definition for 'Impracticable' is based on physical constraints while the definition of 'practicable' factors in costs, technology, proposed use, logistics, and adverse consequences. We believe this will lead to confusion.*

**Recommended Amendment:** Nitsch recommends updating these definitions so that the criteria is consistent, such as updating the definition of "impracticable" to include all factors listed in the definition of "practicable".

2. **Reference:** 10.04 Definitions

**Comment:** *The definition of 'impervious area' includes solar arrays as impervious. However, the solar array guidance mentions using the curve number (CN) value of material below the arrays.*

**Recommended Amendment:** Nitsch recommends revising the definition of solar arrays to indicate they are either impervious or pervious based on the surface cover below the array if stormwater will be able to flow off and drain to that surface.

3. **Reference:** 10.36(5)(a) – Page 118 of redline

**Comment:** *The draft regulation indicates there can be no adverse effects to the ability of an area to dissipate wave energy and decrease the velocity of moving water through altering topography, vegetation, soil, sediment characteristic, and erodibility, transportability, and permeability of the soil and sediment. It appears this would prohibit grading and paving to be done in the Velocity and Area of Moderate Wave Action (MoWA) zones because they would naturally result in a decrease in an area's ability to dissipate wave energy. How will the MassDEP evaluate the ability of an area to dissipate wave*

*energy and decrease the velocity of moving water, and how will the MassDEP evaluate the information provided by a design team?*

**Recommended Amendment:** Nitsch recommends that the MassDEP provide more information on the level of detail that needs to be shown when an evaluation is done for these areas, and directly state whether or not new proposed grading and paving is allowed.

4. **Reference:** 10.36(8)(a) – Page 120 of redline

**Comment:** *The draft regulation indicates that topographical alterations can be made to provide flood storage. However, in coastal flood plains, flood storage will be insignificant unless it's completely separated from areas connected to the coastal flow. Lowering topography to add flood storage may also create more difficult site conditions where a project is trying to raise elevations and where filling in Land Subject to Coastal Storm Flowage (LSCSF) seems more logical especially for resilience.*

**Recommended Amendment:** Nitsch recommends adding language to clarify there may be areas where fill is added to allow for accessibility and make other parts of the site more resilient overall, such as raising a building to a specific elevation to meet 310 CMR 10.36 requirements.

5. **Reference:** 10.36(8)(f) – Page 121 of redline

**Comment:** *In the third line of the regulation, it states "...provided that there shall be no redirection of wave energy or of flood water to other properties..."*

**Recommended Amendment:** Nitsch recommends that text be added to state "... there shall be no significant redirection of wave energy or of flood water to properties..." as any change to elevations or structures onsite will result in some change of water flow.

6. **Reference:** 10.00, 4q Chart – Page 74 of redline

**Comment:** *The setback requirements listed (e.g.: 100 feet from 5% slope, 10 feet from building foundation [i.e.: no infiltration systems within building footprint], and 10 feet from property lines) are very restrictive. These setback requirements will restrict options on sites with moderate to steep topography and may result in designs with extensive cuts and fills to meet this requirement. In some cases, the setbacks will make parcels that would be otherwise able to meet the Regulations and Standard undevelopable.*

**Recommended Amendment:** Nitsch recommends that these setbacks be provided as general guidance where possible and necessitated by site-specific conditions. The MassDEP could provide separate language allowing stormwater control measures (SCM) setbacks to be evaluated on a case-by-case basis with the Conservation Commission reviewer and requirements of the local jurisdiction.

## **Stormwater Handbook**

1. **Reference:** Chapter 2 (page 2-3)

**Comment:** *The Handbook indicates that points of discharge and stormwater management structures, including but not limited to riprap aprons, must not be located in most types of Wetland Resource Areas. The Handbook continues to describe what constitutes an existing discharge and where they can be located, but under new discharges, it does not clarify location requirements.*

**Recommended Amendment:** Nitsch recommends clarifying what "Most types of Wetland Resource Areas" means in the New Discharge Section. The Handbook seems to suggest discharges are allowed in Bordering Land Subject to Flooding, Isolated Land Subject to Flooding, Land Subject to Coastal Storm Flowage, and Riverfront Area.

2. **Reference:** Chapter 2 (page 2-7)

**Comment:** *The Handbook indicates that in order to meet the groundwater recharge standard, Environmentally Sensitive Site Design (ESSD) or low impact development (LID) must be used unless demonstrated to be impracticable based on a written alternatives analysis to be submitted with the*

*Notice of Intent (NOI). Other SCMs shall only be used to meet the portions that cannot be met by ESSD or LID. There are many cases where we can meet this requirement on the majority of the site but have small site areas (due to soils, grading, site programming, groundwater, and other conditions) where LID or ESSD cannot be used. In instances where the majority of the recharge volume is infiltrated using LID or ESSD, is an alternatives analysis still required?*

**Recommended Amendment:** Nitsch recommends providing more direction or a template on the information that is required to be part of the alternatives analysis. Nitsch also recommends the MassDEP consider allowing for subsurface infiltration systems to meet Standard 3 without requiring an alternatives analysis. This standard will be challenging to meet without subsurface infiltration, particularly in urban environments where space for LID is limited or nonexistent.

3. **Reference:** Chapter 2 (page 2-53)

**Comment:** *The Handbook indicates that SCMs other than green roofs, rooftop detention, roof gutters, and down spouts may not be installed inside or under buildings. In urban environments such as Boston that have strict infiltration requirements and limited site area, infiltration under the building or location of a storage tank within the building can be unavoidable. Additionally, stormwater reuse tanks may be located within buildings to provide reuse water for building purposes.*

**Recommended Amendment:** Nitsch recommends allowing for installation of SCMs inside or below buildings as allowed by the Massachusetts Plumbing Code. Furthermore, underground infiltration systems under buildings are the only way, in many cases, to meet City of Boston Article 32 zoning requirements on existing buildings in Boston. The zoning article has the goal of infiltrating stormwater to raise groundwater and protect building wooden pile foundations. Allowing the installation of SCMs inside/under the building would support this Article.

4. **Reference:** Chapter 2 (page 2-9)

**Comment:** *The Handbook indicates that infiltrating the required recharge volume on certain sites may be difficult because of soil conditions. For sites comprised solely of hydrologic soil group (HSG) D soils and bedrock at or within two feet of the land surface, Applicants are required to infiltrate the required recharge volume only to the maximum extent practicable. Nitsch believes soils with HSG D or sites with high bedrock should both be excluded from this requirement and that a site should not need both characteristics to be exempt. Additionally, consideration should be given to sites that have previously been developed that meet these restrictions. Redevelopment of these sites to improve upon the existing condition should be allowed but may be infeasible if the site is required to meet the recharge requirements.*

*The MassDEP does not give consideration to sites (undeveloped or previously developed) that have high groundwater. Shallow estimated seasonal high groundwater can make it impractical to provide the required recharge volume.*

**Recommended Amendment:** Nitsch recommends allowing sites with HSG D soils, bedrock within 2 feet of the surface, or sites with estimated seasonal high groundwater within 2 feet of the surface be required to meet the recharge standard only to the maximum extent practicable.

5. **Reference:** Chapter 2 (page 2-53)

**Comment:** *The Handbook indicates that the runoff from open air parking garages is considered wastewater and must meet Massachusetts State Plumbing Code regulations. Plumbing Code indicates that runoff from the top level of an open-air parking garage should be treated as stormwater runoff from a vehicular surface and not sent to the sanitary sewer system.*

**Recommended Amendment:** Nitsch recommends revising this language to match Massachusetts Plumbing Code which indicates runoff from the top deck of a multi-deck, open-air parking structure is considered stormwater runoff and should not discharge to the sanitary sewer system.

6. **Reference:** Chapter 2 (page 2-54 and 2-55)  
**Comment:** Table 2-8 provides the vertical and horizontal setback requirements for each SCM. The setback requirements are unreasonably restrictive and will make it impracticable to provide SCMs on sites.  
**Recommended Amendment:** Nitsch recommends that these setbacks be provided as general guidance where possible and necessitated by site-specific conditions. The MassDEP could provide separate language saying SCM setbacks can be evaluated on a case-by-case basis with the Boston Conservation Commission reviewer and requirements of the local jurisdiction.
7. **Reference:** Chapter 2 (page 2-56)  
**Comment:** The Handbook requires a minimum access of 12 feet around SCMs with additional width required if side slopes exceed 15%. While this requirement may make sense for large-scale traditional SCMs, such as regional surface detention basins, this requirement makes small-scale green infrastructure spread throughout a site impracticable. Not all SCMs require the same access for maintenance, and this discourages the use of small bioretention planters or other SCMs throughout the site.  
**Recommended Amendment:** Nitsch recommends allowing for flexibility on the type of access required for small-scale SCMs receiving runoff from an area less than half an acre and based on site-specific conditions.
8. **Reference:** Chapter 2 (page 2-56)  
**Comment:** The Handbook says a minimum 10-foot setback from buildings and property lines is required for SCMs. This setback distance is not always feasible, especially in urban environments where the lot is entirely comprised of a building footprint. Some municipalities, such as Boston, will even allow construction of infiltration practices within the public way to mitigate for development impacts.  
**Recommended Amendment:** Nitsch recommends removing this requirement and allowing municipalities to determine the appropriate setback requirements for their needs.
9. **Reference:** Chapter 2 (page 2-56) and Appendix A (A-48, A-51, A-55, A-72, A-132)  
**Comment:** The Handbook prohibits the construction of pipes, SCMs, and drainage structures below Estimated Seasonal High Groundwater (ESHGW). This requirement is very prohibitive, especially for sites with high estimated seasonal high groundwater or sites that have been previously developed. This requirement will deter implementing site improvements that can be beneficial to improving stormwater runoff quality and make some sites not feasible for construction.  
**Recommended Amendment:** Nitsch recommends removing this prohibition and allowing the construction of pipes, drainage structures, and SCMs at elevations below estimated seasonal high groundwater. If the concern is groundwater drawdown through inflow into the pipes, SCMs, or structures, the Handbook could allow these elements to be installed to meet typical watertight specifications (i.e., watertight pipe, impermeable liners on stormwater systems, and other methods).
10. **Reference:** Chapter 5 (page 5-7)  
**Comment:** The Handbook indicates that Proprietary Separators cannot be used for primary treatment of site runoff in retrofits, redevelopment projects, and new developments. While Nitsch acknowledges that proprietary structures are not a preferred option for stormwater treatment, site conditions do not always allow for the construction of other SCMs in constrained portions of the site, and separators are a feasible treatment solution given site conditions. In retrofit or redevelopment projects, this restriction deters stormwater improvements by requiring more expensive, harder to maintain SCMs.  
**Recommended Amendment:** Nitsch recommends the Handbook be revised to allow for the use of Proprietary Separators as primary treatment where the construction of other SCMs is infeasible,



provided the overall water quality treatment targets for the site are met. There could be language added to limit this flexibility to redevelopment projects only.

11. **Reference:** Chapter 5 (page 5-10)  
**Comment:** *The documentation required for evaluation of Proprietary Structures is very lengthy and restrictive. The Massachusetts Stormwater Technology Evaluation Program (MA STEP) no longer exists and previous verifications through MA STEP are no longer valid. For every project that uses a Proprietary Structure, third party field studies substantiating the total suspended solids (TSS), total phosphorus (TP) and other pollutant removal claims must be included with a Notice of Intent (NOI) Application. Field studies must use Technology and Acceptance Reciprocity Partnership (TARP) Tier II Protocol, and other accepted approvals are not valid. The submission must also include technical descriptions of the product, including schematic and process flow diagrams which explain how it works, what the technical configurations are, etc.*  
**Recommended Amendment:** Nitsch recommends that MassDEP provide an approved list of proprietary water quality structures and their associated pollutant removal rating. This would be similar to Chapter 11.3 of the New Jersey Stormwater Best Management Practices Manual. Additionally, Nitsch recommends adding provisions that allow for NOI submissions with a performance specification. Public projects cannot call for a specific product and need to allow for a minimum of three equal bid items. Typically, this is done by using a performance specification.
12. **Reference:** Chapter 6 (page 6-4)  
**Comment:** *The Handbook indicates that redevelopment projects that cannot meet the water quality treatment requirements onsite may provide offsite mitigation. Although this is a good option for municipalities, this can be challenging for private landowners.*  
**Recommended Amendment:** Nitsch Engineering recommends providing a provision allowing private landowners with a redevelopment site to pay into a bank for offsite mitigation rather than constructing it themselves in the case they do not own other land within the municipality. This is similar to an approach the U.S. Environmental Protection Agency (EPA) is considering for the Residual Designation Authority Permit.
13. **Reference:** Chapter 6 (page 6-19)  
**Comment:** *The Handbook indicates that additional stormwater storage shall not be assumed to be provided by media, stone, or other subsurface materials while modeling peak rate mitigation in an SCM. This language is confusing because materials such as stone are considered part of certain SCMs such as subsurface infiltration systems and porous pavement stone reservoirs.*  
**Recommended Amendment:** Nitsch recommends revising the language to clarify that stone or other materials that are considered part of the SCM can be considered when calculating peak rate mitigation.
14. **Reference:** Chapter 6 (page 6-21)  
**Comment:** *The Handbook says that the Required Recharge Volume is at least 1-inch of runoff depth multiplied by the total post construction area for HSG A, B, and C soils. Other sections of the Handbook, including the Definition of Standard 2 in Chapter 2 (page 2-7) indicate that it should be 1-inch over the impervious area onsite.*  
**Recommended Amendment:** Nitsch recommends revising the language to clarify the recharge volume should be calculated using the increase in impervious areas, and not total site area.
15. **Reference:** Chapter 6 (page 6-22)  
**Comment:** *The Handbook indicates that a slope stability analysis should be performed if a proposed recharge basin is proposed within 50 feet of a 3:1 or steeper slope.*  
**Recommended Amendment:** Nitsch recommends providing more clarification around when the analysis is required and describing what is required to be submitted for the analysis. These may include

clarifying the requirements for the slope stability analysis and when it is required. The Handbook should also clarify whether it matters if the steep slope is upstream or downstream of the SCM or what the change in elevation is along the slope (for example if we are only dropping 3 feet at a 3:1 slope).

16. **Reference:** Chapter 6 (page 6-38) and Appendix A  
**Comment:** *In Chapter 6, the Handbook indicates that the maximum stone void ratio for SCMs that use stone or gravel should be 35%. In Appendix A, for specific SCMs, the Handbook reference void ratios for stone varying between 30% and 40%.*  
**Recommended Amendment:** Nitsch recommends clarifying the maximum void ratio and updating the Handbook to be consistent throughout.
17. **Reference:** Chapter 6 (page 6-40)  
**Comment:** *The Handbook indicates the Hantush method predicts the maximum height of the groundwater mound beneath a rectangular or circular recharge area. As such, Hantush is not an acceptable method for linear features (i.e., infiltration trenches, subsurface infiltrators). Use MODFLOW to perform the mounding analysis for linear features.*  
**Recommended Amendment:** The Hantush method allows for the input of a recharge systems' length and width, which takes into account the linear shape of longer, narrower systems. The Hantush method should be allowed for modeling groundwater mounding for linear systems.
18. **Reference:** Chapter 6 (page 6-72) and Chapter 1 (page viii)  
**Comment:** *The Handbook indicates that an approved Soil Evaluator (under MassDEP Title 5) cannot be considered a competent soil professional. Although the Soil Evaluator title was developed for Title 5, the training required for an approved Soil Evaluator includes identifying soil textures and estimated seasonal high groundwater, which supports the evaluation of soils for stormwater infiltration. The new Handbook requirements seem to indicate that only geotechnical engineers could provide the soil infiltration rates.*  
**Recommended Amendment:** Nitsch recommends revising the Stormwater Handbook to include MassDEP Approved Soil Evaluators as competent soil professionals.
19. **Reference:** Chapter 6 (page 6-76)  
**Comment:** *The Handbook indicates that for infiltration SCMs, at a minimum, one test location for every 5,000 SF with a minimum of three (3) test locations per infiltration practice should be included for soil testing. Two borings per test locations: one for ESHGW and one for infiltration testing. Though three test locations may make sense for large scale infiltration SCMs, many SCMs are less than 5,000 SF and may not need that many test locations to characterize the conditions within the SCM. Additionally, it is standard practice to perform test pits that evaluate soil and groundwater conditions and perform infiltration testing; however, the Handbook does not permit combining these within a single test pit. As written, every infiltration SCM will require six (6) test pits or borings which is excessive considering the space available and intent of the testing.*  
**Recommended Amendment:** Nitsch recommends maintaining the requirement for one test location for every 5,000 SF but removing the minimum of three (3) test locations per SCM. This allows smaller systems to provide one (1) or two (2) test pits/borings, minimizing disturbance while providing necessary soil and groundwater information to inform design. Additionally, soil textural analysis, estimated seasonal high groundwater determination, and infiltration testing should be allowable at a single test location at the discretion of the competent soil professional and the agent for the approving authority.
20. **Reference:** Chapter 6 (page 6-77)  
**Comment:** *The Handbook indicates that borings or test pits used to evaluate seasonal high water and soil texture must be advanced to a depth of at least 60 inches below the lowest engineering depth of*



*the SCM. It will need to be deeper than 60 inches where there is an indication that there may be a confining layer deeper than 60 inches. For example, if the USGS Surficial Mapping indicates bedrock is near the surface, the borings should go until refusal or 20 feet, whichever is shallower.*

**Recommended Amendment:** Test pits are a better method for determining seasonal high ground water and soil texture than borings since they expose the vertical face of the soil profile which allows for easier identification of soil horizons, soil texture at each horizon, and redox features. However, advancing a test pit 20 feet below grade is not possible with most commonly available excavation equipment. In this scenario a boring would be the only option and it will be more difficult to acquire the needed information. Excavating to a depth of 60 inches below the lowest engineering depth of the SCM is appropriate and practical. The requirement to advance to refusal or 20 feet, whichever is shallower, should be deleted.

21. **Reference:** Chapter 6 (page 6-86)

**Comment:** *The Handbook indicates that a textural analysis is not acceptable to determine the HSG of soils. This is a departure from standard design practices that have proven to be a reliable way to determine appropriate infiltration rates.*

**Recommended Amendment:** Nitsch recommends textural analysis using the Rawls Table for stormwater infiltration design. The Rawls Table was developed by the University of Minnesota in 1982 which quantified soil infiltration rates using saturated hydraulic conductivity based on USDA soil textures. It makes sense to use soil infiltration rates based on a United States Department of Agriculture (USDA) methodology just as current stormwater modeling used a version of the USDA methodology for curve numbers based on soil type. Nitsch also recommends that sieve analysis (grain size analysis) should be allowed for determining infiltration rates in a corresponding table using the Unified Soil Classification table which would then correspond to an Infiltration rate.

If in situ testing for infiltration rates is required, then the MassDEP should provide testing guidelines and methodology for Guelph, Double Ring, and Falling Head Tests. The MassDEP should consider classes for teaching design professionals on how to use these pieces of equipment appropriately.

22. **Reference:** Chapter 6

**Comment:** *The Handbook indicates that the calculations required to meet Standard 2, Peak Rate Attenuation, should use infiltration values from Table 6-4 based on the soil texture. Calculations to show compliance with Standard 3, Stormwater Recharge, should use in-situ soil infiltration testing rates separate from Table 6-4. Standard 4, Pollutant Removal, requires the use of the EPA Performance Removal Curves to document compliance. The EPA Pollutant Removal Curves are based on the Rawl's values for infiltration. Three of the stormwater standards are based on different infiltration values which will lead to confusion during the permitting process.*

**Recommended Amendment:** Nitsch recommends consistent infiltration values based on the current Rawls Table. Nitsch recommends that one infiltration rate be used (Rawls Table) for clarity instead of asking projects to provide multiple rates depending on the standard which will create confusion.

23. **Reference:** Chapter 6 (page 6-78)

**Comment:** *Table 6-4 indicates that the infiltration rates provided in this table must be used when using infiltration to calculate peak runoff rate. Additionally, the highest provided infiltration rate in the table is 1.42 inches per hour (in/hr). When infiltration testing is performed, the testing results should be allowed for use when calculating peak runoff rate. In instances where infiltration testing results in a soil with infiltration rates higher than 1.42 in/hr, it seems overly conservative to have to use an infiltration rate lower than the actual rate for design purposes, especially where the Handbook requires infiltration testing.*

**Recommended Amendment:** Nitsch recommends using the Rawls Table for infiltration rates for calculating peak runoff rate or to allow for use of infiltration rates determined using infiltration testing for design of SCMs to mitigate the peak runoff rate.

24. **Reference:** Appendix A (page A-14 and A-62)

**Comment:** *The Handbook indicates that the maximum impervious area that can discharge to a Qualifying Pervious Area (QPA) is 1,000 square feet. A maximum impervious area of 1,000 square feet is low if this credit is intended to be used for driveways and parking lots as indicated because 1,000 square feet is equivalent to five parking spaces. Additionally, a Vegetated Filter Strip can be considered a QPA and is allowed to receive runoff from an area one acre or less (per Appendix A, page A-62).*

**Recommended Amendment:** Nitsch recommends increasing the impervious area limit for the Environmentally Sensitive Site Design (ESSD) credit to match the area allowed to discharge to a vegetated filter strip.

25. **Reference:** Appendix A (page A-42)

**Comment:** *The Handbook indicates that in order for a site to take credit for street and parking lot cleaning, it needs to occur a minimum of 10 months of the year. Many municipalities street sweep for eight or nine months of the year, omitting December, January, and February. Additionally, the Massachusetts Small MS4 General Permit allows permittees to take credits for street sweeping less than 10 months of the year and only requires sweeping twice a year. Snow in the months of December, January, and February may make street and parking lot cleaning challenging.*

**Recommended Amendment:** Nitsch recommends lowering the requirement to nine (9) months of the year.

26. **Reference:** Appendix A (page A-54)

**Comment:** *The Handbook indicates that Proprietary Manufactured Separators must be configured off-line to reduce scouring and re-entrainment of previously trapped sediment. Some proprietary separators are designed to prevent re-suspension of sediment. Requiring all manufactured separators to be installed in this configuration is unnecessary and too prescriptive.*

**Recommended Amendment:** Nitsch recommends modifying this requirement to allow for inline configuration if the structure has an internal bypass.

27. **Reference:** Appendix A (page A-55)

**Comment:** *The Handbook indicates that Proprietary Manufactured Separators may receive credit for 44% TSS removal. Many manufacturers claim higher removal rates and other states (such as New Jersey, refer to Chapter 11.3 of the NJ Stormwater BMP Manual) allow for TSS removal rates of 50% for Proprietary Manufactured Separators based on Best Management Practice (BMP) testing.*

**Recommended Amendment:** Nitsch recommends revising the TSS removal rate and considering increasing it to 50% for Proprietary Manufactured Separators.

28. **Reference:** Appendix A (page A-64)

**Comment:** *The Handbook indicates that in order to use a pea gravel diaphragm with filter strip as pretreatment for bioretention, the grass/gravel combination must encircle the entire bioretention area.*

**Recommended Amendment:** Nitsch recommends revising the Handbook to only require the gravel/grass strip where stormwater runoff will be entering the basin.

29. **Reference:** Appendix A (page A-70)

**Comment:** *The Handbook indicates that Filtering Bioretention is not suitable to treat Total Maximum Daily Loads (TMDL) pollutants Phosphorus and Nitrogen. The Massachusetts Small MS4 General Permit allows for filtering bioretention and provides pollutant removal curves for Phosphorus and Nitrogen. Additionally, Bioretention with Internal Storage Reservoir is a type of filtering bioretention*

*basin that receives higher Phosphorus and Nitrogen removal rates. Assuming the level of pollutant removal is suitable for the TMDL, filtering bioretention should be considered suitable for TMDL pollutants.*

**Recommended Amendment:** Nitsch recommends revising the Handbook to consider Filtering Bioretention to be acceptable for Phosphorus TMDLs to be consistent with the Massachusetts Small MS4 General Permit.

30. **Reference:** Appendix A

**Comment:** *The Massachusetts Small MS4 General Permit includes Bioretention with Internal Storage Reservoir (ISR) as an approved method of removing phosphorous, TSS, nitrogen, and other pollutants from stormwater runoff. This SCM has not been included in the revised Handbook.*

**Recommended Amendment:** Nitsch recommends including design criteria and information about bioretention with ISR in the new Handbook based on the EPA guidance and University of New Hampshire (UNH) Stormwater Center Details.

31. **Reference:** Appendix A (page A-73)

**Comment:** *The Handbook indicates that for peak reduction modeling of bioretention basins, the depth of the ponds in the runoff model shall never exceed 12 inches. Though Nitsch agrees the lowest outlet for a bioretention basin should not be more than 12 inches above the bottom of the pond, if properly designed and planted, these systems can effectively function with a peak elevation above 12 inches for short periods of time.*

**Recommended Amendment:** Nitsch recommends modifying the language to allow for a peak depth of water above 12 inches provided that the outlet for the basin is constructed no more than 12 inches above the bottom of the basin. Another application of this requirement can be found in the New Jersey Stormwater BMP manual Chapter 9.7.

32. **Reference:** Appendix A (page A-73)

**Comment:** *The Handbook indicates that no storage shall be assumed to be provided by the bioretention media when modeling peak rate reduction. Nitsch agrees that the soil media should not be considered for storage as it is typically insignificant but recommends that the volume within the crushed stone reservoir course should be allowed to contribute towards the peak rate mitigation.*

**Recommended Amendment:** Nitsch recommends modifying the language to allow for the storage in the crushed stone reservoir of bioretention to be considered as part of the total volume of the system and contribute towards peak rate mitigation.

33. **Reference:** Appendix A (page A-91)

**Comment:** *The Handbook indicates that the lowest portion of the gravel layer of a gravel wetland must be at least 2 feet above ESHGW. Per the UNH Stormwater Center Subsurface Gravel Wetland Design Specifications, gravel wetlands do not require separation from groundwater. Many gravel wetlands include a liner which allows the SCM to be located within groundwater. The Connecticut Stormwater Quality Manual, Maine BMP Technical Design Manual, and NJ Stormwater BMP Manual allow gravel wetlands to be located below the ESHGW elevation provided they have a liner or sufficiently impermeable soils. Additionally, the UNH Stormwater Center standard details and specifications for gravel wetlands clarify that gravel wetlands can be located below ESHGW.*

**Recommended Amendment:** Nitsch recommends removing the separation requirement for gravel wetlands and ESHGW consistent with other states' requirements.

34. **Reference:** Appendix A (page A-100)

**Comment:** *The Total Phosphorus and Total Suspended Solids removal rates for proprietary filter structures are low compared to other States. The Connecticut Stormwater Quality Manual and New*

*Jersey Stormwater BMP Manual allow for 80% TSS removal by proprietary structures. Many manufacturers claim to remove a minimum of 60% phosphorus.*

**Recommended Amendment:** Nitsch recommends revising the language to allow TSS and TP removal rates based on product specific third-party testing which may include higher removal rates than a standard removal rate.

35. **Reference:** Appendix A (page A-132)

**Comment:** *The Handbook indicates that ESHGW should not be within two to four- feet of the bottom of the dry swale. Other areas of the Handbook indicate that SCMs should be located two feet above ESHGW.*

**Recommended Amendment:** Nitsch recommends revising the language between these sections for consistency to maintain a minimum of 2 feet of separation between the bottom of the dry swale and ESHGW.

36. **Reference:** Appendix A (page A-136 and A-142)

**Comment:** *The Handbook indicates that dry wells and infiltration basins can never be located above existing manmade fill. Section 6.3.3 allows for infiltration above manmade fill provided certain criteria are met.*

**Recommended Amendment:** Nitsch recommends revising the language for Dry Wells and Subsurface Infiltration Basins to match the requirements of Section 6.3.3.

37. **Reference:** Appendix A (page A-142)

**Comment:** *The Handbook indicates that if bedrock is located on the site, an analysis must be performed to determine the appropriate vertical separation for infiltration basins. Other areas of the Handbook indicate that infiltration SCMs should be located a minimum of two feet above bedrock.*

**Recommended Amendment:** Nitsch recommends revising the Handbook to provide more detail about the required analysis to determine the vertical separation between the bottom of infiltration and bedrock. Nitsch recommends clarifying that a minimum of two feet is required but may be greater depending on the results of the analysis.

38. **Reference:** Appendix A (page A-157)

**Comment:** *The Handbook indicates that porous pavement must not receive stormwater from other drainage areas, especially areas that are not fully stabilized. While Nitsch agrees that porous pavement should be protected from receiving runoff from areas that are not stabilized, there are common applications where adjacent areas drain towards porous pavement systems. The NJ Stormwater BMP Manual and Connecticut Stormwater Quality Manual allow for an area with a ratio of 3:1 (area draining towards porous pavement to area of porous pavement) to drain towards the porous pavement surface. The Maine BMP Technical Design Manual allows for adjacent area run-on provided the length of the pervious pavement is equal in length to the impervious area that drains to it.*

**Recommended Amendment:** Nitsch recommends that the Handbook allow for adjacent area run-on to porous pavement as long as the area is limited to a 3:1 ratio (area draining towards porous pavement to area of porous pavement).

39. **Reference:** Appendix A (page A-155)

**Comment:** *The Handbook indicates that porous pavement provides peak rate attenuation for small storms through a reduced curve number of 80. While a reduced curve number is helpful, it does not represent the true benefit porous pavement can provide in reducing peak rate. The NJ Stormwater BMP Manual, Connecticut Stormwater Quality Handbook, Minnesota Stormwater Manual, and Maine BMP Technical Design Manual allow for reduced runoff rate by taking the storage reservoir and design of the porous pavement section into account. Depending on the design specifications, the reduction*



*provided by the porous pavement systems varies by storm event and can be effective at mitigating the 100-year runoff rate.*

**Recommended Amendment:** Nitsch recommends that the Handbook allow for the storage of stormwater runoff in the reservoir course of a porous pavement section to mitigate the peak runoff rate. This method would allow the pavement section to be modeled as subsurface infiltration and is consistent with both the NJ Stormwater BMP Manual and the Minnesota Stormwater Manual.

40. **Reference:** Appendix A (page A-163)

**Comment:** *The Handbook requires a minimum four feet of separation between the bottom of the subsurface infiltration basin and ESHGW. This contradicts other areas of the Handbook that requires two feet of separation. Additionally, because a mounding analysis is required for infiltration SCMs with less than four feet of separation between ESHGW, requiring more than two feet of separation may be unnecessary. The mounding analysis will guide the appropriate separation given site-specific conditions.*

**Recommended Amendment:** Nitsch recommends revising the requirement to allow for a minimum of two feet of separation between the bottom of the subsurface infiltration basin and the ESHGW provided a mounding analysis is completed.

41. **Reference:** Appendix A (page A-163)

**Comment:** *The Handbook requires a mounding analysis be conducted for subsurface infiltration basins using the MODFLOW method. MODFLOW is the USGS's modular hydrologic model. MODFLOW is considered an international standard for simulating and predicting groundwater conditions and groundwater/surface-water interactions. MODFLOW is used by hydrogeologists to simulate groundwater flows. The new Handbook suggests that the United States Geological Survey (USGS) is an appropriate agency for obtaining SCM information for permitting. Nitsch notes that USGS provides a groundwater mounding analysis spreadsheet using the Hantush Method for mounding analysis. The Hantush Method is the accepted method for groundwater mounding analysis in engineering practice and has been used for linear systems without issues. There are rectangular infiltration systems that are not long and linear and should be allowed to use the Hantush Method. Using MODFLOW for long linear infiltration systems is over complicating what the Hantush Method can provide in a simple spreadsheet.*

**Recommended Amendment:** Nitsch recommends revising the Handbook to allow for the Hantush method to perform a mounding analysis for subsurface infiltration systems.

42. **Reference:** Appendix A (page A-163)

**Comment:** *In the case of Land Subject to Coastal Storm Flowage (LSCSF), subsurface systems are utilized to mitigate peak runoff rate from rainfall events whereas the flooding in these areas is typically caused by coastal inundation. These systems provide critical mitigation for non-coastal storm events and limiting their use in LSCFS is unnecessarily restrictive. Proper engineering design, along with regular maintenance of these systems both support the longevity of them and allow for inundation when necessary. Additionally, this requirement would make design of sites in urban areas along the coast impracticable. Many of these coastal sites (such as downtown Boston) rely on subsurface infiltration systems to reduce peak runoff rates before connecting to existing drainage infrastructure.*

*In the case of Bordering Land Subject to Flooding (BLSF), Nitsch understands that in the 100-year storm, these systems may be inundated, and groundwater levels may increase, however, proper engineering design and regular maintenance of these systems support the longevity of them and allow for inundation when necessary. Subsurface infiltration systems can be critical in helping meet the Stormwater Standards on some sites, particularly on redevelopment sites, small-scale sites, and in urban environments. These systems are very effective at mitigating runoff from the 2- and 10-year storms and are not just used in the 100-year storm. These sites rely on subsurface infiltration systems to reduce peak runoff rates before connecting to existing drainage infrastructure.*

**Recommended Amendment:** Nitsch recommends allowing for construction of subsurface infiltration in BLSF and LSCSF provided routine operation and maintenance and inspection guidelines are followed.

43. **Reference:** Appendix A (page A-163)

**Comment:** *The Handbook indicates that subsurface infiltration systems must NOT (emphasis by Nitsch) be sized using the static method (including the volume to store the peak runoff rate) and not simple or dynamic field methods.*

**Recommended Amendment:** Nitsch questions the language in this statement. Nitsch believes that the 'NOT' is a typographical mistake and that the requirement should read that the "*subsurface infiltration system must be sized using the static method*".

The MassDEP does not provide a rationale for why the dynamic methods are no longer appropriate. Nitsch recommends that MassDEP allow the dynamic methods in order to size systems on small sites or sites with existing conflicts that prevent the installation of larger stormwater management systems.

44. **Reference:** Appendix A (page 170)

**Comment:** *The Handbook indicates that green roofs are not appropriate for sites with higher pollutant loading. Green roofs are located on a building and do not receive the same pollutant loading as the rest of the site and should be allowed for use on all sites.*

**Recommended Amendment:** Nitsch recommends updating the Handbook to allow for the use of green roofs on all sites including those with higher pollutant loading.

45. **Reference:** Appendix A (page 172)

**Comment:** *The Handbook indicates that a curve number of 86 should be used when modeling peak rate attenuation from all green roofs. Using a CN of 86 is not appropriate when considering the nuances and variables of site-specific green roof design. For example, a CN of 86 may be an appropriate estimate of flow attenuation for thinner (extensive) green roof sections, but isn't accurate for thicker (intensive) green roofs (up to 6-48 inches of material when considering more robust planters).*

**Recommended Amendment:** Nitsch recommends updating the definitions of extensive and intensive green roofs to be consistent with NJ DEP's BMP Manual Section on Green Roofs. The definitions from MassDEP distinguish between the two (2) based on maintenance, plants and an undefined requirement on "deeper, heavier and richer" soils. The NJ DEP's BMP Manual includes a defined thickness for the two (2) types. When the green roofs are defined based on thickness, engineers can calculate the curve number for each design storm (rather than one standard curve number for all storms) using the same requirements in the NJ DEP BMP Manual which allows for a more accurate representation of runoff.

46. **Reference:** Appendix A (page 172)

**Comment:** *The Handbook provides setback requirements for green roofs from wetlands, building foundations, and other features. Green roofs are located on buildings and should be allowed on them regardless of where the building is located as their proximity to wetlands has no impact on the resource area.*

**Recommended Amendment:** Nitsch recommends removing the setback requirements for green roofs.

47. **Reference:** Appendix A (page 172)

**Comment:** *The Handbook describes the required elements of a green roof. Although not required, trees and certain types of shrubs/bushes could be included in an intensive green roof design and shouldn't be discouraged from use. Additionally, a minimum density of plantings should be considered.*

**Recommended Amendment:** Nitsch recommends revising the Handbook to include a minimum density of plantings. The NJ Stormwater BMP Manual recommends a minimum 85% density planting requirement. Additionally, the use of shrubs/bushes on an intensive green roof should be encouraged.



48. **Reference:** *Appendix A (page 172)*

**Comment:** *The Handbook indicates that runoff from green roofs should not be discharged to nutrient-impaired Surface Waters and if using green roofs in these circumstances, the rooftop overflow should be treated. The City of Cambridge and other municipalities require green roofs and discharge green roof overflow into the Charles River, which is impaired for Phosphorus. Nitsch recognizes that green roofs, like landscaped and lawn areas, may increase nutrient loading while plantings are being established and once the plantings are established, the nutrient loading decreases. While extensive green roofs with shallow sections may require routine replanting of vegetation, intensive green roofs do not require the same level of replanting and instead can provide pollutant reduction and substantial peak rate mitigation benefits.*

**Recommended Amendment:** Nitsch recommends the revising the Handbook to allow for the construction of intensive green roofs in areas that discharge untreated stormwater to nutrient-impaired Surface Waters provided that the site's stormwater discharges meet the required TSS and TP reductions.

49. **Reference:** *Appendix A (page 174)*

**Comment:** *The Handbook includes limited information on maintenance of green roofs.*

**Recommended Amendment:** Nitsch recommends including a more specific maintenance time frame beyond "regularly." Perhaps four (4) times a year to maintain the roof, once a year during the growing season for the vegetation, and once a year during the non-growing season for the vegetation. Include maintaining the 85% vegetative cover if that is decided to be updated with this BMP. Consider including inspection for erosion/scour as well as unwanted ponding.

### **General Questions**

1. **Question:** *The EPA is in the process of drafting requirements for the Residual Designation Authority permit that will regulate private landowners within the Mystic River, Neponset River, and Charles River Watersheds. Has the MassDEP coordinated with the EPA to ensure that the requirements contained within the Draft Regulations are consistent with the requirements in the RDA permit?*
2. **Question:** *Chapter 5 of the Handbook references the Transportation Separate Storm Sewer System (TS4) permit. It is our understanding that The EPA is in the process of finalizing requirements for the TS4 permit and a final version of this permit has not been released to the public at this time. Has MassDEP coordinated with the EPA to ensure that the requirements contained within the Draft Regulations are consistent with the requirements in the TS4 permit?*

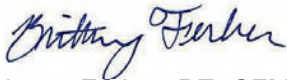
These are some of the questions and comments that we have as Massachusetts Licensed Professional Engineers regarding the Draft Regulations and the Handbook. We appreciate your consideration of our comments. We are willing to meet with the appropriate people at MassDEP to discuss if you feel that would be appropriate. We are also available by email or phone if you want to have a call to discuss. Please feel free to contact Brittney Ferber, PE,CFM at [bferber@nitscheng.com](mailto:bferber@nitscheng.com) or 857-206-8437 or Ryan Gordon, PE, ENV SP, LEED Green Associate at [rgordon@nitscheng.com](mailto:rgordon@nitscheng.com) or 857-206-8695 if you have any questions, comments, or want to meet to discuss. Thank you for allowing the public to provide input on these important and impactful Draft Regulations and Handbook!

Very truly yours,

**Nitsch Engineering, Inc.**



Lisa A. Brothers, PE, ENV SP, LEED AP BD+C  
President & CEO



Brittney Ferber, PE, CFM  
Project Manager



Ryan Gordon, PE, ENV SP, LEED Green Associate  
Project Manager

BMF/RMG/kwo



April 30, 2024

Massachusetts Department of Environmental Protection (MassDEP)  
Bureau of Water Resources Wetlands Program & Waterways Program  
100 Cambridge St, Suite 900  
Boston, MA 02114

Subject: Wetlands-401 and Waterways Resilience Comments

Dear Commissioner Heiple, Wetlands Program Chief Rhodes, and Waterways Program Chief Padien,

The North and South Rivers Watershed Association (NSRWA) would like to offer comments and recommendations regarding the environmental impacts of the proposed changes to the Wetlands (310 CMR 10.00), 401 Water Quality Certification (314 CMR 9.00), and Waterways (310 CMR 9.00 aka Chapter 91 or Tidelands) regulations. We are a 54 year old nonprofit based on the South Shore of Massachusetts. Our membership consists of approximately 1,500 households on the South Shore and our watershed spans across 12 towns. The NSRWA's comments are focused on the need to streamline permitting for wetlands restoration projects, to improve data used to inform decision-making.

We commend MassDEP for the years of work that has been put in to prepare these draft regulations, and for helping to make Massachusetts more resilient to climate change. These are necessary steps towards ecological restoration, public safety, and preparing our communities for the impacts of climate change.

However, these draft regulations do not go far enough in achieving the goals of "Resilience 1.0," and after swift promulgation of most of these regulations, we strongly encourage MassDEP to begin the "Resilience 2.0" process to strengthen some of the provisions found in 1.0.

### **Streamline Permitting for Wetlands Restoration**

Massachusetts has long been a leader in environmental protection. It was the first state to adopt a wetlands protection law and it is a leader in restoring wetlands. In order to continue this leadership, the new regulations must address the following:

1. Strengthen the proposed inclusion of nature-based projects by requiring applicants to demonstrate that nature-based solutions were considered as part of the alternative analyses.
2. As written, the regulations define salt marsh hay as "fill," and treat it with the same long permitting pathway as fill used in development, even though hay is part of ecological restoration. Instead, the definition of "fill" should exclude salt marsh hay, and those projects should be exempt from getting a

**The North & South Rivers Watershed Association Inc.**  
P.O. Box 43, Norwell, Massachusetts 02061  
(781) 659-8168 Fax (781) 659-7915  
[www.nsrwa.org](http://www.nsrwa.org)



Chapter 91 license.

3. Streamline permitting for restoration projects must be included in forthcoming “Resilience 2.0” package, and must require interagency coordination so these projects (dam removals, salt marsh restoration, culvert upgrades) can happen as quickly as possible to achieve our goals around carbon sequestration, water quality, and biodiversity goals. There must be a (simpler) replacement for the Combined Application/Combined Permit process between Chapter 91 and the Wetlands Protection Act.
4. NSRWA would like to see special conditions given to dam removal projects under 310 CMR 9.00. The proposed regulations already provide for culvert replacements to be exempted from a Chapter 91 license, recognizing that those projects do not impede navigation and instead increase the resilience of the site. MassDEP’s public summary of the proposed changes state that these projects are exempt “when such projects do not reduce the space available for navigation, facilitating the implementation of certain measures designed to address climate vulnerability related to increased precipitation.”
5. The Wetlands Protection Act regulations provide an expedited permitting process for dam removals, categorizing them as an Ecological Restoration Limited Project; Chapter 91 should do the same by exempting them from obtaining a permit. There are 3,000 dams across the Commonwealth, 300 of which are considered “high hazard” by the Office of Dam Safety.

### **Improve Data Used to Inform Decision-Making**

We are fierce advocates for the use of science and data to inform decision-making and we applaud the proposed requirement for sea level rise data to be considered for new development and redevelopment. This is an important step but we do have a few concerns:

1. The updated data (NOAA14+) that MassDEP is proposing be tied to the Wetland Protection Act regulations will be outdated soon. That data needs to instead address precipitation intensities of future storm events in order to provide true climate resilience.
2. MassDEP’s proposal will rely on FEMA maps to delineate Land Subject to Coastal Storm Flowage, rather than sea level rise, which would provide dynamic, forward-looking projections for precipitation that will protect our community for decades to come.
3. Nothing in the draft regulations points to forecasting precipitation.

### **Stormwater Handbook**

1. Standard 3 Incentivize developers to go beyond minimum under the Maximum Extent Practicable standard for redevelopment.



Thank you for your consideration of these comments. We are grateful for the considerable amount of time and resources MassDEP has invested to create these draft regulations. We look forward to continuing to work together to protect Massachusetts' rivers, ecosystems, and communities from the impacts of climate change.

Very truly yours,

Samantha Woods  
Executive Director



FOR THE SUDBURY ASSABET & CONCORD RIVERS

23 Bradford Street • Concord, MA 01742

978 • 369 • 3956

office@oars3rivers.org

oars3rivers.org

April 29, 2024

Massachusetts Department of Environmental Protection  
Bureau of Water Resources Wetlands Program  
Attention: Wetlands-401 Resilience Comments  
100 Cambridge Street, Suite 900  
Boston, MA 02114

Submitted via: [dep.wetlands@mass.gov](mailto:dep.wetlands@mass.gov), [dep.waterways@mass.gov](mailto:dep.waterways@mass.gov)

Dear Ms. Rhodes and the MassDEP Wetlands Program,

Thank you for the opportunity to comment on the draft Wetlands Protection Act regulations as part of MassDEP's "Climate Resilience 1.0" package.

OARS is a non-profit organization whose mission is to protect, improve, and preserve the Sudbury, Assabet, and Concord rivers and watershed for all people and wildlife. OARS has a long and successful history of advocating for legislation and regulations that improve the quality of our rivers. OARS also has extensive experience in mapping and managing invasive water chestnut in our surface waters and has authored the widely-used "Water Chestnut Management Guidance & Five-Year Management Plan for the Sudbury, Assabet, and Concord River Watershed" (2017, Update in 2024). OARS also plans and manages dam removal projects and is the facilitator of the SuAsCo Climate Resiliency Coalition.

We are pleased to see that these regulations advance climate resilience. These are necessary steps towards ecological restoration, public safety, and preparing our communities for the impacts of climate change. We appreciate the years of work MassDEP has spent crafting these draft regulations, and OARS strongly supports many of the proposed provisions. We also appreciate MassDEP's responsiveness to the public during the rollout of Climate Resilience 1.0, and hope that there will be a similar level of support given to educating conservation commissions and other practitioners on the final set of regulations. We have reviewed and support the comments submitted by the Mass Rivers Alliance.

**Specifically, OARS supports the following and recommends their promulgation:**

- Exempting culvert replacements that conform to the Stream Crossing Standards and dam removal projects from a Chapter 91 license, recognizing that these projects do not impede navigation and instead increase the resilience of the site.
- Including "artificial turf" under the definition of Impervious Surface. The chemicals found in artificial turf have been found to degraded public health and water quality.
- The increased 1-inch recharge requirement for all new soil types in new development under Standard 3, especially using the static sizing method.
- Expanding Low Impact Design/Environmentally Sensitive Site Design credits.
- Exempting basic Shared Use Path maintenance from WPA permitting requirements.



- Aligning the Wetland Protection Act's conditions to coordinate with the Municipal Small Sewer System permit, making compliance less burdensome for municipalities.

**Where the regulations need to be refined:**

- The updated WPA does not do enough to simplify and ease the permitting for ecological restoration projects, particularly dam removals. The high cost of permitting dam removals creates long delays and high costs, resulting in fewer projects and inefficient use of public funds. A simplified permitting process is needed, as is the prioritization of dam removal over fishways. Removal has significantly more benefits for resiliency and ecological restoration than other strategies.
- The updated WPA does nothing to ease permitting for invasive aquatic plant management. Aquatic invasive plants have a huge and ever-increasing negative impact on wetland values and public enjoyment of our ponds, lakes, streams, and rivers, exacerbated by climate change. Aquatic invasive plant removal has significantly more benefits for resiliency and ecological restoration and protection of the wetland interests (particularly protection of fisheries and protection of wildlife habitat), than potential for damage from "alteration" of resource areas (e.g., land under water). Much of the effort to manage them is from volunteers or non-profits, neither of which have the funds or staff time to apply under the WPA for their small-scale (yet highly effective and minimally disruptive) management efforts. The high cost of permitting aquatic invasive plant management, such as water chestnut, discourages volunteer efforts and results in expansion of damage to the wetland resource areas and interests. A simplified permitting process and better guidance, for example to use RDAs to facilitate well-designed small-scale management efforts, rather than discourage them, is urgently needed. For example, a new "minor activity" category that applies to removal of aquatic invasive plants could be added. A limited project provision that specifically allows small-, medium-, and large-scale invasive species removal projects with distinct regulatory review standards should be considered. Such limited projects should have procedures and fees for small projects that are not burdensome to volunteers, conservation groups, or municipal efforts.
- The updated data (NOAA14+) that MassDEP is proposing to be utilized in the Wetland Protection Act regulations will be outdated soon. FEMA delineations and maps are also quickly out of date. Precipitation data should be dynamic and should use forward-looking projections for precipitation that will protect our community for decades to come.
- Under the proposed WPA updates, alternative analysis must include nature-based solutions. Suggested language to require rather than suggest: "applicant shall utilize" and have applicant demonstrate NBS installations in their alternative analyses.
- In the WPA/SW Handbook, redevelopment must improve existing site conditions. Runoff volume for redevelopment and new development should be reduced at a scale needed for the site (*well over 1 inch for all soil types*) to infiltrate and retain stormwater onsite as much as possible.
- Within the WPA, the no-build area in Buffer Zone should be strengthened and expanded.

Though the draft regulations are overall moving in a positive direction, they do not go far enough in achieving the stated goals of “Resilience 1.0.” **After swift promulgation of these updates, we strongly encourage MassDEP to begin the “Resilience 2.0” process to continue improving the Wetland Protection Act regulations as suggested above.** We cannot afford a delay in ramping up our regulatory approach to development to match the challenge of the climate crisis before us.

Thank you for the considerable time and effort the agency has invested in creating these draft regulations thus far. We look forward to continuing to work together to protect Massachusetts’ rivers, ecosystems, and communities from the impacts of climate change.

Sincerely,

A handwritten signature in dark ink, reading "Matthew Brown" with a long, sweeping horizontal line extending to the right.

Matthew Brown

Executive Director

# OCEAN HAVENS

---

Distinct Waterfront Properties

April 30, 2024

Bonnie Heiple, Commissioner  
Massachusetts Department of Environmental Protection  
Attn: Wetlands-401 Resilience Comments  
100 Cambridge Street, Suite 900  
Boston, MA 02114

**RE: Comments on the proposed amendments to 310 CMR 10.00: Wetlands Protection Act published in December 2023**

Dear Commissioner Heiple:

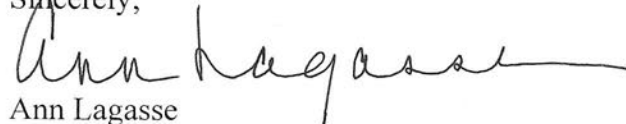
I am writing to you as the owner of Ocean Havens, LLC. We own and operate six marinas in Boston and Provincetown and operate the East Boston Shipyard and Marina under a long term lease from Massport. Our business operations are all water dependent and our operations in East Boston include a significant component of water dependent industrial uses located within and outside of the Designated Port Area ("DPA"). Virtually all of our operations are located within Land Subject to Coastal Storm Flowage and much of them with V-Zones. By necessity, we are located in and adjacent to tidal waters and our marine operations and accessory uses require proximity to deep water. We have significant business plans to rehabilitate and add onto existing buildings and construct new buildings for these marine operations and accessory uses to meet the needs of our tenants.

We are writing to you today to express our deep concern about the proposed Land Subject To Coastal Storm Flowage performance standards. While we appreciate your efforts to reduce the impact of these regulations on water dependent industrial uses, the current exemption only applies within the DPAs and does not apply to water dependent uses generally. Therefore, these proposed rules would adversely affect our existing and planned operations.

We specifically request that the exemption in 310 CMR 10.36(4)(d) be broadened to include all water dependent uses and accessory uses thereto as defined in Chapter 91 regulations at 310 CMR 9.12(2)(a)-(b) and 9.12(3), and to expand the geographic area to include the entire coastline, not just Designated Port Areas.

I appreciate your commitment to the use of the coastline for water dependent uses in the service of the public interest and hope that you will not create further hurdles to the effective and efficient operation of our marine facilities.

Sincerely,



Ann Lagasse



# Town of Orleans Conservation Commission

Town Hall • 19 School Road • Orleans, Massachusetts 02653-3699

Tel: (508) 240-3700 Ext. 2425 / Fax: (508) 240-3388

March 21, 2024

MassDEP - BWR Wetlands Program  
Attn: Wetlands-401 Resilience Comments

Re: Proposed Regulations for Land Subject to Coastal Storm Flowage

Dear Colleague,

The Conservation Commission of Orleans welcomes the Department's proposed regulations for Land Subject to Coastal Storm Flowage (LSCSF). Orleans is a coastal community on Cape Cod with extensive wetlands and low-lying areas that are subject to flooding. More prudent oversight of developments in these areas is overdue.

The Commission understands that these proposed regulations and a complementary set on waste water management are being considered as 'Resilience 1.0' with the expectation that a suite of other, stronger and more comprehensive regulations related to climate change adaptation will emerge under the rubric of 'Resilience 2.0.'

In light of our experience with the already significant impacts of rising sea levels and increased storm velocities and variability, we encourage the Department to accelerate the promulgation of those proposed regulations. Most importantly, we strongly believe that they need to encapsulate a vision which can best be summarized as 'smart retreat.' In essence that implies stopping the un-natural deterrence of coastal erosion/processes and carefully restricting mass volumes and impervious coverage in sensitive areas, except possibly in areas of critical public infrastructure and in spaces that are urban and densely populated. They should further enhance protections for current and expanding LSCSF areas, especially in regards to salt marsh retreat paths.

With regard to the proposed LSCSF regulations in 'Resilience 1', the Commission appreciates the thoughtful and thorough approach that the Department has taken. If approved, these regulations will indeed significantly improve management of these areas in a way which responds to the emerging challenges with a careful consideration of use of these areas by the public and private land owners. The Commission found many aspects of the proposals to be compelling. We were especially grateful for what appears to be enhanced space for permitting restoration and research efforts.



We have only one major issue, one which perhaps is meant to be wrapped into 'Resilience 2.0.' This winter has been a mild but turbulent one on the Cape in terms of storm damage. We had five significant storms from the southeast. They caused a lot of coastal erosion and extensive flooding. These storms were NOT 'major' weather events and wind speeds, while significant, were NOT extraordinarily high. But because of tidal patterns and higher sea levels their impact was magnified. Obviously, the impacts of any storm event depend on a variety of factors but it was clear from these five storms that the extent of LSCSF is probably already significantly greater than anticipated by current retrospective benchmarks for the baseline used in calculating their extent. Moreover, the frequency of '100' year storm events under those standards seems to be less than 100 years. Therefore, we would encourage to Department to reconsider the baseline standard proposed for estimating the extent of LSCSF to adopt one which better reflects the dynamic nature of the changes that are already occurring and likely to take place, one which is more proactive and forward leaning.

Again, our thanks to the Department for these proposals. They are a big step in a better direction and we thank the Department for its efforts.

Sincerely



Drusy Henson  
Orleans Conservation Commission Chair

**From:** [Patty O'Neill](#)  
**To:** [DEP Wetlands \(DEP\)](#)  
**Subject:** Wetlands-401 Resilience Comments  
**Date:** Tuesday, April 30, 2024 4:02:15 PM

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Hello!

I have experience as an ecological landscaper doing residential landscape maintenance (conventional commercial experience as well), field survey technician experience for a design firm in Northampton, and ecological design experience that have led to my requests:

1a. During a Conway School project about helping South Hadley conservation commission prioritize parcels of land to conserve to protect water quality, I found this paper: Calhoun, Aram J. K. and Michael W. Klemens. *Best Development Practices: Conserving pool-breeding amphibians in residential and commercial developments in the northeastern United States*, MCA Technical Paper No. 5 (New York: Metropolitan Conservation Society, 2002.)

It stresses the importance of upland habitat for wetland life, and **recommends clustering development away from vernal pools/wetlands, especially roads: 100' fully protected vernal pool envelope + an additional 650' "Critical Terrestrial Habitat Buffer" around that, with development clustered to take up no more than 25% of that 650' buffer space.**

1b. Perhaps **the nuanced exception to this rule would specify and incentivize low-intensity/low-energy developments that live lightly on the land**, in thoughtful relation to the land and their land use, and whose operational plans specify this distinction from conventional residential and commercial developments that don't center this kind of relationship with land and the ecosystem. **For example, indigenous lifeways and style of development, which have coevolved relationships with ecosystems, should not be disrupted by this 25% rule.** Incentivizing this style of thoughtful relation to land use via development is the highest priority to me--a transition to renewable energy doing all the same operations is not enough, and not spoken about enough in resiliency planning, in my opinion.

1c. Please **allow for other bioregional resiliency projects/development**, especially related to silvopasture, or agriculture with integrated ecological function/food and material harvesting in ecologically appropriate plant community and successional maintenance formats to exist in closer proximity to wetlands than conventional development if it makes sense for them to.

1d. Maintenance practices of residences, commercial developments, and state and municipal land should also abide by these rules and maintenance practices--**please look into maintenance practices and mowing schedules that promote conservation as well.** Imagine how maintenance might look without fossil fuels, and how our developments might look and function in that case, in a changed climate. Let's plan for that contingency and start communicating it to people as much as we can. Let residents and commercial properties, and/or their hired property caretakers know conservation maintenance schedules and techniques and act in coordination.

2. I would like to see **habitat connectivity promoted as a priority, with wildlife underpasses required for new and redevelopment projects all coordinated toward state and regional conservation and migration goals--and have this explained to the public--so wildlife can better sustain themselves with existing development constraints now and climate**



change that will necessitate further migration, and support our overall resiliency. Surely wetlands and climate change can factor into this to make this relevant to the wetlands update.

Thank you so much!

--

Patty O'Neill

Owner/Ecological Landscaper & Designer

**Edge of the Wild LLC**

Ecological Land Care & Design

[www.edgeofthewild.land](http://www.edgeofthewild.land)

(703) 577-6781 cell

*Ecological design and land care services for clients in the Connecticut River Valley of Western Massachusetts*



**TOWN OF PELHAM CONSERVATION COMMISSION**  
**Pelham, Massachusetts**

April 30, 2024

Via Email: [dep.wetlands@mass.gov](mailto:dep.wetlands@mass.gov)

Re: Wetlands-401 Resilience Comments  
Comments on MassDEP's Resilience 1.0 Draft Regulations and 2.0 Recommendations

Dear MassDEP,

We sincerely appreciate the effort that went into creating these draft regulations and commend MassDEP for focusing on ways to make Massachusetts and its wetland resources more resilient to climate change. We appreciate the great strides made in the following areas and are eager to see the following new regulations promulgated right away.

- Supporting greater use of nature-based solutions.
- Updating the precipitation calculations for stormwater designs.

Below, we provide some suggestions for improving the proposed "1.0" changes and suggestions for the forthcoming "Resilience 2.0" changes.

- MassDEP should engage with day-to-day practitioners in their regulatory revision efforts: conservation agents, conservation commissioners, and other professional non-profit staff – the people responsible for interpretation and consistent implementation of these regulations.
- The regulations should provide performance standards that protect wetland functions and values and not specific methods and means of achieving those performance standards. Methods and means should be addressed in guidance documents.
- The revised regulations provide some excellent detail, but must strike a reasonable balance between scientific precision and overly complex or burdensome requirements that render them too difficult for a majority of volunteer conservation commissions and applicants to implement. The proposed stormwater requirements, for example, exceed the review capabilities of most conservation commissions.
- Although we agree that the current Stormwater Handbook has much room for improvement, and although the new Stormwater Handbook is nicely organized, the new

860-page behemoth is far too complex to: (1) be usable by most conservation agents or commissions; and (2) facilitate efficient review and permitting. Many of the new details of stormwater management should be removed from the regulations to facilitate future updates.

- Although we agree that referencing the NOAA14+ precipitation data is a great step in the right direction, it does not factor in climate change. The Handbook could at least refer to the new EEA Climate change projections dashboard (part of Climate Resilient Mass) which provides town-specific precipitation projections using NOAA 14+).
- Provide frequent outreach and education about the new regulations once promulgated. Dissemination of detailed and multi-faceted explanations of these new regulations and the purposes and intents behind them for the Conservation Commissions and conservation professionals who will implement them will be essential. MSMCP welcomes the opportunity to assist MassDEP in these efforts.

### **Requests for 2.0 Changes**

As we all know, the 1.0 draft regulation changes alone will not achieve our goal of true resilience. We appreciate that MassDEP has said that it is already working on regulatory reform package “2.0.” MSMCP has identified a number of issues that should be addressed in the next regulatory reform package which we agree with. Many of these suggested revisions are straightforward. Some of these suggestions warrant additional discussion. We implement the wetland regulations on a daily basis and know what works well and what is challenging. We urge MassDEP to begin a robust process of stakeholder engagement with consultants, field professionals, and conservation agents so that we may help you develop practical, strong, climate resilient regulations. Here we provide some suggestions to begin the conversation.

- In the wetland regulations and Chapter 91, DEP must acknowledge and reflect the difference between wetland “alterations” resulting from new development and wetland “alterations” resulting from ecological restoration efforts and must streamline permitting for wetlands restoration projects to achieve the state’s resiliency goals by:
  - Reversing historic damage to our wetlands,
  - Addressing climate change, rising sea levels, ever-increasing invasive species,
  - Promoting carbon sequestration, improved water quality, and increased biodiversity, and
  - Promoting living shorelines and other nature-based solutions.
- Create new Minor Activities (in 310 CMR 10.02(2)(b)(2)) for routine work in Riverfront and Buffer Zone conducted by homeowners and land managers such as:
  - Cutting of certain high-risk trees.
  - Removal of invasive vegetation.
- Create new Limited Projects (310 CMR 10.24 and 10.53) and other provisions to simplify trail permitting and invasives species management in wetland resources areas.

- Work with Conservation Agents to update the Riverfront Area regulations to clarify some of the sections that are particularly difficult to interpret and lead to inconsistent implementation.
- Work with Conservation Agents to update and greatly simplify the WPA application and permit forms.
- Increase application fees. Wetland Fees do not cover the administrative costs for processing, reviewing, issuing, and mailing wetland permits.
- Develop guidance documents. Conservation commissions and conservation staff would benefit from guidance documents which provide more detail about various regulatory provisions.
- To account for their inherent value, particularly in the face of climate change, consider expanding Isolated Land Subject to Flooding (ILSF) jurisdiction to include small isolated wetlands by reducing the size of ILSF in 10.57(2)(b).
- Consider adding vernal pools as a new wetland resource area, with a 100-foot Buffer Zone.
- Provide some discretion for local conservation commissions to utilize an administrative approval process for activities in the buffer zone which will not impact wetland functions and values. We feel strongly that individuals who wish to undertake minor activities (such as the removal of a high-risk tree) should be able to receive local approval from their local Conservation Commission without filing for a state permit.

Thank you for the opportunity to share our comments. As partners in the implementation of the Wetland Regulations, we deeply appreciate your efforts to engage with us and are excited to continue this very important conversation as the 1.0 changes are finalized and as the 2.0 changes begin to be fleshed out.

Sincerely,

Dana MacDonald  
Chair, Pelham Conservation Commission

**From:** [Peter Jones](#)  
**To:** [DEP Wetlands \(DEP\)](#)  
**Subject:** Climate Resiliency discussion  
**Date:** Monday, April 1, 2024 9:57:32 AM

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Dep Members,

What we have noticed is that when planning for climate resiliency, it is most important to identify the problems we are trying to solve. We have noticed that each town is impacted differently and a problem in one area may be nonexistent in another area. In order to make effective use of available resources we need to identify six problems we suspect will need to be addressed and focus our limited time and resources on. So I would suggest we narrow down our project scope.

Very Best  
Pete Jones  
Wellesley Wetlands protection Committee  
Vice Chair

**From:** [Verizon Notification](#)  
**To:** [DEP Wetlands \(DEP\)](#); [Waterways, DEP \(DEP\)](#)  
**Cc:** [Patrick O'Connor](#)  
**Subject:** New proposed Mass DEP regulations  
**Date:** Sunday, April 28, 2024 11:50:41 AM

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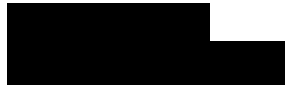
**CAUTION:** This email originated from a sender outside of the Commonwealth of Massachusetts mail system. Do not click on links or open attachments unless you recognize the sender and know the content is safe.

As Scituate coastal property owners we find it outrageous that we did not find out about the new proposed coastal regulatory changes until April 27, 2024, only 4 days before the comment deadline of April 30, 2024. As we understand, the new regulations were proposed on Dec. 22, 2023. Why did it take four months for us to hear about these new regulations? There should have been many public hearings on these proposals.

These new regulations are preposterous and would be catastrophic to coastal communities if implemented as we understand them.

The Mass Dep needs to revise these new regulations using modern design engineering and technology to adapt , not just retreat.

Peter and Anne Wolczik





April 30, 2024

MassDEP BWR Wetlands Program  
Wetlands-401 Resilience Comments  
100 Cambridge Street, Suite 900  
Boston, MA 02114

Dear MassDEP BWR Wetlands Program:

Pioneer Valley Planning Commission (PVPC), Berkshire Regional Planning Commission (BRPC) and Franklin Regional Council of Governments (FRCOG) have collaboratively reviewed the information provided by the Massachusetts Department of Environmental Protection (MassDEP) for the proposed changes to 310 CMR 10.00 and the associated Stormwater Handbook and are submitting the following comments and suggestions for review and comments by MassDEP.

## **Introduction and Appreciation**

The expansive rural transportation network of unpaved roads in western Massachusetts is uniquely vulnerable to changing climate conditions. The effects of a changing climate have already been observed, and it is anticipated that adverse financial, social, and economic impacts related to rural dirt roadway infrastructure will be exacerbated as climate exposure becomes more frequent and extreme. Rural dirt roads are relied on to provide both local and regional connections through and around mountains, rivers, streams, and valleys. This network presents a significant challenge, and the continual maintenance of rural dirt roadways in western Massachusetts represents a significant cost for municipalities (which often have small populations and small municipal budgets, with much difficulty filling DPW/highway staff positions). For example, in Franklin County, there are 419 miles of unpaved roads, many of which run alongside, or cross, cold-water fisheries. Additionally, the social costs related to public health and safety, public services, and school bus routes are strained by the effects of a changing climate.

Municipal unpaved roads in western Massachusetts are critical in the connections they make, especially to schools, jobs, health care services, local village centers, and other commercial centers in the region. The impacts of climate change are apparent on many dirt road segments already. Events like the series of downpours last July, for example, left several locations in complete disrepair. Several Western MA towns estimated \$500K to \$750K in damages to their dirt road infrastructure from these storms.

In response to these challenges, PVPC, BRPC & FRCOG have recently formed the "Western Massachusetts Unpaved Road Climate Resiliency Coalition," and are seeking funding for a regional project to pilot unpaved roads stormwater Best Management Practices (BMPs) in 8 Western MA municipalities. This new project, if funded by the Municipal Vulnerability Preparedness (MVP) program, will expand the Dirt Roads Toolkit developed by FRCOG with funding from the MassDEP's

s.319 grant program. FRCOG's Toolkit focuses on appropriate stormwater Best Management Practices for rural unpaved roads that reduce water quality impacts from road material migration off of unpaved roads into rivers and lakes, especially the sensitive Cold Water Fish Resources (CFRs) that are numerous in Franklin County and Western MA. The Western Massachusetts Unpaved Road Climate Resiliency Coalition's project will develop new sections for the Toolkit that focus on climate resilient road maintenance practices and staff trainings to increase the capacity of our Department of Public Works to install and maintain climate resilient stormwater BMPs.

We sincerely appreciate the effort that MassDEP put into creating these draft regulation changes and commend MassDEP for focusing on ways to make Massachusetts and its wetland resources more resilient to climate change. We see many of the proposed changes to the general and inland wetland regulations as valuable steps towards increased public safety and ecological health in the face of climate change. We also believe that some of the proposed changes will be very challenging to implement on dirt/gravel roads and will lead to unintended detrimental consequences to the rural communities of Western Massachusetts, and ironically its waterbodies. Therefore, we are requesting Mass DEP to refine sections of the proposed regulation prior to their promulgation. Our primary concern is the proposed regulatory changes will significantly strain rural western mass communities with an unachievable and costly mandate related to improving the climate resiliency of dirt/gravel roads. FRCOG's 319-funded project and the Western Massachusetts Unpaved Road Climate Resiliency Coalition's proposed project are both aimed at making it easier for Towns to maintain unpaved roads and install simple stormwater control measures to reduce impacts to waterbodies, but we anticipate these proposed changes will make some of these beneficial projects impossible to implement.

## Overarching Concerns

The proposed definition of compacted gravel will make dirt roads "impervious," and as a result, any "improvements" to the roads will be subject to fully comply with Standards 3 & 4 of the Stormwater Regulations 310 CMR 10.05(6)(k)-(q). The major problems facing dirt roads are erosion and washouts from uncontrolled stormwater runoff and the impacts on local waterways, including high-quality cold-water fisheries, is evident in the deltas/piles of road material in these small and mid-size CFR streams in areas with dirt roads.

We believe it is not feasible to achieve the 80% TSS and 50% TP requirements of Standard 4 using the recommended Stormwater Control Measures outlined in Chapter 5 of the Handbook. This coupled with the 100-foot setbacks to critical areas (especially CFRs) are going to pose significant challenges for western Massachusetts communities. It is likely that 80% of the dirt roads in western Massachusetts cross a CFR at least once and often several times and these crossings are often where the BMPS are needed to keep road material out of the resource areas.

We offer the following specific comments and recommendations in the following five areas.

### 310 CMR 10.04 Definitions

- Compacted Gravel: The definition proposed in the regulations is, "Compacted Gravel or Soil means, for purposes of stormwater management (310 CMR 10.05(6)(k)-(q)), gravel roads, gravel parking lots, dirt roads, dirt parking lots, and unvegetated areas that have historically provided or have been designed to provide a compacted surface for use by vehicles,

pedestrians, bicycles and/or animals. Compacted gravel and soil do not include lawns, roadway median strips, landscaped areas, and natural turf athletic fields. The presumption that a soil is compacted can be overcome by a showing that the soil strength is less than 10 bars of pressure (approximately 145 pounds per square inch or  $10^6$  pascals)."

**Concern:** There are several definitions for gravel (ASTM, ASSHTO, USCS) and there is also the common, more general use of the term in construction. There are various conditions/usages for specific materials that affect permeability. This definition needs clarification.

- **Impracticable:** The definition proposed in the regulations is, "Impractical for use in 310 CMR 10.05(6)(k)-(q) for purposes of stormwater management means impossible in practice to do or carry out based solely on physical constraints."

**Maximum Extent Practicable:** The definition proposed in the regulations is, "Maximum Extent Practicable, for purposes of stormwater management (310 CMR 10.05(6)(k)-(q)), is defined at 310 CMR 10.05(6)(o)."

Project proponents seeking to demonstrate compliance with some or all of the Stormwater Management Standards to the Maximum Extent Practicable shall demonstrate that:

1. They have made all reasonable efforts to meet each of the Standards.
2. They have made a written alternatives analysis and? complete evaluation of possible stormwater management measures including Environmentally Sensitive Site Design (ESSD) and Low Impact Development (LID) Techniques or practices that minimize land disturbance and Impervious Surfaces, structural Stormwater Control Measures (SCMs), Best Management Practices (BMPs), pollution prevention, erosion and sedimentation control, and proper operation and maintenance of Stormwater Best Management Practices, physical constraints (e.g., high groundwater), and costs;
3. If full compliance with the standards cannot be achieved, the written alternatives analysis makes a clear showing that they are implementing the highest practicable level of stormwater management.

**Concern:** The two definitions conflict with each other. Maximum Extent Practicable as defined in 310 CMR 10.05(6)(o) allows for costs to be considered as a justification for "impracticable", but the new definition of "Impractical" specifically removes financial obligations and focuses solely on physical constraints. MassDEP will need to clarify this prior to promulgation.

Full compliance with 310 CMR 10.05(6)(k)-(q) on dirt/gravel roads will cost a significant amount of money for design, engineering, permitting and construction that rural western MA town do not have.

- **Impervious surface:** The definition proposed in the regulations is, "Impervious Surface means, for purposes of stormwater management (310 CMR 10.05(6)(k)-(q)), any surface that prevents or significantly impedes the infiltration of water into the underlying soil, including, but not limited to artificial turf, Compacted Gravel or Soil, roads, building rooftops, solar arrays, parking lots, Public Shared Use Paths, bicycle paths, and sidewalks paved with concrete, asphalt, or other similar materials. For purposes of this definition, porous pavements are Impervious Surfaces in order to size the depth of the underlying reservoir course to meet recharge and

Total Suspended Solids/Total Phosphorus removal requirements pursuant to 310 CMR 10.05(6)(k)3. and 4.

**Concern:** Regarding municipal rights of way (ROWS), there needs to be a balance between stormwater concerns with what is needed and reasonable to raise the standards of dirt/gravel roads composition and design in order to handle increased frequency and severity of rain events across Massachusetts. Traditionally, country drainage was preferred over “gray stormwater systems” of pipes and point source discharge in rural settings.

- **Improvement of Existing Public Roadways:** The definition proposed in the regulations is, “Improvement of an Existing Public Roadway means, for purposes of Redevelopment stormwater management in 310 CMR 10.05(6)(k)7, activities undertaken to a roadway that increase the total impervious area by less than a single lane width. This can include activities such as widening roadways (less than a single lane), adding shoulders, correcting substandard intersections, expansion or making other structural changes to an existing drainage system, and installing new sidewalks. Improvement of an Existing Public Roadway may include New Stormwater Discharges.”

**Concern:** The definition does not seem to consider improvements to unpaved public roads. The only possible way to improve climate resilience and improve the existing conditions of jurisdictional resource areas is to improve dirt/gravel roads by incorporating a series of stormwater BMPs and other structural changes to an existing (or non-existing) drainage system.

- **Maintenance of an Existing Public Roadway:** The definition proposed in the regulations is, “Maintenance of an Existing Public Roadway means activities undertaken to a roadway that do not increase impervious area. Such activities include, but are not limited to, grinding, scarifying, repaving, resurfacing, replacing existing drainage pipes, or resetting curbs or catch basin frames. Maintenance of an Existing Public Roadway does not include widening, installing new shoulders, installing new sidewalks, or creating New Stormwater Discharges from existing roads.”

**Concern:** Again, the definition does not seem to consider unpaved municipal roads. The new term adds confusion because of language in 10.02(2)(b)(2) and 10.53(3)(f).

- **Setbacks:** In Stormwater Handbook Chapter 2, Table 2-8 (page 2-54 and 2-55), Table 2-8 provides the vertical and horizontal setback requirements for each SCM. Section 10.05(4)(q), a setback distance of 100 ft is set from cold-water fisheries.

**Concern:** Although we are supportive of extra measures to protect cold-water fisheries, the setback requirements are unreasonably restrictive and will make it impracticable to provide BMPs and SCMs on sites. It will become difficult/impossible to conduct maintenance, retrofitting and improvement of dirt/gravel roads; especially when designing them to be climate resilient. Improvements to drainage on unpaved roads will be stifled, leading to deteriorating road quality and water quality.

- **Retrofits:** The regulatory changes propose a new term for retrofits, defining it as, “Retrofit Projects means, for purposes of stormwater management (310 CMR 10.05(6)(k)-(q)), projects



that make site- specific changes designed solely to improve water quality, reduce peak discharge rates, increase recharge, or reduce or eliminate combined sewer overflows (CSO). Retrofit Projects are not new development or maintenance.” Later in the regulations, it specifies that Retrofit Projects shall comply with 310 CMR 10.05(6)(k)1., 5., 6., 8., 9., and 10. Retrofit Projects shall not have to comply with 310 CMR 10.05(6)(k)2., 3., 4., and 11., except they must improve existing conditions for at least peak discharge rate, recharge, or water quality treatment.

**Concern:** The stormwater control measures envisioned in FRCOG’s Unpaved Road Toolkit may fall under the retrofit’s definition, as they would seek to reduce road material migration from roads to streams. Towns have varying degrees of written maintenance plans but would now be required to have a long-term maintenance plan for any measures added after this regulatory update.



Pictured above are examples of unpaved roads in Franklin County where FRCOG would like to encourage stormwater practices that reduce drainage off roads and into streams. The 100-ft setback and stormwater pollutant reduction requirements would make any such work difficult.



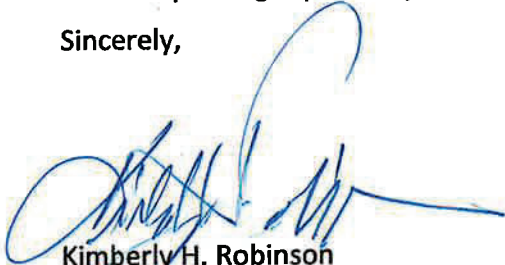
Pictured to the left is an unpaved road in Franklin County where FRCOG would like to discourage this type of practice. Soil amendments put on the banks of rivers will only be washed away during the next storm. Such practices are wasteful and deleterious for surface water quality.

## Proposed Recommendations

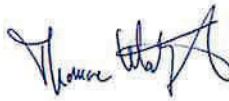
1. **Recommended Amendment (Option 1/Preferred Option):** We recommend MassDEP consider including "Municipal dirt/gravel road" under 310 CMR 10.05(6)(m)(6): Unpaved... This will address our concerns by allowing improvements to dirt/gravel roads to only have to meet the Stormwater Management Standards to the Maximum Extent Practicable.
2. **Recommended Amendment (Option 2/Alternative Option):** We recommend MassDEP consider including a new limited project provision under 310 CMR 10.53(3) to allow municipal DPWs to maintain, retrofit and improve existing dirt and/or gravel public roadways, but limited to improving inadequate road drainage structures including culverts, drainage easements, ditches, watercourses and artificial water conveyances to insure flow capacities which existed on the effective date of 310 CMR 10.51 through 10.60 (April 1, 1983) and to the maximum extent practicable under (310 CMR 10.05(6)(k)-(q).
3. **Recommended Amendment (Option 3/Alternative Option):** We recommend MADEP consider a "Rural Dirt Road Specific Exemption." Under this exemption existing rural dirt/gravel roads are only required to meet the Stormwater Standards to the maximum extent practicable, under (310 CMR 10.05(6)(k)-(q). For municipalities with dirt/gravel roads the definition of "impervious" will not apply.
4. **Recommended Amendment:** We recommend the setbacks in the SW Handbook Chapter 2, Table 2-8 (page 2-54 and 2-55) be provided as general guidance where possible and necessitated by site-specific conditions. MassDEP could provide separate language saying SCM setbacks can be evaluated on a case-by-case basis with the Conservation Commission reviewer and requirements of the local jurisdiction. This would be a good use of the definition of "'Nearby'".

As a collaboration of all RPAs in Western Massachusetts, we urge MassDEP to give careful consideration to our detailed comments, reach out with questions or for assistance, and make the necessary changes prior to promulgation.

Sincerely,



Kimberly H. Robinson  
Executive Director, PVPC



Thomas Matuszko  
AICP Executive Director



Linda Dunlavy  
Executive Director, FRCOG



Franklin Regional  
Council of Governments



**From:** [Risa M](#)  
**To:** [DEP Wetlands \(DEP\)](#)  
**Subject:** Re: Wetlands-401 Resilience Comments  
**Date:** Tuesday, April 30, 2024 8:26:55 AM

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April 30, 2024

Attn: Wetlands-401 Resilience Comments  
100 Cambridge Street, Suite 900  
Boston, MA 02114  
Re: Comments on Proposed Wetlands Regulations

Commissioner Heiple and MassDEP Wetlands Staff:

I appreciate the opportunity to comment on MassDEP's Draft Wetlands Regulations to be codified at 310 CMR 10.00. It is imperative that the Commonwealth's environmental regulations incorporate resiliency to address the challenges exacerbated by climate change. I commend MassDEP for the incredible amount of work reflected in these proposed regulations and wish to express general support for the regulations as a whole. In particular, I support the development of performance standards for Land Subject to Coastal Storm Flowage (LSCSF); establishing restrictions on new development in the highest risk areas of our coastline; updating the storm water standard to better reflect current precipitation amounts and promote nature-based solutions; and developing provisions for scientific research.

However, I also respectfully offer the following comments for consideration. Specifically, I encourage other interests of the act be presumed significant or acknowledged as being potentially significant within the preamble to the LSCSF performance standards including wildlife habitat and prevention of pollution, as well as allowing additional minor activities within LSCSF such as activities for planning purposes (e.g., borings, test pits, etc.). In addition, due to their complexity, it is imperative that MassDEP support Conservation Commissions in understanding and implementing these regulations.

I urge MassDEP to consider these comments, move to expeditiously to adopt these regulations, and work to develop additional climate resiliency and ecological restoration provisions.

Best,

Risa McNellis

**From:** [Robert Vogel](#)  
**To:** [DEP Wetlands \(DEP\)](#)  
**Cc:** [Corey Miles](#)  
**Subject:** Wetlands - 401 Resilience Comments  
**Date:** Monday, April 1, 2024 10:04:41 AM

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How will conflicts between Proposed LSCSF Performance Standard and Proposed draft 10<sup>th</sup> Edition Building Code Standard be resolved? E.g. for new construction: Velocity Zone LSCSF – Prohibited; V Zone 10<sup>th</sup> edition – Elevate on open piles to BFE plus 3'. MoWA LSCSF – minimum freeboard 2'; MoWA 10<sup>th</sup> Edition – minimum freeboard 3'. How do these Standards compare with current FEMA and NFIP regulations? Will discrepancies be resolved prior to implementation? Bob Vogel

Robert B. Vogel - MCBO  
Building Commissioner / Zoning Enforcement Officer

Please remember when writing or responding that the Secretary of State's Office has determined that email is a public record and all e-mail communications sent or received by persons using the Town of Scituate network may be subject to disclosure under the Massachusetts Public Records Law (M.G.L. Chapter 66, Section 10) and the Federal Freedom of Information Act.

**From:** [REDACTED]  
**To:** [DEP Wetlands \(DEP\)](#); [Waterways, DEP \(DEP\)](#); [Patrick O'Connor](#); [Patrick.kearney@mahouse.gov](mailto:Patrick.kearney@mahouse.gov)  
**Subject:** Wetlands-401 Resilience Comments  
**Date:** Tuesday, April 30, 2024 4:50:06 PM

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Dear MassDEP, Senator O'Connor, and Senator Kearney,

Thank you for welcoming comments on the proposed revisions to the Wetlands Regulations. We are co-founders of a local environmental group, the **Scituate Salt Marsh Stewardship Initiative** that got its start in September 2022. The purpose of our group is to clean up and restore the coastal ecosystem in the Sand Hills neighborhood, most notably the Sand Hills Salt Marsh, but also the 1600 other acres of salt marsh in Scituate, MA. There is no Scituate town body dedicated to specifically protecting our salt marshes, including the Conservation Commission. That's why we formed our group.

We of the **Scituate Salt Marsh Stewardship Initiative** heartily support the new regulations that MassDEP is proposing. Strengthening and clarifying the procedures to be followed by local conservation commissions in issuing permits for work in areas protected under the Wetlands Protection Act would better ensure that new construction destructive of wetlands, such as that which has already occurred and is currently being proposed in our community, does not continue without ample review and consideration of adverse environmental impacts. And we urge you to go further in insisting that Massachusetts towns stop allowing building in fragile landscapes like wetlands, floodplains, and coastal dunes.

Trying to protect our Sand Hills Salt Marsh has been an uphill battle. For example, we are currently challenging the application of a local builder who wants to erect a 50-foot structure at 164 Turner Road, Scituate, right in the Sand Hills Salt Marsh. The builder concurrently serves as the chair of the Scituate Conservation Commission, complicating our citizen efforts to petition our local officials to protect the marsh. The Zoning Board of Appeals has yet to issue any waivers or special permits to the builder. But we have little faith in the Board's impartiality despite our lawyer's legal arguments and local residents' testimonials during a public ZBA hearing on March 28, 2024.

Since the March 28 hearing, we have continued our efforts to stop this development by collecting over 500 signatures from Scituate residents, most from the Sand Hills neighborhood, imploring town officials to halt the building project at 164 Turner. We hope town officials will seriously consider the views of these 500 citizens who signed petitions and stop this development in our marsh. But so far, our town has shown no interest in curbing development, including in a fragile wetland.

The final decision of our Zoning Board of Appeals for 164 Turner will be May 16, 7 pm, at Scituate Town Hall. If any of you would have the opportunity to show your

support for our efforts to preserve a salt marsh, and further the work of the MassDEP, please consider sending someone to attend the meeting. We would be so very grateful.

As I said above, this email is in full support of the new MassDEP regulations. And if you find you can go further in your regulations to stop building altogether in federally protected wetlands, we would applaud you and consider it a great day for the environment.

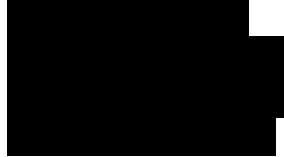
Thank you so much for the work you do. If you have any questions or want further information, please do not hesitate to contact us.

Sincerely,

Joanne Wyckoff and Della Shepherd

**Scituate Salt Marsh Stewardship Initiative (SSMSI)**

Joanne Wyckoff

A large black rectangular redaction box covering the contact information for Joanne Wyckoff.

Della Shepherd

A large black rectangular redaction box covering the contact information for Della Shepherd.

April 30, 2024

MassDEP - BWR Wetlands Program  
Attn: *Wetlands-401 Resilience Comments*  
100 Cambridge Street, Suite 900  
Boston, MA 02114

I offer the following comments and suggestions for the proposed amendments to the MA Wetlands Protection Act regulations. Specifically, I suggest that Land Subject to Coastal Storm Flowage (LSCSF) should be presumed significant for wildlife habitat under certain, specific conditions.

I have heard it argued that LSCSF should not be considered significant for wildlife habitat because there are no wildlife species that are dependent on LSCSF. Although this is true, as a rationale for denying LSCSF significance for wildlife habitat, it is inconsistent with how wildlife habitat is considered for Bordering Land Subject to Flooding (BLSF).

In BLSF the presumption for wildlife habitat applies to the ten-year floodplain or 100 feet within the 100-year floodplain, whichever extends furthest from the water body or waterway. There are no wildlife species that depend on either the 10-year floodplain or the 100-year floodplain. It would not make sense for wetland wildlife to depend on habitat that holds water, on average, only once in ten years or once in 100 years. The reason why those portions of BLSF are presumed to be significant for wildlife habitat is proximity. Approximately 76 percent of freshwater, wetland-dependent wildlife in Massachusetts require or otherwise utilize upland areas adjacent to wetlands and water bodies. This includes 100 percent of wetland-dependent mammals, 95 percent of wetland-dependent amphibians, 90 percent of wetland-dependent reptiles, and 55 percent of wetland-dependent birds.

Some areas defined as LSCSF provide important habitat for coastal wetland dependent wildlife, simply due to their proximity to coastal wetlands and/or the ocean. These include Diamondback Terrapins and a host of colonial-nesting, coastal waterbirds such as cormorants, gulls, night-herons, egrets, and Ibises. Some of these species nest in only a handful of sites in Massachusetts. Therefore, it is important to protect these critical habitats wherever they occur within MA Wetlands Protection Act jurisdiction, including LSCSF.

Therefore, I suggest that the following language be included in the Preamble to 310 CMR 10.36. "Areas within Land Subject to Coastal Storm Flowage that contain mapped or otherwise known nesting areas for Diamondback Terrapins or colonial-nesting, coastal waterbirds such as cormorants, gulls, night-herons, egrets, and Ibises, are presumed to be important for wildlife habitat." I further suggest that the performance standards in 310 CMR 10.36 (4) be modified to include strong protection for areas of LSCSF that are presumed significant for wildlife habitat.

Feel free to contact me if you would like to discuss this further.



Scott Jackson, Extension Professor  
413-545-4743; [sjackson@umass.edu](mailto:sjackson@umass.edu)

**From:** [Scott Freeman](#)  
**To:** [DEP Wetlands \(DEP\)](#); [Waterways, DEP \(DEP\)](#)  
**Subject:** Wetlands and Waterways Resilience Comments  
**Date:** Monday, April 29, 2024 3:47:34 PM

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Dear MassDEP

I submit the below comments relative to the proposed Massachusetts Wetlands and Waterways regulations changes, from December 22, 2023. I am a 40-year career environmental engineering professional, now retired, and have held PE licenses in Massachusetts and several other states, and I have worked on projects around inland and coastal wetlands and waterways for much of my career.

- The proposed regulations appear to have been released in haste, in premature reaction to the public momentum and concern regarding climate change impacts. This is an important subject that must be carefully considered when making major changes that may impact coastal property ownership, business, economic interests, and recreational or other uses. I assume the minimum public notice or comment requirements were met as required, but this type of change requires more careful consideration than just the minimum approach. More interaction with community leaders, and businesses relying on the coastal resources, at a minimum, would be appropriate.

- To substantially restrict or prohibit design of structures nearly completely within the high velocity wave or wind zones simply ignores the progress made in coastal engineering design over the past decade that has resulted in some robust and environmentally sound design approaches to building or modifications in these areas. The coastal engineering practice has developed numerous new design approaches and risk management methods, in part based on damage assessments following hurricane events and other storm events. Work continues on these design approaches. While there is no "one size fits all" solution, there are competent engineers who can carefully consider each situation, using historic data and reasonable estimates of future conditions. Not having a "one size fits all" approach does not justify going to the extreme of a major prohibition of structures in these zones.

- Whatever changes are proposed, Massachusetts needs to assure that the persons reviewing future permit applications or similar requests are competent in the field of coastal engineering design. Local conservation commissions typically lack this type of experience/expertise, and putting them in any sort of major review/approval role for work in these coastal areas does not make sense and may actually work against the goals of environmental protection. We may miss opportunities to mitigate currently undesirable situations by simply rejecting any newly proposed designs or modifications. When in doubt, the local Con Comm will likely disapprove.

- Massachusetts needs to more carefully consider design standards and regulations that have evolved in other states, particularly some of the Southern states, where there are even more issues regarding development or construction of structures in coastal areas. There is more experience in those locations from failure analysis due to severe storm events, and they have miles of coastline, both protected and developed.



Please consider my comments in the further actions on these very important regulations.

Respectfully Submitted,

Scott R. Freeman

 ReplyForward

**From:** [Sean Young](#)  
**To:** [DEP Wetlands \(DEP\)](#)  
**Subject:** Wetlands-401 Resilience Comments  
**Date:** Tuesday, April 30, 2024 10:02:14 AM  
**Attachments:** [repermanded letter for adressing concern and personal background.pdf](#)  
[few more violations plum island Draft.pdf](#)  
[Generator stands plum island Draft.pdf](#)  
[Mini Split plum island Draft.pdf](#)

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April 30, 2024

Massachusetts Department of Environmental Protection Bureau of Water Resources -  
Wetlands Program

Attention: Wetlands-401 Resilience Comments

100 Cambridge Street, Suite 900

Boston, MA 02114

Dear MassDep Wetlands Program:

Thank you for the opportunity to comment on the draft Wetlands Protection Act regulations as part of MassDEP's "Climate Resilience 1.0" package. These are positive steps towards protecting our coastal resources and infrastructure, and making Massachusetts more climate resilient. I appreciate MassDEP's considerable time and effort to prepare these proposed regulations.

As a Conservation Agent, I consider this role a dream job that aligns with my passion for and education in the diverse and complex WPA areas of Newbury, Massachusetts. Our town faces unique challenges due to its wetlands, marshes, barrier beach islands, and coastal dunes.

If I were to lose my job for speaking out on this topic, it would be as absurd as claiming the world is flat and that 2+2 equals 5. I hold a Bachelor's degree in Natural Resource Management from UMass and hold an active electrical license (#56632), having grown up in a trade family led by my father, a master licensee (#13847).

I strongly advocate for a requirement that coastal town building and electrical inspectors, as well as zoning enforcement officers, comply with NFPA 70 sections 682.5(3) and 682.10, along with Rule #3 in the Massachusetts electrical amendments concerning land subject to coastal flooding.

Section 682 was established during Hurricane Katrina in 2005. Currently, no state-wide amendments specific to Section 682 exist; towns must either adhere to this code or enforce stricter regulations. Less stringent standards should not be permitted unless the Board of Electricians authorizes an exception through a mass amendment by the Board of Public Safety.

This enforcement would not only alleviate the burden on conservation agents to issue special conditions for generators and other electrical equipment but also enhance community safety and environmental protection. For instance, the rationale for a two-foot elevation on dunes with a Base Flood Elevation (BFE) of zero is often incorrectly referred to as facilitating sand movement. This is a misunderstanding because the FEMA zone minus the ground elevation equals zero, meaning the electrical datum plane is at two feet. Negative numbers in ground elevation would imply depths below sea level, necessitating a higher height because “segments” “negative number means less than nothing,”

Using a concrete pad weighing over 1200 pounds and standing two feet tall to anchor it is complex and environmentally disruptive. A more sustainable and environmentally friendly approach would involve mandating prefab anchored systems or mounting systems. These systems are recyclable/reusable, they hold value like bottle returns, cause minimal ground disturbance, and do not scour like concrete. Importantly, they support vegetation growth, which can enhance local biodiversity, contribute to natural habitats, and strengthen community resilience against climate impacts.

Such strategic approaches emphasize the necessity of integrating building codes with environmental conservation principles to ensure that our community’s development does not come at the expense of its ecological health. These measures would not only streamline our work but also significantly contribute to a sustainable and safer environment.

Please refer to the 4 documents each is technically a draft and additional documentation for supporting details.

Galileo Galilei, an Italian astronomer and physicist, was accused of heresy in 1633 for believing that the Earth revolves around the sun, instead of the other way around. The Catholic Church considered this idea to be heresy, and told Galileo that he could consider it a hypothetical idea, but not present it as reality

Thank you for your time and efforts

A few violations















Addressing the Challenges:  
Navigating the Complexities of Generator Use and Maintenance

By Sean Young

Draft

This document is not allowed to be used for ADVICE this is internal  
Documentation for the right of discussion.

Article 682 in the NEC is a highly specific code article, and its interpretation, along with the search for it, took days, revealing no Massachusetts Amendments specifically for this article. Despite reviewing materials related to generators, FEMA, NFPA, and potentially other sources, this is an article I had not encountered before, like the specialized knowledge required for installing a dry dock for a submarine. Its specificity makes it a unique code and may require electrical installations that adhere to the safety standards and guidelines specified in Article 682 to address potential hazards associated with proximity to water, such as electrical shock or corrosion.

Achieving a consensus on understanding and interpreting codes is ideal. The complexity increases when codes are drawn from multiple codebooks and manufacturer specifications that may be unfamiliar to local inspectors. Plum Island, characterized by its unique combination of natural and artificially made bodies of water, faces stringent restrictions similar to only a few other locations in New England. This shared characteristic underlines the importance of a uniform interpretation of codes across different building departments and by-laws.



This marks the beginning of the manufacturer's specifications and the "Before You Begin" section from Generac, which is reiterated for most generators, although there can be variations between manufacturers. The most common one I noted on Plumb Island is Generac.

People not filing RDAs

#### Before You Begin

- Contact the local inspector or city hall to be aware of all federal, state, and local codes which could impact installation. Secure all required permits before installing.
- Carefully read and follow all procedures and safety precautions detailed in this installation manual. Contact an IASD for assistance if any portion of the installation manual, technical manual, or other factory-supplied documents is not completely understood.
- Fully comply with all relevant NEC, NFPA, and OSHA standards, as well as all federal, state, and local building and electric codes. This unit must be installed in accordance with current NFPA 37 and NFPA 70 standards, and any other federal, state, and local codes for minimum distances from other structures.
- Verify the capacity of the natural gas meter or LP tank in regards to providing sufficient fuel for both the generator and other household and operating appliances.

#### NEC Requirements

Local code enforcement may require Arc Fault Circuit Interrupters (AFCIs) to be incorporated into the transfer switch distribution panel. The transfer switch provided with this generator has a distribution panel which will accept AFCIs (pre-wired transfer switches only).

Siemens Part No. Q115AF - 15A or Q120AF - 20A can be obtained from a local electrical wholesaler and will simply replace any of the single pole circuit breakers supplied in the pre-wired transfer switch distribution panel.

#### Standards Index



#### WARNING

Loss of life. This product is not intended to be used in a critical life support application. Failure to adhere to this warning could result in death or serious injury.

(000209b)

- Strictly comply with all applicable national, state, and local laws, as well as codes or regulations pertaining to the installation of this engine-generator power system. Use the most current version of applicable codes or standards relevant to the local jurisdiction, generator used, and installation site.

**NOTE:** Not all codes apply to all products and this list is not all-inclusive. In the absence of pertinent local laws and standards, the following publications may be used as a guide (these apply to localities which recognize NFPA and IBC).

1. National Fire Protection Association (NFPA) 70: The NATIONAL ELECTRIC CODE (NEC) \*
2. NFPA 10: Standard for Portable Fire Extinguishers \*
3. NFPA 30: Flammable and Combustible Liquids Code \*
4. NFPA 37: Standard for Stationary Combustion Engines and Gas Turbines \*
5. NFPA 54: National Fuel Gas Code \*
6. NFPA 58: Standard for Storage and Handling Of Liquefied Petroleum Gases \*
7. NFPA 68: Standard On Explosion Protection By Deflagration Venting \*
8. NFPA 70E: Standard For Electrical Safety In The Workplace \*
9. NFPA 110: Standard for Emergency and Standby Power Systems \*
10. NFPA 211: Standard for Chimneys, Fireplaces, Vents, and Solid Fuel Burning Appliances \*
11. NFPA 220: Standard on Types of Building Construction \*
12. NFPA 5000: Building Code \*
13. International Building Code \*\*
14. Agricultural Wiring Handbook \*\*\*
15. Article X, NATIONAL BUILDING CODE
16. ASAE EP-364.2 Installation and Maintenance of Farm Standby Electric Power \*\*\*\*
17. ICC:IFGC

This list is not all-inclusive. Check with the Authority Having Local Jurisdiction (AHJ) for any local codes or standards which may be applicable to your jurisdiction. The above listed standards are available from the following internet sources:

\* [www.nfpa.org](http://www.nfpa.org)

\*\* [www.iccsafe.org](http://www.iccsafe.org)

\*\*\* [www.rerc.org](http://www.rerc.org) Rural Electricity Resource Council P.O. Box 309 Wilmington, OH 45177-0309

\*\*\*\* [www.asabe.org](http://www.asabe.org) American Society of Agricultural & Biological Engineers 2950 Niles Road, St. Joseph, MI 49085

**Electrical Datum Plane.** A specified vertical distance above the normal high-water level at which electrical equipment can be installed and electrical connections can be made. (CMP—7)

### **682.5 Electrical Datum Plane Distances**

The electrical datum plane shall consist of one of the following:

- (1) In land areas subject to tidal fluctuation, the electrical datum plane shall be a horizontal plane 600 mm (2 ft) above the highest tide level for the area occurring under normal circumstances, that is, highest high tide.
- (2) In land areas not subject to tidal fluctuation, the electrical datum plane shall be a horizontal plane 600 mm (2 ft) above the highest water level for the area occurring under normal circumstances.
- (3) In land areas subject to flooding, the electrical datum plane based on (1) or (2) above shall be a horizontal plane 600 mm (2 ft) above the point identified as the prevailing high water mark or an equivalent benchmark based on seasonal or storm-driven flooding from the authority having jurisdiction.

The electrical datum plane for floating structures and landing stages that are (a) installed to permit rise and fall response to water level, without lateral movement, and (b) that are so equipped that they can rise to the datum plane established for (1) or (2) above, shall be a horizontal plane 750 mm (30 in.) above the water level at the floating structure or landing stage and a minimum of 300 mm (12 in.) above the level of the deck.

### **682.10 Electrical Equipment and Transformers**

Electrical equipment and transformers, including their enclosures, shall be specifically approved for the intended location. No portion of an enclosure for electrical equipment not identified for operation while submerged shall be located below the electrical datum plane.

### **682.11 Location of Electrical Distribution Equipment**

On land, the equipment serving feeders shall comply with one of the following:

- (1) Be located no closer than 1.5 m (5 ft) horizontally from the shoreline, and live parts of the equipment are elevated a minimum of 300 mm (12 in.) above the electrical datum plane
- (2) Be located no closer than the shoreline, and live parts of the equipment are located a minimum of 3 m (10 ft) above the electrical datum plane

Therefore, the electrical/mechanical equipment supplied by electricity must be raised 2 Feet or higher

We are focusing this discussion on optional generators/Residential (NEC 702)

There are a total of 4 generator types all with different installation requirements.

Referenced in (NEC:445-700-701-702)

In which case would prompt the manufacturer spec for example (Generac) but most generators have this and are updated by model year if they do not, they are still subject to 682. on these articles due to flooding.



### Water Ingress Avoidance

- Select a location on high ground where water levels will not rise and flood the generator. This unit should not operate in, or be subjected to, standing water.
- Install unit where rain gutter downspouts, roof run-off, landscape irrigation, water sprinklers, or sump pump discharge does not flood unit or spray enclosure, including any air inlet or outlet openings.
- Excess moisture can cause excess corrosion and decrease life expectancy of the unit.

Since this generator must be placed 2 feet due to article 682:

### Placement on Roofs, Platforms, and Other Supporting Structures

Where required to place generator on a roof, platform, deck, or other supporting structure, generator must be placed in accordance with the requirements in NFPA 37, Section 4.1.3. See [Fire Codes, Standards, and Guidelines](#) for permissible clearance reductions. Surface beneath the generator and beyond must be noncombustible to a minimum distance of 12 in (30.5 cm). Contact local building inspection department or fire department to determine which noncombustible materials are approved for installation.

This would prompt AHJ for distance of 12" of non-combustible materials in MASS CMR:

<https://www.mass.gov/doc/massachusetts-527-cmr-100-2021-edition-effective-may-12-2023/download>

**16.14.1.1 Noncombustible Material.** A material that complies with any of the following shall be considered a noncombustible material:

- (1)\* The material that, in the form in which it is used, and under the conditions anticipated, will not ignite, burn, support combustion, or release flammable vapors when subjected to fire or heat.
- (2) The material is reported as passing ASTM E136, *Standard Test Method for Assessing Combustibility of Materials Using a Vertical Tube Furnace at 750°C*.
- (3) The material is reported as complying with the pass/fail criteria of ASTM E136 when tested in accordance with the test method and procedure in ASTM E2652, *Standard Test Method for Assessing Combustibility of Materials Using a Tube Furnace with a Cone-shaped Airflow Stabilizer, at 750°C*.

Possible Remedy: upon consensus.

Various products are available on the market to help with the installation and meet requirements of IBC or IRC applied by the ICC.

<https://generatorcodex.com/generac-generator-raised-platform/>

Gorilla Generator Stands	Adjustable height and sturdy construction	Provides flexibility and stability for different generator sizes
Pylex Stands	Portable and easy to assemble	Allows for convenient relocation and storage



Other stands \*image\*

\*If a concrete base is allowed\* but the size of the concrete must be sufficient to not topple over after ripping off the propane line?



Which would be around 6-8 inches depth and weighing around 1156 pounds there is math behind this.

If poured concrete pilons are allowed to be used....(this is a discussion with the conservation commissioners).

Diamond piers on 4x4 must include 12" noncombustible pad --- current allowed method.

So if you take the stand above that meets 12" separation.

## Genstand-Cantilever



Some form of installation guidance may be helpful

The mention of a 2-foot elevation requirement for generators, as indicated by the conservation commission, is aimed at preventing dune movement. This requirement appears to stem from the standards set out in NEC Article 682. The interpretation of the Wetlands Protection Act (WPA) can differ, like building codes that are also up to interpretation. Building codes are meticulously crafted to prioritize the safety, health, and welfare of individuals, setting forth rigorous standards for building design, construction, and use. They comprehensively address structural integrity, fire safety, electrical systems, plumbing, ventilation, and accessibility, aiming to mitigate risks and ensure public safety by requiring buildings to be resilient against various threats. But manufacture specs override all interpretations. These codes integrate valuable lessons from installer experiences alongside Occupational Safety and Health Administration (OSHA) standards, enriching regulations with practical insight to enhance overall safety and compliance.

- Insert pages 152-163\*

The provided sections from pages 152-163 of the Wetlands Protection Act (WPA) regulations offer guidance that may be relevant to generator installations on Plum Island. The WPA allows for a degree of interpretation when it comes to permitting work, suggesting that while approval is flexible, the Act itself does not prescribe specific methodologies for carrying out such work. Instead, it emphasizes the adoption of best practices. This approach encourages stakeholders to apply the highest standards of environmental protection and safety while also accommodating the unique environmental sensitivities of areas like Plum Island. Understanding these regulations in the context of generator installation is crucial, as it ensures compliance not only with the letter of the law but also with its spirit, aiming to preserve natural habitats and minimize human impact. Therefore, while navigating these guidelines, it's important to consider both the direct implications for installation procedures and the broader environmental principles they uphold, making informed decisions that respect and protect the delicate ecosystem of Plum Island.

\*See pages 152-163

Incorporating a review of the relevant codes could significantly enhance our understanding and ensure compliance in the Flood Zone and all that pertains to Plum Island while also expanding our knowledge in certain specialized areas, notably in cases where generators are powered exclusively by propane or gas. A notable risk identified under Federal Emergency Management Agency (FEMA) guidelines, is the potential for fuel tanks to deplete and become buoyant during long periods of use, posing a significant risk during flooding.

Additional regulations that focus on flood zones and strategies to secure equipment effectively. Understanding the complex interplay between different codes and regulations highlights the importance of interdisciplinary knowledge and collaboration. Ensuring safety in flood-prone areas requires an all-around approach, considering not just the immediate operational safety of equipment like generators but also long-term environmental and infrastructural impacts. This comprehensive perspective is essential for developing resilient, safe, and compliant installations in challenging environments such as Plum Island.

Additional:

<https://msc.fema.gov/portal/home>

<https://www.fema.gov/pdf/rebuild/mat/sec8.pdf>

[https://www.fema.gov/sites/default/files/2020-08/midwest\\_floods\\_ras\\_2009.pdf](https://www.fema.gov/sites/default/files/2020-08/midwest_floods_ras_2009.pdf)

<https://wcee.nicee.org/wcee/article/17WCEE/2b-0119.pdf>

<https://iaeimagazine.org/2019/2019november/mitigation-ideas-for-reducing-flood-loss/>

[https://agents.floodsmart.gov/sites/default/files/fema\\_nfip-p-348-protecting-building-utility-systems-from-flood-damage-2017.pdf](https://agents.floodsmart.gov/sites/default/files/fema_nfip-p-348-protecting-building-utility-systems-from-flood-damage-2017.pdf)

[https://www.fema.gov/sites/default/files/2020-07/flood-protection-backup-power\\_iowa-floods-2016.pdf](https://www.fema.gov/sites/default/files/2020-07/flood-protection-backup-power_iowa-floods-2016.pdf)

[https://www.fema.gov/sites/default/files/documents/fema\\_p-2181-fact-sheet-3-4-2-building-systems-electrical.pdf](https://www.fema.gov/sites/default/files/documents/fema_p-2181-fact-sheet-3-4-2-building-systems-electrical.pdf)

<https://community.fema.gov/ProtectiveActions/s/article/Hurricane-Special-Conditions-Locations-Use-of-Generators>

<https://www.mass.gov/doc/310-cmr-1000-the-wetlands-protection-act/download>

New Jersey requirements- Engineered plans... This might be beneficial in the V-zone

[https://www.nj.gov/dca/divisions/codes/publications/pdf\\_ccc/2013\\_v25.pdf](https://www.nj.gov/dca/divisions/codes/publications/pdf_ccc/2013_v25.pdf)

<https://www.peqtwp.org/DocumentCenter/View/127/New-Jersey-Floodplain-Management---Quick-Guide-PDF>

## Residential Generators

Application (Find at BH Building Dept or  
<https://www.state.nj.us/dca/divisions/codes/resources/constructionpermitforms.html> :

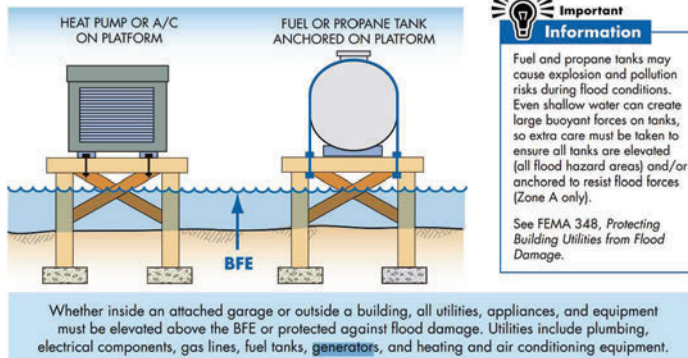
- A Construction Application Jacket.
- A Building Sub-Code Application, if elevating the generator or in Flood Zone.
- A Mechanical Sub-Code Application completed by the contractor.
- An Electrical Sub-Code Application completed by the licensed contractor.
- A Permit Zoning Application

### The Applicant Must Provide:

- Completed construction application, sub-code forms and Zoning Permit application.
- A copy of the property survey, with the title block, showing the proposed location of the generator.
- **If the property is in a flood zone, you must submit a flood elevation certificate prepared by a NJ licensed Professional Engineer and the plans submitted for the generator installation must include how the generator will be elevated over the flood level.**
- A copy of the PSE & G "Residential Gas Load Data Inquiry" submitted to PSE & G. This ensures that there is enough natural gas in your neighborhood as well your individual gas supply line from the street and the meter is properly sized for the additional appliance.
- A copy of the specifications for the generator, including that part which indicates the clearances to combustibles and/or the structure.
- A gas riser diagram.
- The contractor must supply copies of any licenses or certification issued by the State of NJ applicable to the work he is going to perform.

### Required Inspections

#### Utility Service, Equipment, and Fuel Tanks



## Florida requirements

<https://www.miamidade.gov/building/library/brochures/generator-installation.pdf>





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☒ Exclude Closed and Final Permits

<input type="checkbox"/>	#	Location	Permit#	Permit Type	Application Date	Issued Date	Total Fee	Status	Work Description	Project	Priority	
<input type="checkbox"/>	20	NORTHERN BL	23-13SM	Sheet Metal	06/20/2023	06/22/2023	107.00	Closed	5 Mini Splits and 1 Air Handler		Black-Final/Closed	
<input type="checkbox"/>	20	NORTHERN BL	23-60P	Plumbing	04/28/2023	05/01/2023	175.00	Closed	dRAINAGE, VENTING WATER DISTRIBUTION RES		Black-Final/Closed	
<input type="checkbox"/>	20	NORTHERN BL	23-52G	Gas	04/28/2023	05/01/2023	115.00	Closed	INTERIOR GASPIPING RESIDENTIAL DWELLING		Black-Final/Closed	
<input type="checkbox"/>	20	NORTHERN BL	23-22E	Electrical	01/31/2023	02/01/2023	410.00	Closed	Remodel house completely		Black-Final/Closed	
<input type="checkbox"/>	20	NORTHERN BL	23-50RB	Building Residential	01/09/2023	02/28/2023	3131.00	Closed	Remove Alter Existing Roof, Reconfigure Interior Wal		Black-Final/Closed	

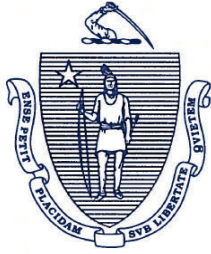
I'm striving to fulfill my duties as a conservation agent, and the presence of this structure on the dune directly impacts my responsibilities. When other trades neglect to adhere to their prescribed code articles, it undermines the structural integrity and environmental resilience of the area. It's not just about following regulations; it's about safeguarding the ecosystem and community welfare.

The disregard for manufacture specifications, MLG 141, 143, and CMR 1 not only poses risks to the immediate surroundings but also creates a ripple effect of non-compliance. This complicates my job and introduces uncertainty, as adherence to MLG 141 and 143 is crucial for maintaining standards that ensure safety and sustainability.

Moreover, violations of 110.b, 90.2b, 422.31b, and 110.26 occurred due to non-compliance with article 682. This indicates a systemic issue that goes beyond individual projects. Instead of pursuing building violations, I was simply taking my dog for a walk on the beach and up North, but these observations raise concerns about the broader enforcement landscape.

Allowing code violations might seem inconsequential, but when they occur in such a sensitive area as the dune, it affects everyone. The ecological significance of dunes, especially in mitigating coastal erosion and protecting against storm surges, cannot be overstated.

Furthermore, it might be prudent to suggest to the homeowner that they verify with their insurance whether these installations will be covered. This could potentially mitigate any future complications or liabilities, and it emphasizes the importance of proactive risk management in construction projects.



*The Commonwealth of Massachusetts*  
**MASSACHUSETTS SENATE**

**SENATOR PATRICK M. O'CONNOR**  
*First Plymouth and Norfolk District*

STATE HOUSE, ROOM 419  
BOSTON, MA 02133-1053  
TEL. 617-722-1646  
FAX. 617-722-1028

PATRICK.OCONNOR@MASENATE.GOV  
WWW.MASENATE.GOV

April 30, 2024

MassDEP - BWR

Attn: *Waterways Resilience Comments/Wetlands-401 Resilience Comments*  
100 Cambridge Street, Suite 900  
Boston, MA 02114

**Sent Via Electronic Mail**

Dear MassDEP Waterways, Wetlands and Other Interested Parties:

I am reaching out today to discuss the proposed revisions to the Massachusetts Wetlands Protection Act and its coastal regulation amendments. While I commend the Administration's efforts to address climate change and enhance coastal resilience, I have reservations about certain aspects of the proposed regulations regarding coastal reconstruction or redevelopment.

A primary concern from constituents involves the allowance for new construction, including structures on open piles, within prohibited velocity zones. Additionally, the proposed regulations may restrict reconstruction or redevelopment if it exceeds the size of the original building, thereby preventing any increase in the overall building footprint on the site.

Based on my assessment of the current flood zone mapping, it appears that a significant portion of the district I represent stands to be adversely affected by these changes. The inability to rebuild or redevelop poses a threat to the property investments of many constituents.

Additionally, the proposed approach of managed retreat, outlined in these regulations, could lead to substantial losses in property tax revenue for municipalities, as well as render many properties undevelopable.

It's important that we find a practical solution that bridges the gap between existing regulations and the proposed revisions outlined in 310 CMR 10.00: Wetlands Protection Act Regulations and 310 CMR 9.00: Waterways Regulations. One suggestion would be to provide more flexibility in reconstruction guided by Federal Emergency Management Agency (FEMA) recommendations.

A significant number of residents on the South Shore have expressed their concerns about these issues and are submitting written comments during the open comment period. I respectfully request an extension of this period to ensure that the agency receives input from these residents and other residents that are just now finding out about the proposed changes.

Before finalizing these regulations, I also respectfully request that they not be enacted without adequate public awareness among both residents and municipalities, especially those along the coastline. Conducting in-person, locally hosted public information sessions and hearings to provide a platform for residents and municipalities to voice their concerns and suggestions would go a long way in addressing issues related to the proposed changes.

Should you require any further clarification or have questions, please feel free to reach out to me directly.

My Very Best,



**Patrick M. O'Connor**

State Senator

First Plymouth & Norfolk District

**From:** [Kelly McClintock](#)  
**To:** [DEP Wetlands \(DEP\)](#)  
**Cc:** [SFTA](#); [Courtney Ek](#); [Joyce Hastings](#); [Jacob.Strauss](#); [Terry Luskin](#); [Kelly McClintock](#); [Matthew Oleyer](#); [Steve Scrimshaw](#); [Kurt Stiegel](#); [Debra Takacs](#)  
**Subject:** Wetlands-401 Resilience Comments  
**Date:** Sunday, April 14, 2024 9:05:59 AM

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CAUTION: This email originated from a sender outside of the Commonwealth of Massachusetts mail system. Do not click on links or open attachments unless you recognize the sender and know the content is safe.

To MassDEP:

The Sherborn Forest and Trail Association (SFTA) works in partnership with Sherborn's Conservation Commission to maintain and manage Sherborn's extensive, publicly accessible trail system. In addition to routine brush and fallen tree clearing and removal, this work has revealed numerous locations where trails cross wet areas and intermittent streams.

Several times over the past years SFTA has been able to permit and construct appropriate boardwalks and even full (if small) bridges, but we now have a considerable backlog of projects that are held up by the permitting process. Our Conservation Commission fully agrees that these projects are important both to protect wetlands and improve recreational enjoyment, but our agent simply does not have the time to prepare the paperwork, and SFTA does not have the funds to hire an alternative professional.

Many of these necessary projects will simply not happen under the current rules.

SFTA strongly urges MassDEP either to greatly simplify this process, or to exempt entirely these kinds of projects from the permitting process while allowing a town's Conservation Commission to address relevant situations.

Thank you!

Laura Van Blarcom, SFTA President

**From:** [Martyn Taubert](#)  
**To:** [DEP Wetlands \(DEP\)](#)  
**Subject:** Wetlands and Waterways Resilience Comments  
**Date:** Monday, April 29, 2024 2:40:52 PM

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**CAUTION:** This email originated from a sender outside of the Commonwealth of Massachusetts mail system. Do not click on links or open attachments unless you recognize the sender and know the content is safe.

Please consider all public input especially from Marinas and shoreline homeowners affected by the proposed new regulations.

Along with this family since 1958 and previous generations have been operating Ship Shops Boatyard and living on the shore of the Bass River in one form or another since 1927. There are homes on the banks of this waterway existing since the late 1700's and still standing.

I have personally been watching the rise or lack of noticeable rise for close to 50 years now in which in that time have not felt as though the elevation of structures necessary. Also, in that time since 1927 there have been numerous hurricanes, Northeasters, no name storms and even a tornado which we and the homes have all survived with some homes over 100 years without additional government regulation on building construction, heights etc.

We can not just run back from shore from the weather. We prepare for storms and always come out ok on the other side.

Our business employs 15 people and offers marine service to the commercial, pleasure and government agencies like the Town of Yarmouth DNR Safe boats, local patrol boats, pump out boats, work barges for channel maintenance, mooring services and fire boats including providing fuel service to both pleasure and commercial.

The burden and expense of more regulation could easily make it difficult if not impossible to remain profitable, affecting the next generation's ability to enjoy what nature has provided us and to keep providing vital services. In that case we could be forced to convert the property to residential and the entire boating community in this area would be at a loss for all marine services we provide to residents, general public and commercial fish operations which are vital to our coastal community.

Again, our business and the shoreline community has endured harsh weather for many many years and we feel as though we can continue without additional regulation.

Thank you for your time and consideration of our livelihood and services provided to the community/

Martyn Taubert  
Ship Shops Inc  
S. Yarmouth, Ma. 02664



**From:** [REDACTED]  
**To:** [DEP Wetlands \(DEP\)](#)  
**Subject:** Wetlands-401 Resilience Comments  
**Date:** Friday, April 19, 2024 7:42:35 AM

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**CAUTION:** This email originated from a sender outside of the Commonwealth of Massachusetts mail system. Do not click on links or open attachments unless you recognize the sender and know the content is safe.

Hello MassDEP,

Squannacook Greenways, Inc. appreciates MassDEP's work to propose wetland resilience draft regulations. We are a non-profit organization building and maintaining the Squannacook River Rail Trail in Townsend and Groton, MA. As stakeholders, we offer the following Wetlands-401 Resilience Comments.

Squannacook River Rail Trail is a four-mile non-motorized stone-dust shared-use path. We have been constructing the trail in sections, and the final section is nearly finished. Most of our Board of Directors have been working toward this day for almost 20 years! Wetland permitting has been one of our biggest challenges, right up there with fundraising and abutter outreach.

Like many rail trails, the abandoned railroad corridor passes along wetland areas through much of its length. In adherence to wetland regulations, we contracted a professional wetland delineator, filed Notices of Intent in two towns, mailed more than 50 certified letters to abutters, publicized and attended a public hearing, installed around 1 ½ miles of erosion control wattles, and constructed a 2,000 square foot wetland area to replicate an isolated section of rail corridor where drainage trenches were unmaintained by the railroad for decades. An additional challenge has been to complete construction in winter, during the November 7 to March 15 window defined by NHESP requirements.

As a volunteer group, we committed a great deal of time and money to complete the complex permitting process and adhere to all requirements of our Orders of Conditions. The finished trail now serves as an important resource for people to visit and appreciate beautiful natural areas that previously were abandoned areas overrun with invasive plants and illegal motorized activity. While we fully understand the importance of protecting our wetland areas, we believe it would be appropriate for MassDEP to support the construction and maintenance of public use trails by working to alleviate some of the permitting challenges that may discourage important volunteer efforts such as ours.

Thank you,

Joan

Joan Wotkowicz

Squannacook Greenways, Inc.



# STAMSKI AND MCNARY, INC.

1000 Main Street  
Acton, Massachusetts 01720  
(978) 263-8585, FAX (978) 263-9883

## PRINCIPALS

JOSEPH MARCH, P.E., P.L.S.  
GEORGE DIMAKARAKOS, P.E.

## ASSOCIATE

JONATHAN BOLLEN, P.L.S.

April 29, 2024

Stephanie Maura  
Director, Division of Wetlands and Waterways  
Massachusetts Department of Environmental Protection  
100 Cambridge Street, Suite 900  
Boston, MA 02114

Re: **Resilience updates to Wetlands and Waterways regulations**

Dear Ms Maura,

Thank you for the opportunity to comment on the draft regulations. Clearly, much work has gone into these revisions and that is greatly appreciated. We offer a number of comments that we feel are extremely important in order to avoid a situation where there would be virtually no site that could meet the proposed requirements. The implications will be crippling and counter productive if left as they are. Unfortunately, we did not have time to review the voluminous handbook and would love to have more time to do so given the serious impacts of the changes.

First, there must be additional language that allows engineering judgment to be used in evaluating individual sites. This has been the case for as long as there have been Civil Engineers. Strict adherence to setbacks with no basis in science or empirical data is not engineering. Sites are becoming more complex and more challenging. We get registered as professional engineers to exercise our judgement after decades of experience and lessons learned.

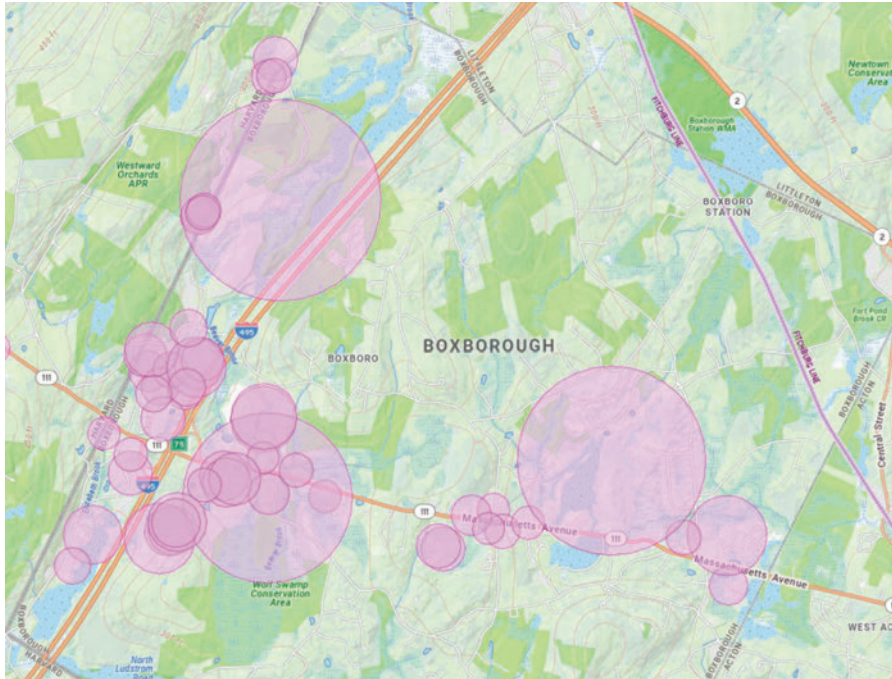
Below are some examples where we significant issues. We referenced page numbers to 310 CMR 10 only, since these themes also appear in the other regulations.

Page 74

The heading in the table indicates: "Minimum Setback from **any component** of a Stormwater Management System to Resource (all Setbacks horizontal except as otherwise stated)". In all cases, this prohibits any component such as swales, catch basins, leaders from a roof downspout. This is counterproductive and discourages stormwater management. These components are necessary to capture runoff to meet treatment and mitigation goals. To prohibit any component has a crippling effect on stormwater management and a number of components should be exempted from the table..

**Interim Wellhead Protection Area (IWPA)** Setback at least 10 feet outside IWPA

This is must have been a mistake. Zone I prohibitions make sense and are consistent with existing regulations because there is a high likelihood of groundwater being drawn down. IWPA's are arbitrary radii that are based on a generic formula. IWPA's should simply be listed under critical areas, such as Zone IIs. Critical areas currently have certain restrictions on which BMP's are allowed and this would make sense for an IWPA. Also, any component includes pipes and catch basins, etc, as noted above. Some towns, like Boxborough, have significant portions of town cover by IWPA's. These areas have public wells because they are zoned for denser development, contain large housing properties and industrial properties.



This should only apply to structural infiltration practices like the bedrock separation. Sumps of catch basins and other components will often be in or near the groundwater. This would have a tremendously negative impact on the design of a roadway. A catch basin typically has a 4 foot sump and about 3 feet to the grate elevation. That means that the road surface would have to be 9 feet above groundwater.

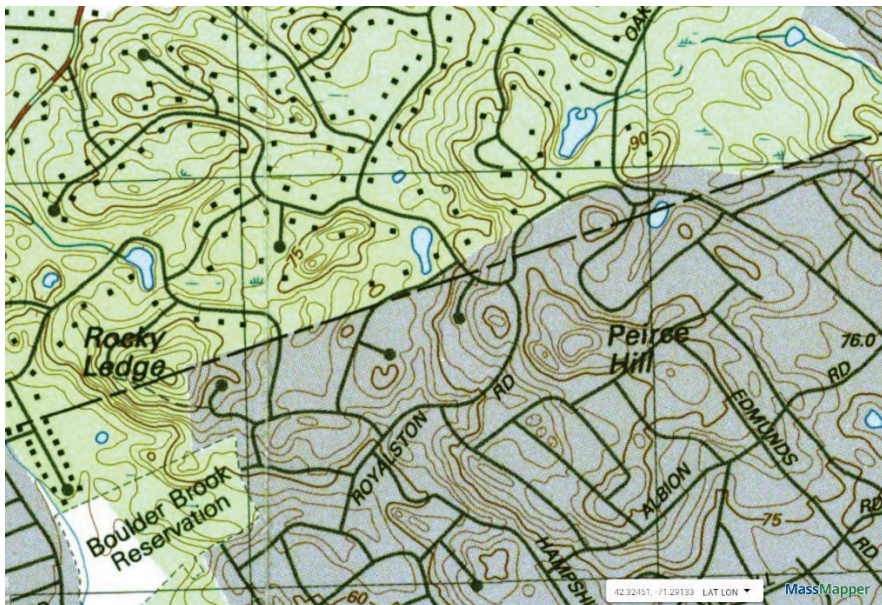
April 29, 2024

**Well that is not a Public Water Supply** 100 feet

This really has nothing to do with stormwater. Title 5 allows a septic tank to be 50 feet from a well which has potentially much higher risk, and sewer pipes within 10 feet. This is not based on science and is inconsistent with thousands of existing situations. Many towns rely entirely upon private wells and will be significantly affected.

**Slope 100 feet from any slope greater than 5%** to an infiltration basin, surface exposed or underground infiltration trench, or infiltrating bioretention area.

This is not based on science. There are thousands of installations that do not meet this requirement and there is no issue. This also has nothing to do with wetlands protection. There will be few properties statewide that are 100 feet away from a 5% slope. This slope is 1 foot vertically in 20 feet horizontally, which is the allowable slope for a walkway for handicap accessible paths. Some entire towns will be crippled by this. Even if it was possible to achieve this setback, it would potentially create large swaths of additionally cleared wooded areas and bring in significant amounts of fill. An analysis of the impact of this must be done statewide. Thousands of systems are in place without problems. We have engineered stormwater basins for decades with a 6 foot wide impermeable berm and 3:1 side slopes hundreds of times. This should be removed from the regulations and the handbook should be revised to allow for engineering judgement. Some entire towns will be crippled by this. The figure below is from MassMapper showing an area of Wellesley Hills and Weston. Most of this area is steeper than 5% and would essentially preclude the ability to infiltrate stormwater. There are many examples like this throughout the state. In fact, the western part of the state is much steeper than this example.



Our concern is that these will be a development obstacle and exacerbate the housing crisis. We recommend removing setbacks from 310 CMR 10 rules and just having the handbook address them with the allowance for using Engineering judgement in consideration of local conditions. This would also allow the updating of the handbook more frequently as issues evolve without having to revise the regulations. We thank you for your attention to this matter. If you have any questions regarding this matter, please feel free to contact our office.

Respectfully,  
Stamski and McNary, Inc.

George Dimakarakos, P.E.



**From:** [Stephanie Kruel](#)  
**To:** [DEP Wetlands \(DEP\)](#)  
**Subject:** Wetlands-401 Resilience Comments  
**Date:** Tuesday, April 30, 2024 9:38:12 AM

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Dear Director Jones,

Please consider the following comment on 310 CMR 10:

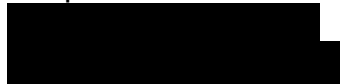
10.30 COASTAL BANKS (no changes proposed by DEP)

1. *Definition. Coastal Bank means the seaward face or side of any elevated landform, other than a coastal dune, which lies at the landward edge of a coastal beach, land subject to tidal action, or other wetland.*

This definition should be clarified to exclude filled tidelands. In the case of filled tidelands, what has often been regulated as a coastal bank is man-made land that was created by constructing Coastal Engineering Structures (CES) and then placing fill “landward” of those structures. The CESs in these cases were not installed to protect any existing landforms, but rather to form new land. As such, although the CES is a vertical buffer to storm waters, the land behind it has no “natural resistance... to erosion caused by wind and rain runoff” which is identified as a vertical buffer’s critical characteristic in 10.30(1): “When the issuing authority determines that a coastal bank is significant to storm damage prevention or flood control because it is a vertical buffer to storm waters, the stability of the bank, *i.e., the natural resistance of the bank to erosion caused by wind and rain runoff*, is critical to the protection of that interest(s),” and further related to the only relevant performance standard at 10.30(6): “Any project on such a coastal bank or within 100 feet landward of the top of such coastal bank shall have no adverse effects on the stability of the coastal bank.” The CES that is providing the vertical buffer to storm waters is not a natural resource and should not be regulated as one, and the land behind it does not qualify as a Coastal Bank.

Sincerely,

Stephanie Kruel





April 30, 2024

Massachusetts Department of Environmental Protection  
Bureau of Water Resources Wetlands Program  
Attention: Wetlands-401 Resilience Comments  
100 Cambridge Street, Suite 900  
Boston, MA 02114

Re: Draft Wetlands Protection Act regulations

Dear Ms. Rhodes and the MassDEP Wetlands Program,

Thank you for the opportunity to comment on the draft Wetlands Protection Act regulations as part of MassDEP's "Climate Resilience 1.0" package.

In 1999, Congress designated twenty-nine miles of the Sudbury, Assabet, and Concord Rivers as a component of the National Wild and Scenic River System. This federal designation recognizes the rivers' free-flow and nationally significant outstanding scenic, ecological, recreational, historical, and literary values. Comprised of representatives from local, state and federal governments, and local non-profits, the Sudbury, Assabet, and Concord Wild and Scenic River Stewardship Council (RSC) coordinates the protection and enhancement of the Wild and Scenic River segments and their associated outstandingly remarkable values.

The RSC is pleased to see that these draft regulations advance climate resilience across Massachusetts. These are necessary steps towards ecological restoration, public safety, and preparing our communities for the impacts of climate change. We appreciate the extensive work MassDEP has spent crafting these draft regulations, and we strongly support many of the proposed provisions. The RSC believes these regulations should go even farther; we encourage MassDEP to strengthen some of these provisions and ease the permitting requirements for ecologically beneficial projects under the Wetlands Protection Act (WPA).

The RSC supports the following and recommends their promulgation:

- Exempting culvert replacements that conform to the Stream Crossing Standards and dam removal projects from a Chapter 91 license, recognizing that these projects do not impede navigation and instead increase the resilience of the site.
- Including "artificial turf" under the definition of Impervious Surface. The chemicals found in artificial turf have long degraded public health and water quality.
- Expanding Low Impact Design/Environmentally Sensitive Site Design credits.
- Exempting basic Shared Use Path maintenance from WPA permitting requirements.



**member organizations**

Bedford, Billerica, Carlisle, Concord, Lincoln, Sudbury, Wayland, Framingham,  
OARS, Sudbury Valley Trustees, Commonwealth of Massachusetts,  
National Park Service, US Fish and Wildlife Service.

- Aligning the Wetland Protection Act's conditions to coordinate with the Municipal Small Sewer System permit, making compliance less burdensome for municipalities.

The RSC recommends that the following regulations be refined:

- To accelerate the pace of restoration projects, Massachusetts needs a simplified permitting process. The updated WPA does not do enough to streamline the permitting for ecological restoration projects, particularly dam removals. The high cost of permitting dam removals creates long delays and high costs, resulting in fewer projects and inefficient use of public funds. A simplified permitting process is needed, as is the prioritization of dam removal over fishways. Removal has significantly more benefits for resiliency and ecological restoration than other strategies.
- The updated WPA also needs to ease permitting for invasive aquatic plant management. Aquatic invasives plants have a huge and ever-increasing negative impact on wetland values and public enjoyment of our ponds, lakes, streams, and rivers, exacerbated by climate change. Aquatic invasive plant removal has significantly more benefits for resiliency and ecological restoration and protection of the wetland interests (particularly protection of fisheries and protection of wildlife habitat), than potential for damage from "alteration" of resource areas (e.g., land under water). Much of the effort to manage them is from volunteers or non-profits, neither of which have the funds or staff time to apply under the WPA for their small-scale (yet highly effective and minimally disruptive) management efforts. The high cost of permitting aquatic invasive plant management, such as water chestnut, discourages volunteer efforts and results in expansion of damage to the wetland resource areas and interests. A simplified permitting process and better guidance is urgently needed.
- The updated data (NOAA14+) that MassDEP is proposing to be utilized in the Wetland Protection Act regulations will be outdated soon. FEMA delineations and maps are also quickly out of date. Precipitation data should be dynamic and should use forward-looking projections for precipitation that will protect our community for decades to come.
- Under the proposed WPA updates, alternative analysis must include nature-based solutions. Suggested language to require rather than suggest: "applicant shall utilize" and have applicant demonstrate NBS installations in their alternative analyses.
- In the WPA/SW Handbook, redevelopment must improve existing site conditions. Runoff volume for redevelopment and new development should be reduced at a scale needed for the site (well over 1 inch for all soil types) to infiltrate and retain stormwater onsite as much as possible.
- Within the WPA, the no-build area in Buffer Zone should be strengthened and expanded.



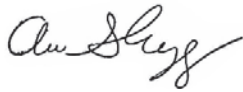
**member organizations**

Bedford, Billerica, Carlisle, Concord, Lincoln, Sudbury, Wayland, Framingham,  
OARS, Sudbury Valley Trustees, Commonwealth of Massachusetts,  
National Park Service, US Fish and Wildlife Service.

Climate change is expected to exacerbate water quality problems due to increased thermal pollution, heat stress, loss of flow due to evaporation and drought, and increased pollution and sedimentation due to more intense rainfall. The draft regulations are overall moving in a positive direction; however, they do not go far enough in achieving the stated goals of “Resilience 1.0.” After swift promulgation of these updates, we strongly encourage MassDEP to begin the “2.0” process to continue improving the Wetland Protection Act regulations. There must be no delay in ramping up our regulatory approach to development to match the challenge of the climate crisis before us.

Thank you for the considerable time and effort the agency has invested in creating these draft regulations thus far. We look forward to continuing to work together to protect Massachusetts’ rivers, ecosystems, and communities from the impacts of climate change.

Sincerely,



Anne Slugg, Chair  
Sudbury, Assabet, and Concord Wild and Scenic River Stewardship Council



**member organizations**

Bedford, Billerica, Carlisle, Concord, Lincoln, Sudbury, Wayland, Framingham,  
OARS, Sudbury Valley Trustees, Commonwealth of Massachusetts,  
National Park Service, US Fish and Wildlife Service.

April 30, 2024

Via Electronic Mail

MassDEP – BWR Wetlands Program  
100 Cambridge Street, Suite 900  
Boston, MA 02114  
[dep.wetlands@mass.gov](mailto:dep.wetlands@mass.gov)

RE: WETLANDS-401 RESILIENCE COMMENTS

Dear Mass DEP Wetlands Staff:

Please accept these comments on the draft revisions to MassDEP's Wetlands Regulations. I want to extend my support for the main objectives of the proposed regulation revisions as stated in the Public Summary document of December 13, 2023:

- Promote coastal resiliency against worsening impacts of storms, flooding, and sea level rise; and
- Promote resiliency against increasing flooding, storm damage, and runoff pollution through updated stormwater management standards.

I strongly support the Land Subject to Coastal Storm Flowage standards, the incorporation of current science and rainfall data to inform stormwater management approaches and better align with the MS4 requirements, and encouraging the use of nature-based design solutions.

As a point of introduction, my name is Susan D. Chapnick, M.S., and I am the Vice-Chair (and former Chair) of the Conservation Commission in the Town of Arlington, where I help lead local policy changes towards climate change resilience and adaptation planning in wetland resource areas. Additionally, I currently serve on the Science Advisory Committee for the MassDEP Bureau of Waste Site Cleanup (BWSC) where I assist in the development of regulations and technical guidance, most recently for the MCP Climate Change Toolkit developed jointly by the BWSC and the Licensed Site Professionals Association (LSPA). I am also the President and Principal Scientist of New Environmental Horizons, Inc. (NEH), an environmental chemistry consulting firm and Women Owned Business Enterprise (WBE), where I am recognized as a technical expert in Massachusetts and beyond, with over 30 years of experience in analytical chemistry and quality assurance for complex environmental investigations.

Given this opportunity to incorporate climate change resilience standards into the state's Wetlands Protection Act (WPA), I have the following additional recommendations towards climate change resilience that I hope you may consider to bring these revisions more consistent with the state's climate change goals and in alignment with several municipalities including the Town of Arlington, which has been leading the local policy/regulation changes towards incorporation of climate change resilience standards into local Bylaws and Wetlands Regulations.

1. **Recommend adding the words "climate change resilience" to multiple sections of the WPA regulations** to highlight the importance of the specific standards towards meeting climate change resilience goals. Currently, "climate change" is only specifically mentioned in the preamble to the draft regulations and in the new section on "Scientific Research Projects" in 10.05(12).

Justification: The impacts of climate change can adversely affect each Resource Area's ability to provide and promote the resource area values protected by the WPA. Resource Areas are critical to building a community's resilience/adaptation to the impacts of climate change due to their ability to provide for flood control, storm damage prevention, extreme temperature mitigation, and other Resource Area Values including but not limited to water supply protection; pollution prevention; erosion and sedimentation control; protection of surrounding land and other homes or buildings; wildlife, plant, and aquatic species protection; habitat protection; and the protection of the natural character or recreational values of the wetland resources.

2. **Recommend requiring NOAA Atlas 14 upper confidence limit** rather than 0.9 times the upper confidence limit, as the required precipitation data to develop stormwater management systems that will be climate resilient.

Justification: The focus of this regulation update is to "promote resiliency" against increasing flooding, storm damage, and runoff pollution; therefore, why should the current precipitation data, as represented by the 0.9 times the upper confidence limit of the NOAA Atlas 14 data be the WPA standard? If promoting climate change resilience is the real goal, the standard should be the projected precipitation so that resilience can be built-in, which would require the upper confidence limit itself as the standard.

Precedent: The Town of Arlington Wetlands Regulations (March 16, 2023) requires the NOAA Atlas 14 upper confidence limit (NOAA 14 Plus Plus) precipitation data be used for design of stormwater management.

<https://www.arlingtonma.gov/home/showpublisheddocument/64923/638174068252130000>

3. **Recommend Compensatory Flood Storage at 2:1** for each elevation as a climate resilience strategy rather than 1:1 as currently in 10.57(4)(a)1.

Justification: The focus of this regulation update is to "promote resiliency" against increasing flooding, storm damage, and runoff pollution; therefore, recommend this increase in Compensatory Flood Storage as a climate resilience approach to address future flooding.

Precedent: The Town of Arlington Wetlands Regulations (March 16, 2023) requires that "Compensatory flood storage shall be at a 2:1 ratio, minimum, for each unit volume of flood storage lost at each elevation" under Land Subject to Flooding (Bordering and Isolated (Section 24).

<https://www.arlingtonma.gov/home/showpublisheddocument/64923/638174068252130000>

4. **Recommend prohibiting Artificial Turf Fields in coastal and inland Wetland Resource Areas.** The current scientific weight-of-evidence points to adverse impacts on wetland resource areas and negative climate resilience impacts of Artificial Turf Fields.

Justification: The focus of this regulation update is to promote resiliency, consistent with Massachusetts Executive Order 569 (<https://www.mass.gov/executive-orders/no-569-establishing-an-integrated-climate-change-strategy-for-the-commonwealth>), which states "WHEREAS, our state agencies and authorities, as well as our cities and towns, must prepare for the impacts of climate change by assessing vulnerability and adopting strategies to increase the

adaptive capacity and resiliency of infrastructure and other assets.” However, Artificial Turf Fields reduce resiliency due to:

- a. increase in urban heat;
- b. increase in pollutant loads from surface runoff and infill particulate migration;
- c. loss of carbon sequestration as a climate resilience strategy due to removal of soil;
- d. increase in use of fossil fuels and increase in environmental impacts over natural turf fields to manufacture the field, for installation, replacement and disposal every 8-10 years;
- e. addition of 20 tons of plastic carpet and 200 tons of infill into the environment for one Artificial Turf Field (according to the Synthetic Turf Council); and
- f. because each Artificial Turf Field adds an average of 80,000 sq feet of impervious surface, which negatively impacts stormwater and flooding resilience.

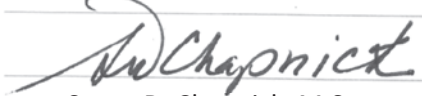
Precedent: The Charles River Watershed Association (CRWA) recently took the position of opposing installation of Artificial Turf due to detrimental effects on the watershed:

**"CRWA opposes the installation of artificial turf** as contrary to our core mission of promoting the health of the Charles River and its watershed. Given the increasing prevalence of synthetic turf usage in watershed communities, CRWA wishes to articulate its position on artificial turf and provide resources for those interested in learning more." <https://www.crwa.org/artificial-turf>

I have also attached to this comment letter a position paper that I have developed over the last year that summarizes (including references) the adverse impacts of Artificial Turf Fields on the environment.

Thank you for your consideration of these recommendations.

Respectfully submitted,



Susan D. Chapnick, M.S.  
Vice-Chair, Arlington Conservation Commission  
[s.chapnick@comcast.net](mailto:s.chapnick@comcast.net)

President & Principal Scientist  
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Attachment: Chapnick Statement – Adverse Impacts of Artificial Turf Fields on the Environment



## **Chapnick Statement: Adverse Impacts of Artificial Turf Fields on the Environment**

**Date:** April 17, 2024

**From:** Susan D. Chapnick, M.S.

**The current scientific weight-of-evidence points to adverse impacts on the environment, especially in and around protected wetland resource areas, and negative climate resilience impacts of Artificial Turf Fields. The practicable alternative is organically managed natural turf fields that are well-constructed for improved drainage.**

### **Adverse Impacts**

- Chemical Pollution: Toxic chemicals harmful to wetland resource areas can migrate through leaching, airborne dust, volatilization, and physical migration of infill particles. Known toxic chemicals including zinc, lead, polyaromatic hydrocarbons (PAHs), phthalates (endocrine disruptors), and volatile organic compounds (VOCs), have been documented (1, 2, 5, 6). Direct toxicity to aquatic organisms has been documented from Artificial Turf Field surface runoff during rainstorms based on whole effluent toxicity and Zinc toxicity (3). PFAS, the “forever” chemical, is found mainly in the grass blades and carpet backing material. PFAS environmental impacts from artificial turf are under-studied, but part-per-trillion (ppt) levels have been shown to have adverse effects (6) and PFAS has been documented to leach from Artificial Turf Fields (8). EPA is expecting to publish aquatic life criteria for PFAS in 2023 (9). Furthermore, recent scientific studies and reports (10, 11) have shown that an emerging contaminant, the chemical “6PPD-quinone” that is derived from the oxidation/weathering of tires, is acutely toxic to fish – meaning it is the cause of fish kills. Highest toxicity reported for 6PPD-quinone has been in coho salmon, white-spotted char, brook trout, and rainbow trout/steelhead (16). Sublethal effects and chronic toxicity of 6PPD-quinone are currently unknown (under investigation). Tire crumb rubber is currently the most commonly used infill in artificial turf fields. Therefore, artificial turf fields with crumb rubber infill can leach 6ppd-quinone into the environment and aquatic systems.
- Heat Effects: Artificial turf fields exacerbate heat stress in already stressed urban resource areas. This has negative environmental and human impacts and can be an environmental justice (EJ) issue due to increased heat island effects in EJ communities. Temperatures of over 150 degrees F have been routinely recorded on Artificial Turf Fields during June and summer months, compared to natural grass fields with temperatures of less than 90 degrees F (5). Cooling of artificial turf fields for use by spraying water exacerbates chemical, plastic, and particulate pollution. Increased heat effects due to climate change will add, for example, 13 to 23 days of greater than 90 degrees F from the current 8 days per year in the town of Arlington (Table 26, reference 7).
- Plastic and Particulate Pollution: Synthetic grass fibers are made of polyethylene or polypropylene plastic. Plastic and rubber infill particles migrate into resource areas, resulting in plastic and microplastic pollution. Plastics are a known source of endocrine disruptors. Plastics and microplastics are consumed by aquatic organisms and negatively impact the ecosystem (17). Crumb rubber infill and weathered plastic blades routinely migrate from older fields into the surrounding resource areas. This has been directly observed in Arlington, at the Arlington Catholic High School artificial turf field, which is within 100 feet of a protected brook (reference Arlington Conservation Commission communication and site pictures through March 2023, included in the public record). The European Union recently acknowledged the negative impact of tire crumb rubber infills as microplastic pollution and in September 2023 enacted a ban on the sale of

products containing intentionally added microplastics – specifically including in this ban “granular artificial turf infill” (19).

- Adverse Climate Change Resilience and Adaptation Impacts: Massachusetts Executive Order 569 (<https://www.mass.gov/executive-orders/no-569-establishing-an-integrated-climate-change-strategy-for-the-commonwealth>) states “WHEREAS, our state agencies and authorities, as well as our cities and towns, must prepare for the impacts of climate change by assessing vulnerability and adopting strategies to increase the adaptive capacity and resiliency of infrastructure and other assets.” Artificial Turf Fields reduce our environmental resiliency because of:
  - a. increase in urban heat;
  - b. increase in pollutant loads from surface runoff and infill particulate migration;
  - c. loss of carbon sequestration as a climate resilience strategy due to removal of soil (15);
  - d. increase in use of fossil fuels and increase in environmental impacts over natural turf fields to manufacture the field, for installation, replacement and disposal every 8-10 years;
  - e. addition of 20 tons of plastic carpet and 200 tons of infill into the environment for one Artificial Turf Field (according to the Synthetic Turf Council); and
  - f. because each Artificial Turf Field adds an average of 80,000 sq feet of impervious surface (18), which negatively impacts stormwater and flooding resilience.
- Adverse Impacts on wildlife habitat: toxicity to aquatic life from crumb rubber infill (including fish deaths and reproductive stress), loss of habitat for insects and other invertebrates (especially burrowing organisms), limiting foraging and prey availability for birds and small mammals, loss of pollinator use, disrupted habitat connectivity, and impacts to species composition and the water cycle owing to extreme heat.

### **Practicable Alternative**

Organically managed natural turf fields that are well constructed for improved draining and employ aeration, mowing techniques, and soil amendments based on soil science data allow for:

- 1) improved drainage;
- 2) reduced need for chemical application of fertilizers;
- 3) elimination of non-organic harmful chemical/pesticide treatments;
- 4) improved field performance over natural non-organically managed athletic fields;
- 5) wildlife corridor connectivity and pollinator, bird foraging, and invertebrate habitat functions;
- 6) a more climate resilient athletic field because it is sustainable (does not cause recurring environmental impacts every 8-10 years), does not increase urban heat, has less pollution runoff due to infiltration, and allows for carbon sequestration, compared to artificial turf fields.

Examples in the Commonwealth of successful organically managed natural turf fields include: Springfield with 67 acres of organically managed athletic fields (12), Marblehead with 20 acres of organically managed athletic fields (13), and Martha’s Vineyard (14). The Toxic Use Reduction Institute (TURI) report includes a cost comparison table for Artificial Turf vs. Organically managed Natural Turf (4).

References:

- 1) EPA, July 2019: Tire Crumb Rubber Characterization  
<https://www.epa.gov/chemical-research/july-2019-report-tire-crumb-rubber-characterization-0>
- 2) R. Massey, L. Pollard, & H. Harari, Journal of Environmental & Occupational Health Policy, February 23, 2020 (Vol 30, Issue 1): Artificial Turf Infill: A comparative Assessment of Chemical Contents  
<https://journals.sagepub.com/doi/full/10.1177/1048291120906206>
- 3) CTDEP, July 2010: Artificial Turf Study: Leachate and Stormwater Characteristics  
<https://portal.ct.gov/-/media/DEEP/artificialturf/DEPArtificialTurfReportpdf.pdf>
- 4) TURI, September 2020: Athletic Playing Fields & Artificial Turf: Considerations for Municipalities and Institutions  
[https://www.turi.org/content/download/13271/203906/file/Factsheet.Artificial\\_Turf.September2020.pdf.pdf](https://www.turi.org/content/download/13271/203906/file/Factsheet.Artificial_Turf.September2020.pdf.pdf)
- 5) TURI, April 2019 (updated): Athletic Playing Fields – Choosing Safer Options for Health and the Environment  
<https://www.turi.org/content/download/11980/188623/file/TURI+Report+2018-002+June+2019.+Athletic+Playing+Fields.pdf>
- 6) TURI, February 2020: Per- and Poly-fluoroalkyl Substances (PFAS) in Artificial Turf Carpet  
<https://www.turi.org/content/download/12963/201149/file/TURI+fact+sheet+-+PFAS+in+artificial+turf.pdf>
- 7) Town of Arlington Hazard Mitigation Plan – 2020 update  
<https://www.arlingtonma.gov/home/showpublisheddocument/51627/637268071185670000>
- 8) York Analytical Data for PFAS from swale runoff of Amity High School Artificial Turf Field in Woodbridge, CT, 2021  
<https://subscriber.politicopro.com/eenews/f/eenews/?id=00000181-b526-d010-a3cb-b5aed1070000>
- 9) PFAS Strategic Roadmap: EPA’s Commitments to Action 2021-2024  
[https://www.epa.gov/system/files/documents/2021-10/pfas-roadmap\\_final-508.pdf](https://www.epa.gov/system/files/documents/2021-10/pfas-roadmap_final-508.pdf)
- 10) Acute Toxicity of the Tire Rubber-Derived Chemical 6PPD-quinone to Four Fishes of Commercial, Cultural, and Ecological Importance, March 2022  
<https://pubs.acs.org/doi/10.1021/acs.estlett.2c00050>
- 11) CAL EPA: Product – Chemical Profile for Motor Vehicle Tires Containing N-(1,3-Dimethylbutyl)-N’phenyl-p-phenylenediamine (6PPD), 2022

[https://dtsc.ca.gov/wp-content/uploads/sites/31/2022/05/6PPD-in-Tires-Priority-Product-Profile\\_FINAL-VERSION\\_accessible.pdf](https://dtsc.ca.gov/wp-content/uploads/sites/31/2022/05/6PPD-in-Tires-Priority-Product-Profile_FINAL-VERSION_accessible.pdf)

- 12) City of Springfield, June 2019: Natural Grass Playing Field Case Study

<https://www.turi.org/content/download/12156/190509/file/Natural+Grass+Playing+Field+Case+Study+Springfield+MA.+June+2019.pdf>

- 13) Marblehead, November 2020 (revised): Natural Grass Playing Field Case Study: Marblehead, MA

<https://www.turi.org/content/download/12705/198916/file/Natural+Grass+Playing+Field+Case+Study+Marblehead+MA+revised.Nov2020.pdf>

- 14) Martha's Vineyard, December 2020: Natural Grass Playing Field Case Study: Martha's Vineyard, MA

<https://www.turi.org/content/download/13432/205432/file/Natural+Grass+Playing+Field+Case+Study+MV+MA.Dec2020.pdf>

- 15) The Massachusetts Healthy Soils Action Plan, 2022-2023

<https://www.mass.gov/doc/healthy-soils-action-plan-2023/download>

- 16) ITRC, Summer 2023. What We Know: 6PPD and 6PPD-quinone.

<https://6ppd.itrcweb.org/wp-content/uploads/2023/09/6PPD-Focus-Sheet-Web-Layout-9.pdf>

- 17) de Haan, W.P. et al. 2023. The dark side of artificial greening: Plastic turfs as widespread pollutants of aquatic environments. *Environ. Pollut.* vol. 334, 122094, 1 Oct 2023

<https://www.sciencedirect.com/science/article/pii/S0269749123010965?via%3Dihub>

- 18) MassDEP proposed Wetlands Protection Act (WPA) draft revisions, December 2023: defines "Impervious Surface" to include artificial turf.

<https://www.mass.gov/doc/310-cmr-1000-wetlands-proposed-revisions-redlinestrikeout/download>

- 19) Zuccaro, P., et al. 2024. The European Union ban on microplastics includes artificial turf crumb rubber infill: other nations should follow suit. *Environmental Science & Technology*, v.58, 6, 2591–2594.

<https://doi.org/10.1021/acs.est.4c00047>

*Susan D. Chapnick, M.S. – Bio*

Susan Chapnick is President and Principal Scientist of New Environmental Horizons, Inc. (NEH), an environmental chemistry consulting firm specializing in the planning and evaluation of environmental data. She also leads local policy changes towards Climate Change Resilience and adaptation planning in wetland resource areas as the Former Chair and current Vice-Chair of the Conservation Commission in the Town of Arlington, MA. She is recognized as a technical expert with over 30 years of experience in analytical chemistry and quality assurance of environmental measurements for complex investigations in support of Natural Resource Damage Assessments, USEPA Superfund, US Army Corps of Engineers, and state-led programs. Additionally, Ms. Chapnick serves on the Science Advisory Committee for the MassDEP Bureau of Waste Site Cleanup where she champions scientific integrity in the development of environmental regulations and technical guidance for site cleanups and climate change resilience in the Commonwealth. Ms. Chapnick holds a Master's of Science in Marine Science from the University of South Carolina and a BA in Biological Sciences

**From:** [Susan Lindberg](#)  
**To:** [DEP Wetlands \(DEP\)](#)  
**Subject:** Wetlands and Waterways Resilience  
**Date:** Monday, April 29, 2024 1:30:24 PM

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**CAUTION:** This email originated from a sender outside of the Commonwealth of Massachusetts mail system. Do not click on links or open attachments unless you recognize the sender and know the content is safe.

To Whom it May Concern.

Just yesterday I was made aware of the proposed regulations to coastal properties. I have had a property on a barrier beach in Humarock at [REDACTED] for 32 years. I have had a few minor problems with wave action but not nearly what you would expect. If these regulations are passed, it would be catastrophic and impossible to make any kind of improvements to our house. We should be able to utilize modern engineering design to adapt to our environment. We do not need additional restrictive regulations.

Thank you,

Regards

Susan T.Lindberg

Sent from my iPad





**Sustainable Coastal Solutions, Inc.**  
107A County Road  
North Falmouth, MA 02556  
508-365-2900  
sustainablecoastalsolutions.com

April 30, 2024

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To: Massachusetts DEP – BWR Wetlands Program

From: John Ramsey, P.E.

Re: Wetlands – 401 Resilience Comments

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Sustainable Coastal Solutions, Inc. (SCS) is providing a review of the proposed draft Wetlands Protection Act changes. The review focus on the following elements:

**10.24(1)(b) General Provisions**

The draft regulations state “In planning shoreline protection projects, Applicants shall consult the resilientma.org website for the most current mapping...” It is understood that the planning process for shoreline protection projects should incorporate climate change into the design; however, stipulating the source of information to depend upon is problematic, especially as some of the information available through resilientma.org is either outdated or simply incorrect and inaccurate. A recent technical review for Nantucket regarding the sea-level rise projections, as well as the associated coastal modeling analysis, associated with resilientma.org demonstrate the large-scale inaccuracies of the information (see Attachment 1 for the full technical review).

***Suggested Remedy:*** *To ensure that Conservation Commission and/or MADEP personnel are not improperly directed to utilizing potentially outdated or incorrect information from resilientma.org, alter language in 10.24(1)(b) to read “In planning shoreline protection projects, Applicants shall utilize the latest sea level rise projections from a reputable government source...”*

**10.24(7)(c) General Provisions**

One major concern related to these inaccuracies relates to potential design “improvements” for existing public roadways 10.24(7) is increased and likely unnecessary environmental impacts, where use of the sea-level rise projections from resilientma.org will lead to substantial overdesign of the project. While this overdesign will have no detrimental impact to the roadway itself, other than cost, the expanded Wetland Resource Area impacts associated with elevating

roadways to elevations stipulated by resilientma.org (generally considered “physically implausible” based on NOAA sea-level rise projections) is unnecessary and detrimental to the resource areas protected under the Act (e.g. a higher roadway berm elevation will cause the side slope to extend further into the Resource Area). It is recommended that MADEP provide better guidance to ensure that information from resilientma.org is not misused, leading to an increase in detrimental environmental impacts. In 10.24(7), the Applicant should be required to demonstrate that the roadway improvement minimizes resource area impacts and that any sea-level rise projection utilized to justify these improvements is shown to match observed sea-level rise trend. As indicated in Attachment 1, the resilientma.org 2010-2020 historic trend does not match observations, but the NOAA 2000-2020 historic trend matches the observed sea level rise, thereby providing a more scientifically-defensible source of information.

In 10.24(1) it states that “the Issuing Authority may allow the conversion of one Resource Area to other Resource Areas to achieve greater shoreline resiliency, but there shall be no loss of Salt Marsh...” However, 10.24(7)(c) allows for “restoration of an equivalent area of Salt Marsh”, which is ill-defined and not necessarily proximal to the area of environmental impacts. This type of vague language likely will lead to inconsistent interpretation both at the local and state level. In addition, it remains unclear whether 10.24(7)(c) supersedes the ACEC regulations which have a “no adverse impact” standard for Salt Marsh and other Resource Areas.

The draft regulations only address existing public roadways, but do not address private roadways. It should be noted that numerous public roadways do not provide egress to any dwellings and/or critical infrastructure (e.g. a public roadway may only lead to a beach parking lot or Town landing, etc.). However, numerous private roadways service dwellings and require emergency egress. Therefore, limiting the regulations to only address public roadways is both short-sighted and arbitrary. It is critical that MADEP reconsider the language of 10.24(7) to ensure there are provisions for any roadway that warrants resiliency improvements.

**Suggested Remedies:** *For 10.24(7), the Applicant should be required to demonstrate that the roadway improvement minimizes resource area impacts and that any sea-level rise projection utilized to justify these improvements is shown to match observed sea-level rise trends. As indicated in Attachment 1, the resilientma.org 2010-2020 historic trend does not match observations, but the NOAA 2000-2020 historic trend matches the observed sea level rise, thereby providing a more scientifically-defensible source of information. Therefore, use of the sea-level rise curve provided in resilientma.org should be discouraged until updates are made to ensure that sea-level rise trends are corroborated with historic data.*

*For roadway improvement projects aimed at resiliency, require mitigation that provides at least an equal area of restoration or creation of any Resource Area directly impacted. This restoration should be proximal to the project. Further, the Applicant should not be allowed to mitigate direct impacts to Salt Marsh resources by improving Salt Marsh hydrology, as these types of improvements require several years and perhaps decades to establish Salt Marsh growth; therefore, not meeting the 75% restoration within two years requirement. If MADEP is suggesting that the “no adverse impact” standard for Salt Marsh, as well as other Resource Areas, in ACECs is no longer relevant because of these revised regulations, this should be stated clearly. It appears that 10.24(8)(a) regarding Public Shared Use Paths addresses the ACEC concerns; however, 10.24(7) does not.*

*Recently, there have been a series of public projects proposed to increase public roadway elevations that will have direct impacts to Salt Marsh resources where the roads basically serve a landing or beach parking lot (e.g. Crane Reservation). MADEP should revise the regulations to require that the Applicant demonstrates that the increase in roadway elevation is required for emergency egress of a dwelling or critical infrastructure. Also, considerations for private roadways should be included.*

### **10.36 Land Subject to Coastal Storm Flowage**

The updated draft Wetland Protection Act Regulations contain significant revisions that the Department should evaluate carefully prior to promulgating these updated Regulations. As a member of the Department’s Land Subject to Coastal Storm Flooding (LSCSF) Advisory Committee, I find that the draft regulations, dated November 16, 2023, do not adhere to many of the concepts and recommendations that were developed as part of the Committee’s work. From the outset, developing a “one size fits all” set of regulations for LSCSF proved challenging. However, based upon presentations by members of the Committee, including MA Coastal Zone Management, MADEP, and private consultants, the over-arching concern focused on areas of the coastal floodplain that already have experienced flood damage, with the understanding that ongoing sea-level rise will exacerbate problems in these areas and lead to additional coastal flooding in other areas. While the MADEP presentation regarding the draft Regulations provided a graphical representation of the extensive FEMA repetitive loss properties as the need for appropriate LSCSF Regulations, a majority of the Massachusetts coastline experiencing significant repetitive loss are developed areas that consist of predominantly impermeable surfaces. In addition, the most heavily impacted areas experience storm damage from waves overtopping seawalls and/or revetments, where the water overtopping the coastal engineering structures flows in one direction (unidirectional flow) across the landform landward of the structure. Unfortunately, nearly all of these areas would be classified in the Regulations as MiWA Zones, not requiring any real action to address the ongoing problems. Further, the regulations have a “carve-out” for previously developed areas, which further reduces the potential effectiveness of any Regulation. Therefore, as

drafted, the LSCSF Regulations will not address the areas where LSCSF coastal flood damage is most severe, but instead potentially over-regulate areas with more limited concerns. Overall, the major concern is that the draft Regulations do not effectively address the known issues related to the highest repetitive loss damage LSCSF areas in the Commonwealth.

### **10.36(1) Preamble**

There are numerous reasons for Massachusetts to prevent new building construction in high hazard flood zones, especially FEMA V-Zones; however, protecting the characteristics of LSCSF is not a scientifically-defensible reason. If widely-spaced building piles resulted in scour from ‘asymmetric waves’ (i.e., any nearshore wave), pile scour would be ubiquitous across any pile-supported pier exposed to storm wave energy. This is clearly not the case. Further, the example for pile scour provided in the MADEP presentation regarding the LSCSF Regulations (an example from Superstorm Sandy from a dune system in New Jersey) clearly involved unidirectional flow from the back bay into the ocean as floodwaters receded. This was not an example of wave scour and certainly does not demonstrate that wave action in a V-Zone was responsible for the scour. Since FEMA and State Building Code both encourage open pile foundations in V-Zones, the draft LSCSF Regulations appear to contradict the fundamental engineering principle that these open foundations allow flow/waves to pass under a structure and do not create significant scour. Additionally, the draft Regulations state “the requirements for elevation of structures on pile-supported foundations, which is required to dissipate the wave energy in V-Zones and MoWA Zones, apply within any coastal or inland areas of LSCSF.” The pile-supported foundations do not dissipate wave energy, but rather allow this energy to be passed under the structure with minimal disturbance. This is why open pile foundations are mandated in high hazard coastal flood zones.

Perhaps the most problematic portion of the draft Regulations revolve around the characteristics that are critical to the protection of the flood control and storm damage prevention interests. Specifically, the characteristics are introduced as if LSCSF is similar to other Wetland Resource Areas, where the functions of LSCSF need protection. However, in many cases, elevating a landform in a manner that doesn’t impact adjacent properties is standard engineering practice that will actually eliminate LSCSF by increasing the elevation of the landform out of the coastal floodplain. Since (a) the ocean is an infinite source of flooding and there is no scientific reason to attempt compensatory storage of the ocean, and (b) sound resilience engineering strategies will often recommend elevating a landform to provide flood protection, the LSCSF characteristics should acknowledge the difference between LSCSF and other Resource Areas, where elimination of LSCSF, in many cases, is an effective strategy to improve resiliency. The most problematic characteristic is found in 10.36(1)(e) which focuses on the requirement that LSCSF have the ability to store flood waters. Although there are a handful of locations in Massachusetts where coastal flood waters “pond” in low-lying natural areas that

are either hydraulically disconnected or connected by an inefficient control structure to the ocean (e.g. a culvert or narrow channel), these cases are the exception, not the rule. For nearly all situations, it is important to design resiliency efforts to eliminate storage of coastal floodwaters on the upland to the greatest extent practicable, as the ocean is an infinite flooding source and compensatory storage of coastal floodwaters is meaningless. We have suggested modified language below for 10.36(1)(e).

**Suggested Remedies:** *It is suggested that the Commonwealth utilize other regulatory avenues (e.g. Zoning) to control new development in high hazard coastal flood zones. It appears that the Commonwealth, through a CZM contract, has a consulting team working on creating coastal resiliency planning areas. This likely would be an appropriate place to evaluate other regulations/restrictions regarding new structures in high hazard coastal flood zones.*

*It is recommended that 10.36(1)(e) be modified to read “the ability of a natural low-lying topographic area to store coastal flood waters, because it is either hydraulically disconnected or connected by an inefficient control structure to the ocean (e.g. a culvert, bridge, or narrow channel), until such time as the flood waters can infiltrate into the ground or return to the ocean.”*

#### **10.36(4)(b) Application of Performance Standards for Coastal Banks**

It is unclear whether coastal engineering structures would be considered Coastal Banks that do not supply sediment, such that the provisions of 310 CMR 10.36(5) through (8) apply. However, this is likely moot, as a coastal engineering structure is “fill”; therefore, these structures would be considered Previously Developed Land.

**Suggested Remedy:** *Clarify that 10.36(4)(b) does not apply to coastal engineering structures*

#### **10.36(6) Activities in the V-Zone and MOWA Zone**

New construction is prohibited in V-Zones. As mentioned above, the engineering/scientific basis for this prohibition is lacking. If MADEP pursues this approach, it is critical that numerous issues are clarified. For example, relocation of a building to a different, less hazardous, location on the site should be allowed, although this might be considered “new construction” by the Issuing Authority.

A number of structures are allowed within the V-Zone and MoWA Zone including pedestrian walkways, elevated open rack boat storage facilities, piers, and docks. As mentioned previously, if it is the MADEP position that building piles cause unacceptable scour that has an adverse impact on the functions of the LSCSF, all piles associated with activities allowed under 10.36(6) also will have adverse impacts to the Resource Area. Therefore, the new building prohibition is arbitrary. As an example, an open rack boat storage facility that collapses



because of pile scour likely would have a significantly greater adverse environmental impact than a collapsed home, as the collapse of the boat rack could have fuel and oil spills, as well as more substantial flotsam.

For 10.36(6)(d), it is unclear why MADEP would not encourage improvements in coastal resiliency for existing coastal engineering structures located in LSCSF. This may be moot, as coastal engineering structures are fill under 10.36(8) and would be exempt from the provisions of 10.36(6)(d). However, his clarification should be provided to ensure that this is corrected. Further, there is no stipulation for fill in the V-Zone or MoWA Zone to improve resiliency. It should be noted that Massachusetts has embraced nature-based shore protection, where two of the most successful strategies are engineered beach and dune nourishment, typically within the V-Zone and MoWA Zone. Many project elements associated with these nourishment designs involve fill within landward areas that are presently LSCSF. A suggestion to remedy this shortcoming in the regulations is provided below.

**Suggested Remedies:** *As described previously, it is suggested that the Commonwealth utilize other regulatory avenues (e.g. Zoning) to control new development in high hazard coastal flood zones. It appears that the Commonwealth, through a CZM contract, has a consulting team working on creating coastal resiliency planning areas. This likely would be an appropriate place to evaluate other regulations/restrictions regarding new structures in high hazard coastal flood zones. Perhaps another solution is for MADEP to stipulate that new piles in LSCSF are only allowed for water-dependent uses.*

*It is clear that a coastal engineering structure is fill in accordance with 310 CMR 10.36(8) and, therefore, the structure would be considered a previously developed area with different allowed activities. This indicates there is no need for 310 CMR 10.36(6)(d) and it should be removed. Further, Activities in the V-Zone and MoWA Zone should include “avoiding fill, structures, or topographic features that would, in the judgment of the Issuing Authority, contribute incrementally to an increase in flood velocity, volume, or elevation on other properties resulting in storm damage.” This will allow for nature-based coastal resiliency strategies that require fill within V-Zone and MoWA Zone areas of LSCSF.*

#### **10.36(7)(g) Activities in the MiWA Zone**

It is unclear what the basis for the Issuing Authority to determine whether wave energy across the site is significant. It is also unclear what significance the 100-ft Buffer Zone from another Resource Area has within the MiWA Zone.

**Suggested Remedy:** *MADEP should stipulate what information is required to demonstrate the basis for a judgment to force an Applicant to be required to use an open pile foundation in a MiWA Zone. Is it photographic evidence, technical analyses, or simply anecdotal information?*



**10.36(8) Redevelopment Within Previously Developed Land Subject to Coastal Storm Flowage**

The redevelopment language appears to acknowledge that these strategies should promote “resiliency by improving existing conditions to the maximum extent practicable”; however, the limitations on activities will prevent resilient designs. Further, the language contained within this section is extremely vague and would be aided substantially by definitions.

Again, there is no redevelopment “carve-out” allowed for private roadways to improve their resilience, where some pertinent examples include Great Island, Grand Island, and Chapoquoit Island, all on Cape Cod, plus numerous others on Nantucket and Marthas Vineyard. All of these access roads allow emergency egress to a substantial number of homes. In addition, it is understood that some public roadways where improvements to roadway elevation were planned serve beach parking lots (e.g. Crane Reservation). Therefore, it is inappropriate from an environmental regulatory stand-point, as well as from a public safety stand-point, to only allow public roadways and infrastructure to qualify as redevelopment. Comments on specific sub-sections are described below:

10.36(8)(a) indicates that “existing conditions may be improved by topographical alterations to provide flood storage.” As stated previously, the ocean is an infinite source of flood waters, there is no benefit to compensatory storage of the ocean. This misnomer exists throughout the 310 CMR 10.36 draft regulations and requires correction.

10.36(8)(c) indicates that “no portion of any proposed new building may be located within the V-Zone and no portion of any newly reconstructed building may be located seaward than its previous location within the MoWA Zone area of the lot.” Again, definitions and inconsistencies can create confusion within this section. First, if the Applicant is razing an existing building and reconstructing the “same” building further landward, but still in the V-Zone, is that allowed? Also, what if the newly reconstructed building is not within the MoWA Zone, but rather in the V-Zone, is the reconstruction allowed?

10.36(8)(f) limits the placement of fill for flood control purposes to the MiWA Zone in areas “where impervious surfaces have predominantly replaced the natural coastal floodplain.” As mentioned previously, both engineered beach and dune nourishment are effective nature-based flood control strategies, typically performed in the MoWA and V-Zones. It is unclear why MADEP is attempting to limit the application of fill for flood control to predominantly paved areas. It appears that MADEP is treating this resource area in a similar fashion to Salt Marsh, where preservation of LSCSF is paramount. However, in many cases, eliminating LSCSF by elevating the landform is an appropriate strategy to provide resiliency, regardless of whether the site is within a V-Zone, MoWA Zone, or MiWA Zone.

10.36(8)(g) limits height improvements to seawalls and berms for flood control purposes to only areas where impervious surfaces have predominantly replaced the natural floodplain and when it is conducted by the public agency responsible for the infrastructure or, in the case of private seawalls and berms, when supported by the municipality. Similar to the public vs. private roadways, improving elevation of coastal flood protection structures, as well as the landform within LSCSF landward of the shore protection structure, will reduce flood damage. Prohibiting private entities from improving coastal flood protection is nonsensical. In addition, elevation improvements are limited to seawalls and berms; however, there are numerous other coastal engineering structures that mitigate flooding (e.g. revetments, dikes, levees, bulkheads, etc.). It is unclear whether MADEP is suggesting that elevating these other types of structures is prohibited. Finally, private entities requiring support from municipalities for protection of their property could lead to substantial controversy, especially for a private entity that may not be well-liked by the municipality.

**Suggested Remedies:** *It is challenging to provide a concise list of remedies that would make this section of the regulations workable. To start, MADEP should provide better definitions for Previously Developed Area and Currently Developed. For Previously Developed Area, a definition for the word “area” is required – does MADEP mean parcel, group of parcels, area of Town, Town, etc? In another subsection, it appears that the term “lot” was used. All of this creates confusion for the reviewer and it is suggested that this entire section be discarded and rewritten. Other major alterations should be considered relative to the arbitrary limitations placed on private entities. It should be noted, effective coastal flood protection will require substantial collaboration between private and public entities. Limiting private entity activities will create unnecessary friction between the various parties and likely undermine efforts to provide meaningful flood protection. Due to the mix of private and public entities owning property along the Massachusetts coast, not to mention the series of publicly maintained seawalls/revetments crossing private property, effective resiliency will require that municipalities work with private property owners. This is especially true in many of the low-lying historic port areas (e.g. Nantucket, Vineyard Haven, Oak Bluffs, Newburyport, etc.). The regulations should not be utilized as a “stick” in this process, but rather the regulations should be written in a manner that provides a “carrot” for private property owners to work with public agencies.*

*Specific to the issue of fill as a method to improve coastal resiliency, MADEP should encourage use of this technique where appropriate. While elevating the landform will not work everywhere, elimination of LSCSF in a high hazard flood zone (V, MoWA, or MiWA Zones) through use of fill should not be discouraged by the regulations. For example, elevating the entire landform of the Seaport District prior to redevelopment would have been an appropriate flood mitigation strategy, regardless of whether all areas would have been considered predominantly impervious surfaces. It should be understood that increasing the elevation of an area the size of the Seaport District would have no effect on the level of the harbor*

*flooding, as the ocean provides an infinite source of flood waters and storage of these waters across the flood plain does nothing to mitigate flood damage. As described previously, compensatory storage of ocean flood waters is meaningless and should not be considered a characteristic of LSCSF, except in limited circumstances.*

**Attachment 1**  
**Review of MC-FRM for Nantucket**



**Sustainable Coastal Solutions, Inc.**  
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April 23, 2024

## MEMORANDUM

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To: Nantucket Conservation Commission and Nantucket Coastal Resilience Advisory Committee

From: John Ramsey, P.E.

Re: Review of Draft Nantucket Wetlands Bylaw Relative to Incorporation of the Massachusetts Coastal Flood Risk Model (MC-FRM) Results

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Sustainable Coastal Solutions, Inc. (SCS) is providing a review of the proposed modifications to the Nantucket Wetlands Protection Bylaw, specifically focused on use of the state-funded Massachusetts Coastal Flood Risk Model (MC-FRM) as the basis for future coastal flooding projections. The review focus on the following elements:

- Accuracy of sea level rise projections utilized by MC-FRM
- Accuracy of modeled wave conditions predicted by MC-FRM
- Ability for independent assessment of MC-FRM results
- Stated limitations regarding MC-FRM results

As described below, a detailed analysis of each of the above elements indicates that the MC-FRM approach is both inaccurate and inappropriate for the proposed regulatory purposes.

### 1. Draft Text of Wetlands Protection Bylaw

MC-FRM is directly mentioned in the proposed bylaws in two locations. First, under the definitions section:

*SEA LEVEL RISE- Sea level rise is an increase in the ocean's surface height relative to the land in a particular location. The thermal expansion of ocean water and melting polar ice are the primary causes of today's rising sea levels. Tide gauge records indicate that since 1963 Nantucket Harbor has experienced an average of 0.14 inches of sea level rise per year. The NOAA tide gauge for Nantucket is located on Steamboat Wharf and is one of only a few locations in Massachusetts with localized tracking of historic sea level rise. NOAA also notes that Nantucket is projected to experience higher levels of sea level rise than the global average, which is consistent with similar sea level rise projections provided by the Massachusetts Coastal Flood Risk Model (MC-FRM) produced by the Commonwealth of Massachusetts [bold and underline added].*

Under § 390-15. Land Subject to Coastal Storm Flowage, the following performance standard is proposed:

*Land subject to coastal storm flowage or land within 100 feet of land subject to coastal storm flowage shall be presumed significant to the interests protected by the Bylaw as referenced in Subsection A; therefore, the following regulations shall apply (Specific resource areas that lie within the area of land subject to coastal storm flowage, and the wetland values they protect, are otherwise addressed elsewhere in these regulations. The regulations concerning those areas are in addition to the regulations set forth in this section):*

*(4) Building upon areas subject to coastal storm flowage and sea-level rise in locations where such structure would be subject to storm damage or high-tide flooding may not be permitted. New construction that is not water-dependent may not be permitted in areas defined as high- or extreme coastal risk in this Bylaw. **When permitting new projects, risk determination shall utilize the latest available data from Nantucket's NOAA tide gauge and the latest sea-level rise projections available from the Massachusetts Coastal Flood Risk Model (MC-FRM).** If permitted, all construction must be in compliance with state and local building code regulations for flood hazard areas. All construction within this area shall also demonstrate consistency with the Town of Nantucket Coastal Resiliency Plan.*

## 2. Accuracy of Sea Level Rise Projections Utilized by MC-FRM

While long-term tide records (e.g., Nantucket Harbor) provide valuable insight into historical changes over the past several decades, they do not necessarily dictate future sea level rise due to changing environmental and anthropogenic conditions. However, evaluation of available historical information provides a data-driven assessment of sea level rise trends. For example, Figure 1 illustrates the monthly measured water levels for Nantucket Harbor from 1965 to 2023 (a fifty-eight-year period), where the mean sea level rise was computed to be 4.01 mm/year or ~0.16 inches/year. The total sea level rise for the approximate 60-year record was 0.76 feet.

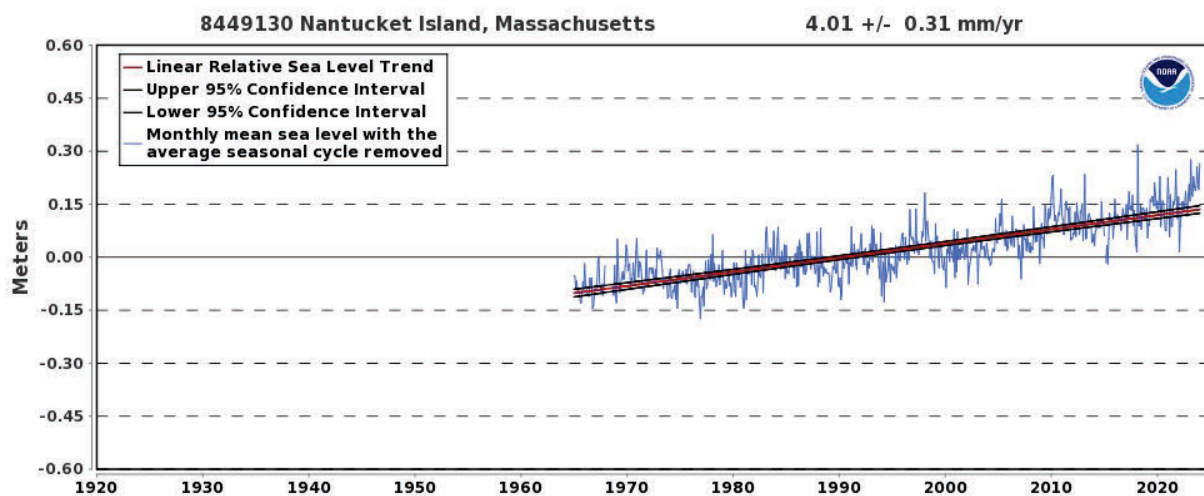


Figure 1 Monthly mean water levels recorded in Nantucket Harbor between 1965 and 2023 indicate a linear trend in sea level rise over the past 58 years of approximately 4.01 mm per year (0.013 feet per year). (Source: NOAA)



To further advance our understanding of sea level rise, predictive models have been developed to project the effects of climate change on relative sea level rise in coming decades. New and existing models used to predict sea level rise are continually refined with augmented datasets to reduce output uncertainty; however, there still exists a large range of potential future sea level rise scenarios. It should be noted that ‘projections’ should be considered much less accurate than measured data, due to uncertainties associated with the numerous parameters required to evaluate environmental conditions of the future. To be effective as a policy tool, predictive models and projections must be able to accommodate data that reflects present conditions to reduce uncertainty of future projections.

The Commonwealth of Massachusetts funded the Massachusetts Sea Level Assessment and Projections work that led to publication of a technical memorandum (DeConto and Kopp, 2017), which provided future projected sea level rise for various tide gage stations in the state, including Nantucket Harbor (Figure 2). These localized projections are downscaled from regional and international projections, where a more complete description of the probabilistic projections is provided in Table 1. The ‘High’ projections highlighted in Table 1 have been incorporated into [resilient.mass.gov](https://resilient.mass.gov) and the Massachusetts Coastal Flood Risk Model (MC-FRM). Therefore, all quantitative analyses depicted by the tools represented in [resilient.mass.gov](https://resilient.mass.gov) are directly dependent upon the selected sea level rise scenarios. In this case, the state selected the ‘High’ or 99.5% chance of non-occurrence (i.e. less than 0.5% chance of actually occurring) sea-level scenario from Table 1 as the baseline. As indicated below, this sea level rise scenario is shown to substantially over-predict actual water levels in 2020 and more recent National Oceanographic and Atmospheric Administration (NOAA) analyses of sea level rise (Sweet, et al., 2022) do not support an acceleration in sea level rise that will cause regional water levels to “catch up” to the ‘High’ scenario depicted in Table 1. **MassDOT (the agency that funded the MC-FRM analysis) released the following technical review comment regarding a coastal flooding analysis: “According to MC-FRM, the state selected ‘high’ or 99.5% chance of non-occurrence set of sea level rise scenario as the baseline. This sea level rise scenario is shown to substantially over-predict actual water levels in 2020” (see Figure 2). Therefore, MC-FRM modeling results dependent upon this sea level rise scenario is becoming increasingly inaccurate over time.**

Understandably, accurate projections of sea level rise are critical for engineers, coastal managers, and local Conservation Commissions developing or reviewing future coastal hazard mitigation strategies. Enhanced accuracy in the prediction of future storm driven flood and tidal elevations ensures the consideration of sufficient safety measures, while also maintaining economic feasibility and reducing the potential for adverse environmental impacts. Using the recorded water elevations measured in Nantucket Harbor for 2020, a direct comparison between measured and projected relative sea level can be evaluated to assess the near-term accuracy of the sea level rise projections from MC-FRM (Figure 3). The results of this assessment indicate that sea level projections over the first decade of MC-FRM projections (i.e., 2010 to 2020), when utilizing the recommended ‘High’ scenario, are overestimated by a factor of three (3).

<b>Table 1: Relative mean sea level (feet, NAVD88) projections for Nantucket, MA as presented in DeConto and Kopp, 2017</b>					
<b>Scenario</b>	<b>Probabilistic projections</b>	<b>2030</b>	<b>2050</b>	<b>2070</b>	<b>2100</b>
Intermediate	Unlikely to exceed (83% probability) given a high emissions pathway (RCP 8.5)	0.7	1.5	2.4	4.2
Intermediate High	Extremely unlikely to exceed (95% probability) given a high emission pathway (RCP 8.5)	0.9	1.8	3.0	5.2
High	Extremely unlikely to exceed (99.5% probability) given a high emission pathway (RCP 8.5)	1.2	2.5	4.3	7.9
Extreme (Maximum physically plausible)	Exceptionally unlikely to exceed (99.9% probability) given a high emissions pathway (RCP 8.5)	1.4	3.1	5.5	10.5

Coastal processes modelers often utilize ‘relative error’ to assess how well a model simulates the measured data, where relative error is the ratio of the absolute error between model and data results relative to the measured data. Relative error is expressed as a percentage and has no units. **For the MC-FRM model, the relative error for the only time period of projections available (2010-2020) is 310%. This indicates “the latest sea-level rise projections available from the Massachusetts Coastal Flood Risk Model (MC-FRM)” greatly overestimate sea level rise in Nantucket compared to observations and clearly demonstrate that the MC-FRM results are inappropriate to accurately represent future sea level rise conditions. MC-FRM is not consistent with NOAA sea level rise projections, as detailed below.**

More recent sea level rise projections from NOAA (Sweet, et al., 2022) suggest significantly lower projected future sea level rise rates for Nantucket (downscaled from the full U.S. analysis), especially between the present and 2050. Figure 4 provides the updated NOAA projections, where the ‘intermediate’ projection represents conditions that are about as likely as not to occur or, in other words, a 50% chance of occurrence. As illustrated in Figure 4, the ‘intermediate’ NOAA sea level rise projection generally matches the ‘observed trajectory’ projection to 2050, which was based upon extrapolating the observed sea level rise trends between 1970 and 2020. Further, Figure 5 demonstrates the applicability of utilizing more moderate sea level rise projections, as the observed sea level rise in Nantucket between 2000 and 2020 (shown in gray) is below all of the projections evaluated by Sweet, et. al. (2022). Based on the NOAA tide data, the Nantucket sea level rose 0.36 feet between 2000 and 2020; therefore, in 2020, the mean sea level was 0.09 feet NAVD88 since the mean sea level in 2000 was -0.27 feet NAVD88. **The NOAA intermediate sea level rise projection between 2000 and 2020 was 0.45 feet, yielding a relative error for this time period of 25%, which represents a better fit to data by an order of magnitude relative to MC-FRM.** Table 2 presents the relative errors associated with both MC-FRM and NOAA projections.

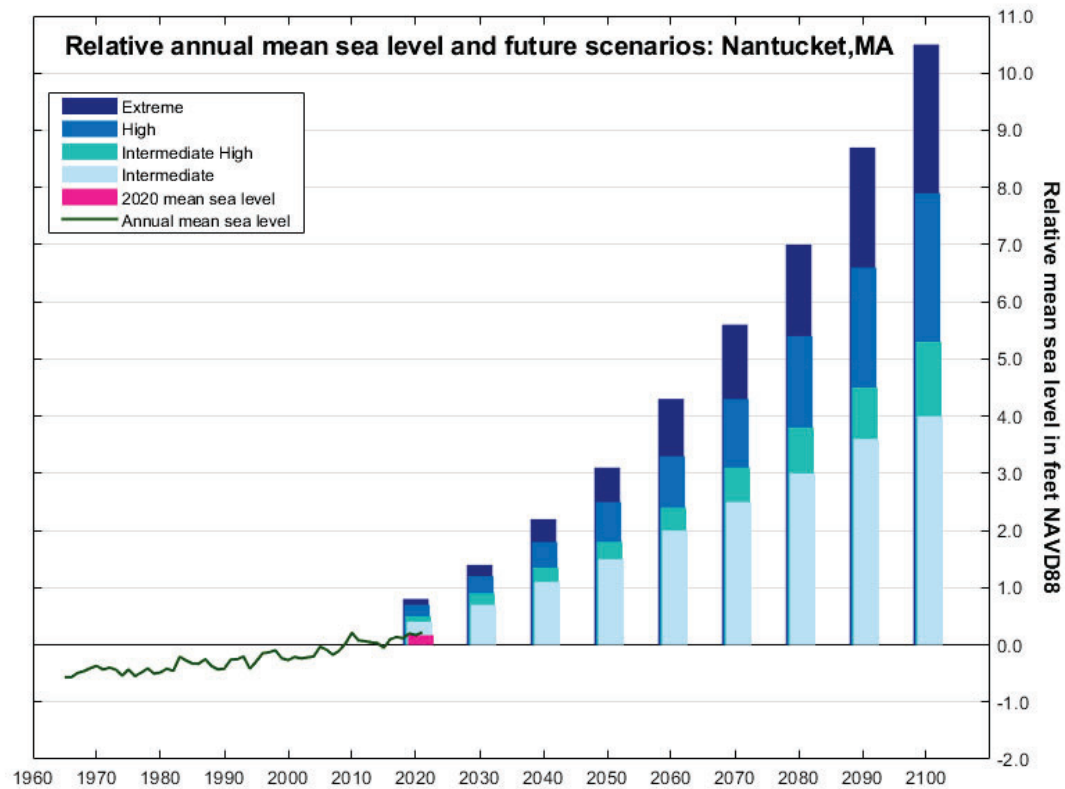


Figure 2 Relative mean sea level projections for the Nantucket, MA tide station based on four National Climate Assessment global scenarios with associated probabilistic model outputs from the Northeast Climate Science Center. The probabilistic projections are listed in Table 1, where MC-FRM incorporated the ‘High’ scenario. The pink bar denotes the 2020 recorded mean sea level in Nantucket Harbor. The green curve represents the annual mean sea level calculated from the data record from the Nantucket tide gage.

Understanding that the Town wants to adopt strategies for addressing sea level rise, it is recommended that the Town of Nantucket consider adopting an approach based upon the best available science from a reputable government source. Overall, the federal government has both the knowledge and resources to continuously update projections based upon the evolving science, where NOAA has been consistent in providing the most scientifically-defensible information.

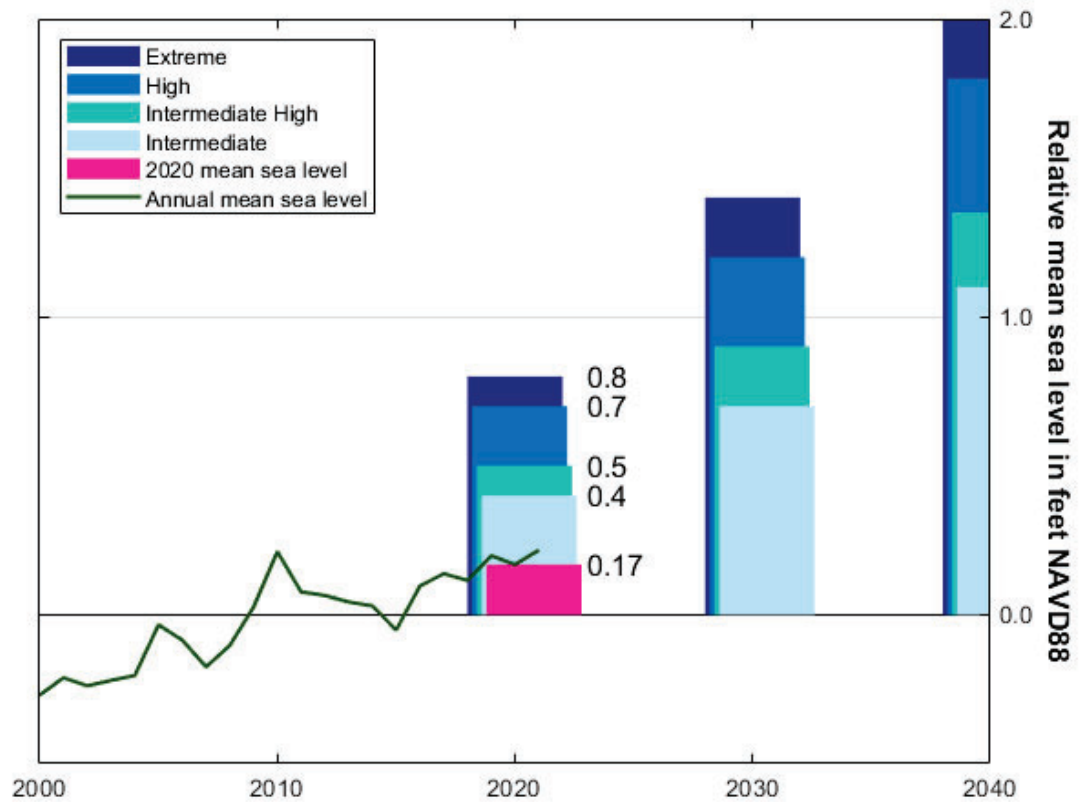


Figure 3 Comparison of probabilistic sea level rise projections from MC-FRM/Resilient MA (DeConto and Kopp, 2017) and measured annual mean sea level for Nantucket, Massachusetts. Note, the MC-FRM value for 2020 is represented by the 'High' scenario, with a projected mean sea level of 0.7 feet NAVD.

Table 2: Relative error for MC-FRM and NOAA (Sweet, <i>et al.</i> , 2022) for the time period of the overlapping data and model records available.	
Projection Technique	Relative Model Error Compared to Data
MC-FRM	310%
NOAA (Sweet, <i>et al.</i> , 2022) Intermediate Curve	25%

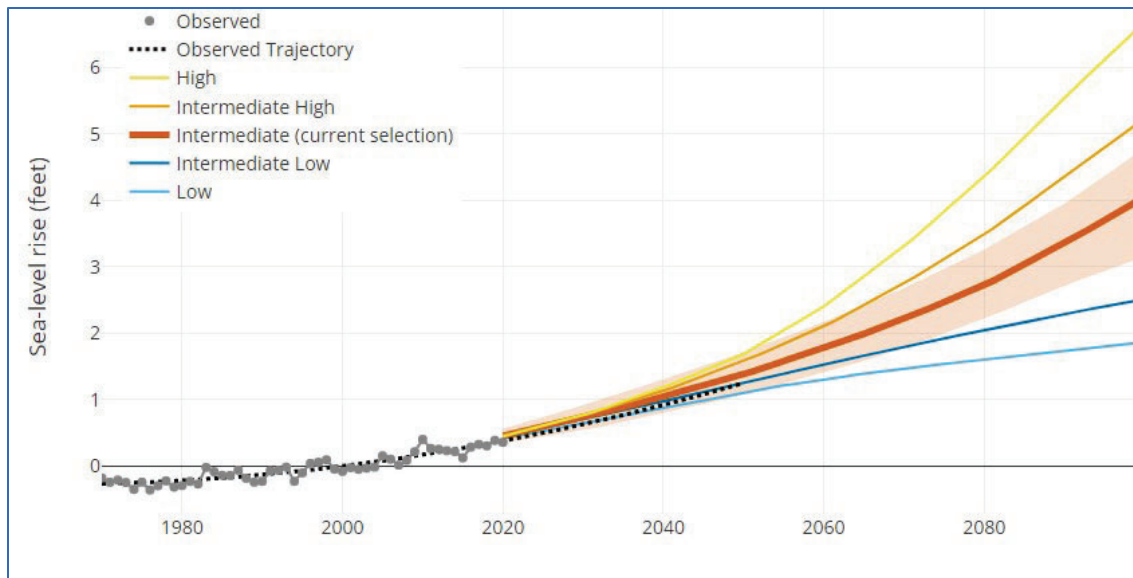


Figure 4 Projected sea level rise for Nantucket, Massachusetts based upon modeling analyses performed by NOAA (Sweet, et. al., 2022). Results for a full range of scenarios can be found at: <https://sealevel.nasa.gov/flooding-analysis-tool/projected-flooding?>

### 3. MC-FRM Storm Wave Analyses

MC-FRM was intended to expand upon the utility of the U.S. Army Corps of Engineers North Atlantic Coast Comprehensive Study (NACCS), which was completed in 2015 (Cialone, *et al.*, 2015) and utilized the combined ADCIRC and STWAVE model that formed the basis for MC-FRM. NACCS was thoroughly calibrated to storm water levels, and the developers of MC-FRM simply corroborated this already calibrated model using a more refined grid in the nearshore areas. The MC-FRM calibration generally provides similar accuracy to the NACCS for assessing storm water levels (i.e. the effects of both regional-scale storm surge and the influence of waves at the locations of the selected calibration tide stations). As the MC-FRM developers have indicated, their product is supposed to augment the NACCS work by providing presumably calibrated/validated nearshore and flood plain wave and inundation information, both for existing and future sea level rise scenarios.

Unfortunately, the MC-FRM developer/consultant has provided no calibration of wave heights (i.e. the  $H_{max}$  or “maximum wave height” available as downloadable raster images) and/or storm wave overtopping. On the contrary, MC-FRM training sessions indicated that MC-FRM was not compared to the extensive Flood Emergency Management Agency (FEMA) “repetitive loss” dataset, which provides valuable insight into the extent of historical coastal flooding impacts in Massachusetts. In addition, the previously mentioned concerns about future sea level rise rates used in MC-FRM, a cursory review of the “Level 2” information downloaded from the Woods Hole Group/CLS website caused significant concerns regarding the validity and accuracy of MC-FRM wave modeling results, as well. In general, downloaded information for 2030 (the available information that is most proximal to present-day conditions) can be expected to be similar to observed present conditions during a severe storm event; however, provided  $H_{max}$  values for Nantucket (Figure 6) are clearly inaccurate based upon historical measurements, storm observations, and other numerical wave modeling efforts (e.g. NACCS and Applied Coastal

Research and Engineering). The following provides a brief summary of the inaccurate MC-FRM results:

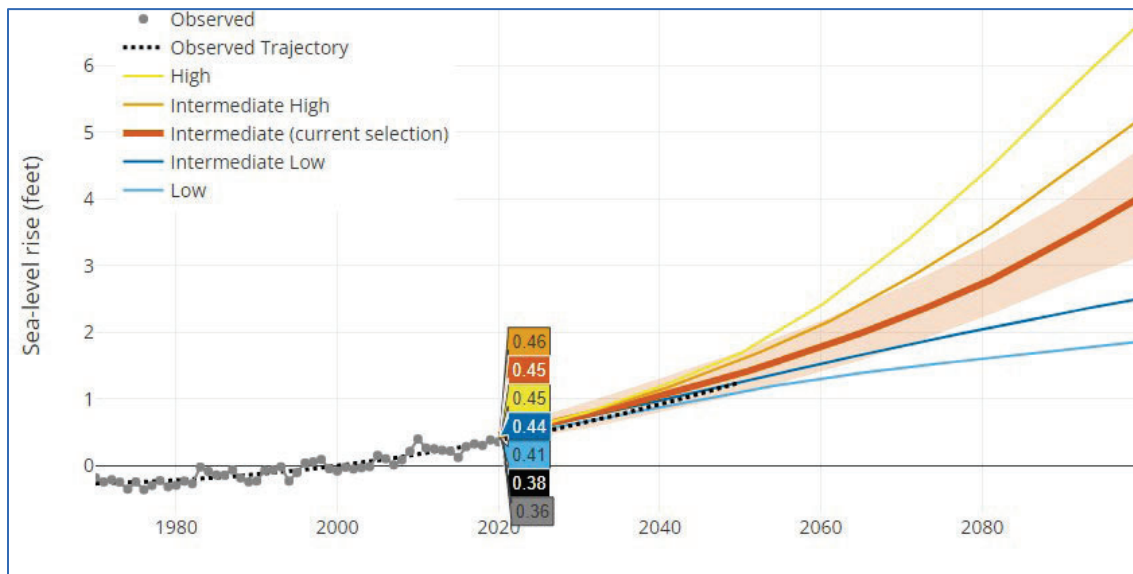


Figure 5 Projected sea level rise for Nantucket, Massachusetts based upon modeling analyses performed by NOAA (Sweet, et. al., 2022). The colored numbers represent the modeling results for the various scenarios for 2020, as well as the observed mean sea level. Results for a full range of scenarios can be found at: <https://sealevel.nasa.gov/flooding-analysis-tool/projected-flooding?>

- MC-FRM indicates that maximum storm wave heights in southern Nantucket Sound exceed 25 feet; however, the maximum wave heights measured at NOAA National Data Buoy Center (NDBC) #44020 in central Nantucket Sound has only recorded maximum observed wave heights of approximately 12 feet. An example of measured severe storm wave conditions in Nantucket Sound is provided in Figure 7, where the observed peak wave heights during Winter Storm Riley in 2018 barely exceed 10 feet. Therefore, **MC-FRM overpredicts storm wave height in open Nantucket Sound waters by more than 100%.**
- Although it appears that the barrier beach separating Sesechacha Pond from the Atlantic Ocean is not overtopped during the 2030 1% annual recurrence storm MC-FRM storm event, **the model predicts a 7-ft maximum wave height in Sesechacha Pond, which is physically implausible.**
- In a similar fashion, the 45-ft maximum wave height modeled by MC-FRM along the south side of Nantucket for the 2030 1% annual recurrence storm is problematic. For comparison, Figure 8 illustrates the largest wave heights measured at NDBC Bouy #44008, approximately 54 nautical miles south east of Nantucket in ~240-ft water depth, as well as a photograph along the Nantucket south shoreline during the same storm. As shown, maximum wave heights along the seaward edge of the continental shelf during a severe storm are slightly less than 40 feet. However, the series of shoals both south and east of Nantucket significantly dissipate the wave energy, ensuring that wave heights – even during the most severe coastal storms – are attenuated, with peak nearshore wave



heights that are only a small fraction of the offshore wave height. As depicted in the bottom frame, observed nearshore waves during a severe storm in this area are typically on the order of 8-to-12 feet in height. These observations match typical severe storm wave data collected by the Marthas Vineyard Coastal Observatory (MVCO)) (<https://mvco.whoi.edu/data/>). Therefore, MC-FRM substantially overpredicts nearshore storm wave height along the Atlantic Ocean shoreline, as well.

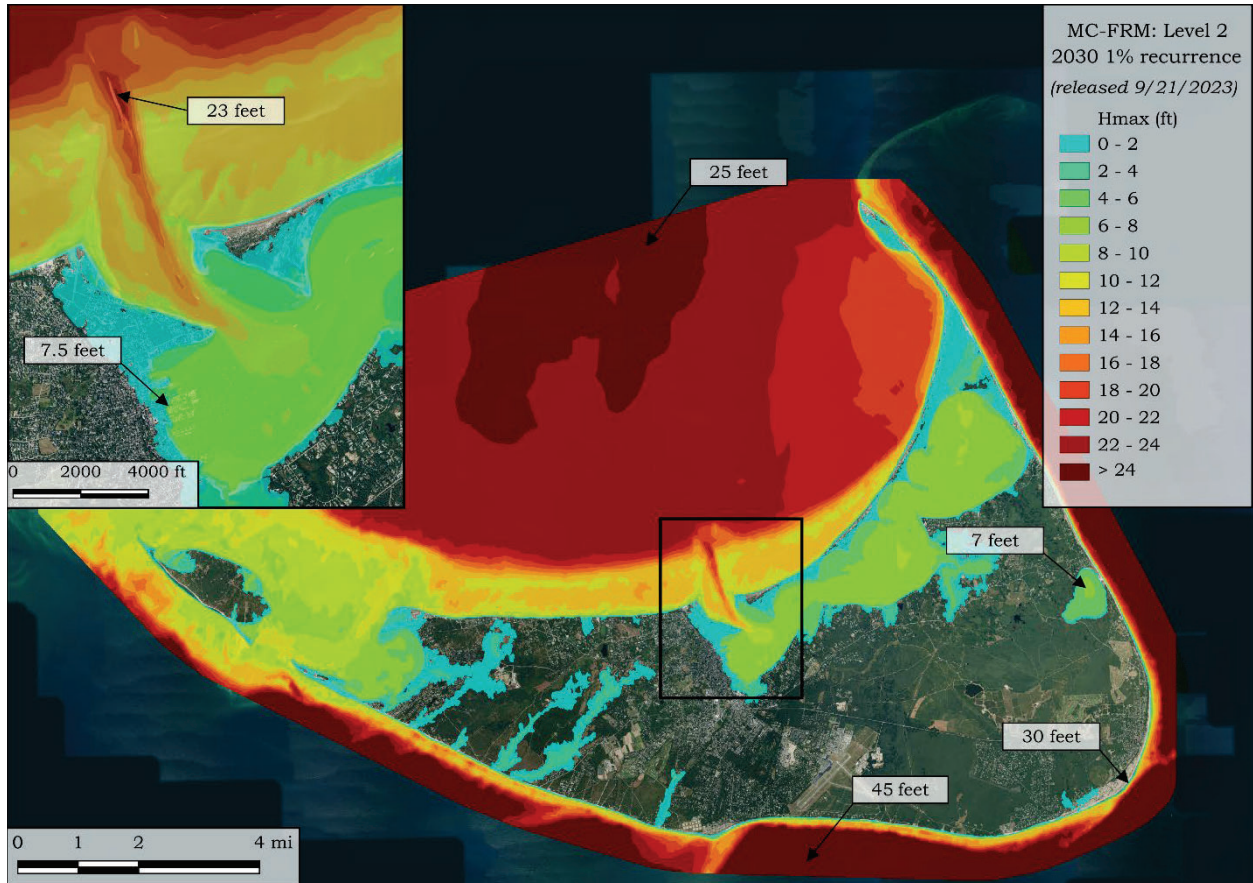


Figure 6 MC-FRM Level 2 2030 1% annual recurrence maximum wave heights downloaded from the Woods Hole Group/CLS download site. Maximum wave heights (Hmax) are color-coded and an inset is provided for the area of the harbor jetties and downtown shoreline to provide more detail (Source: model output - Woods Hole Group, Inc./CLS, with annotations from Sustainable Coastal Solutions).

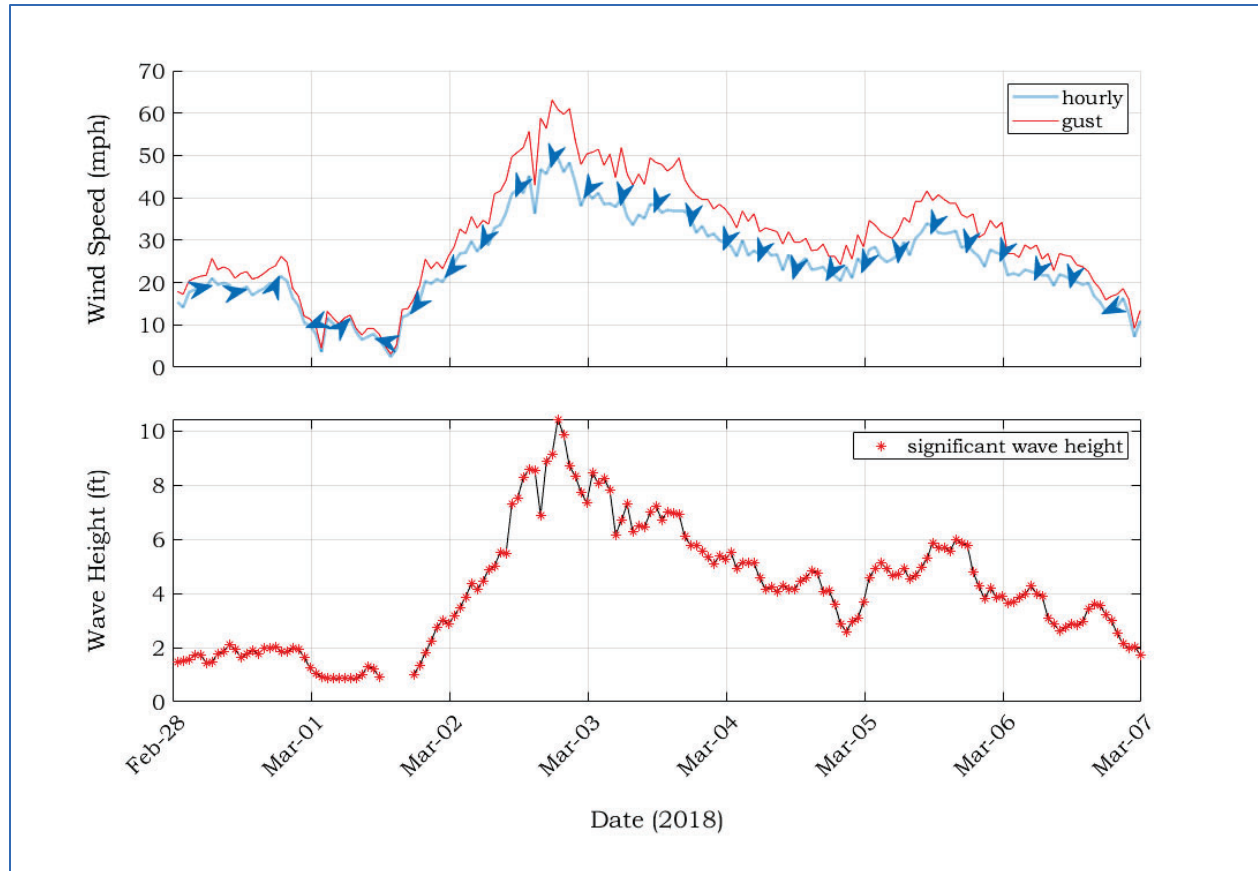


Figure 7 NOAA National Data Buoy Center (NDBC) #44020 wind and wave data for Winter Storm Riley in early March 2018. The wave buoy is located in central Nantucket Sound. This wind and wave information is typical of severe extratropical (nor'easter) conditions in Nantucket Sound, with peak wave heights of ~10 feet (*Source: NOAA*).

- Focusing on the inset in Figure 6, it is clear that **the MC-FRM simulated storm waves running down the axis of the jettied channel into Nantucket Harbor are unrealistic, where the maximum wave height running down the channel exceeds 23 feet in height** (Figure 6). More specifically, the maximum wave heights to either the east or west of the jettied channel are only ~50% of the MC-FRM-predicted maximum wave height in the navigation channel. **Besides being scientifically indefensible, numerical model propagation of a 23-ft storm wave into the interior of Nantucket Harbor would bias model results throughout the harbor interior.** As Figure 9 clearly demonstrates, when compared to modeled wave heights either immediately east or west of the channel, the MC-FRM maximum wave heights along the channel axis are approximately 23 feet and wave heights in the surrounding area are 12-to-13 feet. It is unclear whether this error in the MC-FRM analysis is due to a numerical ‘artifact’ associated with model simplifications/limitations or this is a more serious fundamental flaw with the MC-FRM model setup. As no actual wave measurement data is available in this area, storm wave heights simulated by the NACCS model were provided for comparison of the MC-FRM. Figures 10, 11, and 12 provide the location and storm model output for simulations from NACCS, the base model for MC-FRM. The NACCS model output can be more clearly corroborated with measurements in Nantucket Sound (Figure 7), where the measured

wave heights in central Nantucket Sound are slightly greater than 10 feet and the largest wave heights at the NACCS station in the Nantucket Harbor inlet channel are slightly under 9 feet. It also should be noted from the NACCS data set that the largest wave conditions do not correspond to the highest water levels (i.e. the highest storm surge levels), especially for simulated tropical storm events, indicating that a joint probability analysis of wave heights and storm surge is warranted.

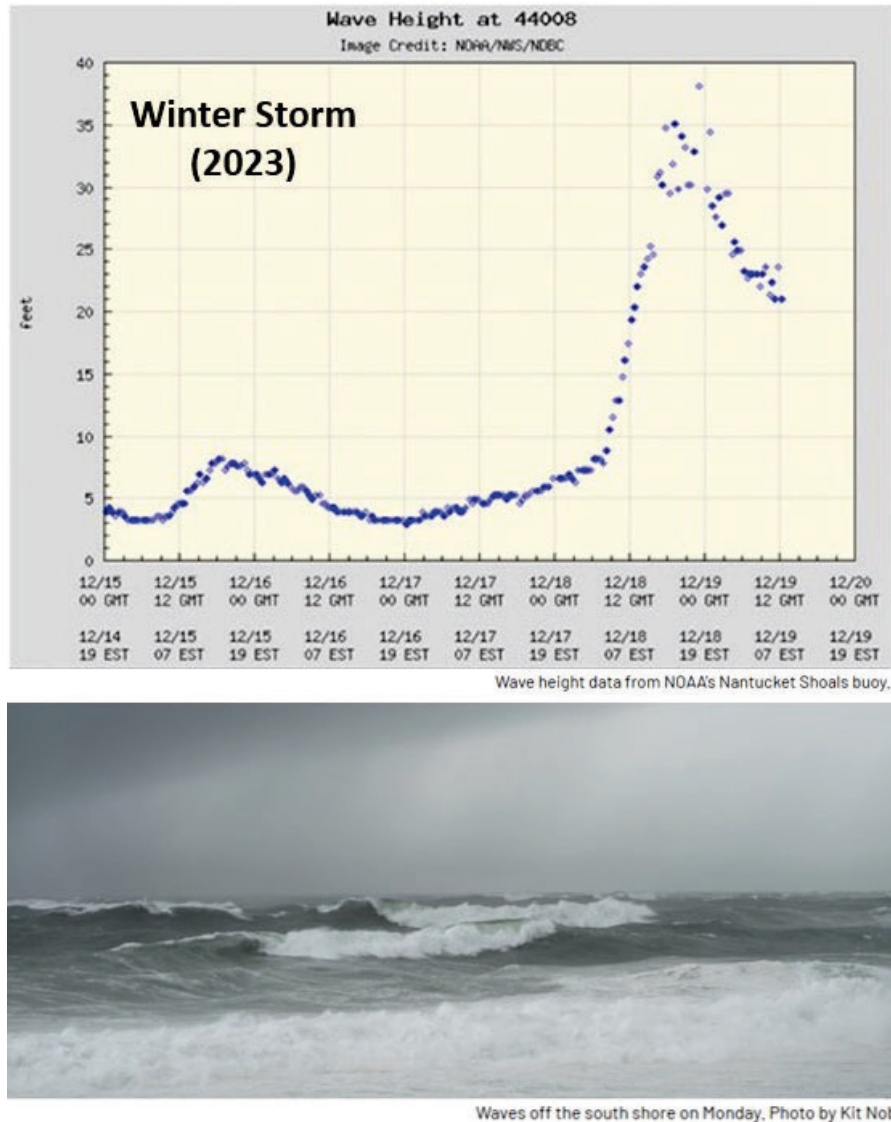


Figure 8 NOAA National Data Buoy Center (NDBC) #44008 data from a December 2023 southerly storm event. The buoy is located at the edge of the continental shelf, approximately 54 nautical miles south east of Nantucket in ~240-ft water depth. A photograph taken from the Nantucket south shoreline during the same storm for comparison.



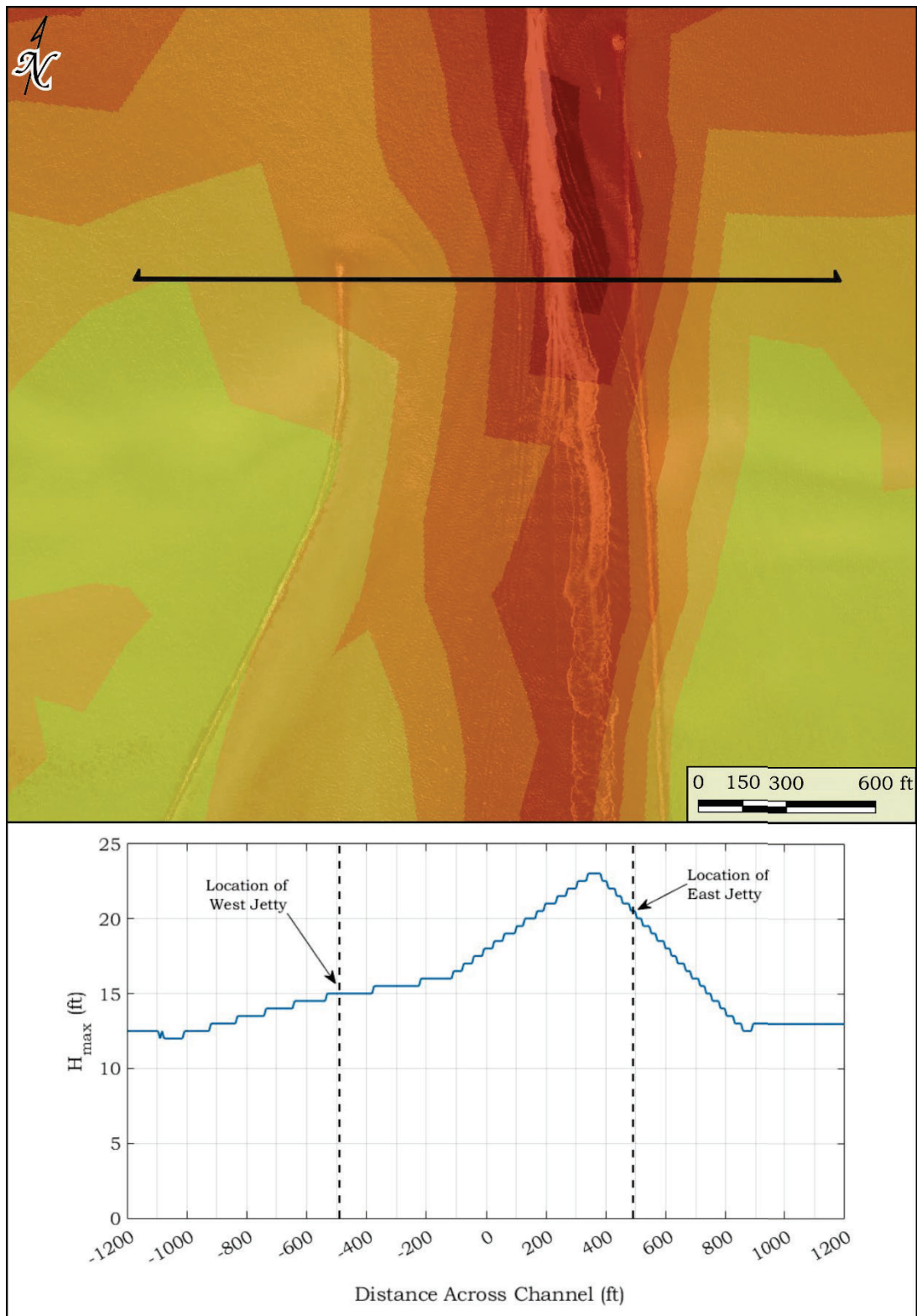


Figure 9 Detailed view of MC-FRM model results from the 2030 1% recurrence storm event near the seaward extent of the Nantucket Harbor jetties. The top sub-plot illustrates the wave height contours described in Figure 6, and the bottom sub-plot provides MC-FRM output wave heights along the black transect shown in the top sub-plot.

- From the inset in Figure 6, it is noted that the 2030 1% annual recurrence  $H_{\max}$  predicted by MC-FRM is 7.5 feet along the downtown shoreline. Results from NACCS (Figure 12) indicate that the MC-FRM predicted maximum wave height at the shoreline is approximately twice the wave heights developed from similar storm data sets in the center of the harbor. For the NACCS model, only a single storm event had a modeled wave height in excess of 4 feet and all extra-tropical storm event indicated wave heights of less than 3 feet. The overall NACCS wave height results are consistent with similar Applied Coastal Research and Engineering modeling for Petrel Landing (Figure 13). Attachment A provides photographs of observed storm wave conditions in Nantucket. **Therefore, the 7.5-ft maximum wave height predicted by MC-FRM represents an unrealistic wave height that is not supported by other similar modeling efforts or site observations.**

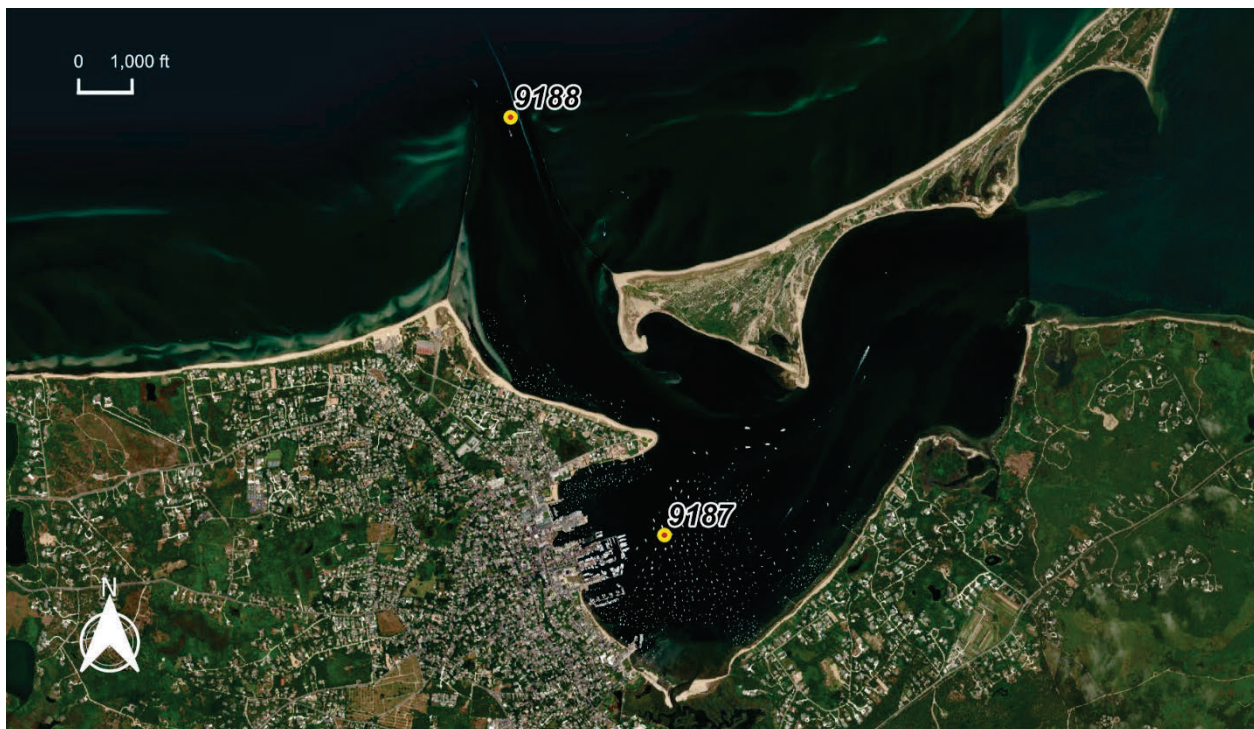


Figure 10 Map of Nantucket Harbor with the locations of the NACCS stations at the harbor entrance (9188), and inside the harbor (9187).

Further, according to MC-FRM output for 2030, the 1% recurrence water surface elevation within Nantucket Harbor is 9.5 feet NAVD. According to FEMA (an analysis based upon historical data, rather than strictly numerical model results), the present 1% recurrence stillwater elevation is 6.1 feet NAVD. The FEMA results are consistent with the predicted NACCS water surface elevations, which indicate that the highest modeled water elevation in Nantucket Harbor is slightly greater than 6 feet NAVD. It should be noted that the NACCS model (a) utilizes a similar suite of numerical models incorporated into MC-FRM and (b) the effects of storm wave setup are incorporated into NACCS, similar to MC-FRM. Utilizing the assumed 2030 projected increase in mean sea level incorporated into MC-FRM, the 2030 1% recurrence storm would likely be about 1.2 feet above the existing 1% recurrence storm levels or ~7.3 feet NAVD. **However, the MC-**

FRM predicted 1% recurrence water surface elevation within Nantucket Harbor is 9.5 feet NAVD, which is more than 2 feet higher than indicated by other scientifically-validated sources. This discrepancy in potential future storm surge elevations adds to the fundamental concerns regarding the adequacy of MC-FRM for evaluating future coastal flood risks.

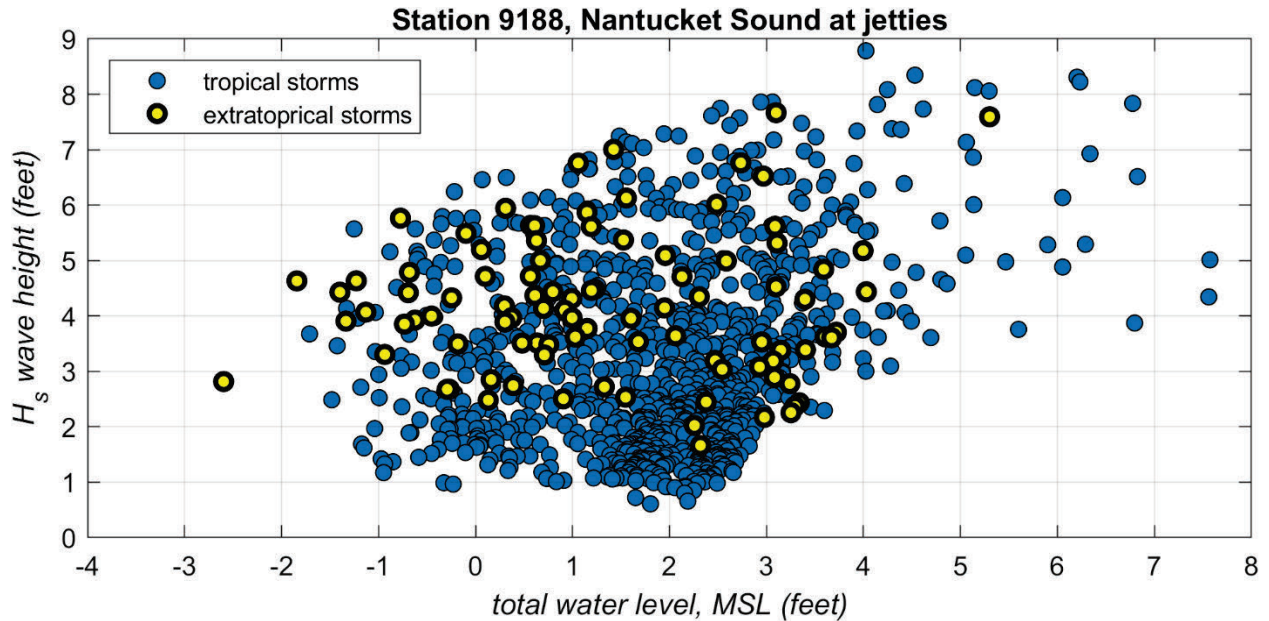


Figure 11 Total water elevation (including tide, setup and storm surge, relative to MSL) versus significant wave height ( $H_s$ ) for the NACCS output station 9188, at the entrance of the Harbor jetties. The water level is what occurred at the time of the storm's peak wave height.

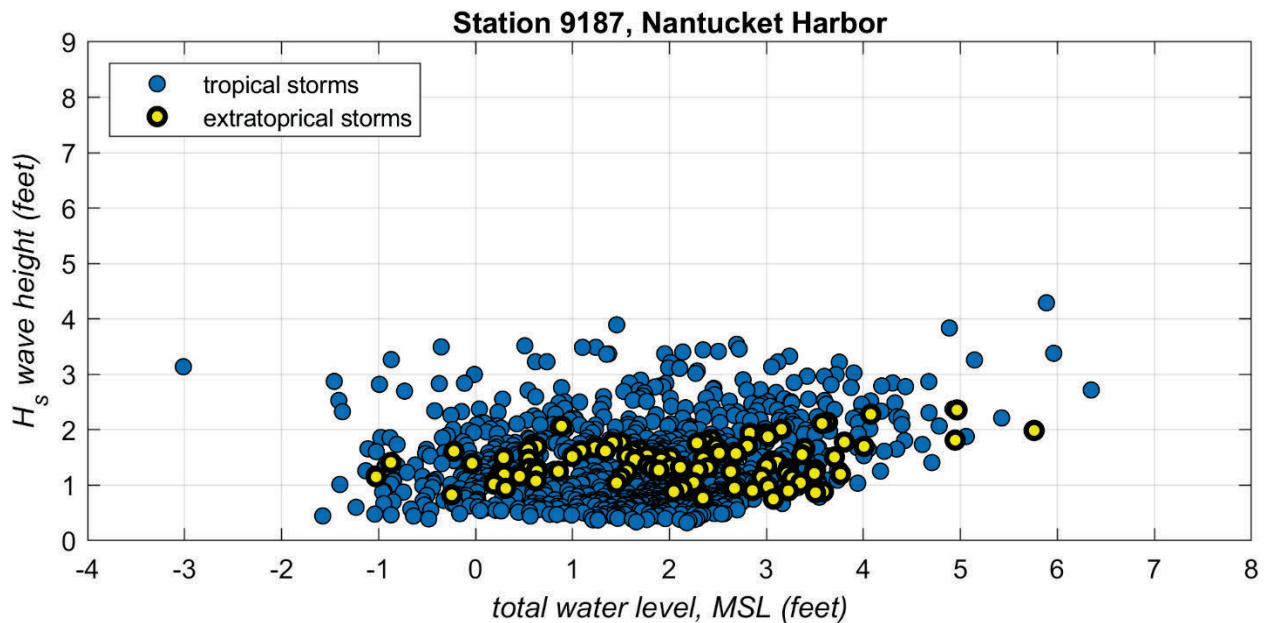


Figure 12 Total water elevation (including tide, setup and storm surge, relative to MSL) versus significant wave height ( $H_s$ ) for the NACCS output station 9187, in Nantucket Harbor. The water level is what occurred at the time of the storm's peak wave height.



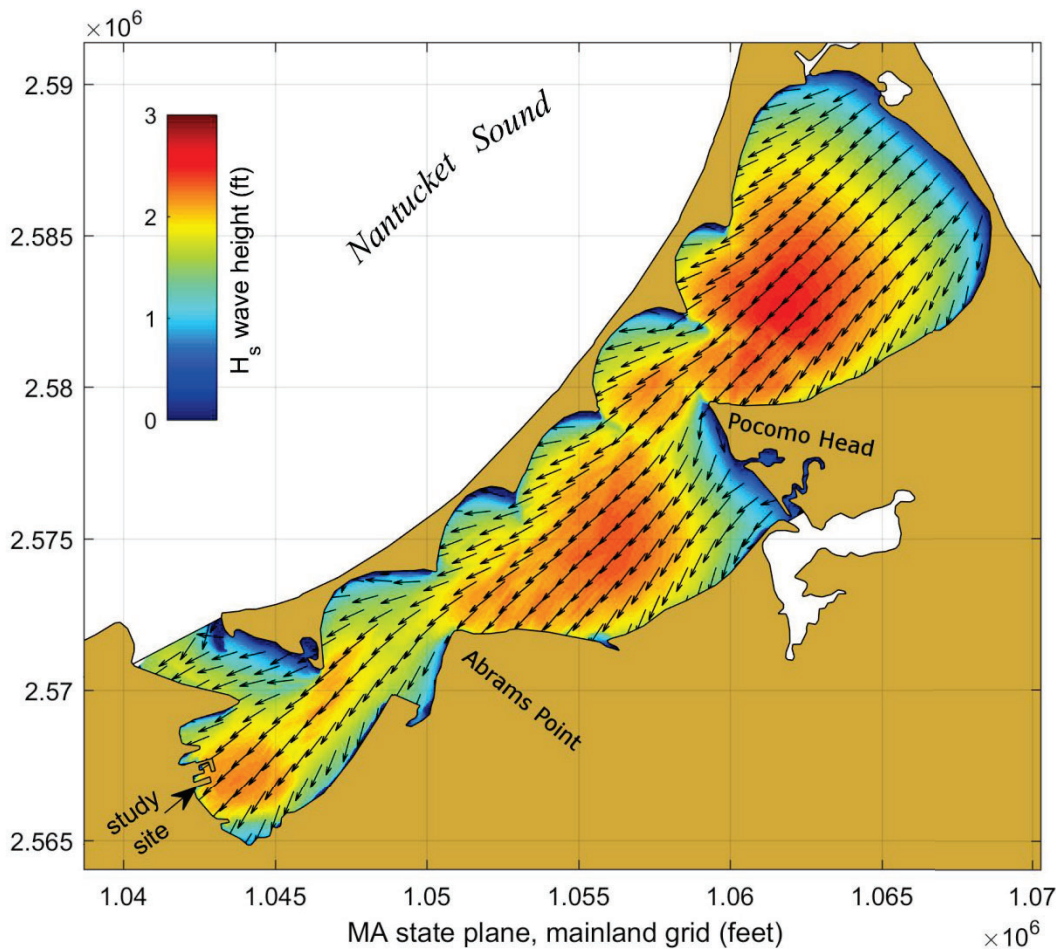


Figure 13 Wave output from the 2D SWAN wave model of Nantucket Harbor, for 10-year (10% annual probability) NE winds. Color contours represent wave height, while vectors indicate mean wave direction. The Petrel Landing study site at the south-western end of the Harbor is indicated.

#### 4. Ability for Independent Review of MC-FRM Results

Contrary to the language presented in the draft Nantucket Bylaw language, the **Massachusetts Coastal Flood Risk Model (MC-FRM) was not produced by the Commonwealth of Massachusetts, but rather the model was developed under state funding. Unfortunately, MC-FRM is a proprietary model, which is completely owned by a private consultant.** The Commonwealth of Massachusetts has no ownership of the modeling system, and similar to other entities, access is limited to unreviewed products provided on the private consultant's website. With this in mind, **rather than use of a static proprietary product (e.g. MC-FRM), effective public policy would argue that the best scientifically-defensible information should be utilized as the basis for adapting to climate change.**

Further, the technical report for the statewide MC-FRM model has not been produced. During public training sessions, the model developer suggested that a full 'peer review' of the modeling product had been completed; however, without even a completed technical report, it remains unclear how a thorough peer review could be performed. Further, if the 'peer review' was simply a review of the overall modeling approach, rather than an in-depth technical assessment of the

model results, the review process is incomplete and flawed. Neither the project report nor the ‘peer review’ have been made available. **Due to this lack of transparency, there is no opportunity for the scientific/engineering community to assess the validity, accuracy, and uncertainty of MC-FRM. This prevents an applicant from challenging the results of MC-FRM, even if it shown to be demonstrably incorrect.** A limited review of MC-FRM results for existing 100-year storm conditions indicates both major underpredictions (e.g. Scituate, Plymouth, and Chatham) and overpredictions (e.g. Hull, Hingham, Winthrop, Nantucket, and Marshfield) of observed severe storm conditions. This suggests that a mechanism must be in place to allow for an appeal process for errors associated with MC-FRM, similar to the FEMA Letter of Map Revision (LOMR) process.

## 5. Stated Limitations Regarding MC-FRM Results

The MC-FRM metadata states that the model results are for **“discussion and research purposes only”** and **“information is provided with the understanding that these data are not guaranteed to be accurate, correct or complete”**, which only further raises questions regarding the utility of the results to inform coastal flood protection planning and/or design efforts. While it is understood that the Town would like to incorporate projected sea level rise into future planning, the substantial limitations associated with MC-FRM make this tool ill-suited for the purpose. It likely is not good public policy to have the Town of Nantucket link regulations to a proprietary product that has the above stated limitations regarding both the products intended use, as well as the lack of any standards regarding its accuracy or completeness.

## 6. Conclusion

As described above, numerous demonstrable shortcomings and errors related to MC-FRM, make this product ill-suited for regulatory purposes. The major concerns are summarized below:

- a. MassDOT (the agency that funded the MC-FRM analysis) released the following technical review comment regarding a coastal flooding analysis: “According to MC-FRM, the state selected ‘high’ or 99.5% chance of non-occurrence set of sea level rise scenario as the baseline. This sea level rise scenario is shown to substantially over-predict actual water levels in 2020.” Therefore, MC-FRM modeling results dependent upon this sea level rise scenario is becoming increasingly inaccurate over time.
- b. For the MC-FRM model, the relative error for the only time period of projections available (2010-2020) is 310%. This indicates *“the latest sea-level rise projections available from the Massachusetts Coastal Flood Risk Model (MC-FRM)”* greatly overestimate sea level rise in Nantucket compared to observations and clearly demonstrate that the MC-FRM results are inappropriate to accurately represent future sea level rise conditions. The NOAA intermediate sea level rise projection between 2000 and 2020 was 0.45 feet, yielding a relative error for this time period of 25%, which represents a better fit to data by an order of magnitude relative to MC-FRM. Therefore, NOAA projections based upon the ‘intermediate scenario’ are shown to be substantially more accurate than the MC-FRM model results.
- c. Downloaded MC-FRM information for 2030 (the available information that is most proximal to present-day conditions) can be expected to be similar to observed present conditions during a severe storm event; however, provided  $H_{\max}$  values for Nantucket (Figure 6) are clearly inaccurate based upon historical measurements, storm observations, and other numerical wave modeling efforts. These inaccuracies include:

- MC-FRM overpredicts storm wave height in open Nantucket Sound waters by more than 100%.
  - MC-FRM predicts a 7-ft maximum wave height in Sesechacha Pond, which is physically implausible
  - MC-FRM simulated storm waves running down the axis of the jettied channel into Nantucket Harbor are unrealistic, where the maximum wave height running down the channel exceeds 23 feet in height. Besides being scientifically indefensible, numerical model propagation of a 23-ft storm wave into the interior of Nantucket Harbor would bias model results throughout the harbor interior.
  - Along the downtown shoreline, the 7.5-ft maximum wave height predicted by MC-FRM represents an unrealistic wave height that is not supported by other similar modeling efforts or site observations.
  - the MC-FRM predicted 1% recurrence water surface elevation within Nantucket Harbor is 9.5 feet NAVD, which is more than 2 feet higher than indicated by other scientifically-validated sources for 2030. This discrepancy in potential future storm surge elevations adds to the fundamental concerns regarding the adequacy of MC-FRM for evaluating future coastal flood risks.
- d. The Massachusetts Coastal Flood Risk Model (MC-FRM) was not produced by the Commonwealth of Massachusetts, but rather the model was developed under state funding. Unfortunately, MC-FRM is a proprietary model, which is completely owned by a private consultant. The Commonwealth of Massachusetts has no ownership of the modeling system, and similar to other entities, access is limited to unreviewed products provided on the private consultant's website. With this in mind, rather than use of a static proprietary product (e.g. MC-FRM), effective public policy would argue that the best scientifically-defensible information should be utilized as the basis for adapting to climate change.
  - e. Neither the project report nor the 'peer review' have been made available. Due to this lack of transparency, there is no opportunity for the scientific/engineering community to assess the validity, accuracy, and uncertainty of MC-FRM. This prevents an applicant from challenging the results of MC-FRM, even if it shown to be demonstrably incorrect.
  - f. The MC-FRM metadata states that the model results are for "discussion and research purposes only" and "information is provided with the understanding that these data are not guaranteed to be accurate, correct or complete", which only further raises questions regarding the utility of the results to inform coastal flood protection planning and/or design efforts.

Based upon the technical review of available MC-FRM information, we respectfully ask that the Nantucket Conservation Commission revise the following proposed bylaw language, as follows:

*When permitting new projects, risk determination shall utilize the latest available data from Nantucket's NOAA tide gauge and the latest sea-level rise projections available from the Massachusetts Coastal Flood Risk Model (MC-FRM)*

to read

*When permitting new projects, risk determination shall utilize the latest available data from Nantucket's NOAA tide gauge and the latest sea-level rise projections available from a reputable government source.*

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## Attachment A: Storm Photographs

**Hurricane Carol  
(1954)**



*Source: Nantucket Historical Association*

**Hurricane Carol  
(1954)**



*Source: Nantucket Historical Association*



## No-Name Storm (1991)



*Source: Nantucket Historical Society*

## Winter Storm (1992)



*Source: Nantucket Historical Society*

**Winter Storm Riley  
(2018)**



*Source: Joshua Bradford Gray*

**Winter Storm  
(2022)**



*Source: Nantucket Current*



**Town of Swampscott**  
**OFFICE OF THE**  
**Conservation Commission**  
Elihu Thomson Administrative Building  
22 Monument Avenue  
Swampscott, Massachusetts 01907

**MEMBERS**

Tonia Bandrowicz, Chair  
Colleen Hitchcock, Vice Chair  
Jonathan Grabowski  
Monica Lagerquist  
Molly O'Connell  
Richard Simmons  
Randall Hughes  
Scott Saunders

**STAFF**

Marissa Meaney, Conservation Agent

Massachusetts Department of Environmental Protection  
Bureau of Water Resources Wetlands Program  
Attn: Wetlands-401 Resilience Comments  
100 Cambridge Street, 9th Floor  
Boston, MA 02114

April 24, 2024

Dear Ms. Rhodes and the MassDEP Wetlands Program,

Thank you for the opportunity to comment on the draft Wetlands Protection Act (WPA) regulations, or "Climate Resilience" 1.0 package, as proposed by MassDEP.

The Swampscott Conservation Commission would like to express our overall support for these regulations, especially the proposed performance standards for Land Subject to Coastal Storm Flowage (LSCSF). As our commission deals with a number of coastline-related projects, having performance standards for this resource area is critical to ensuring that we uphold the values and functionality of the WPA.

We also strongly support the new standard of no new construction in the Velocity Zone, a section of coastline that already experiences consistent and rising flooding; and support the new requirement for nature-based improvements to be considered for coastal projects. We will note that the latter proposed language could be stronger in order to ensure that nature-based techniques are used, more than just "considered," and we would highly recommend additional training and guidelines be available for commissioners in order to better understand and evaluate this topic as it is an evolving science.

On the topic of training, we hope that MassDEP is planning for a wide range of training options for conservation commissions once these new regulations are enacted, so that our commissioners can feel fully prepared and ready to put these new standards into practice.

We look forward to these regulations being promulgated swiftly and thank MassDEP staff for the time and effort put into this process.

Sincerely,

Tonia Bandrowicz, Chair  
Swampscott Conservation Commission





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April 30, 2024

MassDEP - BWR Waterways Program

Attn: *Wetlands-401 Resilience Comments*

100 Cambridge Street, 9th Floor

Boston, MA 02114

*Submitted Electronically via [dep.wetlands@mass.gov](mailto:dep.wetlands@mass.gov)*

## **RE: Comments Concerning Draft Wetland Regulations\_310\_CMR\_10.00**

The Stormwater Equipment Manufacturers Association (SWEMA) appreciates the opportunity to provide comments on MassDEP's draft Wetland Rules and Stormwater Handbook. We are an industry association with diverse membership consisting of innovative stormwater solution providers, laboratories, and other professional organizations sharing the common goal of seeing defensible, scientifically-sound, and easily implementable stormwater regulations established across the country. During this public comment period for the Draft Wetland Regulations and proposed Stormwater Handbook, we would like to offer the following recommendations for your consideration:

### **Update the stormwater technology pollutant removal crediting process to avoid reliance on antiquated protocols**

MassDEP's draft Wetlands Rule and Stormwater Handbook continues to reference the 2003 TARP Tier II Field Monitoring Protocol as the only allowable means for proprietary SCM acceptance. This protocol is antiquated, and the TARP program no longer exists. As a result, there are no longer any devices certified in accordance with the protocol, making it an inappropriate reference for certifying system performance. Antiquated references have the effect of disincentivizing innovation in stormwater management, which limits opportunities for new technology acceptance and of not recognizing any scientific advances, which can lead to inadequate data quality. There are more current protocols that could be used to ensure the State of Massachusetts' water bodies are protected from the harmful effects of sediment and nutrient pollution.

There are currently two gold standards for evaluating the performance of proprietary treatment technologies, one for laboratory testing and one for field testing. The laboratory test is administered by the New Jersey Department of Environmental Protection (NJDEP) and the New Jersey Corporation for Advanced Technology (NJCAT). The field test is administered by Washington State Department of Ecology and is called the Technology Assessment Protocol-Ecology (TAPE) program. Both should be referenced in MassDEP's new rule and handbook.



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In addition, there is a third standard currently under development. The Stormwater Testing and Evaluation for Products and Practices (STEPP) will be a national program that will recognize both the NJDEP and TAPE programs. STEPP will rely on ASTM standards and verify proprietary Trash Capture devices, hydrodynamic separators (HDS), filters, and biofilters, in addition to non-proprietary stormwater control measures (SCMs). MassDEP should allow for acceptance of STEPP verifications as they become available.

**SWEMA Recommendation:** *Revise TARP references to the TAPE field protocol so that it is the acceptable source of field data for assigning pollutant removal credit of proprietary filter and biofiltration SCMs. Additionally, reference the NJDEP laboratory protocol for acceptance of proprietary hydrodynamic separators (HDS) for use as pretreatment and in treatment train applications. Finally, allow for the eventual acceptance of STEPP verified products, if they meet MassDEP performance requirements, as they become available.*

#### **Acknowledge need for guidance on utilization of “treebox filters”**

MassDEP maintains existing guidance on the use of proprietary HDS and filtration systems.

Currently, the Agency recognizes these systems within a generic “treebox filter” category. However, there is a growing list of available proprietary high rate biofiltration SCMs in the marketplace. Each available system relies on unique, high-flow rate, proprietary media blends, and sizing, as well as utilizes pollutant removal processes that can more closely mimic the natural hydrologic cycle, so they should be recognized separately from other types of existing filtration SCMs.

On our webpage, we maintain generic guidance on the use of these types of systems that MassDEP could expand upon.

[https://www.stormwaterassociation.com/assets/docs/FACTSheets/swm\\_may2018\\_FACT%20SHEET%20Tree%20Box%20Filters.pdf](https://www.stormwaterassociation.com/assets/docs/FACTSheets/swm_may2018_FACT%20SHEET%20Tree%20Box%20Filters.pdf)

**SWEMA Recommendation:** *Establish a third category of proprietary SCMs entitled, “Biofilters” or “High-rate Biofiltration” and provide updated use guidance within the Handbook.*

#### **Remove proposed blanket pollutant removal credit for proprietary filters and treebox filters, i.e. proprietary biofiltration**

SWEMA strongly believes each SCM, proprietary or otherwise, should stand on its own merits and



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performance testing. MassDEP's proposal to award 60% TSS and 30% TP credit to proprietary filters and allow proprietary biofiltration to be used to meet the 90% TSS and 60% TP criteria without submission of performance data is overly subjective. Unproven practices with different components, media mixes, and sizes would be allowed to enter the marketplace without having successfully proven to reduce pollutants. Improvements in the stormwater management space will be dampened by removing the incentive to innovate practices capable of removing higher levels of pollution.

**SWEMA Recommendation:** *Provide pollutant removal credit only for proprietary filtration and biofiltration SCMs that maintain a TAPE General Use Level Designation (GULD) and for HDS systems that maintain NJDEP Certification. These standards mean proprietary systems are fully compliant with the respective protocol. Allowance should be made for acceptance of STEPP verified products, if they meet MADEP requirements, as they become available. Additionally, all approved systems should utilize the same components and media as tested and be sized according to the hydraulic loading rate that successfully met the specified protocol's performance criteria.*

Thank you again for the opportunity to communicate these critical concerns. Please contact our Executive Director, Laurie Honnigford, at [laurie@stormwaterassociation.com](mailto:laurie@stormwaterassociation.com) or (720) 353-4977 with any questions or for further engagement. We look forward to serving as an on-going informational resource to MassDEP.

Sincerely,

A blue ink signature of Jay Holtz, consisting of a stylized 'J' followed by 'Holtz'.

Jay Holtz  
SWEMA GARC Chairman

A blue ink signature of Jacob Dorman, consisting of a stylized 'J' followed by 'Dorman'.

Jacob Dorman  
Liaison

A blue ink signature of Laurie Honnigford, consisting of a stylized 'L' followed by 'Honnigford'.

Laurie Honnigford  
Managing Director



Massachusetts Department of Environmental Protection  
Bureau of Water Resources Wetlands Program  
100 Cambridge Street, Suite 900  
Boston, MA 02114  
Email: [dep.wetlands@mass.gov](mailto:dep.wetlands@mass.gov)

April 30, 2024

Re: Wetlands - 401 Resilience Comments

Please accept this letter on behalf of The Nature Conservancy (TNC) in response to proposed amendments to 310 CMR 10.00 Wetlands Protection Act (WPA) and Section 401 Water Quality Certifications, and 310 CMR 9.00 Waterways (Chapter 91).

We extend our gratitude to the Massachusetts Department of Environmental Protection (MassDEP) for preparing Resilience 1.0 amendments that encourage sound regulatory updates to increase Massachusetts' resiliency in our changing climate. These first steps are necessary to protect the safety of our coastal communities and vibrant ecosystems as well as plan for an uncertain climatic future.

The Nature Conservancy is a global conservation organization working toward a world where people and nature thrive. Our ambitious [2030 goals](#) address the greatest threats to the planet in the climate and biodiversity loss crises. In Massachusetts (and beyond), TNC is committed to working with communities to find durable solutions, and we are appreciative of the Healey/Driscoll Administration's groundbreaking leadership in addressing climate change and biodiversity loss.

**We have reviewed Resilience 1.0 regulations and respectfully provide the following comments:**

*Consistency with federal coastal risk regulations*

By updating language to 310 CMR 10.36 to align the Land Subject to Coastal Storm Flowage (LSCSF) metrics based on the Federal Emergency Management Agency's (FEMA) Flood Zones, the Commonwealth will be keeping new development out of areas that face damaging floods and sea level rise. The consistency with language used in FEMA's National Flood Insurance Program supports clarity in defining which areas face the highest risk of flooding, as well as the potential cost to insure properties. We applaud the decision to restrict new development in the highest risk areas.

*Prioritizing nature-based solutions for shoreline protection*

Provisions under 310 CMR 10.24 prioritize ecological protection and restoration of coastal wetlands within our built environment. These provisions are necessary to advance coastal wetlands restoration projects, as well as to encourage coastal engineering projects to consider nature-based solutions to work on LSCSF.

**Upon review of the proposed updates in Climate Resilience Regulations 1.0, we respectfully offer the following recommendations for Resilience 2.0:**

*Streamlining license and permit application process*

We view Resilience 1.0 as an opportunity to improve and streamline the permitting process for removing barriers to restoration and conservations efforts in alignment with [Executive Order No. 618: Biodiversity Conservation in Massachusetts](#). This order outlines the co-benefits of biodiversity

conservation, including flood mitigation and improved water quality, which a simpler application would promote.

In addition to a simpler, streamlined application for permitting, we strongly recommend a re-evaluation of the fill definition for nature-based solutions and other ecological restoration projects. Under 310 CMR 9.05(3), we ask for a more robust definition for fill to clarify which ecological restoration projects require permitting under this regulation. For example, oyster reef restoration, a critical nature-based solution for improving coastal water quality, providing structured habitat for marine life, and stabilizing the shoreline, often requires placement of material to act as a base layer, increasing likelihood of oyster survival. Natural materials, such as clean shell and/or rock (known as cultch) and spat-on-shell (oysters set on shell or other material), are commonly used in oyster reef construction.<sup>1</sup> We encourage certain ecological restoration practices, including oyster reef habitat creation, that meet certain minimum standards, to be exempt from the requirements under Chapter 91, as these projects are designed to preserve and protect the rights of the public and do not interfere with the public trust.

#### *Using best available data and incorporate climate modeling*

Under 310 CMR 10.57, we encourage MassDEP to include language that references “the best available climate data” for evaluation, rather than pinpoint specific datasets, such as NOAA14+, that may require new amendments to the regulations with the release of new datasets. New datasets are released regularly, and allowing for their usage supports using the best available science for decision-making. Additionally, to evaluate sea level rise, datasets and climate modeling that include projections would be more suitable for considering future coastal resiliency.

#### *Sea level rise projections for development*


While the consistency in language with FEMA’s flood maps under 310 CMR 10.36(5-8) will make it easier to connect federal and state policies regarding development, the reliance on FEMA flood maps prioritizes historical flood data, rather than projected sea level rise. This could potentially allow for projects that could fall under a different FEMA flood zone in future mapping updates. Considering future scenarios for current and new development is a crucial element to adapting to a changing climate, particularly for coastal communities that face sea level rise and coastal erosion.

With the recent release of ResilientMass, including the ResilientCoasts Initiative, Resilience 2.0 will provide a unique opportunity to align regulatory updates with our state’s innovative plans to make our communities and coastal environments more resilient to climate change. We look forward to seeing how Resilience 2.0 will incorporate the ambitious goals and plans set forth by the Commonwealth.

TNC appreciates the two-step process to review and respond to these regulatory updates and is grateful to the agencies involved in reviewing and addressing public comments. We look forward to our continued collaboration in addressing these evolving challenges in protecting our communities and environment.

Thank you for considering these comments. If you have any questions, please do not hesitate to contact me at [abowden@tnc.org](mailto:abowden@tnc.org).

Sincerely,



Alison Bowden  
Director of Conservation Science and Strategy

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<sup>1</sup> zu Ermgassen, P, Hancock, B., DeAngelis, B., Greene, J., Schuster, E., Spalding, M., Brumbaugh, R. 2016. Setting objectives for oyster habitat restoration using ecosystem services: A manager’s guide. The Nature Conservancy, Arlington VA. 76pp.



The Trustees of Reservations  
200 High Street | Boston, MA 02110

April 29, 2024

MassDEP - BWR Wetlands Program  
Attn: *Wetlands-401 Resilience Comments*  
100 Cambridge Street, Suite 900  
Boston, MA 02114

To Whom it May Concern,

We are grateful to the Healey-Driscoll Administration and the Executive Office of Energy and Environmental Affairs for initiating the proposed regulatory changes to the Wetlands Protection Act and for your work to ensure our wetland resources are protected, restored and made resilient for the future.

The Trustees preserves, for public use and enjoyment, properties of exceptional scenic, historic, and ecological value in Massachusetts. Today, 132 years after our founding, we are Massachusetts' largest conservation and preservation organization. With the support of our 100,000 member households, we care for 123 properties, and 27,000 irreplaceable acres, including 3,000 acres of coastal beach, dune, and marsh habitat and 2,300 acres of freshwater wetland habitat.

We applaud the Department of Environmental Protection for the proposed creation of performance standards to protect wetlands and floodplains and the built environment they buffer. The [State of the Coast](#) reports published by The Trustees have emphasized the importance of both community adaptation as well as nature-based solutions to protect community infrastructure. A recognition that flooding is projected to increase due to sea level rise and increased precipitation intensity has necessitated many of the forward-thinking updates you have proposed to keep our communities safe – including green stormwater infrastructure, updating precipitation data sources, coastal protections, and more efficient permitting processes for critical adaptation and restoration work.

MassDEP has clearly worked diligently to include the perspectives of multiple voices from our community into this update and The Trustees recognizes and greatly appreciates this collaborative approach. We are currently working closely with the agency to develop updates as part of Resilience 2.0 and are excited about the impact this work will have on our ability to adapt coastal habitats to climate change.

We respectfully offer the following considerations to the proposed **Resilience 1.0** update package:

1. The **restoration of coastal and riverine habitat** is critical for slowing and absorbing flood waters, buffering adjacent communities, and providing habitat. This work necessitates control and removal

of non-native invasive species. Existing code and code revisions proposed allow for planting of native plants but do not address removal of non-native invasive species. Non-native species proliferation is exacerbated by disturbance and climate change and impacts the resilience of our ecosystems. We propose the following revisions:

- 10.02(2a)(3): add “g. removal of non-native invasive plants”
- 10.02 (2b)(2): add a subsection “removal of non-native invasive plants provided erosion and sedimentation controls are implemented until the area is restabilized with native species”

2. Conducting **scientific research** in natural areas provides benefits to these resources that far outweigh any short-term disturbance impacts. It is critical we understand how habitats are changing and why, how we can increase resilience, and the effectiveness of intervention approaches. We encourage DEP to work together with research institutions to ensure the proposed revisions to this section support this critical work. We are concerned about provisions that:

- Limit the type of ecological and climate resilience work that is conducted,
- Limit the timeframe the work is permitted to occur within,
- Require removal of structures added to the resource area as part of restoration or resilience efforts if results show gains for habitat, or
- Limit the ability of restoration and resilience project practitioners to effectively monitor on-the-ground projects over the long-term.

3. Sea level rise is necessitating **elevation of roads** in some areas which may negatively impact salt marsh habitat. In the Great Marsh ACEC, 75% of roads are projected to be flooded daily by 2100. We support the creation of a permitting pathway, as proposed, for road elevation projects impacting wetland resource areas but only where there is a prominent public benefit, there are no feasible alternatives, and impacts to resource areas are mitigated. If language must be added to ensure DEP has discretion to deny road elevation projects that do not comply with this criteria, we support that inclusion. We propose the following revisions to the amended code:

- 24(7)(c)(1): Amend to include both public and private roadways. Some private roadways also provide a public benefit.
- 24(7)(c)(1): Amend 10.24(7)(c)(1a) “a. the width of the elevated **paved** roadway surface is the same as the existing roadway surface” to allow for a wider soft shoulder if needed to ensure structural integrity of the road and resilience to storm impacts.
- 24(7)(c)(1): We suggest adding a clause allowing for a wider paved roadway surface if a reasonable case can be made for the need to improve pedestrian and bike access.
- 10.24(7)(c)(1)(b): We propose allowing for two alternatives for mitigation to salt marsh impacts. The first is the language proposed describing “creation” of saltmarsh, but specifying this must be done on-site at a 1:1 ratio and is preferred to occur where fill has compromised historic marsh. The second is for payment into a in lieu fee program available to restoration practitioners to utilize to restore hydrology of existing marsh using ditch remediation and runneling techniques at a ratio of 20:1, and only where on-site creation of marsh is not possible.

4. **Restoration of our salt marshes** is urgent before sea level rise and subsidence results in conversion to tidal flats (projected to occur between 2070 and 2100 under “high” sea level rise scenario throughout the state). We understand improvements are being developed to streamline the permitting process and accelerate this critical work through the Resilience 2.0 process, but strongly encourage the following as part of Resilience 1.0:

- Allow marsh restoration projects aimed at restoring natural hydrology, sediment deposition, and flow regimes to qualify as Tidal Ecological Restoration Projects (10.13(5)), as opposed to Ecological Restoration Limited projects. The nearly complete Guidance document for the ditch remediation, runneling, and microtopography restoration techniques can serve as performance standards for these projects.
  - Allow additional types of restoration techniques not listed specifically in the code to be permitted as Ecological Restoration Projects once a Guidance document outlining performance standards for these techniques is completed. This enables DEP to be nimble in responding to new science without the lengthy process of amending code.
  - Streamline the permitting process through implementation of a single application, online application system, coordinated interagency review, and issuance of permits within three months of application.
5. **Maintaining and constructing trails** can minimally impact natural resources but provides incredible benefits to communities as well as builds long-term appreciation and stewardship of natural resources. Trails improve people's connection with the natural world and are a platform for teaching the public about the benefits of these resources and threats to their health. Trails are being increasingly impacted by climate change driven storm and flooding events in addition to seeing increased use during and after the pandemic. Unfortunately, trail maintenance and construction projects utilizing best trail management practices are often discouraged by a complicated, time-consuming, and resource intensive permitting process. We request that DEP engage with the trail community to clarify and streamline the permitting process. We propose:
- A clear definition of "Conservation Property" in reference to unpaved trails within buffer zones or Riverfront Areas to include municipal land, land trust properties, and private property subject to conservation restrictions.
  - Simplification of the permitting process for low elevated (4-12") trail structures that are discouraged in favor of higher elevation structures that are costly and impact resource areas in different ways. This could include expanding the limited project provision and allowing Conservation Commissions to approve projects which will alter less than 500 square feet.
  - The creation of an exemption for maintenance and expansion of trail structures (boardwalks, puncheaons, waterbars, etc.) similar to the exemptions afforded to existing structures associated with many other public services in 10.02(2)(a)(2).

The Trustees appreciates the opportunity to be a part of this collaborative process! It is clear the administration is committed to taking action to protect both Massachusetts' natural resources and at-risk communities. We welcome the opportunity to further engage on any of these topics.

Sincerely,



Katie Theoharides  
President and CEO  
The Trustees of Reservations

April 29, 2024

**Attn: Wetlands-401 Resilience Comments**  
**C/O Lisa Rhodes**  
**MassDEP-BWR**  
**100 Cambridge Street,**  
**Suite 900,**  
**Boston, MA. 02114**

**RE: Wetlands-401 Resilience Comments, on the proposed DEP Regulatory changes.**

Dear Ms. Rhodes,

### **Introduction**

This letter is a compilation of comments received on the proposed regulations from consultants and concerns raised by property owners located in Land Subject to Coastal Storm Flowage areas. The following letter outlines concerns related to the contemplated DEP changes. We sincerely appreciate the high level of work that was invested in these regulations by DEP, DEP stakeholders and the Conservation groups. However there doesn't seem to be any involvement or consideration in crafting these regulations from the following stakeholders; American Society of Civil Engineers (ASCE), the Federal Emergency Management Agency (FEMA), the Massachusetts Flood Hazard Management Program (FHMP) and water dependent businesses, review by legal counsel with experience in environmental designs and permitting, or registered professionals who design and permit projects in an environmentally responsible manner. The regulations as currently composed will not provide the full environmental protection needed, will deprive hundreds of private property owners use of their land and will cause substantial harm to our economy, particularly to the functionally dependent uses.

There are two realities in many of our coastal areas. The first is many of the areas are older and in need of a resilient design. The second item is we presently have design tools and resilient means and methods that are being performed to protect our environment. The proposed regulations as currently propose inhibits land uses and will severely harm our residence, business owners. The Commonwealth has and continues to show we are one of the leading stewards to protect our environment in a resilient manner. A prohibition on achieving this goal especially in our coastal and flood prone communities is not a complete approach. DEP should not approve the regulations as presented, taking a step back and inviting other professionals to provide improved regulations, which protect land use and improves on protecting our valuable resources.

### **Discussion**

The regulations as currently written do not take into considerations, professionals and agencies who should be involved with the process to ensure, in fact, protect the environment and preserve the rights of property owners to use their land in an environmentally responsible manner. The regulations also don't account for all of the hard work the ASCE, FEMA and the FHMP have



done and continue to do in order to protect the environment with properly designed project that protect the environment and are completed to provide a fully Flood Resistant project.

We understand DEP's position is not Codes and it is to preserve the environment. However, it seems short sighted to ignore all the great work which has and is taking place by the ASCE, FEMA, Local Floodplain coordinators, Conservation Commissions, design engineers and environmental Scientists. Many of the new projects and renovations are already incorporating environmentally responsible designs. These designs are accounting for sea level rise, structural protection and more importantly substantial improvements in protecting our sensitive resource areas.

In 2006 ASCE released excellent guides for Flood Resistant design and construction. The guidelines are ASCE 24-05 and 24-14. These guides were developed and continue to evolve with well-established engineering principles. They provide excellent standards on how to protect the environment in a resilient manner.

FEMA and the International Building Committee have accepted these guidelines. FEMA continues to develop many technical bulletins on how to protect the environment. The Massachusetts FHMP works extremely close with local, state and Federal Agencies to ensure project proceed in an environmentally responsible manner.

All of these agencies collaborated with each other to ensure many stakeholders were involved in protecting the environment. They continue to evaluate and update guidelines and regulations with a balanced approach to protecting the environment.

On the private design side, engineers and applicants continue to provide, resilient designs ranging in size from private home sites to Marine Ship Building and Ship Repair facilities. This approach to projects designs and environmental permitting involves professional wetlands scientists, wildlife biologists, coastal geologists, registered professional surveyors, engineers and environmental attorneys. The Commonwealth presently has excellent local, state and federal agencies we use to ensure the environment is protected.

Using this approach ensures, that when a project is complete, the project provides additional protection our environment. Taking into consideration and incorporating resilient designs protects our resource areas and habitats. Projects are being permitted on a regular basis from residential project up to large Marine Ship Building and Repair facilities, some of which are in endangered species habitats and many in coastal resource areas.

For example, on residential properties in High Hazard Coastal areas there are many examples of permitting and providing natural based and resilient solutions. These typical assessment and design elements typically consist of first having the resource areas formally assessed by Professional Scientists and/or Geologists. The site is accurately surveyed. The design engineers, scientists and geologists provide a resilient design which protects and improves the environment. Measures implemented include; cobble berms, beach nourishment, biodegradable coir logs, plantings, monitoring and replenishment. Structures are properly elevated and constructed with flood resistant materials.

The larger projects follow a similar process with more analysis and a larger design team incorporating geotechnical firms, Licensed Site Professionals and a larger structural and architectural team. The larger projects incorporate appropriate flood resistant measures which attenuate flooding impacts, storm damage prevention, stormwater quality improvements and monitoring. All of these projects result in an improvement to the environment and take into account resilient designs and sea level rise. Many of these projects are for functionally dependent uses for many Marinas. The end result is the environment is better protected from flood damage with improved stormwater discharges.

The prohibition of no new buildings in V-Zones or expansion of existing buildings on piles is clearly harmful to functionally dependent uses. There are many projects being upgraded designing, permitting and constructing resiliently designed projects which take into consideration impacts from sea level rise. The larger projects incorporate floodproofing measures which improve upon a site's ability to handle flood impacts, while substantially improving upon stormwater discharges and monitoring. The structures we are designing are elevated to exceed elevation requirements in flood prone areas. The materials and installation prevent flood inundation and are properly anchored. All materials are corrosion resistant materials.

To prohibit the use of pile supported structures in flood prone areas hampers, particularly the functionally dependent uses and property owners from being able to use a construction technique on their property. There are numerous areas in the Commonwealth on historically filled tidelands and are located in flood prone areas. Almost all of these filled areas are filled with unsuitable fill which cannot support structural loads. Techniques currently used to address this issue in a practical manner involve, borings, geotechnical analysis and a structural design. The structural designs typically require the use of piles or Geopier Foundations. Taking this tool out of the tool box essentially implies you cannot build on this property. The use of piles and Geopier foundations is an economically viable option as opposed to excavating out the fill under the entire foundation and refilling with Structural fill. Excavating fill also increases the potential impact to the environment. I also think you will find the use of conventional foundations is not allowed in flood prone areas.

Newer larger facilities in flood prone areas should not be prohibited. The reason for this, particularly for functionally dependent uses, is many of the facilities are outdated and inadequate to conduct their required water dependent use. The Chapter 91 regulations fail to address new water dependent functionally dependent uses and uses frequently found adjacent to the water.

A great example is a Marine Ship Building and Ship Repair facility which is essentially every marina in the State. Many of these facilities are in dire need of upgrading and are going through this process now. This involves bringing their required activities indoors to protect their industrial uses, such as maintenance inside. This typically eliminates or reduces the potential for pollutants getting into our resource areas. These activities are conducted inside of a new larger structure, with a flood compliant building, which is supported on piles or Geopier foundations. The new larger buildings, provides the following amenities

- Boats from the outside inside of a structurally designed building with flood vents, corrosion resistant materials.
- Waterproof utility connections that prevent water intrusion.
- Hazardous Materials and wastes are properly elevated in secondary containment to prevent flood intrusion and pollutant release.
- Smart vents are incorporated which allows for floodwater to enter and exit. Allowing the floodwaters to enter increase the site's temporary flood storage capabilities, absorbs flooding and reduces flooding impacts on and off site.
- We do elevate the functionally dependent uses as best as feasible to allow for the continued operations.
- Non functionally dependent uses are properly elevated.
- Substantial stormwater quality measures are incorporated with long-term maintenance and testing required.

It is worth noting the above measures are necessary to ensure compliance with the Environmental Protection Agency's (EPA) Stormwater Discharges from Industrial Activities- EPA's 2021 Multi-Sector General Permit (MSGP). The MSGP requires these sites to comply with formal monitoring, testing, reporting and compliance with these regulations. In order for an Industrial Use to be located in flood prone areas it requires the property owners and businesses to spend substantial money to bring their facilities into compliance. Compliance is a federal requirement which is not optional. To achieve compliance almost always requires larger facilities and substantial investment in building and infrastructure. This means new larger buildings on Pile or Geopier foundations. Along with this comes substantial stormwater quality improvements, testing, reporting and correct actions.

The proposed requirements of no new or larger facilities without pile foundations will cripple these impacted uses and will place them out of compliance with federal EPA requirements. We can't improve the environment if we are not allowed to design, build and manage our businesses in a responsible and resilient manner. Many of these facilities have a federal mandate to comply with Industrial Activities. We use many tools as outlined in this report to achieve a resilient design, improve on the protection of our environment and reduce flood impacts.

## **Summary**

These regulations should be further evaluated with a complete review by all impacted stakeholders and not limited to conservation stakeholders. There is a real concern, if approved they will have a substantial impact on the state's economy, in particular coastal communities, businesses which are functionally dependent uses. The functionally dependent uses in order to operate are required to be adjacent to the water. Many of these facilities and the businesses who support the marine trades will be severely crippled by these regulations as currently formatted.

The Commonwealth has a great opportunity here to marry the new regulations with well prescribed codes for proper flood compliant measures. In doing so, we fully protect our resource areas and don't cause irreparable harm to our coastal businesses and property owners. You can regulate it with prohibitions and nature based solutions, but you won't fully protect the environment. The regulations as proposed will prohibit and discourage many property owners

from using necessary measures needed to attenuate flood impacts and incorporate required measures to protect our resource areas, which result in leaving in place structures that do more harm to the environment than new or expanded compliant structures. We believe a broader review and public hearings is needed through MEPA's Environmental Monitor to obtain public comments. We also believe it is essential for the Regulations to work with Current Codes. The regulations tell us what we need to do and sets the parameters for complying. The Codes tell us how to do things in a responsible manner so we have fully compliant projects which are located in High Hazard Flood prone areas in a resilient Manner. Thank you for taking the time to consider my comments.

Sincerely

A handwritten signature in blue ink that reads "Thomas C. Pozerski". The signature is written in a cursive, flowing style.

Tom Pozerski



**TOWN OF CONCORD**  
**DIVISION OF NATURAL RESOURCES**

141 KEYES ROAD, CONCORD, MASSACHUSETTS 01742

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Delia R. J. Kaye  
Natural Resources Director

MassDEP - BWR Wetlands Program  
Attn: *Wetlands-401 Resilience Comments*  
100 Cambridge Street, Suite 900  
Boston, MA 02114  
Sent via email to [dep.wetlands@mass.gov](mailto:dep.wetlands@mass.gov)

April 30, 2024

Re: Wetlands-401 Resilience Comments

Dear MassDEP,

Thank you for the efforts to update the Wetlands Protection Act regulations to become more climate resilient. The proposed regulations provide several improvements to the current regulations, notably, developing performance standards for Land Subject to Coastal Storm Flowage, supporting nature-based solutions, and updating stormwater calculations to reflect more current rainfall data. MassDEP invested significant time and effort in the regulation revision, which is sincerely appreciated.

I also appreciate that MassDEP held several information sessions, office hours, and public hearings on the proposed regulatory revisions, which were informative and helpful. I also appreciate that MassDEP extended the comment deadline to allow more time to review the changes.

I have served as Concord's Natural Resources Director since 2006, and prior to that was a wetland scientist for nine years with a mid-size engineering firm. In these roles, I have both prepared and reviewed wetland applications, and have extensive familiarity with the current WPA regulations and MassDEP guidance documents.

On behalf of the Natural Resources Commission, I offer the following comments. Comments are separated into comments on the current draft regulations (Section 1.0), and comments on future regulatory changes (Section 2.0).



## Section 1.0 Comments

### Definitions (310 CMR 10.04):

**Public Shared Use Paths.** The new definition in 10.04 states that the Path must be on “public property or on private property pursuant to an easement that provides for public access”. MassDEP should afford all owners of publicly accessible land with Public Shared Use Paths the same allowances and requirements under the regulations. This should include land trust and other permanently protected public or private property that provides public access.

### Procedures (310 CMR 10.05):

**Notices of Intent (10.05(4)(a)).** Small homeowner projects should not need to submit a full SWPPP. Please consider revising the language to read along the lines of “All projects must address erosion, sedimentation control, and pollution prevention with plans appropriate to and commensurate with the proposed alterations, even those projects otherwise exempt from the stormwater standards.”

**10.05(6)(m)(6):** Requiring unpaved footpaths in natural areas to comply with the Stormwater Management Standards seems unreasonable. Trails generally rely on country drainage and so do not “fit” into the proposed stormwater management standards. Please consider including unpaved footpaths in natural areas as an exempt activity under the Stormwater Management Standards 10.05(6)(l).

**310 CMR 10.03(6)(b), 10.04 (Alter), 10.05(3)(2)(b), and 10.58(6) Application of Herbicides and Cutting in Rail Rights-of-Way:** Please clarify the requirements for permitting the use of herbicides and mechanical cutting to control vegetation in rail rights-of-way in Buffer Zones and Riverfront Area. MBTA and Keolis claim exemptions for mechanical cutting that DEP has not supported and are currently under OADR review. The regulations should clarify that mechanical vegetation removal in wetland resource areas and buffer zones requires additional review under an RDA or NOI.

Some of the proposed changes seem far too detailed to be included in the regulations, and would perhaps benefit from being removed from the regulation and incorporated into guidance documents. Examples include:

- NOAA14+ precipitation data, which is currently being updated.
- 10.02(2)(b)r.iv. Please consider deleting the language between “To prevent the possible export (...) disposed” and creating a guidance document or policy instead. Please consider removing this level of specificity under 10.02(2)(b)n.iv for similar reasons.



## Section 2.0 Comments

### Activities Within the Areas Subject to Protection ... (310 CMR 10.02(2)(a))

**Trail Maintenance.** Please consider creating a new section to exempt Maintenance of Existing Trails in use by the public. Boardwalks, puncheons, waterbars, and other basic trail infrastructure need to be routinely maintained or replaced to protect land in and adjacent to wetland resource areas. Land managers should be able to conduct necessary maintenance (but not expand) without the need to go through a permit process.

### Minor Activities (310 CMR 10.02(2)(b))

**Unpaved pedestrian walkways.** Please consider defining Conservation Property to include all types of natural land onto which the public is invited. Currently, unpaved pedestrian walkways (trails) less than 3 feet wide for public access on “Conservation Property” are exempt from regulation. However, many trails traverse general municipal land, land trust properties, and private property with conservation restrictions affording public access. Additionally, please consider increasing the 3-foot width to 4 feet because the state’s own guidance on accessible trails encourages trails are “at least 36” wide, and usually wider”.

**10.02(2)(b)(e)** Please remove inground swimming pools from Minor Activities. Construction of inground swimming pools involves significant excavation, large impervious areas around the pool, fencing, and often involves discharge of chlorinated water, activities which can have impacts to wetland resource areas without proper review and controls.

**Hazard Tree Removal.** Please add a new minor activity for removal of up to five hazard trees (so determined by a certified arborist or the Conservation Agent).

**Invasive Species Removal:** Please add a new minor activity that allows for removal of invasive species, in consultation with the Conservation Agent, in areas greater than 50 feet from BVW or MAHW, provided erosion controls are used and the area is replanted so as to achieve 75% native species coverage.

### Definitions (310 CMR 10.04)

**Please create new definitions for “Vernal Pool” and “Vernal Pool Habitat”:** Currently, Vernal pool habitat includes the definition of both the depression and the 100-foot jurisdictional area. Please extend the jurisdiction to provide a 100-foot Buffer Zone to vernal pools, regardless of whether it falls within a resource area or not. Suggested changes:

“Vernal Pool” is a basin or depression that typically holds water for at least two continuous months through the spring and is free of adult, reproducing fish populations. Vernal pools are essential breeding habitat for a variety of amphibian

species such as wood frog (*Lithobates sylvaticus*) and spotted salamander (*Ambystoma maculatum*) and provide other extremely important wildlife habitat functions during the non-breeding season for these species. Vernal pools are important habitat for other wildlife species. The boundary of a vernal pool is the maximum water level in such a basin or depression and is identified by direct observation or by field indicators of the maximum extent of flooding.

“Vernal Pool Habitat” is the area between the boundary of a vernal pool and the boundary of a jurisdictional resource area that contains the vernal pool, or 100 feet from the edge of the vernal pool boundary, whichever distance is greater.

**Emergencies (310 CMR 10.06):** Please add the following language, similar to language provided for Enforcement Orders: “An Emergency Certification issued by a conservation commission shall be signed by a majority of the commission. It may also be signed by a single member or agent of the commission, if said Certification is ratified by a majority of members at the next scheduled meeting of the Commission”.

**Limited Projects (310 CMR 10.53):** Please expand the Limited Project provisions to simplify permitting requirements for routine land management projects necessary to address the impacts of climate change. Please expand the Limited Project provisions to facilitate large scale invasive species work in wetland resource areas with specific regulatory review standards to simplify invasive species removal projects without triggering complicated permitting processes.

Please also add a limited project provision which specifically allows small- and medium-scale invasive species removal projects with specific regulatory review standards. Non-native invasive plants pose a major threat to the health and survival of our native ecosystems, and are on the rise with climate change. Currently, invasive plant control work requires time-consuming, costly, and complex wetland permitting devised for construction projects. Quick identification and removal of invasive plants minimizes the dramatic negative effects of these plants and allows for the recovery of native species diversity and native wildlife habitat, a recognized wetland value.

Please also expand the limited project provision in 10.53(j)(a) to allow: “The construction of new public footpaths and associated boardwalks/ puncheons that are constructed close to the ground provided, however, that such structures are constructed on pilings, sills, or posts so as to permit the reasonably unobstructed flowage of water.” Larger public boardwalk/puncheon projects could still be required to provide wetland replication based on the size, scope, and nature of the project and the opportunity for less impactful alternatives.

**Bordering Vegetated Wetland Performance Standards (310 CMR 10.55)**

**10.55(2).** Please modify the definition of BVW and how the boundary of a BVW is defined to reflect the 2022 “Massachusetts Handbook for Delineation of Bordering Vegetated Wetlands” that was released in March 2023.

**10.55(4)(c).** Please simplify the permitting process for trail construction projects by adding to the Bordering Vegetated Wetland regulations a new section in 10.55(4)(c)(4) allowing Commissions to permit new trails in wetlands when: "said work involves the creation of a public trail for non-motorized use (i.e., hiking, skiing, mountain biking, etc.) which will alter less than 500 s.f. of BVW, provided alternatives that attempted to avoid and minimize impacts were considered and that the trail will permit the reasonably unobstructed flowage of water."

**Bordering and Isolated Land Subject To Flooding (310 CMR 10.57)**

**10.57(2)(a)5.** Vernal Pool Habitat should not necessarily need to be certified by DFW in order to be afforded protection. Please consider allowing field-based evidence submitted to the Conservation Commission by competent professionals as acceptable proof of vernal pool habitat.

**10.57(2)(a)6. Vernal pools.** Please revise the language to read: “The boundary of a certified or uncertified vernal pool shall be based on field observations of the maximum extent of flooding and delineated by a competent source meeting the criteria in 310 CMR 10.60(1)(b). Vernal pool habitat shall include the area within 100 feet of the boundary of the vernal pool itself.” DFW does not certify the boundary of vernal pools, so we suggest removing those references. The application would be submitted with the applicant’s representative delineating the vernal pool boundary and the Conservation Commission or MassDEP, as the issuing authority, verifying that delineation. Conservation Commissions and MassDEP staff may meet the requirements under 10.60 but they may not; simply listing the reference to 10.60 would be adequate here.

**10.57(2)(b) Isolated Land Subject to flooding:** Please consider expanding the jurisdiction over small, isolated wetlands by reducing the size of ILSF to account for loss of isolated wetland protections as a result of the Sackett Decision.

Please consider adding vernal pools as its own dedicated wetland resource area, with a 100-foot Buffer Zone.

**310 CMR 10.58: Riverfront Area Regulation Revisions** Please work with conservation professionals to address the following areas of concern.

- Interpreting the Redevelopment requirements for mitigation/restoration for “non-compliance” of more than one performance standard
- Clarifying the distinction between 310 CMR 10.58(5)(c) and (d)
- Requiring an Alternatives Analysis for Redevelopment projects

- How the regulations apply to large sites with small amounts of pre-existing development

Thank you again for your work on regulatory changes, and for your consideration of these comments. I believe that the 2.0 revisions will be strengthened by MassDEP inviting conservation professionals to develop the next set of revisions, and would be happy to participate in that process.

Sincerely,

*Delia Kaye*

Delia Kaye,  
Natural Resources Director

cc: Natural Resources Commission

JASON L. MAMMONE, P.E.  
DIRECTOR OF ENGINEERING

NATHAN S. BUTTERMORE, P.E.  
INFRASTRUCTURE ENGINEER

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**DEPARTMENT OF INFRASTRUCTURE ENGINEERING**

April 25, 2024

MassDEP – BWR Wetlands Program  
Attn: Wetlands-401 Resilience Comments  
100 Cambridge Street, Suite 900  
Boston, MA 02114

RE: Wetlands-401 Resilience Comments

To Whom It May Concern,

The Town of Dedham appreciates the opportunity to provide comments/questions on the proposed wetlands resilience 1.0 Draft Regulations.

**General Stormwater Management Handbook Comments/Questions:**

- The applicability of the MS4 permit and the MassDEP Handbook should be consistent. The Handbook exempts residential projects with 4 or fewer units while the MS4 permit exempts projects with less than 1 acre of disturbance.
- Please ensure that Table 2-2 “SCM Convention Crosswalk and TSS / TP Removal Credits”, Table 2-6 “Suitability of SCMs to treat TMDL pollutants”, and Appendix F of the EPA 2016 Small MS4 Permit (including any subsequent permits) are all in agreement. Developers will likely be using the MassDEP Handbook as their reference, while municipalities have to go by the Permit. In addition, both documents refer to each other and should be in agreement. Looking specifically at Table 2-6 and comparing against MS4 Appendix F for Phosphorus removal, it appears there are numerous inconsistencies:
  - Street sweeping is included in MS4 Appendix F
  - General and Solar ESSD – These practices encourage LID SCMs for which phosphorus removal calcs can be performed; however, it is unclear if these practices are required to have the same sizing/volume as Standards 3 and 4, or if they should just be included to the MEP. If they are not required to treat the same volume, and are still assumed to meet Standards 3 and 4, it

may be difficult to translate these credits to phosphorus removal for the purposes of meeting TMDLs.

- For example, say a site maximizes all of the ESSD concepts, but provides very little traditional SCM treatment. Would MassDEP accept this as meeting Standards 3 and 4 and would EPA accept this as removing 60% P?
- For Solar ESSD – are SCMs required, or does one assume that the area is pervious if the panels are small enough such that runoff drips down and infiltrates beneath?
- Roof and Road Runoff to QPA – Both the MassDEP and MS4 Appendix F offer credit, but the pollutant removal values appear to differ.
- MassDEP offers credit for tree canopy while EPA does not.
- Buffer Zone Improvement – Pollutant removal amounts appear to differ
- Filtering Bioretention Areas – These are included in MS4 Appendix F
- Stormwater Wetland, Wet Pond, and Wet Swale – Need additional clarity/guidance in the crosswalk tables in the Manual and Permit.
  - A gravel wetland appears to be called out separately in MS4 Appendix F.
  - Has it been confirmed with EPA that a constructed stormwater wetland can be lumped in with gravel wetland, or should it be a wet pond?
  - Can a wet swale be considered a wet pond?
- Extended Dry Detention Basins are included in MS4 Appendix F. The pollutant removals in Appendix B do not match MS4 Appendix F
- Sand Filters are included in MS4 Appendix F
- Would a Filtering Tree Box Filter qualify as a filtering bioretention area?
- Wet Basins are included in MS4 Appendix F
- A Filtering Roof Dripline Filter could probably be considered a sand filter
- Grass Channel / Biofilter Swale, Water Quality Swale (Dry/Wet), and Grass Swale:
  - This terminology is confusing and should be eliminated. Any conveyance that includes storage should be considered the same as its non-linear equivalent (e.g., sand filter, infiltration basin, infiltration trench) with extra caveats for limiting longitudinal slopes, calculating storage volume behind check dams, and ensuring it can convey the appropriate storms without erosion.
  - Table 2-6 indicates that one cannot get P removal credits for TMDLs for both Grass Channels and Water Quality Swales while MS4 Appendix F has “Dry Water Quality Swale/Grass Swale” in Table 3-5, and a performance curve for “Water Quality Grass Swale”
- Table 2-6 indicates several SCMs do not provide P removal credits, but the individual Appendix A entries for those SCMs direct to an EPA Performance Curve for the SCM, which provides a P removal credit. The same is true for the “Suitability to Treat TMDL Pollutants” section in each Appendix A entry. These indications should be consistent. Tree Box Filters



(filtering), Bioretention Area (filtering), Wet Basin, Extended Dry Detention Basin are some examples.

- Rain Barrels & Cisterns are included in MS4 Appendix F
- In Table 2-8, it should be considered whether foundation setbacks would differ between full foundations and slab-on-grade foundations.
- Proprietary Manufactured SCMs, Section 5.3.1, Page 5-7. Should replace “and” for “or” in the sentence that reads “All Proprietary Manufactured SCMs must be placed or configured to be offline and contain an internal or external bypass to prevent resuspension of previously trapped solids” assuming the device’s testing demonstrates the ability to prevent resuspension of trapped solids.
- Section 5.3 should be simplified. If an appropriate certification program such as TARP or STEP does not exist, DEP or EPA should maintain a list of approved proprietary devices. Manufacturers could fund the research/testing and pay an application fee to cover the cost of reviewing and approving. Perhaps a University could perform the reviews if DEP or EPA does not have the staff. Municipalities likely should not be expected to perform any review of these devices beyond verifying that a particular certificate or approval has been granted. The MS4 permit, TMDLs, and MassDEP Handbook should be consistent regarding approvals. In the interim until such a program can be established, reciprocity for approvals from other states with acceptable methods (e.g. Washington, Virginia, etc.) should be established.
- Please ensure that guidance is consistent between SCMs with stone reservoirs with respect to the stone sizing and void space. Section 6.2.3 indicates that void space should be no more than 35% while the Appendix A Dry Well section says 40%. Stone size for dry wells, infiltration trenches, and leaching catch basins are 1.5-3”, 2-5”, and 1-2”, respectively. ¾” and 1.5” seem to be the two sizes that are locally available. Pipe manufacturer, ADS summarizes void space testing results in ADS Technical Note TN 6.30 and recommends using 40% for any size based on the testing results. BATT also uses 40% as the default porosity which seems to be the industry standard. For some SCMs such as porous pavements, it probably make sense that the stone size differs from the other infiltration practices.
- The guidance for sizing SCMs in Section 6.2.3 should include calculations for when an SCM collects runoff from both pervious and impervious areas in accordance with Table 3-4 and the associated examples in Appendix F, Attachment 3. Without accounting for runoff from pervious areas, an SCM designed solely to the size of the impervious area it treats could be overwhelmed and the actual Water Quality Volume provided by that SCM would be smaller than expected.
- Similar to the above, the guidance for calculating pollutant removal as a function of runoff retained should direct the user to include expected runoff from any

pervious areas in addition to captured impervious areas in their calculations, as shown in Table 3-4 and the associated examples in Appendix F, Attachment 3. Not doing so allows the user to collect credit on treated pervious areas without accounting for the additional volume the runoff from those areas would need, potentially overwhelming the SCM and reducing the removal efficiency. Based on trial-and-error testing, I believe the BATT tool includes pollutant removal from pervious areas without accounting for the storage volume need for runoff from those areas. If that's accurate, it should be noted in the guidance for the BATT tool included in Section 6.2.4 of the Handbook.

- On page A-15, Table QP 4 quantifies the removal credits for each scenario in the example. In this table, SCM ID QPA No. 1 is shown to have a rounded ratio of 2:1 and equates that to TSS and TP removals of 90% and 60%, respectively. However, Table QPA 3 states that 2:1 ratios provide no removal credits at all. Please revise as necessary.
- The credit for Tree Canopy Implementation for Runoff Reduction (A-17) should require that the trees be native in order to promote native plantings. Several of those listed in the associated table are not native.
- Appendix A. Subsurface Infiltrators – The text under Peak Rate Attenuation may need to be revised to clarify that the bottom of the reservoir can be within 2-4' of the season high groundwater elevation, but that a mounding analysis would be needed.
- **A-16:** Could it be added that new trees must be natives to get the ESSD Credit 5?
- **A-16:** Callery Pear should be taken off the medium tree list because it is a non-native and has been listed as invasive in other states with similar climates to ours and could have the potential to become invasive in MA.

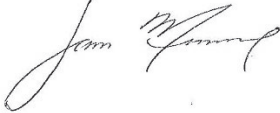
#### **General Wetland Protection Act Comments/Questions:**

- The definition of **Highway Specific Considerations** gives MassDOT special rights under the WPA. The regulations should not be based on the governing agency but should be based on the size of the roadway and potential impacts.
- The newly added **10.02(2)(b)2 r.iv.** seems overly complicated, and we could use more specific information about what would qualify as hand methods. The allowance of cutting shrubs and branches may also result in the unintended spread of invasive species.
- **10.05(4)(a)** - The regulations should not require a SWPPP for every NOI filing. This wording would be preferred—"all projects must address erosion,

sedimentation control, and pollution prevention with plans appropriate to and commensurate with the proposed alterations, even those projects otherwise exempt from the stormwater standards”.

The Town appreciates the opportunity to provide comments on the draft regulations.

Sincerely,

A handwritten signature in black ink, appearing to read "Jason Mammone". The signature is fluid and cursive, with the first name "Jason" and last name "Mammone" clearly distinguishable.

Jason L. Mammone, P.E.  
Director of Engineering

Cc: Nathan Buttermore, Infrastructure Engineer  
Patrick Hogan, Stormwater Manager  
Meredith Labelle, Conservation Agent



# TOWN OF FREETOWN CONSERVATION COMMISSION

TOWN HALL • P. O. BOX 438 • ASSONET, MASSACHUSETTS 02702

Chairman  
Charles Sullivan

Members  
Christopher Mather  
Margaret French  
Steven Tripp

April 22, 2024

Via Email: [dep.wetlands@mass.gov](mailto:dep.wetlands@mass.gov)

**RE: Wetlands-401 Resilience Comments  
Comments on MassDEP's Resilience 1.0 Draft Regulations and 2.0 Recommendations**

Dear MassDEP:

## Introduction and Appreciation

The Town of Freetown Conservation Commission is a five (5) member committee who takes the responsibility of administering the Wetlands Protection Act very seriously. Our comments are from the perspective of those who daily engage with consultants and residents, and the Regulations and permit processes in efforts to protect and enhance remarkably diverse wetland ecosystems in these challenging times of climate change.

This letter focuses on the general and inland wetland regulations. It provides suggested modifications of the proposed "1.0" changes and our suggestions for the forthcoming "2.0" reg change package. Throughout the letter, underlining indicates topics and **bold-face indicates specific requests**.

We sincerely appreciate the effort that MassDEP put into creating these draft regulation changes and commend MassDEP for focusing on ways to make Massachusetts and its wetland resources more resilient to climate change. We see many of the proposed changes to the general and inland wetland regulations as valuable steps towards increased public safety and ecological health in the face of climate change. **All the proposed changes to the general and inland wetland regulations on which we (and our colleagues) have not commented, we endorse and encourage you to promulgate swiftly.**

## Overarching Concerns

We feel that some of the proposed changes will be very challenging to implement and/or could lead to unintended detrimental consequences and so should be refined prior to promulgation. Many of our detailed comments can be summarized under four overarching concerns.

- The revised regulations must strike a reasonable balance between scientific precision and overly burdensome requirements that render them too difficult for a majority of volunteer conservation commissions and applicants to implement. In other words, they must be readily practicable.

- Regulations should provide performance standards that protect wetland functions and values and not specific methods and means of achieving those performance standards. Methods and means should be addressed in guidance documents.
- In the face of climate change and invasive species, the revised regulations must acknowledge and reflect the difference between “alterations” resulting from new development and “alterations” resulting from ecological restoration. Ecological restoration projects should be considered projects that support “public health and safety”, as mosquito control projects are.
- Regulation revisions must strive to create greater consistency of thresholds, exemptions/allowances, and requirements based on existing wetland functions and values and the potential impacts (or benefits) on those wetland functions and values of proposed projects, not on the user groups conducting the activity.
- MassDEP should **immediately engage day-to-day practitioners in the “Resilience 2.0” planning process**. Regulatory changes should be borne of **early and close coordination** with conservation commissions, conservation staff, and professional non-profit staff, **the people responsible for day-to-day interpretation and consistent implementation of these regulations**.

## Recommendations for the Proposed “1.0” Inland Regulations

As a large group of daily implementers of the wetland regulations, the Conservation Commission urges MassDEP to give careful consideration to our detailed comments (and those of our colleagues), reach out with questions or for assistance, and make the necessary changes prior to promulgation.

### 310 CMR 10.02(2)(b) Minor Exemptions

- 10.02(2)(b)(2)(r). We agree that maintenance of shared use paths should be allowed without the need for permitting, so this new minor activity is appropriate, but it has too many details about means and methods and creates too narrow a management opportunity. We suggest the following revisions:
  - 10.02(2)(b)r.iv. The draft language is too detailed. The language as proposed creates implementation challenges since the means and methods are site-specific. We are concerned that the allowance of cutting shrubs and branches, and chipping and spreading this material in place may result in the unintended localized spread of invasive species. We recognize that the proposed language mirrors existing language in 10.02(2)(b)(2)n. (vegetation cutting for road safety maintenance). **We recommend deleting the language under 10.02(2)(b)4.iv. between “To prevent the possible export (...) disposed” and creating a guidance document or policy instead. We recommend that this type of specificity be removed from existing language under 10.02(2)(b)(2)n for similar reasons.**
  - 10.02(2)(b)r.v. We question why the language incorporates the provision that “(...) no work on any component of a Stormwater Management System is performed, including but not limited to drainage swales” occurs under this minor activity provision. This is contradictory to activities that are already exempt as maintenance of stormwater systems. **We are in favor of the new minor activity but request that the following proposed language be deleted: “(...) no work on any component of a Stormwater Management System is performed, including but not limited to drainage swales.”**
- 10.02(2)(b)n.iv. We recognize that MassDEP’s proposed language immediately above comes from this passage (10.02(2)(b)n.iv. Vegetation cutting for road safety maintenance), however, as noted above,



we believe that the allowance for cutting and chipping in place of vegetation could lead to unintended consequences of spreading invasive species. **We urge MassDEP to revise this language through guidance on best management practices rather than keeping these details in the regulations.**

### 310 CMR 10.04 Definitions

- Highway Specific Considerations. This gives one agency (MassDOT) special rights. Municipal DPWs often have control of roadways of similar size and undertake projects of similar scales, and so should be afforded similar allowances. **The regulations should not be based on the governing agency, but should be based on the size of the roadway, the scale of the proposed project, the intended public benefits, and the potential environmental impacts.**
- Impervious surface. Since solar arrays are often sited in fields and other entirely pervious areas, **there should be opportunities for applicants to utilize site-specific information on pre- and post-construction land cover and infiltration capacities to determine the need for stormwater management systems.**
- Maintenance of an Existing Public Roadway. **This definition should not include all instances of “replacing existing drainage pipes”.** Since some drainage pipes are deep beneath the paved surface, replacement might require extensive excavation, large spoil piles, and dewatering.
- Maintenance of an Existing Public Roadway. This new term adds confusion because of language in 10.02(2)(b)(2) and 10.53(3)(f).
- Public Shared Use Paths. The new definition in 10.04 states that the Path must be on “public property or on private property pursuant to an easement that provides for public access”. **MassDEP should afford all owners of publicly accessible land with Public Shared Use Paths the same allowances and requirements under the regulations.** This could include land trust and other permanently protected public or private property with public access.
- The proposed definition of Zone A references 310 CMR 22 (Drinking Water), but the text does not match. The draft wetland regs use the term "surface water" where Drinking Water (22.00) uses the term "surface water source", which is defined therein as a public water supply. Surface water is not defined as a public water supply.
- Many New Terms or Definitions have been introduced and incorporated throughout the redline version (e.g., the multiple new definitions introduced in 10.36(2)). **All terms should have an entry in 10.04 with either a standalone definition or a reference to the section where the term is defined and used.** Examples of new terms include:
  - Limit of Moderate Wave Action (LMWA)
  - Scientific Research Projects

### 310 CMR 10.05 Procedures

- 10.05(4)(a) Notices of Intent. The regulations should not require such a high level of stormwater management detail for every NOI filing. We recommend two possible alternatives.
  - **Strike the new sentence “A construction period .... Activities” and replace with “All projects must address erosion, sedimentation control, and pollution prevention with plans appropriate to and commensurate with the proposed alterations, even those projects otherwise exempt from the stormwater standards.” OR**



- **Strike the new sentence “A construction period .... Activities” and change the text in the general instructions for NOIs.**
- **Please note there is a typo: “... operation and maintenance plan, and an illicit discharge compliance statement.”**
- **10.05(6)(m)(6): Requiring unpaved footpaths in natural areas to comply with the Stormwater Management Standards seems unreasonable. Trails generally rely on country drainage and so do not “fit” the intentions of the Standards. We ask MassDEP to include unpaved footpaths in natural areas as exempt activity under the Stormwater Management Standards 10.05(6)(l).**
- **10.05(6)(m)(7): This new provision now requires that Maintenance of an Existing Public Roadway comply with the Stormwater Standards to the maximum extent practicable, however, 10.02(2)(b)(2)(p) appears to exempt the same roadway maintenance from review.**

### **310 CMR 10.12 Notice of Intent for an Ecological Restoration Project**

- **(2) The numbering underlined below needs to be fixed because the original (2) was stricken. “Notwithstanding the provisions of 310 CMR 10.54(4)(a)5., 10.56(4)(a)4., and 10.60, a person submitting a Notice of Intent for an Ecological Restoration Project that meets the requirements of 310 CMR 10.12(1) and (2) is exempt ...”**

### **310 CMR 10.13 Eligibility Criteria for Restoration Order of Conditions**

- **(f) We suggest using the word “evidence” in place of the word “demonstration”. “If the project will involve the dredging of 100 cubic yards of sediment or more or dredging of any amount in an Outstanding Resource Water, the Notice of Intent includes a demonstration that an application ...”**

### **310 CMR 10.53 and 10.24 Limited Project Provisions**

- **10.53(u)8. & 10.24 (7)(c)(8) Public Shared Use Paths**
  - **Delete the statement that a separate NOI may be filed either concurrently to the filing of the NOI for the project, or after the OOC is issued, for vegetation management and other activities as defined in 310 CMR 10.02(2)(b)2.r.i.-v. in wetland Resource Areas. Applicants are always welcome to file NOIs.**
  - **Delete “abandoned railbed” in first line. “Public Shared Use Path” is already defined in 10.04. MassDEP should consider more broadly defining a Public Shared Use Path in this limited project provision. Municipal or land trust paths should be afforded the same limited project status.**
- **10.53(4)(e)5. Typo: The letter “r” is missing from the word “through” in “...set forth in 310 CMR 10.53(4)(a) though (d)...”**

### **Additional Miscellaneous Suggestions**

- **Include a list of common acronyms, particularly for new definitions. This could be incorporated in Section 10.04.**
- **Provide frequent outreach and education about the new regulations once promulgated.** Dissemination of detailed and multi-faceted explanations of these new regulations and the purposes and intents behind them for the Conservation Commissions and conservation professionals who will implement them will be essential.

- **Provide headers at the top of every page of the new regulations with the complete section and subsection reference** to facilitate navigation through the numerous lengthy sections that comprise many pages.
- **Make sure the new version of the regulations is formatted with headers so that the pdf will have internal hyperlinks allowing users to “jump” to specific sections.**

## 2. Coordinate on the Development of Regulatory Reform Package 2.0

As we all know, these draft regulation changes alone will not achieve our goal of true resilience. We appreciate that MassDEP has said that it is already working on regulatory reform package “2.0.” The Conservation Commission has identified a number of issues that should be addressed in the next regulatory reform package. Many of these suggested revisions are straightforward. Some of these suggestions warrant additional discussion. We implement the wetland regulations on a daily basis and know what works well and what is challenging. We have a lot to offer to help make 2.0 a real success. **We urge MassDEP to begin a robust process of stakeholder engagement with consultants, field professionals, and conservation agents so that we may help you develop practical, strong, climate resilient regulations.** Here we provide some suggestions to begin the conversation.

### 310 CMR 10.02(2)(a) Activities Within the Areas Subject to Protection ...

- Trail Maintenance. **We ask MassDEP to create a new section to exempt Maintenance of Existing Trails in use by the public.** This could be done by adding a new section “10.02(2)(a)3. Maintenance activities on trails that traverse Areas Subject to Protection under M.G.L. c. 131, § 40” which reads: “Activities conducted to maintain, repair or replace, but not substantially change or enlarge an existing public trail, provided said work utilizes the best practical measures to avoid or minimize impacts to wetland resource areas outside the footprint of said trail”. Boardwalks, puncheons, waterbars, and other basic trail infrastructure need to be routinely maintained or replaced. Land managers should be able to conduct this essential maintenance work to protect wetland resource areas without having to secure a permit.

### 310 CMR 10.02(2)(b) Minor Exemptions

- 10.02(2)(b)(a) Unpaved pedestrian walkways. **We ask Mass MassDEP to define Conservation Property to include all these types of natural land onto which the public is invited.** Currently, unpaved pedestrian walkways (trails) less than 3 feet wide for public access on “Conservation Property” are exempt from the regulations. However, many trails traverse general municipal land, land trust properties, and private property with conservation restrictions affording public access. **Additionally, we urge MassDEP to consider increasing the 3-foot width to 4 feet because the state’s own guidance on [accessible trails](#) encourages trails are “at least 36” wide, and usually wider” (emphasis added).**
- 10.02(2)(b)(e) Conversion of lawn to uses accessory to residential structures such as decks, sheds, patios, pools. **We ask MassDEP to remove inground swimming pools from this minor activity.** Construction of inground swimming pools involve significant excavation, large impervious areas around the pool, fencing, and often involves discharge of chlorinated water. Having no Conservation Commission oversight of these projects has often led to after-the-fact permitting due to erosion or other problems which have impacted wetland resource areas. Tree cutting and grading has occurred in concert with some pool projects when landowners misunderstood these activities were not part of the minor activity provision. As an exempt activity, there is no requirement for an O&M plan to ensure that chlorinated water is not discharged to wetland resources areas without first being dechlorinated. Requiring a wetland permit and preconstruction review of all inground pool projects in the buffer zone

and Riverfront Area will result in better oversight and reduce the non-compliance we see problematic with exempting some inground pools from wetland permitting.

- 10.02(2)(b)(n) Vegetation cutting for road safety maintenance.
  - **We ask MassDEP to update the AASHTO 2011 Policy to “7th edition, 2018 or most current”.**
  - **10.02(2)(b)(n)(iv), We ask MassDEP to remove the detailed language: “To prevent the possible export .... Chipping, disposal method and spreading chips...”** This language is too detailed (means and methods are site-specific and creates some implementation challenges). We suggest working with a stakeholder group and creating a guidance document on appropriate vegetation cutting BMPs that could be applicable to this and other minor activities that involve vegetation cutting.
- Cutting of certain high-risk trees. **We ask MassDEP to add a new minor activity: allowing landowners to remove up to 5 unsafe trees over 6 inches that are in the buffer zone or riverfront area and are threatening structures or human safety.** Trees are suffering from the effects of climate change. Invasive pests like wooly adelgid and emerald ash borer are decimating many of our native hemlocks and ashes. Increases in the number and severity of storms have resulted in more damaged trees. We recognize that certain parameters need to be codified and suggest a guidance document could be created to define and address thresholds associated with minor land management activities and requirements for Conservation Commission notification for certain activities (e.g., giving the Commission 30 days to comment but not necessarily require a permit, akin to forest cutting plans).
- Removal of invasive vegetation. **We ask MassDEP to add a new minor activity to 310 CMR 10.02(2)(b)(2) which reads: “Removal of turf lawn and/or non-native invasive herbs, vines, and shrubs, provided: (1) the activity is located more than 50 feet from the mean annual high-water line within Riverfront Area or from BVW, whichever is farther and (2) provided erosion and sedimentation controls are implemented until the area is stabilized with 75% coverage of native species”.** Invasive plants are one of the biggest threats to our native habitats. Quick and effective management of invasives is essential in controlling the spread of invasive plants.

### **310 CMR 10.03(6)(b), 10.04 (Alter), 10.05(3)(2)(b), and 10.58(6) Application of Herbicides and Cutting in Rail Rights-of-Way**

- Regulation of herbicides and cutting in railway rights-of-way. **We ask that MassDEP clarify the requirements for permitting the use of herbicides and cutting to control vegetation in rail rights-of-way in Buffer Zones and Riverfront Area.** MBTA and Keolis routinely claim exemptions that do not seem to exist and many cases are now in litigation.

### **310 CMR 10.04 Definitions**

- "Activity" and "Alter". **We ask MassDEP to consider clarifying that "vegetation" used in the definitions of "Activity" and "Alter" applies only to NATIVE vegetation.** See the explanation below.
- Definitions for “Vernal Pool” and “Vernal Pool Habitat”. **We ask MassDEP to create new definitions for “Vernal Pool” and “Vernal Pool Habitat”.** Currently, Vernal pool habitat includes the definition of both the depression and the 100’ jurisdictional area. **We also ask that MassDEP extend the jurisdiction to provide a 100-foot Buffer Zone to vernal pools, regardless of whether it falls within a resource area.** Suggested changes:

- “Vernal Pool” is a basin or depression that typically holds water for at least two continuous months through the spring and is free of adult, reproducing fish populations. Vernal pools are essential breeding habitat for a variety of amphibian species such as Wood Frog (*Lithobates sylvaticus*) and the Spotted Salamander (*Ambystoma maculatum*) and provide other extremely important wildlife habitat functions during the non-breeding season for these species. Vernal pools are important habitat for other wildlife species. The boundary of a vernal pool is the maximum water level in such a basin or depression and is identified by direct observation or by field indicators of the maximum extent of flooding.
- “Vernal Pool Habitat” is the area between the boundary of a vernal pool and the boundary of a jurisdictional resource area that contains the vernal pool, or 100 feet from the edge of the vernal pool boundary, whichever distance is greater.

### 310 CMR 10.05: Procedures

- **We ask MassDEP to add the following sentence in 10.05(8) “If requesting an ORAD Extension, the Applicant must submit written confirmation by a professional with relevant expertise that the resource area delineations remain accurate”.** This language appears in 10.05(6)(d) however most Commissions and conservation professionals are unaware of this language since it appears in the wrong section in the regulations (it’s placed in the Order of Conditions section and not the Extensions section).
- **We ask MassDEP to clarify which projects are subject to stormwater management.** Currently, any activity other than the 4 listed categories appear to be subject to stormwater management regulations, however, small projects (e.g., restoration, foot paths) appear to require stormwater management.
- **10.05(8) We ask MassDEP to: (1) move mention of rules associated with extensions from 10.05(6)(d) to 10.05(8); and (2) within 10.05(8) to allow 5-year extensions for any appropriate project (i.e., “where special circumstances warrant and where those special circumstances are set forth in the Order.”)**

### 310 CMR 10.06: Emergencies

- **We ask MassDEP to add new text 10.06(6): “An Emergency Certification issued by a conservation commission shall be signed by a majority of the commission. It may also be signed by a single member or agent of the commission, if said Certification is ratified by a majority of members at the next scheduled meeting of the Commission”,** similar to language provided for Enforcement Orders.

### 310 CMR 10.24 Limited Projects

- 10.24(1)(b). The nature-based resiliency requirement is non-binding. Having applicants merely “consider” these measures does not mean they will implement them. **MassDEP should consider stricter requirements for these measures.**
- 10.24(7)(c). Limited Projects in Coastal Areas at Risk from Sea Level Rise. Allowing the relocation of roads and railroads to avoid the impacts of sea level rise could result in damage to other ecosystems. **We ask MassDEP to postpone this proposed modification until completion of the Resilient Coasts plan.**



### 310 CMR 10.53 Limited Projects

- **We ask MassDEP to expand the Limited Project provisions to simplify permitting requirements for routine land management projects necessary to address the impacts of climate change.**
  - **We ask MassDEP to expand the Limited Project provisions to facilitate large scale invasive species work in wetland resource areas with specific regulatory review standards.** Some invasive species removal projects extend into wetlands and cover >5,000 s.f. There should be a simplified way of allowing landowners and other organizations to tackle invasive species removal projects without triggering complicated permitting processes.
  - **We ask MassDEP to add a limited project provision which specifically allows small- and medium-scale invasive species removal projects with specific regulatory review standards.** Non-native invasive plants pose a major threat to the health and survival of our native ecosystems, and are on the rise with climate change. Currently, invasive plant control work requires time-consuming, costly, and complex wetland permitting devised for construction projects. Quick identification and removal of invasive plants minimizes the dramatic negative effects of these plants and allows for the recovery of native species diversity and native wildlife habitat, a recognized wetland value.
  - **We ask MassDEP to expand the limited project provision in 10.53(j)(a) to allow: “The construction of new public footpaths and associated boardwalks/ puncheons that are constructed close to the ground provided, however, that such structures are constructed on pilings, sills, or posts so as to permit the reasonably unobstructed flowage of water.”** Boardwalks and other basic trail infrastructure that cannot avoid wet environments serve to protect the wetland resource areas and their functions and values. Because most boardwalks and puncheons are only elevated 4-12” above the ground for safety reasons, shading is inevitable, and because many boardwalks and puncheons are built on sills, loss of vegetation under the sills is inevitable. Therefore, under the current regulations, all boardwalk and puncheon construction in BVW requires wetland replication. Our proposed minor modification (above) would allow Conservation Commissions to approve public boardwalks and puncheons as Limited Projects. This would reduce the need for inland wetland replication which generally results in the destruction of forested buffer zones in protected public open spaces. Larger public boardwalk/puncheon projects could still be required to undertake wetland replication based on the size, scope, and nature of the project and the opportunity for less impactful alternatives. Below in this letter are recommendations for a Guidance Document of Best Trail Management Practices (BTMPs) to ensure the health of wetland resource areas.

### 310 CMR 10.55 Bordering Vegetated Wetland Performance Standards

- **10.55(2). We ask that MassDEP modify the definition of BVW and how the boundary of a BVW is defined, to reflect the 2022 “Massachusetts Handbook for Delineation of Bordering Vegetated Wetlands” that was released in March 2023.**
- **10.55(4)(c). We ask that MassDEP simplify the permitting process for trail construction projects by adding to the Bordering Vegetated Wetland regulations a new section in 10.55(4)(c)(4) allowing Commissions to permit new trails in wetlands when: "said work involves the creation of a public trail for non-motorized use (i.e., hiking, skiing, mountain biking, etc.) which will alter less than 500 s.f. of BVW, provided alternatives that attempted to avoid and minimize impacts were considered and that the trail will permit the reasonably unobstructed flowage of water.”** Wetland trail construction should be subject to review under the WPA, but that review should be simplified. Narrow unpaved

pedestrian walkways in publicly accessible open space often traverse wetlands. When wetland trails are properly constructed, they preserve wetland functions and values and help build a culture of appreciation and stewardship for these vital resources. (Note: Allowance for ADA compliance and motorized mobility devices must be considered.)

### **310 CMR 10.57 Land Subject to Flooding (Bordering and Isolated Areas)**

- 10.57(2)(a)5. Vernal Pool Habitat should not necessarily need to be certified by DFW in order to be afforded protection. **We ask that MassDEP consider allowing field-based evidence submitted to the Conservation Commission by competent professionals as acceptable proof of vernal pool habitat.**
- 10.57(2)(a)6. Vernal pools. We ask that MassDEP revise the language to read: “The boundary of a certified or uncertified vernal pool shall be based on field observations of the maximum extent of flooding and delineated by a competent source meeting the criteria in 310 CMR 10.60(1)(b). Vernal pool habitat shall include the area within 100 feet of the boundary of the vernal pool itself.” DFW does not certify the boundary of vernal pools, so we suggest removing those references. The application would be submitted with the applicant’s representative delineating the vernal pool boundary and the Conservation Commission or MassDEP, as the issuing authority, verifying that delineation. Conservation Commissions and MassDEP staff may meet the requirements under 10.60 but they may not; simply listing the reference to 10.60 would be adequate here.
- 10.57(2)(a)3. We ask MassDEP to change references from the software-based BLSF calculations to “listed in the National Oceanic and Atmospheric Administration (NOAA) Atlas 14 Volume 10 (version 3.0 or later version are permissible)” and any such references to using NOAA 14 throughout the proposed Wetland Protection Act Regulatory changes and Stormwater Handbook to “listed in the most recent “National Oceanic and Atmospheric Administration (NOAA) Atlas”. No changes have been proposed to the ILSF section, but ILSF calculations currently refer to BLSF. Changes to 10.57(2)(a)(3)a-c change to require a more comprehensive software to be used in the BLSF calculations, and reference NOAA Atlas 14. Using the most recent rainfall data available through NOAA promotes climate resilience and avoids the necessity to update the Regulations in the future. NOAA 15 is already in development.

### **10.57(2)(b) Isolated Land Subject to flooding**

- **We ask MassDEP to consider expanding the jurisdiction over small isolated wetlands by reducing the size of ILSF to account for loss of isolated wetland protections as a result of the Sackett Decision.**
- **We ask that MassDEP consider adding vernal pools as its own dedicated wetland resource area, with a 100-foot Buffer Zone.** Vernal pools truly are a vital wetland resource subject to flooding, as identified in the Act: “No person shall remove, fill, dredge or alter any bank, riverfront area, fresh water wetland, coastal wetland, beach, dune, flat, marsh, meadow or swamp bordering on the ocean or on any estuary, creek, river, stream, pond, or lake, or any land under said waters or any land subject to tidal action, coastal storm flowage, or flooding, other than in the course of maintaining...” (emphasis added).

### **310 CMR 10.58: Riverfront Area Regulation Revisions**

- Many Conservation Commissions and Conservation Agents find it difficult to interpret many sections of the Riverfront Area sections. We are grateful for the hard work of the working groups who helped develop the regulations which were promulgated in 1996, however, after almost 30 years of implementing these regulations, we have discovered a number of challenges. We welcome discussions



with MassDEP as the areas of concern are too complex to detail here. We ask that MassDEP work with MSMCP and MACC to address the following areas of concern.

- Defining Mean Annual High Water
- Interpreting “practical and economically equivalent”
- Interpreting the Redevelopment requirements for mitigation/restoration for “non-compliance” of more than one performance standard
- Clarifying the distinction, if any, between 310 CMR 10.58(5)(c) and (d)
- Requiring an Alternatives Analysis for Redevelopment projects
- How the regulations apply to large sites with small amounts of pre-existing development

## WPA Forms

We ask that MassDEP work closely with MSMCP and MACC to update the application and permit forms.

- General Comments.
  - Application forms should mirror permit forms.
  - Application forms and permit forms should reflect the regulations.
  - Forms should list the date, project, site, and owner/applicant information on the first page.
  - Forms should rely on “appendices” for site or project specific information (such as coastal resource areas, rare species, and stormwater).
  - There should be forms that are tailored for purely inland municipalities.
  - The language of the forms should be made intelligible to laypeople.
  - Wetland Fees do not cover the administrative costs for processing, reviewing, issuing, and mailing wetland permits. We ask MassDEP to increase application fees.
- Comments regarding the NOI form.
  - The NOI should be greatly simplified and shortened.
  - Much of the NOI is not relevant to a majority of projects; the use of appendices would greatly simplify the application for many applicants.
  - The NOI form (under C.7.) should add categories of projects to which the stormwater standards do not apply (i.e., not “industrial, commercial, institutional, office, residential and transportation projects”).
  - The NOI form should reflect the regulations and ask the applicant to confirm they have met the relevant performance standards. For example, although applicants are required to check off whether a project qualifies as redevelopment in Riverfront Area, this doesn’t require confirmation how the applicant has met the standards for 310 CMR 10.58(5).
- Comments regarding the OOC form.
  - The OOC should be modifiable, to allow for routine additions such as longer lists of approved plans, the Commission’s findings, and the Commission’s site-specific conditions.
  - The OOC should be more succinct and tailored so that the information is pertinent and homeowners and contractors will read it.
  - The OOC should not ask for data that is not supplied by the applicant, e.g., the closest distance from work to wetlands.
  - Clarification should be given for whether the “work” in the “closest distance from work to wetlands” includes restoration work which may happen 0 feet from the wetlands edge or the closest new construction which may be 25 or 50 feet away.

- **The OOC Riverfront Area fields should be simplified and clarified to ensure consistency of information.** For example, how commissions define and fill out areas of alteration and replication fields is highly inconsistent. (How does one “replace” riverfront area?)
- Comments regarding the Determination of Applicability form.
  - **Conservation Commissions need to have more latitude to issue negative determinations of applicability or general permits for small-scale or low-impact projects (such as the hand-pulling of aquatic invasives). The full-scale NOI/OOC permitting process is an enormous disincentive to ecological restoration and management. After all, it is the invasive plants that are creating the alteration and violating the Act, not the efforts to remove them. ;-)**
- Comments regarding the ORAD (Form 4B)
  - The ORAD form should be revised to correct an inconsistency. **The Recording Block on Page 1 and the Recording Information on Page 7 should be removed.** MassDEP Circuit Riders have confirmed that ORADs do not need to be recorded, yet Form 4B (last revised 4/22/2020) indicated that said Form must be recorded. ORADs are simply confirming a wetland boundary for 3 years; no work is associated with ORADs. When applicants record this document, it creates a cloud on a title. Although a landowner can Request a Certificate of Compliance (Form 8A) - that form does not include language appropriate for closing out an ORAD.
  - The ORAD form should be revised to reiterate an important regulatory requirement. **DEP should add a regulatory note on ORADs which states “If requesting an Extension, the Applicant must submit written confirmation by a professional with relevant expertise that the resource area delineations remain accurate, per 310 CMR 10.05(6)(d).”** Most Commissions and conservation professionals are unaware of this language since it is difficult to find in the regulations.

## Develop Guidance Documents

Conservation commissions and conservation staff would benefit from guidance documents which provide more detail about various regulatory provisions.

- Herbicides and cutting in rail rights-of-way. **We ask DEP to issue a guidance document outlining not only the exemptions afforded to railroads but permitting requirements and the recommended material to be submitted to each commission should railroads wish to conduct other activities which are not exempt.** That way, Commissions can properly review the request and fully understand what is being asked of them. It does not appear that railroads are a qualifying structure which meets the exemptions of 310 CMR 10.02(2)(a)(2) or 310 CMR 10.03(6). In addition, mechanical removal is not included in 310 CMR 10.05(3)(2)(b); this only applies to herbicide removal.
  - MBTA and Keolis have claimed exemptions which don’t exist (i.e., MBTA claims to be exempt from filing a Notice of Intent for mechanical vegetation removal).
  - In 2020, Keolis, on behalf of MBTA, filed RDAs in 99 communities for the review of the wetlands maps in each community as part of the renewal of the 5-year Vegetative Management Plan (VMP). In the “work description” Keolis stated that “This work includes both chemical and mechanical controls as represented within the VMP available for viewing at [fdcerailroadvegetation.com](http://fdcerailroadvegetation.com)”. In the submission, Keolis suggested the Commission consider issuing a Negative #2 determination (indicating the work is within an area subject to protection but will not remove, fill, dredge, or alter that area...) or issue a Number Negative 5

determination, citing as exemption 310 CMR 10.02(2)(a)(2). Twenty-two Commissions disagreed with Keolis' interpretation of the Regulations and denied the mechanical work under the RDA. MassDEP issued an SDA concurring with those decisions, which MBTA/Keolis appealed and the case is now in adjudicatory hearing with OADR. Unless mechanical cutting is an exempt activity expressly given to railroads, it seems prudent that Railroads be required to submit detailed plans when they wish to cut vegetation or trees within Resource Areas and Buffer Zones.

- Land management activities. **We Ask MassDEP to Issue Guidance Documents clarifying and simplifying wetland permitting on essential land management activities.** Best Management Practices surrounding high-risk tree removal, trail maintenance and construction, and invasive species management are well documented. Finding ways which allow landowners to manage their open space while ensuring best practices are adhered to is critical. MSMCP and other organizations welcome future discussions with MassDEP on devising guidance documents which simplifies the wetland permitting process and helps landowners conduct more climate resilience land management activities. For example, a guidance document regarding habitat restoration could set regulatory review standards based on the scope, scale, and size of restoration projects.
- Puncheons and Boardwalks. **As an alternative to our recommendation to allow boardwalks and puncheons on publicly accessible trails to be permitted as Limited Projects (as described on page 11), we Ask MassDEP to Issue a Guidance Document clarifying thresholds of negligible impact of boardwalks and/or puncheons on BVW functions and values as a result of shade and loss.** MassDEP has required replication for small publicly accessible puncheons (because of shading and wetland loss) and elevated boardwalks (because of helical piers). A Guidance Document identifying Best trail management practices (BTMPs) to create and maintain stable trail surfaces and limit improper widening of the footbed and trampling of vegetation by hikers seeking to avoid wet areas should be promoted. Such BTMPs are ever more important as climate change intensifies storms and worsens flooding.

## Miscellaneous




Our membership has suggested the following additional miscellaneous changes.

- Update the 401 Water Quality Certification regulations regarding Outstanding Resources Waters (ORWs). **We ask that MassDEP make practical allowances for minor incursions into ORWs for small projects that are responding to climate change and restoration needs.** Currently, there is no provision in the Surface Water Regulations that allows even a negligible amount of fill to be introduced into an ORW. Even building a small boardwalk or puncheon on a walking path is considered 'fill' and requires filing for a major Water Quality Certification. Obviously, work in ORWs must be carefully regulated, however, prohibiting even a single puncheon on a wetland trail within an ORW is unreasonable.
- 10.05(3)(a)(1). **To use consistent, defined terms, we ask that MassDEP change the language to read: "Any person who desires a determination as to whether M.G.L. c. 131, § 40 applies to land or to work that may alter an Area Subject to Protection under M.G.L. c. 131, § 40, may submit to the conservation commission a Request for a Determination of Applicability, Form 1."**
- 10.05(3)(a)(2). Currently, an RDA or NOI is required for any activity in the buffer zone. **We encourage MassDEP to provide some discretion for local conservation commissions to utilize an administrative approval process for activities in the buffer zone which will not impact wetland functions and values.** We feel strongly that individuals who wish to undertake minor activities (such as the removal of a high-

risk tree) should be able to receive local approval from their local Conservation Commission without filing for a state permit.

- Amending an OOC. We ask that MassDEP include a specific provision in the regulations that clarifies how an Order of Conditions can be amended. MassDEP should consider allowing Amended Orders that include minimal increases in resource area impacts, instead of requiring a new NOI to be filed. We also ask that MassDEP clarify whether an amendment to an Ecological Restoration OOC needs to be re-advertised in the Environmental Monitor.

Thank you for the careful consideration of the above comments.

Date: 04/22/2024

# TOWN OF HINGHAM

Thomas Mayo,  
Town Administrator



Hingham Town Hall  
210 Central Street  
Hingham, MA 02043  
(781) 741-1451

April 30, 2024

MA Department of Environmental Protection  
Bureau of Water Resources -Wetlands Program  
Attention: Wetlands-401 Resilience Comments  
100 Cambridge Street, Suite 900  
Boston, MA 02114

Via email to [dep.wetlands@mass.gov](mailto:dep.wetlands@mass.gov) on April 30, 2024

Dear MassDEP Wetlands Program Director:

Thank you for the opportunity to comment on the draft Wetlands Protection Act regulations (310 CMR 10.0 et seq.). The Town of Hingham Conservation Officer, Shannon Palmer, has submitted separate comments focused on requested clarifications and concerns from the perspective of a local conservation commission. In addition to Ms. Palmer's comments, I am writing on behalf of the Town of Hingham to provide the perspective of a coastal municipality which owns and controls waterfront properties that provide invaluable public access to the waterfront for water-dependent activities of residents of the Town and neighboring communities.

While these comments are submitted on behalf of the Town of Hingham, there are many coastal communities in Massachusetts that we understand may be similarly impacted. The concerns we are raising represent the perspective of one of the coastal communities that may suffer potentially negative impacts on public access to the waterfront if the proposed regulations are not revised to allow for resilient modifications, reconstruction and construction of structures that promote public access to the waterfront within flood hazard zones.

The Town of Hingham, through its various boards and committees, own all but two parcels along the area known as the "Inner Harbor" off of Otis Street and Summer Street in Hingham. These parcels include a public "bathing beach", multiple parcels of parkland, and a public boat ramp, providing facilities such as public restrooms, boat pump-out facilities, a public mooring field and, most significantly the historic Barnes Wharf that has been leased by the Town to a non-profit community rowing and sailing program which has benefitted thousands of participants over many decades. Adjacent to the Town-owned land along the Inner Harbor is state highway Route 3A and just across Route 3A is Hingham's historic downtown area (first established in the 17<sup>th</sup> century) and a number of single family homes.

As the impacts of climate change increase, a number of Town-owned parcels have become more vulnerable to, and have already experienced, flooding during major storm events. The Town has been working for a number of years, and spent considerable municipal and state funds, to study and develop



appropriate alternatives designs to achieve resiliency goals that will protect both public and private spaces along the harbor, as well as Route 3A and the historic downtown area. Currently, design alternatives are underway with the assistance of a grant from Coastal Zone Management with whom the Town and its consultants are working closely and that will enable the continued use and enjoyment of these properties by the public for the next 50-100 years.

We would like to highlight, in particular, the community boating programs on Barnes Wharf. There is a small building on the wharf that the community boating program has long ago outgrown. The building lacks necessary utilities and facilities to serve the needs of providing public access to boating in Hingham. The initial designs for increasing resiliency for Barnes Wharf include raising the height of the wharf outside of the current velocity zone. That will require removing the existing small building and open air pavilion with the intention that, upon completion of the raising of the wharf walls to achieve appropriate resiliency, a larger building appropriate in size for the wharf to facilitate the community program be reconstructed thereon.

The proposed regulations may significantly limit the Town's ability to achieve resiliency and protect the existing structures along the Inner Harbor, Route 3A, and structures within our historic downtown. Therefore, the Town's concerns with the proposed regulation include:

1. The regulations should promote resiliency goals to afford continued public use of public lands, and public access to the water from municipal waterfront properties, including, but not limited to Barnes Wharf, raising elevation with fill in the high hazard flood zone will be critical.
2. The revised regulations, as proposed, pose substantial obstacles to the reconstruction/construction of structures that are fundamental to the ability to continue to provide access to the waterfront and the water, such as a building that will continue to support the community boating programs on Barnes Wharf. Together with increasing the elevation of Barnes Wharf in an environmentally appropriate manner to remove it from the velocity zone, the technology exists to design and construct a resilient building on the wharf and the regulations should be crafted in such a way to facilitate, and not prohibit or substantially limit, such projects.
3. The concept of compensatory flood storage in these coastal areas is not relevant and should be excluded from these regulations.

The draft regulations as written, do not acknowledge the full breadth of coastal engineering structures available to mitigate flooding, and disincentivize the use of fill to remove land from LSCSF by elevating the landform and any structures thereon. For the Town's properties, limiting the engineering solutions available to the Town to maintain our properties renders the public investment along the waterfront costs that cannot be recovered, and limits public access to the water, which has always been considered a public good to be encouraged.

Addressing the concerns set forth above is critical given that the proposed regulations will have widespread impacts on the publicly owned land of coastal communities, particularly those that are programed for water-dependent uses and otherwise provide access along and to the water at little to no cost for the majority of the public who do not have private access to the waterfront.



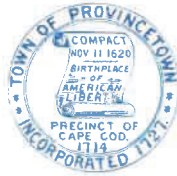
We appreciate the number of public listening sessions that the Department held for the general public. However, we strongly urge the Department to delay adoption of any regulations and schedule some special sessions to meet with representatives of the Commonwealth's coastal communities, including sessions that focus on the particular circumstances of communities in different coast regions, such as the North Shore, South Shore, Cape and Islands. Such sessions would help the Department to more clearly understand in concrete ways, rather than in the abstract, the role that public (and as applicable, private) waterfront parcels and facilities play in the lifeblood of coastal communities. Given the important role that public, municipally-owned parcels and facilities serve in providing public access to the waterfront and waterfront activities, as opposed to exclusive and often expensive private facilities, we believe such sessions would provide information to the Department that will be critical to crafting regulations that serve the dual purpose of protecting the environment from the increasing impacts of climate change, while providing a roadmap for maintaining the maximum possible public access to the water through resiliency planning. In other words, we strongly encourage that the Department focus on resiliency over retreat wherever possible.

Thank you for your consideration of the above comments. We are happy to make representatives of Hingham available to discuss concrete examples of how coastal regulations affect our community and strategies for achieving the sometimes competing, but equally important, goals of environmental protection and sustaining the livability and economic health of the Commonwealth's coastal communities.

Sincerely,

Tom Mayo  
Town Administrator  
Town of Hingham

*Alex B. Morse*  
*Town Manager*  
*Town of Provincetown*



Town Hall, 260 Commercial Street  
Provincetown, Massachusetts 02657  
Facsimile (508) 487-9560  
Telephone (508) 487-7002

**Email:** [dep.wetlands@mass.gov](mailto:dep.wetlands@mass.gov)

**Subject:** Wetlands-401 Resilience Comments

Dear MA DEP Wetlands and Other Interested Parties:

On behalf of the Town of Provincetown, we are writing to provide feedback on the proposed regulation changes by the Massachusetts Department of Environmental Protection (MA DEP) to 310 CMR 10.00. As a highly developed waterfront community, we have a vested interest in ensuring that any regulatory adjustments effectively balance environmental protection with the needs of our community's development and sustainability.

First, we applaud MA DEP's commitment to environmental stewardship and recognize the importance of adapting regulations to address evolving challenges. Nonetheless, it is crucial that these changes are implemented with careful consideration for the unique characteristics and requirements of highly developed waterfront areas like ours. These regulations may be applied successfully in other coastal communities that are not as densely developed. However, in communities like Provincetown where retreat and nature-based solutions are not possible due to limited land, lot size, and existing hard structures, many of these proposed changes would create a significant economic hardship.

Provincetown encompasses 6,400 acres of land area, however 4,500 of those acres are under the jurisdiction of the Cape Cod National Seashore, administered by the National Park Service. This leaves only 1,900 acres under the jurisdiction of Town government, generally in the area south of Route 6. Within those 1,900 acres, there are approximately 2,369 parcels, and of that number, 1,355 parcels (57%) are entirely or partially within the floodplain. There are only 12 parcels of developable, unprotected land that have not yet been built upon, as 347 acres within the Town's jurisdiction are under public and private protection as conservation and open space lands. The remainder is highly and densely developed, with a total year-round population density of 1,517 persons per square mile according to the 2020 US Census, one of the highest densities in the region. The population density can increase up to 25,000 persons per square mile in the summer months.

The overall idea of limiting certain types of development within flood plain is a good one, however a one-size-fits-all approach that does not take the existing conditions of different communities into account will likely result in adverse impacts that the State may not be considering. For communities like Provincetown, whose historic businesses, dwellings, piers, and infrastructure exist in close proximity to the waterfront and with no space for retreat, improvements to bulkheads and resource areas are often only done in conjunction with development or redevelopment of landward structures and hardscape. Without the ability for the local Conservation Commission to carefully consider and approve these types of projects, it is very likely that Provincetown would see negative impacts due to continued and expanded flood pathways as

the existing bulkheads and structures degrade. The Commission would not have an avenue to require improvements to those hard structures or the resource areas themselves, which would be an obstacle to improving Town-wide resiliency – the opposite of the planned impact for the proposed regulations. Many Towns that have seen the increased effects of climate change in recent years are already undertaking their own efforts for improved coastal resilience – in Provincetown this is through the development of a Coastal Resilience Plan, which the Town is currently undertaking. This Plan will result in a robust assessment of existing conditions and alternatives analysis, and recommendations that will help the Town to ensure that our natural resources are protected, while also allowing for continued economic development by employing creative solutions using the most up to date scientific information and technology. Where humans have so altered the landscape, nature on its own cannot or will not provide solutions which protect people, businesses and public access to the waterways, such that limiting and prohibiting development would likely result in no improvements being made toward resiliency. By imposing such strict regulations within Land Subject to Coastal Storm Flowage (LSCSF), MA DEP would likely prevent Towns and private property owners from pursuing options that are recommended by coastal resilience planning efforts, which is not the intention of the proposed regulation changes as we understand them but would result in unintended consequences as applied.

Under the Building Code, structures must be elevated once the SI/SD threshold is reached, often as required under these proposed regulations. However, the proposed regulations go a step too far by prohibiting the development or redevelopment of a site if a change in footprint is proposed. A change in footprint does not always equate to negative impacts to the resource area, even within a V-zone, as Conservation Commissions have the ability to require mitigation and other site improvements that result in a net benefit to the resource area and the properties surrounding the project site. Improvement of site resiliency and expansion of footprint are not mutually exclusive. In certain circumstances—which in our experience occur often in highly developed waterfront communities—allowing for expansion of the footprint of a structure that is also brought into compliance with MA Building Code floodplain standards, or for construction of new structures that are compliant with these standards, gives the Conservation Commission an opportunity to condition a project such that vegetative buffers, site permeability, and overall resilience is improved, both on the waterfront and on more landward properties within LSCSF. When reasonable, sustainable development or redevelopment is allowed, it often brings with it the funding needed to pay for resilient solutions and improvements, which in turn benefit the wetland resource areas. For that reason, these decisions should be left to regional organizations and local Conservation Commissions to implement through local wetlands bylaws and regulations, as this would allow considerations to be made for the diverse circumstances of each community. At the least, language should be included in these regulations to allow for variances or exceptions for certain circumstances where there would be net benefit for the resource area and added resilience for the community. For example, if an expansion of footprint is proposed, but the entire structure would be flood compliant per the MA Building Code, and an associated bulkhead improvement and/or resource area restoration is included that is proven through engineering and knowledge of our specific coastal environment to have a positive benefit for flood protection and the resource area, there should not be a prohibition on development or redevelopment. If not variance language, then highly developed coastal areas, like Provincetown, should be considered more carefully to

allow for less stringent regulations or exemptions, similar to the smaller riverfront area created for certain municipalities under the MA Rivers Protection Act.

While environmental protection is paramount, overly restrictive regulations would likely hinder responsible development and resilience and impede the growth and prosperity of our community. We urge the MA DEP to reconsider the proposed changes to the regulations in favor of more flexible approaches, and to look at the effects that these proposed changes may have on specific communities and their ability to remain economically viable in the wake of development restrictions, when resilience can be achieved in other ways. It is essential to strike a balance between conservation goals and the economic vitality of Provincetown's waterfront community. We trust that MA DEP will carefully consider the feedback received from residents, stakeholders, and experts to develop regulations that are both effective and equitable for all communities within the Commonwealth.

Thank you for your consideration.

Sincerely,

A handwritten signature in blue ink, appearing to read "Alex Morse", with a long horizontal flourish extending to the right.

Alex Morse  
Town Manager

**From:** [Meyer, Julie](#)  
**To:** [DEP Wetlands \(DEP\)](#)  
**Cc:** [Schmitt, Brandon](#)  
**Subject:** Wetlands-401 Resilience Comments  
**Date:** Tuesday, April 30, 2024 4:53:31 PM

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Massachusetts Department of Environmental Protection  
Bureau of Water Resources - Wetlands Program  
Attention: Wetlands-401 Resilience Comments  
100 Cambridge Street, Suite 900  
Boston, MA 02114

April 30, 2024

Dear MassDEP Wetlands Program,

Please find 2 comments below. The first one is in [blue](#) from Town of Wellesley Natural Resources Commission Director Brandon Schmitt who states:

[“I would fully support those revisions that enable our public works and utilities to embrace best practices for filing, documenting and implementing projects that serve the public while also protecting wetland resources in partnership with our ConComs and administrators, and eliminate unnecessary scrutiny and paperwork where positive relationships exist.”](#)

**Brandon Schmitt, Director**

Wellesley Natural Resources Commission  
[ISA Municipal Specialist](#) | [TRAQ](#) | [MQTW](#)  
888 Worcester Street, Suite 160  
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This second comment below is from me, Julie Meyer, Wetlands Administrator for the Town of Wellesley. I am also writing as a proud citizen of the Commonwealth of Massachusetts. Coming from a state with less political or economic resources, I do not take for granted what is involved in protecting our natural resources and converging emerging science into readable regulations. Thank you also for your presentations and discussions with stakeholders during the open comment period. I agree that the changes advertised will indeed better improve climate resilience and water quality protection afforded by wetland Resource Areas, as well as strengthen compliance with TMDLs, than what we have now. As such, I support these overall directions:

1. Better consistency with the MS4 permit. Applicants and reviewers will have an easier time discussing NOIs for large projects with consulting and municipal engineers. There will be easier communication between Planning, Building, and ZBA staff. We will be speaking in a common tongue. (pg. 1)
2. Choosing a higher bar to require ESSD / LID. (pg. 2)

3. Updating references to precipitation data for design storms to data reflective of actual documented conditions and incorporating a scaling factor to respond to uncertainty. (pgs. 2-3)
4. Requiring development projects to attenuate the 100-year storm in the same manner as we require smaller storms. (pgs. 2-3)
5. Acknowledging that “the current numerical recharge targets based on Hydrologic Soil Groups (HSG) are failing to approximate the annual recharge volume lost ..., ” and creating new standards for when using the static design method. (pg. 3)
6. Adopting MS4 Permit requirements for reducing pollution within Redevelopment projects, replacing the vague “Maximum Extent Practicable (MEP)” requirement in Stormwater Management Standard 7. Quantitative performance standards are easier to evaluate projects both objectively and consistently. We will know if we are on the right path if stormwater pollutants decrease in our waterbodies. (pg. 3)
7. Adding a new regulatory category for existing public roadway maintenance projects while offering off-site mitigation. This is an intelligent trade. In Wellesley we have many town road maintenance projects, and we are lucky to have a knowledgeable, experienced, and communicative DPW. As a result of this healthy relationship between those with boots on the ground and staff responsible for administering wetland regulations, we would like to be able to get out of their way when it is clear to all that there is no need for more formal approvals from the Wetlands Protection Committee. Relatedly, I often notice that there are few opportunities to require restoration or mitigation within a completely developed linear parcel and I worry that critical root zones of mature trees are being encroached upon during right-of-way and road trenching. I am hopeful that this addition will result in opportunities for restoration where natural areas have been eliminated and more protection for trees where natural areas remain near roads. (pg. 3)
8. Adding Stormwater Management Standard 11 for projects that discharge to waters designated with a TMDL for P, N, metals, or pathogens. “MassDEP is ... directed ... to secure to the Commonwealth the benefits of the federal Clean Water Act... the restoration ... of the chemical, physical, and biological integrity of the Nation’s waters.” Tobias Stover, Wellesley’s Wetlands Protection Committee’s best point person on water quality (he passed away sadly and unexpectedly in 2021), is cheering from the Great Beyond. (pg. 4).

**Secondly, I express my support for the following specific areas within the regulations:**

**(pg. 13-14) CMR 10.02(2)(b)2. new Minor Activities:**

**p.** Pavement repair, resurfacing, and reclamation of existing roadways within the right-of-way ... and **q.** The repair or replace an existing and lawfully located **driveway** servicing not more than two dwelling units ...

Seeking a Determination or Order is a high bar for both private residents who need to fix their driveway, and for a DPW Highway Department who needs to conserve tax dollars. In addition, roads and driveways are built on relatively flat land (usually less than 5% grade) and are highly developed. This means that risks of erosion and sedimentation



tend to be limited and violations are more likely to be visible to the public. This change will enable Commissions to focus on projects more likely to cause outsized harm to wetlands and waterways.

**r. Public Shared Use Path vegetation cutting for public safety and pavement repair** and resurfacing in the Buffer Zone and Riverfront Area, limited to the following:

**subsection i. Removal of diseased or damaged trees** or branches that pose an immediate and substantial threat to public safety ...; **and ... subsection v. Pavement repair, resurfacing**, and reclamation of existing paved Public Shared Use Paths... " I agree with these changes for tree removal and pavement resurfacing. First, these paths aim to offer a public good - recreation (a Town of Wellesley Bylaw Interest/Value). They are unlikely to be developed over time, unlike a private parcel where cumulative impact is pretty much guaranteed. Secondly, the change will help Wellesley's WPC and the staff that support their work to let DPW Parks & Tree do their job with less friction and the sense of absurdity that is often present during these frequent Kafkaesque interactions.

(pgs. 36, 38, and 41) **Definitions** – it is validating that under **Compacted Gravel or Soil**, MassDEP is saying that unvegetated areas that have historically provided or have been designed to provide a compacted surface for use by pedestrians *might not be considered pervious area* under provisions of 310 CMR 10.05(6)(k)-(q). This is what it seems like observationally to me. Similarly, by defining **Impervious Surface** as any surface that prevents or *significantly impedes* (my emphasis) "the infiltration of water into the underlying soil, including, but not limited to ... Public Shared Use Paths. Finally, this part of the definitions clarifies that some porous pavements when they are not designed with the proper underlying reservoir course do not recharge nor provide water quality treatments. These definitions will make for faster and easier reviewing. Finally, defining **Effective Impervious Cover Reduction** in the regulations nods to the credits given in the Handbook and makes it easier to make Findings of improvements.

**Finally, I have one concern** regarding the proposed regulations related to choosing a higher bar for ESSD / LID unless infeasible or Impracticable. (pg. 2 and pg. 73):

"ESSD involves identifying important natural features, placing buildings and roadways in areas less sensitive to disturbance, and designing stormwater management systems that create relationships between development and natural hydrology." And

"(o) Project proponents seeking to demonstrate compliance with some or all of the Stormwater Management Standards to the Maximum Extent Practicable shall demonstrate that: 1. They have made all reasonable efforts ...; 2. They have made a written alternatives analysis of possible stormwater management measures ..., and proper operation and maintenance of stormwater BMPs, physical constraints (e.g., high groundwater), and costs; and 3. (and) ... a clear showing that they are implementing the highest practicable level of stormwater management."

I would like to see more emphasis guiding Commissions on what is to be considered **"proper"** operations & maintenance of stormwater BMPs. I appreciate your consideration of this issue.

Once again, thank you for requesting feedback and for your hard work.

Sincerely,

**Julie Meyer**

**Wetlands Administrator**

Town of Wellesley

888 Worcester Street, Suite 160

Wellesley, MA 02482

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## Vernal Pool Association

Promoting the study, appreciation and protection of vernal pools.

April 30, 2024

MassDEP

Sent via [dep.wetlands@mass.gov](mailto:dep.wetlands@mass.gov)

Subject Line: **Wetlands-401 Resilience Comments**

**RE: Vernal Pool Association Comments on MassDEP'S Resilience 1.0 Draft Regulations and 2.0 Recommendations**

Dear MassDEP:

The Vernal Pool Association appreciates the opportunity to provide comments on the Resiliency package 1.0 including changes to the Wetland Regulations and Stormwater Handbook. These long awaited changes will improve the processes for how commissions can act, simplifying the permitting process and improving the Commonwealth's ability to respond to our changing climate.. We applaud DEP for improving our conservation partnerships and strongly urge this collaboration to continue.

The Vernal Pool Association (VPA) is a non-profit organization dedicated to the education and preservation of vernal pools and vernal pool species. The VPA provides residents, conservation commissions, and educators with the tools to identify vernal pool species and the certification of vernal pools. VPA moderates a listserve for relevant topics.

To summarize our comments, VPA fully supports the Resilience 1.0 package including the:

- requirement for the use of the most recent rainfall data through the NOAA Atlas;
- requirement for nature-based solutions; and
- updates to the Stormwater Handbook.

We do; however, have some concerns and requested edits to the following:

### **310 CMR 10.05(6)(q)**

- Including the minimum setbacks of stormwater management components to resource areas is important and clearer in the proposed changes, particularly in the specification that the measurement begins with the outermost edge of a SCM. This has been contested for a long time with engineers. The clarification will simplify stormwater reviews. This item is particularly important with the 100' setback to vernal pools.

**310 CMR 10.57(2)(a)6.- BLSF** VPA requests rewriting as shown below:

310 CMR 10.57(2)(a)6. The boundary of a certified or uncertified vernal pool shall be based on field observations of the maximum extent of flooding and delineated by a competent source meeting the criteria in 310 CMR 10.60(1)(b). Vernal pool habitat shall include the area within 100 feet of the boundary of the vernal pool itself, insofar as such area is contained within the boundaries of this Resource Area.

- DFW does not certify the boundary of vernal pools so we suggest removing those references. The NOI application should be submitted with the applicant's representative delineating the vernal pool boundary and the Conservation Commission, as the issuing authority, verifying that delineation. Also, Conservation Commissions and DEP staff may meet the requirements under 10.60 but they may not; simply listing the reference to 10.60 would be adequate here.

**310 CMR 10.57(2)(b)3.** No changes proposed to ILSF section but ISLF calculations currently refer to BLSF. BLSF changes to 10.57(2)(a)(3)a-c change to require a more comprehensive software to be used in the BLSF calculations, and reference NOAA Atlas 14. VPA requests changing all references to “listed in the National Oceanic and Atmospheric Administration (NOAA) Atlas 14 Volume 10 (version 3.0 or later version are permissible)” and any such references to using NOAA 14 throughout the proposed Wetland Protection Act Regulatory changes and Stormwater Handbook to “listed in the most recent National Oceanic and Atmospheric Administration (NOAA) Atlas”.

- Using the most recent rainfall data available through NOAA promotes climate resilience and avoids the necessity to update the Regulations in the future. NOAA 15 is already in development so there is no need to restrict using best scientific evidence when it is available.

**Regulatory Reform Package 2.0**

VPA requests that DEP conduct more outreach to conservation commissions who administer these regulations on a daily basis. While DEP reviewers may have an understanding of the regulations, they do not appear to have the same relationship with residents, engineers, contractors and wetland professionals. Conservation staff have the boots on the ground and the first review of a project. While communication has improved over the past few years, more can be done to engage and partner with Conservation staff while developing the 2.0 package. Easton Conservation strongly encourages DEP to engage in regular discussions with more representatives of the conservation permitting community, like MSMCP, MACC and the VPA.



## Vernal Pool Association

Promoting the study, appreciation and protection of vernal pools.

In advance of further discussion on additional climate resilient packages, **we offer the following recommendations:**

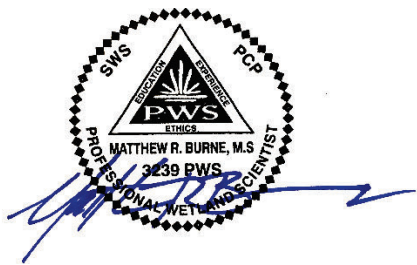
### Vernal Pools and Isolated Land Subject to Flooding

Better protection of these two areas is long overdue, particularly with the state of the federal government and lack of protection throughout the rest of the country. MA has been a leader in natural resource protection and needs to continue that standard for these two resources. VPA requests adding Vernal Pools (certified or uncertified) as a resource area, with a presumption that they are significant to the interests of providing flood control, prevention of pollution and wildlife habitat, at a minimum. We request that **DEP engage in active and robust discussions with conservation professionals on the revisions to the definitions and proposed performance standards including adding buffer zones based on best scientific evidence available.** DEP can look toward other New England states like Maine and Vermont or Ohio for performance standards. The vast majority of municipalities have adopted bylaws for the specific purpose of protecting these two resources that are lacking adequate protection under the current state law. The VPA offers its assistance and expertise in this endeavor and requests that DEP convene a Vernal Pool Working Group to further this important action.

The VPA acknowledges the amount of work and coordination it took to prepare and release the Resiliency 1.0 package. And we are grateful to all of those involved. This certainly was an arduous task. Please do not hesitate to reach out to the VPA with questions about these requests, to assist in any working subgroups or to provide further review.

Thank you.

Sincerely,



Matt Burne, President  
Vernal Pool Association



# Town of Wales Conservation Commission

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[conservation@townofwales.net](mailto:conservation@townofwales.net)



**RE: Wetlands-401 Resilience Comments  
MSMCP's Comments on MassDEP'S Resilience 1.0 Draft Regulations  
and 2.0 Recommendations**

Dear MassDEP:

The Wales Conservation Commission supports the comments provided by the MSMCP as detailed below:

## **Introduction and Appreciation**

MSMCP is a body of municipal conservation professionals representing over 100 member municipalities and reaching hundreds of individual professionals. Our mission is to support one another through a robust offering of educational and networking events.

MSMCP members focus on implementation and permitting under the Wetland Protection Act (WPA) Regulations (the Regulations). Our comments are from the perspective of those who daily engage with consultants, residents, and municipal officials and the Regulations and permit processes in efforts to protect and enhance remarkably diverse wetland ecosystems in these challenging times of climate change. Our board alone has over 150 combined years of experience implementing these regulations across the Commonwealth.

MSMCP has been working closely with MACC, Mass Audubon, Mass Rivers Alliance, AMWS, and other technical experts to review, assess, and comment on the proposed Resilience 1.0 Draft Regulations. While MSMCP has been focused on general and inland wetland regulations, our partners have focused on the proposed changes to Chapter 91, Section 401, the Stormwater Handbook, Coastal Resources, and Restoration. **We hope that MassDEP gives careful consideration to their comments and recommendations.**

This letter focuses on the general and inland wetland regulations. It provides MSMCP's suggested modifications of the proposed "1.0" changes and our suggestions for the forthcoming "2.0" reg change package. Throughout the letter, underlining indicates topics and **bold-face indicates specific requests**.



We sincerely appreciate the effort that MassDEP put into creating these draft regulation changes and commend MassDEP for focusing on ways to make Massachusetts and its wetland resources more resilient to climate change. We see many of the proposed changes to the general and inland wetland regulations as valuable steps towards increased public safety and ecological health in the face of climate change. **All the proposed changes to the general and inland wetland regulations on which we (and our colleagues) have not commented, we endorse and encourage you to promulgate swiftly.**

### **Overarching Concerns**

We feel that some of the proposed changes will be very challenging to implement and/or could lead to unintended detrimental consequences and so should be refined prior to promulgation. Many of our detailed comments can be summarized under four overarching concerns.

- The revised regulations must strike a reasonable balance between scientific precision and overly burdensome requirements that render them too difficult for a majority of volunteer conservation commissions and applicants to implement. In other words, they must be readily practicable.
- Regulations should provide performance standards that protect wetland functions and values and not specific methods and means of achieving those performance standards. Methods and means should be addressed in guidance documents.
- In the face of climate change and invasive species, the revised regulations must acknowledge and reflect the difference between “alterations” resulting from new development and “alterations” resulting from ecological restoration. Ecological restoration projects should be considered projects that support “public health and safety”, as mosquito control projects are.
- Regulation revisions must strive to create greater consistency of thresholds, exemptions/allowances, and requirements based on existing wetland functions and values and the potential impacts (or benefits) on those wetland functions and values of proposed projects, not on the user groups conducting the activity.
- MassDEP should **immediately engage day-to-day practitioners in the “Resilience 2.0” planning process**. Regulatory changes should be borne of **early and close coordination** with conservation commissions, conservation staff, and professional non-profit staff, **the people responsible for day-to-day interpretation and consistent implementation of these regulations**.

## Recommendations for the Proposed “1.0” Inland Regulations

As a large group of daily implementers of the wetland regulations, MSMCP urges MassDEP to give careful consideration to our detailed comments (and those of our colleagues), reach out with questions or for assistance, and make the necessary changes prior to promulgation.

### 310 CMR 10.02(2)(b) Minor Exemptions

- 10.02(2)(b)(2)(r). We agree that maintenance of shared use paths should be allowed without the need for permitting, so this new minor activity is appropriate, but it has too many details about means and methods and creates too narrow a management opportunity. We suggest the following revisions:
- 10.02(2)(b)r.iv. The draft language is too detailed. The language as proposed creates implementation challenges since the means and methods are site-specific. We are concerned that the allowance of cutting shrubs and branches, and chipping and spreading this material in place may result in the unintended localized spread of invasive species. We recognize that the proposed language mirrors existing language in 10.02(2)(b)(2)n. (vegetation cutting for road safety maintenance). **We recommend deleting the language under 10.02(2)(b)4.iv. between “To prevent the possible export (...) disposed” and creating a guidance document or policy instead. We recommend that this type of specificity be removed from existing language under 10.02(2)(b)(2)n for similar reasons.**
- 10.02(2)(b)r.v. We question why the language incorporates the provision that “(...) no work on any component of a Stormwater Management System is performed, including but not limited to drainage swales” occurs under this minor activity provision. This is contradictory to activities that are already exempt as maintenance of stormwater systems. **We are in favor of the new minor activity but request that the following proposed language be deleted: “(...) no work on any component of a Stormwater Management System is performed, including but not limited to drainage swales.”**
- 10.02(2)(b)n.iv. We recognize that MassDEP’s proposed language immediately above comes from this passage (10.02(2)(b)n.iv. Vegetation cutting for road safety maintenance), however, as noted above, we believe that the allowance for cutting and chipping in place of vegetation could lead to unintended consequences of spreading invasive species. **We urge MassDEP to revise this language through guidance on best management practices rather than keeping these details in the regulations.**

### 310 CMR 10.04 Definitions

- Highway Specific Considerations. This gives one agency (MassDOT) special rights. Municipal DPWs often have control of roadways of similar size and undertake projects of similar scales, and so should be afforded similar allowances. **The regulations should not be based on the governing agency, but should be based on the size of the roadway, the scale of the proposed project, the intended public benefits, and the potential environmental impacts.**
- Impervious surface. Since solar arrays are often sited in fields and other entirely pervious areas, **there should be opportunities for applicants to utilize site-specific information on pre- and post-construction land cover and infiltration capacities to determine the need for stormwater management systems.**
- Maintenance of an Existing Public Roadway. **This definition should not include all instances of “replacing existing drainage pipes”.** Since some drainage pipes are deep beneath the paved surface, replacement might require extensive excavation, large spoil piles, and dewatering.
- Maintenance of an Existing Public Roadway. This new term adds confusion because of language in 10.02(2)(b)(2) and 10.53(3)(f).
- Public Shared Use Paths. The new definition in 10.04 states that the Path must be on “public property or on private property pursuant to an easement that provides for public access”. **MassDEP should afford all owners of publicly accessible land with Public Shared Use Paths the same allowances and requirements under the regulations.** This could include land trust and other permanently protected public or private property with public access.
- The proposed definition of Zone A references 310 CMR 22 (Drinking Water), but the text does not match. The draft wetland regs use the term “surface water” where Drinking Water (22.00) uses the term “surface water source”, which is defined therein as a public water supply. Surface water is not defined as a public water supply.
- Many New Terms or Definitions have been introduced and incorporated throughout the redline version (e.g., the multiple new definitions introduced in 10.36(2)). **All terms should have an entry in 10.04 with either a standalone definition or a reference to the section where the term is defined and used.** Examples of new terms include:
  - Limit of Moderate Wave Action (LiMWA)

- Scientific Research Projects

### 310 CMR 10.05 Procedures

- 10.05(4)(a) Notices of Intent. The regulations should not require such a high level of stormwater management detail for every NOI filing. We recommend two possible alternatives.
  - **Strike the new sentence “A construction period .... Activities” and replace with “All projects must address erosion, sedimentation control, and pollution prevention with plans appropriate to and commensurate with the proposed alterations, even those projects otherwise exempt from the stormwater standards.” OR**
  - **Strike the new sentence “A construction period .... Activities” and change the text in the general instructions for NOIs.**
  - **Please note there is a typo: “... operation and maintenance plan, and an illicit discharge compliance statement.”**
- 10.05(6)(m)(6): Requiring unpaved footpaths in natural areas to comply with the Stormwater Management Standards seems unreasonable. Trails generally rely on country drainage and so do not “fit” the intentions of the Standards. **We ask MassDEP to include unpaved footpaths in natural areas as exempt activity under the Stormwater Management Standards 10.05(6)(l).**
- 10.05(6)(m)(7): This new provision now requires that Maintenance of an Existing Public Roadway comply with the Stormwater Standards to the maximum extent practicable, however, 10.02(2)(b)(2)(p) appears to exempt the same roadway maintenance from review.

### 310 CMR 10.12 Notice of Intent for an Ecological Restoration Project

- (2) **The numbering underlined below needs to be fixed because the original (2) was stricken.** “Notwithstanding the provisions of 310 CMR 10.54(4)(a)5., 10.56(4)(a)4., and 10.60, a person submitting a Notice of Intent for an Ecological Restoration Project that meets the requirements of 310 CMR 10.12(1) and (2) is exempt ...”

### 310 CMR 10.13 Eligibility Criteria for Restoration Order of Conditions

- (f) **We suggest using the word “evidence” in place of the word “demonstration”.** “If the project will involve the dredging of 100 cubic yards of sediment or more or dredging of any amount in an Outstanding Resource Water, the Notice of Intent includes a demonstration that an application ...”

### 310 CMR 10.53 and 10.24 Limited Project Provisions

- 10.53(u)8. & 10.24 (7)(c)(8) Public Shared Use Paths
  - **Delete the statement that a separate NOI may be filed either concurrently to the filing of the NOI for the project, or after the OOC is issued, for vegetation management and other activities as defined in 310 CMR 10.02(2)(b)2.r.i.-v. in wetland Resource Areas.** Applicants are always welcome to file NOIs.
  - **Delete “abandoned railbed” in first line.** “Public Shared Use Path” is already defined in 10.04. MassDEP should consider more broadly defining a Public Shared Use Path in this limited project provision. Municipal or land trust paths should be afforded the same limited project status.
- 10.53(4)(e)5. Typo: The letter "r" is missing from the word "through" in "...set forth in 310 CMR 10.53(4)(a) though (d)..."

### Additional Miscellaneous Suggestions

- **Include a list of common acronyms**, particularly for new definitions. This could be incorporated in Section 10.04.
- **Provide frequent outreach and education about the new regulations once promulgated.** Dissemination of detailed and multi-faceted explanations of these new regulations and the purposes and intents behind them for the Conservation Commissions and conservation professionals who will implement them will be essential. MSMCP welcomes the opportunity to assist MassDEP in these efforts.
- **Provide headers at the top of every page of the new regulations with the complete section and subsection reference** to facilitate navigation through the numerous lengthy sections that comprise many pages.
- **Make sure the new version of the regulations is formatted with headers so that the pdf will have internal hyperlinks allowing users to “jump” to specific sections.**

### 2. Coordinate on the Development of Regulatory Reform Package 2.0

As we all know, these draft regulation changes alone will not achieve our goal of true resilience. We appreciate that MassDEP has said that it is already working on regulatory reform package “2.0.” MSMCP has identified a number of issues that should be addressed in the next regulatory reform package. Many of these suggested revisions are straightforward. Some of these suggestions warrant additional discussion. We implement the wetland regulations on a daily basis and know what works well and what is challenging. We have a lot to offer to help make 2.0 a real success. **We urge MassDEP to begin a robust process of**

**stakeholder engagement with consultants, field professionals, and conservation agents so that we may help you develop practical, strong, climate resilient regulations.** Here we provide some suggestions to begin the conversation.

### **310 CMR 10.02(2)(a) Activities Within the Areas Subject to Protection ...**

- Trail Maintenance. **We ask MassDEP to create a new section to exempt Maintenance of Existing Trails in use by the public.** This could be done by adding a new section “10.02(2)(a)3. Maintenance activities on trails that traverse Areas Subject to Protection under M.G.L. c. 131, § 40” which reads: “Activities conducted to maintain, repair or replace, but not substantially change or enlarge an existing public trail, provided said work utilizes the best practical measures to avoid or minimize impacts to wetland resource areas outside the footprint of said trail”. Boardwalks, puncheons, waterbars, and other basic trail infrastructure need to be routinely maintained or replaced. Land managers should be able to conduct this essential maintenance work to protect wetland resource areas without having to secure a permit.

### **310 CMR 10.02(2)(b) Minor Exemptions**

- 10.02(2)(b)(a) Unpaved pedestrian walkways. **We ask Mass MassDEP to define Conservation Property to include all these types of natural land onto which the public is invited.** Currently, unpaved pedestrian walkways (trails) less than 3 feet wide for public access on “Conservation Property” are exempt from the regulations. However, many trails traverse general municipal land, land trust properties, and private property with conservation restrictions affording public access. **Additionally, we urge MassDEP to consider increasing the 3-foot width to 4 feet because the state’s own guidance on [accessible trails](#) encourages trails are “at least 36” wide, and usually wider” (emphasis added).**
- 10.02(2)(b)(e) Conversion of lawn to uses accessory to residential structures such as decks, sheds, patios, pools. **We ask MassDEP to remove inground swimming pools from this minor activity.** Construction of inground swimming pools involve significant excavation, large impervious areas around the pool, fencing, and often involves discharge of chlorinated water. Having no Conservation Commission oversight of these projects has often led to after-the-fact permitting due to erosion or other problems which have impacted wetland resource areas. Tree cutting and grading has occurred in concert with some pool projects when landowners misunderstood these activities were not part of the minor activity provision. As an exempt activity, there is no requirement for an O&M plan to ensure that chlorinated water is not discharged to wetland resources areas without first being dechlorinated. Requiring a wetland permit and preconstruction review of all inground pool projects in the



buffer zone and Riverfront Area will result in better oversight and reduce the non-compliance we see problematic with exempting some inground pools from wetland permitting.

- 10.02(2)(b)(n) Vegetation cutting for road safety maintenance.
  - **We ask MassDEP to update the AASHTO 2011 Policy to “7th edition, 2018 or most current”.**
  - **10.02(2)(b)(n)(iv), We ask MassDEP to remove the detailed language: “To prevent the possible export .... Chipping, disposal method and spreading chips...”** This language is too detailed (means and methods are site-specific and creates some implementation challenges). We suggest working with a stakeholder group and creating a guidance document on appropriate vegetation cutting BMPs that could be applicable to this and other minor activities that involve vegetation cutting.
- Cutting of certain high-risk trees. **We ask MassDEP to add a new minor activity: allowing landowners to remove up to 5 unsafe trees over 6 inches that are in the buffer zone or riverfront area and are threatening structures or human safety.** Trees are suffering from the effects of climate change. Invasive pests like wooly adelgid and emerald ash borer are decimating many of our native hemlocks and ashes. Increases in the number and severity of storms have resulted in more damaged trees. We recognize that certain parameters need to be codified and suggest a guidance document could be created to define and address thresholds associated with minor land management activities and requirements for Conservation Commission notification for certain activities (e.g., giving the Commission 30 days to comment but not necessarily require a permit, akin to forest cutting plans).
- Removal of invasive vegetation. **We ask MassDEP to add a new minor activity to 310 CMR 10.02(2)(b)(2) which reads: “Removal of turf lawn and/or non-native invasive herbs, vines, and shrubs, provided: (1) the activity is located more than 50 feet from the mean annual high water line within Riverfront Area or from BVW, whichever is farther and (2) provided erosion and sedimentation controls are implemented until the area is stabilized with 75% coverage of native species”.** Invasive plants are one of the biggest threats to our native habitats. Quick and effective management of invasives is essential in controlling the spread of invasive plants.

### **310 CMR 10.03(6)(b), 10.04 (Alter), 10.05(3)(2)(b), and 10.58(6) Application of Herbicides and Cutting in Rail Rights-of-Way**

- Regulation of herbicides and cutting in railway rights-of-way. **We ask that MassDEP clarify the requirements for permitting the use of herbicides and cutting to control vegetation in rail rights-of-way in**

**Buffer Zones and Riverfront Area.** MBTA and Keolis routinely claim exemptions that do not seem to exist and many cases are now in litigation.

### **310 CMR 10.04 Definitions**

- **"Activity" and "Alter".** We ask MassDEP to consider clarifying that **"vegetation" used in the definitions of "Activity" and "Alter" applies only to NATIVE vegetation.** See the explanation below.
- **Definitions for "Vernal Pool" and "Vernal Pool Habitat".** We ask MassDEP to create new definitions for **"Vernal Pool" and "Vernal Pool Habitat"**. Currently, Vernal pool habitat includes the definition of both the depression and the 100' jurisdictional area. **We also ask that MassDEP extend the jurisdiction to provide a 100-foot Buffer Zone to vernal pools, regardless of whether it falls within a resource area.** Suggested changes:
  - **"Vernal Pool"** is a basin or depression that typically holds water for at least two continuous months through the spring and is free of adult, reproducing fish populations. Vernal pools are essential breeding habitat for a variety of amphibian species such as Wood Frog (*Lithobates sylvaticus*) and the Spotted Salamander (*Ambystoma maculatum*) and provide other extremely important wildlife habitat functions during the non-breeding season for these species. Vernal pools are important habitat for other wildlife species. The boundary of a vernal pool is the maximum water level in such a basin or depression and is identified by direct observation or by field indicators of the maximum extent of flooding.
  - **"Vernal Pool Habitat"** is the area between the boundary of a vernal pool and the boundary of a jurisdictional resource area that contains the vernal pool, or 100 feet from the edge of the vernal pool boundary, whichever distance is greater.

### **310 CMR 10.05: Procedures**

- **We ask MassDEP to add the following sentence in 10.05(8) "If requesting an ORAD Extension, the Applicant must submit written confirmation by a professional with relevant expertise that the resource area delineations remain accurate"**. This language appears in 10.05(6)(d) however most Commissions and conservation professionals are unaware of this language since it appears in the wrong section in the regulations (it's placed in the Order of Conditions section and not the Extensions section).
- **We ask MassDEP to clarify which projects are subject to stormwater management.** Currently, any activity other than the 4 listed categories appear to be subject to stormwater management regulations, however,

small projects (e.g., restoration, foot paths) appear to require stormwater management.

- **10.05(8) We ask MassDEP to: (1) move mention of rules associated with extensions from 10.05(6)(d) to 10.05(8); and (2) within 10.05(8) to allow 5-year extensions for any appropriate project (i.e., “where special circumstances warrant and where those special circumstances are set forth in the Order.”)**

### **310 CMR 10.06: Emergencies**

- **We ask MassDEP to add new text 10.06(6): “An Emergency Certification issued by a conservation commission shall be signed by a majority of the commission. It may also be signed by a single member or agent of the commission, if said Certification is ratified by a majority of members at the next scheduled meeting of the Commission”, similar to language provided for Enforcement Orders.**

### **310 CMR 10.24 Limited Projects**

- 10.24(1)(b). The nature-based resiliency requirement is non-binding. Having applicants merely “consider” these measures does not mean they will implement them. **MassDEP should consider stricter requirements for these measures.**
- 10.24(7)(c). Limited Projects in Coastal Areas at Risk from Sea Level Rise. Allowing the relocation of roads and railroads to avoid the impacts of sea level rise could result in damage to other ecosystems. **We ask MassDEP to postpone this proposed modification until completion of the Resilient Coasts plan.**

### **310 CMR 10.53 Limited Projects**

- **We ask MassDEP to expand the Limited Project provisions to simplify permitting requirements for routine land management projects necessary to address the impacts of climate change.**
  - **We ask MassDEP to expand the Limited Project provisions to facilitate large scale invasive species work in wetland resource areas with specific regulatory review standards.** Some invasive species removal projects extend into wetlands and cover >5,000 s.f. There should be a simplified way of allowing landowners and other organizations to tackle invasive species removal projects without triggering complicated permitting processes.
  - **We ask MassDEP to add a limited project provision which specifically allows small- and medium-scale invasive species**

**removal projects with specific regulatory review standards.**

Non-native invasive plants pose a major threat to the health and survival of our native ecosystems, and are on the rise with climate change. Currently, invasive plant control work requires time-consuming, costly, and complex wetland permitting devised for construction projects. Quick identification and removal of invasive plants minimizes the dramatic negative effects of these plants and allows for the recovery of native species diversity and native wildlife habitat, a recognized wetland value.

- **We ask MassDEP to expand the limited project provision in 10.53(j)(a) to allow: “The construction of new public footpaths and associated boardwalks/ puncheons that are constructed close to the ground provided, however, that such structures are constructed on pilings, sills, or posts so as to permit the reasonably unobstructed flowage of water.”** Boardwalks and other basic trail infrastructure that cannot avoid wet environments serve to protect the wetland resource areas and their functions and values. Because most boardwalks and puncheons are only elevated 4-12” above the ground for safety reasons, shading is inevitable, and because many boardwalks and puncheons are built on sills, loss of vegetation under the sills is inevitable. Therefore, under the current regulations, all boardwalk and puncheon construction in BVW requires wetland replication. Our proposed minor modification (above) would allow Conservation Commissions to approve public boardwalks and puncheons as Limited Projects. This would reduce the need for inland wetland replication which generally results in the destruction of forested buffer zones in protected public open spaces. Larger public boardwalk/puncheon projects could still be required to undertake wetland replication based on the size, scope, and nature of the project and the opportunity for less impactful alternatives. Below in this letter are recommendations for a Guidance Document of Best Trail Management Practices (BTMPs) to ensure the health of wetland resource areas.

**310 CMR 10.55 Bordering Vegetated Wetland Performance Standards**

- **10.55(2). We ask that MassDEP modify the definition of BVW and how the boundary of a BVW is defined, to reflect the 2022 “Massachusetts Handbook for Delineation of Bordering Vegetated Wetlands” that was released in March 2023.**
- **10.55(4)(c). We ask that MassDEP simplify the permitting process for trail construction projects by adding to the Bordering Vegetated Wetland regulations a new section in 10.55(4)(c)(4) allowing**

Commissions to permit new trails in wetlands when: "said work involves the creation of a public trail for non-motorized use (i.e., hiking, skiing, mountain biking, etc.) which will alter less than 500 s.f. of BVW, provided alternatives that attempted to avoid and minimize impacts were considered and that the trail will permit the reasonably unobstructed flowage of water." Wetland trail construction should be subject to review under the WPA, but that review should be simplified. Narrow unpaved pedestrian walkways in publicly accessible open space often traverse wetlands. When wetland trails are properly constructed, they preserve wetland functions and values and help build a culture of appreciation and stewardship for these vital resources. (Note: Allowance for ADA compliance and motorized mobility devices must be considered.)

### **310 CMR 10.57 Land Subject To Flooding (Bordering and Isolated Areas)**

- 10.57(2)(a)5. Vernal Pool Habitat should not necessarily need to be certified by DFW in order to be afforded protection. **We ask that MassDEP consider allowing field-based evidence submitted to the Conservation Commission by competent professionals as acceptable proof of vernal pool habitat.**
- 10.57(2)(a)6. Vernal pools. **We ask that MassDEP revise the language to read: "The boundary of a certified or uncertified vernal pool shall be based on field observations of the maximum extent of flooding and delineated by a competent source meeting the criteria in 310 CMR 10.60(1)(b). Vernal pool habitat shall include the area within 100 feet of the boundary of the vernal pool itself."** DFW does not certify the boundary of vernal pools, so we suggest removing those references. The application would be submitted with the applicant's representative delineating the vernal pool boundary and the Conservation Commission or MassDEP, as the issuing authority, verifying that delineation. Conservation Commissions and MassDEP staff may meet the requirements under 10.60 but they may not; simply listing the reference to 10.60 would be adequate here.
- 10.57(2)(a)3. **We ask MassDEP to change references from the software-based BLSF calculations to "listed in the National Oceanic and Atmospheric Administration (NOAA) Atlas 14 Volume 10 (version 3.0 or later version are permissible)" and any such references to using NOAA 14 throughout the proposed Wetland Protection Act Regulatory changes and Stormwater Handbook to "listed in the most recent "National Oceanic and Atmospheric Administration (NOAA) Atlas".** No changes have been proposed to the ILSF section, but ISLF calculations currently refer to BLSF. Changes to 10.57(2)(a)(3)a-c change to require a more comprehensive software to be used in the BLSF calculations, and reference NOAA Atlas 14. Using the most recent rainfall data available through NOAA promotes climate resilience and avoids the

necessity to update the Regulations in the future. NOAA 15 is already in development.

#### **10.57(2)(b) Isolated Land Subject to flooding**

- **We ask MassDEP to consider expanding the jurisdiction over small isolated wetlands by reducing the size of ILSF to account for loss of isolated wetland protections as a result of the Sackett Decision.**
- **We ask that MassDEP consider adding vernal pools as its own dedicated wetland resource area, with a 100-foot Buffer Zone.** Vernal pools truly are a vital wetland resource subject to flooding, as identified in the Act: “No person shall remove, fill, dredge or alter any bank, riverfront area, fresh water wetland, coastal wetland, beach, dune, flat, marsh, meadow or swamp bordering on the ocean or on any estuary, creek, river, stream, pond, or lake, or any land under said waters or any land subject to tidal action, coastal storm flowage, or flooding, other than in the course of maintaining...” (emphasis added).

#### **310 CMR 10.58: Riverfront Area Regulation Revisions**

- Many Conservation Commissions and Conservation Agents find it difficult to interpret many sections of the Riverfront Area sections. We are grateful for the hard work of the working groups who helped develop the regulations which were promulgated in 1996, however, after almost 30 years of implementing these regulations, we have discovered a number of challenges. We welcome discussions with MassDEP as the areas of concern are too complex to detail here. **We ask that MassDEP work with MSMCP and MACC to address the following areas of concern.**
  - **Defining Mean Annual High Water**
  - **Interpreting “practical and economically equivalent”**
  - **Interpreting the Redevelopment requirements for mitigation/restoration for “non-compliance” of more than one performance standard**
  - **Clarifying the distinction, if any, between 310 CMR 10.58(5)(c) and (d)**
  - **Requiring an Alternatives Analysis for Redevelopment projects**
  - **How the regulations apply to large sites with small amounts of pre-existing development**

#### **WPA Forms**

Since MassDEP has recently requested MACC and MSMCP to provide comments on the WPA application and permit forms, following we share just a



few of our most pressing requests. **We ask that MassDEP work closely with MSMCP and MACC to update the application and permit forms.**

- General Comments.
  - **Application forms should mirror permit forms.**
  - **Application forms and permit forms should reflect the regulations.**
  - **Forms should list the date, project, site, and owner/applicant information on the first page.**
  - **Forms should rely on “appendices” for site or project specific information (such as coastal resource areas, rare species, and stormwater).**
  - **There should be forms that are tailored for purely inland municipalities.**
  - **The language of the forms should be made intelligible to laypeople.**
  - Wetland Fees do not cover the administrative costs for processing, reviewing, issuing, and mailing wetland permits. **We ask MassDEP to increase application fees.**
- Comments regarding the NOI form.
  - **The NOI should be greatly simplified and shortened.**
  - **Much of the NOI is not relevant to a majority of projects; the use of appendices would greatly simplify the application for many applicants.**
  - **The NOI form (under C.7.) should add categories of projects to which the stormwater standards do not apply (i.e., not “industrial, commercial, institutional, office, residential and transportation projects”).**
  - **The NOI form should reflect the regulations and ask the applicant to confirm they have met the relevant performance standards.** For example, although applicants are required to check off whether a project qualifies as redevelopment in Riverfront Area, this doesn’t require confirmation how the applicant has met the standards for 310 CMR 10.58(5).

- Comments regarding the OOC form.
  - **The OOC should be modifiable, to allow for routine additions such as longer lists of approved plans, the Commission's findings, and the Commission's site-specific conditions.**
  - **The OOC should be more succinct and tailored so that the information is pertinent and homeowners and contractors will read it.**
  - **The OOC should not ask for data that is not supplied by the applicant, e.g., the closest distance from work to wetlands.**
  - **Clarification should be given for whether the "work" in the "closest distance from work to wetlands" includes restoration work which may happen 0 feet from the wetlands edge or the closest new construction which may be 25 or 50 feet away.**
  - **The OOC Riverfront Area fields should be simplified and clarified to ensure consistency of information.** For example, how commissions define and fill out areas of alteration and replication fields is highly inconsistent. (How does one "replace" riverfront area?)
- Comments regarding the Determination of Applicability form.
  - **Conservation Commissions need to have more latitude to issue negative determinations of applicability or general permits for small-scale or low-impact projects (such as the hand-pulling of aquatic invasives). The full-scale NOI/OOC permitting process is an enormous disincentive to ecological restoration and management. After all, it is the invasive plants that are creating the alteration and violating the Act, not the efforts to remove them. ;-)**
- Comments regarding the ORAD (Form 4B)
  - **The ORAD form should be revised to correct an inconsistency. The Recording Block on Page 1 and the Recording Information on Page 7 should be removed.** MassDEP Circuit Riders have confirmed that ORADs do not need to be recorded, yet Form 4B (last revised 4/22/2020) indicated that said Form must be recorded. ORADs are simply confirming a wetland boundary for 3 years; no work is associated with ORADs. When applicants record this document, it creates a cloud on a title. Although a landowner can Request a Certificate of Compliance (Form 8A) - that form does not include language appropriate for closing out an ORAD.
  - **The ORAD form should be revised to reiterate an important regulatory requirement. DEP should add a regulatory note on**

**ORADs which states “If requesting an Extension, the Applicant must submit written confirmation by a professional with relevant expertise that the resource area delineations remain accurate, per 310 CMR 10.05(6)(d).”** Most Commissions and conservation professionals are unaware of this language since it is difficult to find in the regulations.

## **Develop Guidance Documents**

Conservation commissions and conservation staff would benefit from guidance documents which provide more detail about various regulatory provisions.

- **Herbicides and cutting in rail rights-of-way. We ask DEP to issue a guidance document outlining not only the exemptions afforded to railroads but permitting requirements and the recommended material to be submitted to each commission should railroads wish to conduct other activities which are not exempt.** That way, Commissions can properly review the request and fully understand what is being asked of them. It does not appear that railroads are a qualifying structure which meets the exemptions of 310 CMR 10.02(2)(a)(2) or 310 CMR 10.03(6). In addition, mechanical removal is not included in 310 CMR 10.05(3)(2)(b); this only applies to herbicide removal.
  - MBTA and Keolis have claimed exemptions which don't exist (i.e. MBTA claims to be exempt from filing a Notice of Intent for mechanical vegetation removal).
  - In 2020, Keolis, on behalf of MBTA, filed RDAs in 99 communities for the review of the wetlands maps in each community as part of the renewal of the 5-year Vegetative Management Plan (VMP). In the “work description” Keolis stated that “This work includes both chemical and mechanical controls as represented within the VMP available for viewing at [fdcerailroadvegetation.com](http://fdcerailroadvegetation.com)”. In the submission, Keolis suggested the Commission consider issuing a Negative #2 determination (indicating the work is within an area subject to protection but will not remove, fill, dredge, or alter that area...) or issue a Number Negative 5 determination, citing as exemption 310 CMR 10.02(2)(a)(2). Twenty-two Commissions disagreed with Keolis' interpretation of the Regulations and denied the mechanical work under the RDA. MassDEP issued an SDA concurring with those decisions, which MBTA/Keolis appealed and the case is now in adjudicatory hearing with OADR. Unless mechanical cutting is an exempt activity expressly given to railroads, it seems prudent that Railroads be required to submit

detailed plans when they wish to cut vegetation or trees within Resource Areas and Buffer Zones.

- Land management activities. **We Ask MassDEP to Issue Guidance Documents clarifying and simplifying wetland permitting on essential land management activities.** Best Management Practices surrounding high-risk tree removal, trail maintenance and construction, and invasive species management are well documented. Finding ways which allow landowners to manage their open space while ensuring best practices are adhered to is critical. MSMCP and other organizations welcome future discussions with MassDEP on devising guidance documents which simplifies the wetland permitting process and helps landowners conduct more climate resilience land management activities. For example, a guidance document regarding habitat restoration could set regulatory review standards based on the scope, scale, and size of restoration projects.
- Puncheons and Boardwalks. **As an alternative to our recommendation to allow boardwalks and puncheons on publicly accessible trails to be permitted as Limited Projects (as described on page 11), we Ask MassDEP to Issue a Guidance Document clarifying thresholds of negligible impact of boardwalks and/or puncheons on BVW functions and values as a result of shade and loss.** MassDEP has required replication for small publicly accessible puncheons (because of shading and wetland loss) and elevated boardwalks (because of helical piers). A Guidance Document identifying Best trail management practices (BTMPs) to create and maintain stable trail surfaces and limit improper widening of the footbed and trampling of vegetation by hikers seeking to avoid wet areas should be promoted. Such BTMPs are evermore important as climate change intensifies storms and worsens flooding.

### **Miscellaneous**

Our membership has suggested the following additional miscellaneous changes.

- Update the 401 Water Quality Certification regulations regarding Outstanding Resources Waters (ORWs). **We ask that MassDEP make practical allowances for minor incursions into ORWs for small projects that are responding to climate change and restoration needs.** Currently, there is no provision in the Surface Water Regulations that allows even a negligible amount of fill to be introduced into an ORW. Even building a small boardwalk or puncheon on a walking path is considered 'fill' and requires filing for a major Water Quality Certification. Obviously, work in ORWs must be carefully regulated, however, prohibiting even a single puncheon on a wetland trail within an ORW is unreasonable.

- 10.05(3)(a)(1). To use consistent, defined terms, we ask that **MassDEP change the language to read: “Any person who desires a determination as to whether M.G.L. c. 131, § 40 applies to land or to work that may alter an Area Subject to Protection under M.G.L. c. 131, § 40, may submit to the conservation commission a Request for a Determination of Applicability, Form 1.”**
- 10.05(3)(a)(2). Currently, an RDA or NOI is required for any activity in the buffer zone. **We encourage MassDEP to provide some discretion for local conservation commissions to utilize an administrative approval process for activities in the buffer zone which will not impact wetland functions and values.** We feel strongly that individuals who wish to undertake minor activities (such as the removal of a high-risk tree) should be able to receive local approval from their local Conservation Commission without filing for a state permit.

Amending an OOC. **We ask that MassDEP include a specific provision in the regulations that clarifies how an Order of Conditions can be amended. MassDEP should consider allowing Amended Orders that include minimal increases in resource area impacts, instead of requiring a new NOI to be filed. We also ask that MassDEP clarify whether an amendment to an Ecological Restoration OOC needs to be re-advertised in the Environmental Monitor.**

Thank you for the opportunity to comment on these proposed revisions to the regulations.

Sincerely,

THE TOWN OF WALES CONSERVATION COMMISSION

**From:** [whnutter nutter](#)  
**To:** [DEP Wetlands \(DEP\)](#)  
**Subject:** Wetlands-401 Resilience Comments  
**Date:** Saturday, April 20, 2024 12:45:23 PM

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Hello,

My name is Walter Nutter. I am the Maintainer Coordinator for the southern portion of the Midstate Trail (MST), encompassing 52 miles from the Barre Falls Dam to the RI border. As you probably know, the non-profit Midstate Trail is a continuous, 92 mile footpath extending from the NH border to the RI border. As climate change continues to impact our trail, we maintainers are faced with more and more challenges, especially as wetlands areas expand, often flooding the formerly dry trail. In most cases, we need only shift the trail a few feet to avoid muddy or flooded sections, yet to accomplish that task we are faced with many hours of time in order to comply with local Conservation Commission's demands. This onerous permitting process around wetlands continues to strain the resources of our all-volunteer staff.

We are therefore encouraged to learn that the DEP is considering "Resilience 2.0" that would ease the burden on small non-profit recreational trail organizations such as ours. The MST is committed to making stable trail surfaces away from wetlands as much as possible. Experience shows that when trails pass through wetlands, hikers will "bushwhack" an alternate trail around the wet area, trampling vegetation and widening the footpath. Current regulations disincentivize recreational trail organizations from relocating trails away from wetlands. We, like most trail organizations, already have the ability and knowhow to build and maintain trails, puncheons and bridges, and waterbars using best trail maintenance practices. I hope that you will look favorably on the Resilience 2.0 proposal, and take into consideration the comments of the MA Society of Conservation Professionals.

Kindly note that these comments are my own, and are not meant to represent the Midstate Trail Committee.

Sincerely,  
Walter Nutter



**From:** [Wayne Kurker](#)  
**To:** [DEP Wetlands \(DEP\)](#)  
**Subject:** Wetlands and Waterways Resilience Comments  
**Date:** Tuesday, April 30, 2024 2:47:17 PM

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Massachusetts Department of Environmental Protection (Mass DEP) regulations will be very damaging to the recreational boating industry and waterfront properties for several reasons. The state regulations will hinder the recreational boating industry's ability to operate efficiently. Restrictions on new construction or modifications to existing structures could limit the industry's ability to expand or improve facilities, reducing the overall attractiveness of the area to boaters and tourists. The new regulations will also impose financial burdens, which will limit growth and investment, along with creating uncertainty for business owners. Unclear guidelines regarding compliance and enforcement could lead to delays and increased costs for businesses and property owners, potentially making boating unaffordable for many as these costs are passed along.

Failure to revise the proposed regulations will lead to a rapid collapse of the coastal economy. Without access to financing, ordinary property transactions will be hampered and there will be a lack of new investment to upgrade existing facilities. It is essential to attract private sector investments in our coastal communities to achieve real climate change adaption. It is crucial to be more inclusive of impacted communities by holding many more public hearings and actively listening to their concerns. Relying solely on each volunteer Conservation Commission's discretion to approve or deny waterfront property use, particularly for water-dependent uses, is not sufficient. Water-dependent users should have a reliable, explicit right to continue and to be newly built at the water's edge, including docks and piers on the water, which should be done using technology and safety principles, rather than relying on "nature-based" retreat strategies that have not been proven to be effective anywhere.

Prohibiting water-dependent facilities based on the geography of a high wind and wave zone is not the solution. Instead, the focus should be on requiring sound, safe engineering, and design in any wind and wave zone. We already have the knowledge and the capability to design and adapt to storms effectively, and we should be allowed to do so.

Wayne Kurker  
Hyannis Marina



**TOWN OF WEST NEWBURY  
CONSERVATION COMMISSION**

381 Main Street, West Newbury, Mass. 01985

Phone: 978-363-1100 x126 Email: [conservation@wnewbury.org](mailto:conservation@wnewbury.org)

4/25/2024

Via email: [dep.wetlands@mass.gov](mailto:dep.wetlands@mass.gov)

**RE: Wetlands-401 Resilience Comments**

*West Newbury Conservation Commission Comments on MassDEP's Resilience 1.0  
Regulation Changes and Recommendations on Resilience 2.0 Regulation Changes*

Dear MassDEP,

The West Newbury Conservation Commission (WNCC) appreciates the opportunity to review and provide comments on the proposed Resilience 1.0 regulations changes and would also like to take this as an opportunity to provide suggestions for the forthcoming Resilience 2.0 draft regulations changes which we understand are currently being drafted by MassDEP.

The WNCC sincerely appreciates the effort that went into creating the Resilience 1.0 regulations changes and commends MassDEP for focusing on ways to make Massachusetts and its wetland resources more resilient to climate change. We appreciate the great strides made in the following areas and are eager to see the following new regulations promulgated right away:

- Supporting greater use of nature-based solutions.
- Safeguarding our coasts and waterways from flooding and stormwater pollution through the development of the first ever Land Subject to Coastal Storm Flowage (LSCSF) performance standards, prohibiting new development in the highest risk coastal flood zone, and requiring other development to be more resilient and protective of nature.
- Including sea level rise in the revisions to the Massachusetts Waterfront Regulations.
- Updating the precipitation calculations for stormwater designs.
- Allowing Scientific Research Projects in coastal wetland resource areas.

However, some of the proposed regulation changes will be challenging to implement and/or will lead to unintended detrimental consequences or costs and because of this, should be refined prior to promulgation. This comment letter includes suggestions for improving the proposed "Resilience 1.0" regulation changes as well as suggestions for the forthcoming "Resilience 2.0" regulation changes.

## **Suggestions to Improve Resilience 1.0**

1. **General – Formatting and ease of use:** The regulations, 310 CMR 10.00, are a lengthy document and even in their current form without updates, can be difficult for users to review. Two suggestions to improve usability are below:

- 1) Provide headers at the top of every page of the updated regulations with the complete section and subsection reference to facilitate navigation through the numerous lengthy sections that comprise many pages.
  - 2) Format the updated version of the regulations as a PDF document with headers that have internal hyperlinks allowing users to “jump” to specific sections by simply clicking on the section header or section in the table of contents.
- 2. Throughout the regulations, 310 CMR 10.00 – consideration of performance standards vs. methods and means:** The regulations should provide performance standards that protect wetland functions and values and not specific methods and means of achieving those performance standards. Methods and means should be addressed in guidance documents.
- 3. Throughout the regulations, 310 CMR 10.00 – need for simplicity:** The revised regulations provide some excellent detail, but must strike a reasonable balance between scientific precision and overly complex or burdensome requirements that render them too difficult for a majority of volunteer conservation commissions and project applicants to implement.
- 4. Throughout the regulations, 310 CMR 10.00 – need to create greater consistency:** Regulation revisions must strive to create greater consistency of thresholds, exemptions/allowances, and requirements based on existing wetland functions and values and the potential impacts (or benefits) on those wetland functions and values of proposed projects, not on the user groups conducting the activity.
- 5. 310 CMR 10.05(4)(a) – Notices of Intent:** The regulations should not require such a high level of stormwater management detail for every Notice of Intent (NOI) filing. Two possible alternatives are suggested here.
- 1) Strike the new sentence “A construction period .... Activities” and replace with “All projects must address erosion, sedimentation control, and pollution prevention with plans appropriate to and commensurate with the proposed alterations, even those projects otherwise exempt from the stormwater standards.” OR
  - 2) Strike the new sentence “A construction period .... Activities” and change the text in the general instructions for NOIs.
- 6. 310 CMR 10.05(6)(m)(6) – Stormwater management for unpaved footpaths:** Requiring unpaved footpaths in natural areas to comply with the Stormwater Management Standards is unreasonable due to the limited impacts these paths have to resource areas, the financial impacts this will cause for municipalities, land trusts, and homeowners that create these public access trails, and the likely additional impacts this will cause to natural areas.
- Trails generally rely on country drainage and therefore do not “fit” the intentions of the Stormwater Standards.
  - Requiring unpaved footpaths to comply with the Stormwater Standards will likely have significant cost impacts for municipalities, land trusts, and private

homeowners that build these public access trails with negligible benefits to wetland resource areas.

- Requiring unpaved footpaths to comply with the Stormwater Standards could have unintended impacts to natural areas around wetlands from the additional vegetation clearing, soil disturbance, and, potentially, construction of stormwater structures and features to comply with the Stormwater Management Standards.
- MassDEP should further revise the regulations to include unpaved footpaths in natural areas as an exempt activity under the Stormwater Management Standards 10.05(6)(l).

**7. 310 CMR 10.57 – Land Subject to Coastal Storm Flowage (LSCSF):** With the inclusion of first ever performance standards for LSCSF in the regulations, MassDEP has taken a positive step to address flooding from sea level rise and the increasing intensity of coastal storms.

- Reference to the most-up-to-date data on sea level rise and erosion rates should be added to this section.
- While not mapped within the Coastal Zone Management (CZM) area, the Merrimack River is tidal through West Newbury and other municipalities and this situation also applies to tidally influenced but not CZM mapped portions of the Taunton River, tidally influenced tributaries of the Merrimack River and, likely, to other tidally influenced rivers and streams in the state.
- MassDEP should further revise the regulations to remove any ambiguity over whether or not LSCSF applies to these tidally influenced but not CZM mapped rivers and tributaries so that conservation commissions, project applicants, and project consultants can easily determine if a proposed project is subject to this section of the regulations.
  - Clarity could be the inclusion of a note in this section of the regulations that any tidally influenced river, even if not in the CZM mapped area, is subject to this section of the regulations. This would be helpful as this section of the regulations is under the coastal resource area portion of the regulations but, as explained above, not all lands that are subject to coastal storm flowage are mapped adjacent to coastal waterbodies.
  - Clarity could be further increased by adding wording that on the Merrimack, Taunton, and any other rivers that experience tidal influence but are not within the CZM area, that the regulations apply for the river upstream until a certain point such as a certain city, town, or dam where the tidal influence ends.

**8. Stormwater Handbook, general:** Although the new Stormwater Handbook is nicely organized, the new 860-page document is far too complex.

- The complexity and length of the Stormwater Handbook renders it essentially unusable by most conservation commissions and agents.
- The complexity and length of the Stormwater Handbook does not facilitate efficient review and permitting by conservation commissions.
- Because of the complexity, many conservation commissions will be forced to rely on third party peer review of projects that currently, commissions can review

without assistance. This will add unexpected costs to applicants during permitting to fund these peer review costs.

**9. Stormwater Handbook, precipitation data:** Referencing the NOAA14+ precipitation data in the Stormwater Handbook is a step in the right direction however, this data does not factor in climate change.

- As an alternative, MassDEP should consider further revising the Stormwater Handbook to refer to the new EEA ResilientMass Climate & Hazards Viewer which provides town-specific precipitation projections using NOAA 14+.
- Designing stormwater systems today that will account for the increasing precipitation of tomorrow is a major component of resilient building. Communities in the northeastern part of the state like West Newbury are already feeling the impacts of a changing climate as it relates to precipitation. In 2023 for example the northeast received 44.47 inches of precipitation, over 3x the annual historical average of 12.95 inches. In August 2023 West Newbury and other communities experienced catastrophic rain events over 4” of rain in mere hours.

**10. Stormwater Handbook, Appendix A, Page A-16 – environmentally sensitive site design, Tree Canopy Implementation for Runoff Reduction:** While it is understood that native trees *may* not be appropriate for all street tree plantings, more emphasis should be added to this section on the importance of selecting native trees and the additional benefits that planting native trees has over planting non-native trees.

- MassDEP could consider adding provisions to this section of the handbook that tree cost is not a consideration that can be used when selecting between native and non-native trees for a site.
- MassDEP could further explain in this section the ecological benefits and improved resiliency that come from planting native trees.

**11. Stormwater Handbook, Appendix A, Page A-17 – environmentally sensitive site design, Tree Canopy Implementation for Runoff Reduction, tree table:** There are multiple comments and suggested changes to this table:

***The table does not match the DCR list which it references.***

- Many native trees listed on the MA DCR referenced list at <https://masstreewardens.org/wp-content/uploads/Tree-Selection-1.pdf> are not listed in the table in the Stormwater Handbook Appendix.
- There are also non-native trees in the table in the Stormwater Handbook Appendix that are not included in the MA DCR list which the table refers to.
- If the Appendix is referencing the MA DCR list, then updates should be made to the table in the Appendix to better align the table to the MA DCR list, especially as the MA DCR lists includes additional native trees that are currently not listed in the table.

***Callery pear (Pyrus calleryana) should be removed from this list.***

- A caption above the table indicates that “The table below presents tree height, mature spread, and area of average mature spread for a limited selection of native and non-native street trees recommended by Massachusetts Department of Transportation (MassDOT) and Department of Conservation and Recreation

(DCR)” however, callery pear (along with several other non-native trees) is not included in the MA DCR list when reviewing this list at the provided website, <https://masstree wardens.org/wp-content/uploads/Tree-Selection-1.pdf>

- Callery pear are weak trees that are prone to wind and ice damage making them a poor choice for street trees due to the high level of maintenance the trees require and high likelihood the trees will have to be replaced.
- The seeds of callery pear and its various cultivars are easily dispersed by birds, allowing it to invade open spaces such as pastures, grassland and open woodlands. Its rapid growth quickly fills in these open spaces, converting them to woodlands.
- While not currently listed as invasive tree in Massachusetts, Ohio has banned growing or selling Callery pear; South Carolina and Pennsylvania have passed similar bans that take effect this year (2024); and in Virginia callery pear is listed on the DCR Invasive Plants list. Considering a warming climate in Massachusetts and the climate similarities between Massachusetts and these states that have already prohibited callery pear today due to its invasive tendencies, it is not unlikely that callery pear will eventually be listed as an invasive plant in Massachusetts as well.

***Green Ash (Fraxinus pennsylvanica) should be removed from the list.***

- Although some green ash trees appear to have a natural resistance to emerald ash borer (EAB), most are not resistant.
- Encouraging these trees to be planted as street trees creates a potentially hazardous situation in the future when the trees are dying due to EAB infestation and dropping limbs.
- Encouraging these trees to be planted as street trees may have unintended future financial impacts for municipalities, homeowners, and businesses if the trees become infested and must be removed and replaced.

## **Suggestions for the Forthcoming Resilience 2.0**

As we are all aware, the regulatory changes proposed in Resilience 1.0 alone will not achieve our shared goal of true resilience. We appreciate that MassDEP has indicated that it is already working on an additional regulatory reform package “Resilience 2.0” and would like to take this letter as an opportunity to provide suggestions that MassDEP can consider while drafting these changes.

- 1. General – The process of creating the regulatory changes in Resilience 2.0 should be a collaborative process between MassDEP and those that work daily with the regulations:** MassDEP should begin a robust process of stakeholder engagement with consultants, field professionals, and conservation agents so that we can collaborate to develop practical, strong, climate resilient regulations.
- 2. Creation of a new exempt activity in wetland resource areas – Trail maintenance:** We ask MassDEP to create a new section in the regulations to exempt Maintenance of Existing Trails in use by the public.
  - This could be done by adding a new section “10.02(2)(a)3. Maintenance activities on trails that traverse Areas Subject to Protection under M.G.L. c. 131, § 40”



which reads: “Activities conducted to maintain, repair or replace, but not substantially change or enlarge an existing public trail, provided said work utilizes the best practical measures to avoid or minimize impacts to wetland resource areas outside the footprint of said trail”.

- Because boardwalks, puncheons, waterbars, and other basic trail infrastructure need to be routinely maintained or replaced land managers, including municipalities, land trusts, and property owners of trails that are open to the public should be able to conduct this essential maintenance work which ultimately protects wetland resource areas, without having to secure a permit.
- The costs and time associated with the currently required permitting process often prevents this maintenance work from being completed resulting in impacts to wetland resource areas from trail users.

**3. 310 CMR 10.02(2)(b)(a) – Unpaved pedestrian walkways:** MassDEP should define “Conservation Property” to include all types of natural lands onto which the public is invited.

- Currently, unpaved pedestrian walkways (trails) less than 3 feet wide for public access on “Conservation Property” are exempt from the regulations. However, many trails traverse general municipal land, land trust properties, and private properties with conservation restrictions or trail easements affording public access. These are the types of properties that should be included in the definition of “Conservation Property”.
- MassDEP should also consider increasing the 3-foot width of exempt, unpaved pedestrian walkways to 4 feet to encourage these accessible trails to be built. The state’s own guidance on accessible trails encourages trails that are “at least 36-inches wide, and usually wider” (<https://www.mass.gov/info-details/accessible-trails#:~:text=Types%20of%20accessible%20trails,-There%20are%20many&text=These%20accessible%20trails%20are%20either,inches%20wide%2C%25https://www.mass.gov/info-details/accessible-trails> ).

**4. 310 CMR 10.02(2)(b)(e) Conversion of lawn to uses accessory to residential structures such as decks, sheds, patios, pools:** MassDEP should remove construction or installation of inground swimming pools as an exempt minor activity.

- Construction of inground swimming pools involves significant excavation, large impervious areas around the pool, fencing, and often these pools involve discharge of chlorinated water as part of routine pool cleaning and / or when a repair is needed.
- Having no conservation commission oversight of these projects can lead to enforcement actions and after-the-fact permitting due to erosion, sedimentation, or other problems which adversely impact wetland resource areas.
- Tree cutting and grading, which are not exempt activities, sometimes occur as part of inground pool construction and installation. This can lead to landowner misunderstanding when they believe that the whole project is exempt when in fact only a portion of the project, the conversion of lawn, is exempt.

- As an exempt activity, there is no requirement for an O&M plan to ensure that after construction, chlorinated water is not discharged to wetland resources areas without first being dechlorinated.
- Requiring permitting and preconstruction review of all inground pool projects in the buffer zone and Riverfront Area will result in better oversight of these projects and reduce unintended wetland resource area impacts.

**5. Creation of a new exempt activity in the buffer zone/Riverfront Area, 310 CMR**

**10.02(2)(b)(2) – Cutting certain high-risk trees:** Trees are suffering from the effects of climate change. Invasive pests like wooly adelgid and emerald ash borer are decimating many of our native hemlock and ash trees. Increases in the number and severity of storms have resulted in more damaged trees.

- MassDEP should create a new exempt activity for removal of up to 5 hazard trees by homeowners provided that the trees are located at least 50-feet from the mean annual high-water line within the Riverfront Area, Bank or from Bordering Vegetated Wetland, whichever is farther.
- The exemption should be worded to only allow the trees to be cut flush with the ground but to no exempt stump pulling of the cut trees due to the soil disturbance associated with this activity.
- The exemption should apply only if the trees are threatening structures or human safety. To facilitate this review, a guidance document could be created by MassDEP to require submittal of a letter from a state certified arborist attesting to the hazardous nature of the tree to the commission for their review to qualify for the exemption.
- While certain parameters need to be codified to ensure that unanticipated impacts to wetland resource areas do not occur, a guidance document could be created by MassDEP to define and address thresholds associated with this activity with requirements for notice to be given to conservation commissions before conducting the activity and giving the conservation commission a 30-day period for it or its agent to determine if the proposed work meets the thresholds for the exemption or requires a permit. This is similar to the process for forest cutting plans.

**6. Creation of a new exempt activity in the buffer zone and Riverfront Area, 310 CMR**

**10.02(2)(b)(2) – Removal of invasive vegetation:** Invasive plants are one of the biggest threats to our native habitats. Quick and effective management of invasive plants is essential to control the further spread of invasive plants.

- To facilitate quick removal of invasive plants, MassDEP should add a new minor activity to 310 CMR 10.02(2)(b)(2) which reads: “Removal of turf lawn and/or non-native invasive herbs, vines, and shrubs, provided that:
  - (1) the activity is located at least 50-feet from the mean annual high water line within Riverfront Area or from the edge BVW, whichever is farther and
  - (2) provided that erosion and sedimentation controls are implemented until the area is stabilized with at least 75% coverage of native species.

**7. 310 CMR 10.04 – Definitions for “Vernal Pool” and “Vernal Pool Habitat”.**

MassDEP should create new, separate definitions for “Vernal Pool” and “Vernal Pool Habitat” which currently are both defined in one definition. Additionally, MassDEP should extend jurisdiction to provide a 100-foot Vernal Pool Habitat to all vernal pools, regardless overlap with another wetland resource area. This is vital protect the habitat of vernal pool species as many of these species spend a majority of their lives in upland habitat almost 2,000-feet from vernal pools. Potential definitions for these two areas are:

- “Vernal Pool” is a basin or depression that typically holds water for at least two continuous months through the spring and is free of adult, reproducing fish populations. Vernal pools are essential breeding habitat for a variety of amphibian species such as Wood Frog (*Lithobates sylvaticus*) and the Spotted Salamander (*Ambystoma maculatum*) and provide other extremely important wildlife habitat functions during the non-breeding season for these species. Vernal pools are important habitat for other wildlife species. The boundary of a vernal pool is the maximum water level in such a basin or depression and is identified by direct observation or by field indicators of the maximum extent of flooding.
- “Vernal Pool Habitat” is the area between the boundary of a vernal pool and the boundary of a jurisdictional resource area that contains the vernal pool, or 100 feet from the edge of the vernal pool boundary, whichever distance is greater.

**8. 310 CMR 10.05 – Procedures, stormwater standards:** MassDEP should clarify what projects are subject to stormwater management or include additional projects that are exempt from stormwater standards.

- Currently, any activity other than the listed activities appear to be subject to stormwater management regulations. This reads that small projects (e.g., restoration, foot paths) are required to have stormwater management which is often unrealistic and/or unnecessary for these small projects.

**9. 310 CMR 10.53 – Limited Projects, invasive plant removal projects:** MassDEP should add a new limited project provision which specifically allows small- and medium-scale invasive plant removal projects with specific regulatory review standards.

- Non-native invasive plants pose a major threat to the health and survival of our native ecosystems, and are on the rise with climate change.
- Currently, invasive plant control work requires time-consuming, costly, and complex wetland permitting devised for construction projects.
- Quick identification and removal of invasive plants minimizes the dramatic negative effects of these plants and allows for the recovery of native species diversity and native wildlife habitat, a recognized wetland value.

**10. 310 CMR 10.53(j)(a) – Limited Projects, public footpaths:** MassDEP should expand the limited project provision in 10.53(j)(a) to allow: “The construction of new public footpaths and associated boardwalks / puncheons that are constructed close to the ground provided, however, that such structures are constructed on helical screws, pilings, sills, or posts so as to permit the reasonably unobstructed flowage of water.”

- Boardwalks and other basic trail infrastructure that cannot avoid wet environments serve to protect the wetland resource areas and their functions and values.
- Because most boardwalks and puncheons are only elevated 4-12” above the ground for safety reasons, shading is inevitable, and because many boardwalks and puncheons are built on sills, loss of vegetation under the sills is inevitable. Therefore, under the current regulations, all boardwalk and puncheon construction in BVW requires wetland replication.
- The proposed modification above would allow conservation commissions to approve public boardwalks and puncheons as Limited Projects.
- This would reduce the need for inland wetland replication which generally results in the destruction of forested buffer zones in protected public open spaces.
- In addition to preventing destruction of forested buffers, eliminating the need for replication reduces the costs for these projects. A reduction of cost could allow more municipalities, land trusts, and other land owners with trails open to the public to install these systems to protect wetland resource areas from damage by trail users.
- Larger public boardwalk/puncheon projects could still be required to undertake wetland replication based on the size, scope, and/or nature of the project and the opportunity for less impactful alternatives.
- A Guidance Document of Best Trail Management Practices (BTMPs) could be simultaneously created to ensure the health of wetland resource areas.

**11. 310 CMR 10.55(4)(c)(4) – Bordering Vegetated Wetland performance standards, trails:** MassDEP should simplify the permitting process for trail construction projects by adding to the Bordering Vegetated Wetland (BVW) regulations a new section in 10.55(4)(c)(4) allowing conservation commissions to permit new trails in wetlands when: "said work involves the creation of a public trail for non-motorized use (i.e., hiking, skiing, mountain biking, etc.) which will alter less than 500 s.f. of BVW, provided that alternatives that attempted to avoid and minimize impacts were considered and that the trail will permit the reasonably unobstructed flowage of water."

- While wetland trail construction should be subject to review under the Act, that review should be simplified.
- Narrow unpaved pedestrian walkways in publicly accessible open space often traverse wetlands. When wetland trails are properly constructed, they preserve wetland functions and values and help build a culture of appreciation and stewardship for these vital resources.
- Allowance for ADA compliance and motorized mobility devices must also be considered in this section if required for a site.

**12. 310 10.57(2)(b) – Isolated Land Subject to Flooding:** MassDEP should consider expanding jurisdiction over small isolated wetlands, isolated land subject to flooding (ILSF), by reducing the size of ILSF to account for the loss of isolated wetland protections as a result of the Sackett Decision.

- Because they are cut off from other surface waters, the slow flow path of isolated wetlands provides up to 2x better retention of nutrients and pollutants compared

to wetlands that border surface waters (Frederick Y Cheng et al, Disconnectivity matters: the outsized role of small ephemeral wetlands in landscape-scale nutrient retention, *Environmental Research Letters* (2022). DOI: 10.1088/1748-9326/acab17)

- Due to the above reasons, this means that small, isolated vegetated wetlands, even of size that do not qualify for protections as ILSF under the regulations today, provide protection of public interests. This includes protection of public & private water supply; protection of groundwater supply; prevention of pollution and storm damage; and control of floods.
- Increasing state protection to isolated vegetative wetlands is also especially important in communities that do not have local wetland protection bylaws that provide protections to isolated vegetated wetlands.

**13. 310 CMR 10.58 – Revisions to Riverfront Area regulations:** It can be difficult to interpret many of the current Riverfront Area sections. We are grateful for the hard work of the working groups who helped develop the Riverfront Area regulations which were promulgated in 1996, however, after almost 30 years of implementing these regulations, a number of challenges have come to light. MassDEP should work with stakeholders and professional conservation groups such as MSMCP and MACC to address the following areas of concern.

- Defining Mean Annual High Water
- Guidance to interpret “practical and economically equivalent”
- Guidance to interpret the redevelopment requirements for mitigation/restoration for “non-compliance” of more than one performance standard
- Clarifying the distinction, if any, between 310 CMR 10.58(5)(c) and (d)
- Requiring an Alternatives Analysis for Redevelopment projects
- How the regulations apply to large sites with small amounts of pre-existing development

The WNCC appreciates and would like to thank MassDEP for your careful consideration of these recommended regulatory changes for Resilience 1.0 and suggestions for Resilience 2.0. As partners in the implementation of the Wetlands Protection Act and regulations there under, the WNCC deeply appreciates MassDEP’s efforts to engage with conservation commissions and other stakeholders in this process. The WNCC looks forward to continuing this important collaboration as the Resilience 1.0 changes are finalized and as the Resilience 2.0 changes are drafted.

Sincerely,

***The West Newbury Conservation Commission***

Molly Hawkins, Chair

George Preble, Vice Chair

David Parrott, Clerk

Jack Haley, Member

Michelle Greene, Conservation Agent

# MEMORANDUM

TO: MassDEP – BWR  
Via Electronic Mail to: [dep.wetlands@mass.gov](mailto:dep.wetlands@mass.gov)

FROM: Weston and Sampson Engineers, Inc.

DATE: April 30, 2024

SUBJECT: Wetlands – 401 Resilience Comments

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Weston and Sampson Engineers, Inc. (“WSE”) commends the Massachusetts Department of Environmental Protection’s (“MaDEP” or “the Department”) for its continued actions to address climate change, sea level rise, and resiliency in the Commonwealth. WSE has reviewed the Department’s proposed Wetlands Resilience 1.0 Draft Regulations including the proposed revisions to 310 CMR 10.00 and the Draft Third Edition of the Massachusetts Stormwater Handbook. This memorandum compiles comments from engineers, scientists, and practitioners across WSE from its review of the aforementioned documents for consideration by the Department prior to adoption and implementation.

## Comments on the Proposed Revisions to 310 CMR 10.00:

The comments provided below regarding proposed changes to the Wetlands Protection Act regulations at 310 CMR 10.00 are organized by section and not necessarily their significance. Selected, contemplated regulation revisions of concern are provided in *italic-type* with WSE commentary on regulations is provided in both plain and **bold-type**.

### *10.04 Definitions*

*Alter* has been expanded to now include:

*(b) the changing of the water level or water table; and*

*(e) increasing of the volume of untreated stormwater runoff directed to a wetland Resource Area.*

Proposed revisions at (b) may run contrary to the goals of the stormwater changes that increase the volume of stormwater infiltration to 1.0-inches over impervious surfaces. The Department is already



considering changing the recommendation to 0.8-inches based on the memorandum from Comprehensive Environmental, Inc. to Lisa Rhodes and Tom Maguire dated September 27, 2023. Also, based on the limitations of stormwater models (specifically the methodology prescribed by TR-55 and TR-20) for small watersheds, the Department should define the level(s) of change within acceptable parameters.

**Is it the intent of the Department to increase stormwater recharge or is it their intent not to raise or increase groundwater levels in Resource Areas?**

Section (e) is counter to the previously acceptable treatment averaging allowed for de minimis flows that cannot be captured by stormwater systems.

**Is it the intent of the Department to require all runoff be collected and treated and eliminate the use of de minimis calculations for achieving treatment goals?**

*Compacted Gravel or Soil means, for purposes of stormwater management (310 CMR 10.05(6)(k)-(q)), gravel roads, gravel parking lots, dirt roads, dirt parking lots, and unvegetated areas that have historically provided or have been designed to provide a compacted surface for use by vehicles, pedestrians, bicycles and/or animals. Compacted gravel and soil do not include lawns, roadway median strips, landscaped areas, and natural turf athletic fields. The presumption that a soil is compacted can be overcome by a showing that the soil strength is less than 10 bars of pressure (approximately 145 pounds per square inch or 106 pascals).*

**What are the acceptable test methods for soil strength?**

*Stormwater Control Measures*

The acronym “SCM” is used interchangeably for “stormwater control measure” and “source control measure” throughout the proposed regulations, however the definitions section only includes “stormwater control measure.” This could be addressed for clarity in the final version of the regulations.

*10.05 Procedures*

*10.05(6)(k)2. Stormwater Management Systems shall be designed so that post-development peak discharge rates do not exceed pre-development peak discharge rates. This standard is to be met on the Project Site at each point of discharge.*

**Is it the intent of the Department to have design points designated at each new point of discharge in both the pre- and post- development conditions, or can a downstream point continue to be used for hydrologic analyses?**

The proposed changes to this section further state, *...when calculating the peak discharge rate...The NOAA Type C or D storm distribution (NRCS Engineering Field Handbook Chapter 2, National Engineering Handbook Part 650, Massachusetts Supplement for the Implementation of NOAA Atlas 14, Volume 10 Rainfall Data, dated June 17, 2016) or a customized storm distribution developed using the NOAA Atlas 14 upper confidence multiplied by 0.9 shall be utilized...*

It is not clear what “customized storm distribution developed using the NOAA Atlas 14 upper confidence interval...” is. It should be updated to state using either Type C or Type D distribution method or using another distribution method, such as one of the quartiles from the NOAA distribution curves, with technical backup stating why that particular customized storm distribution was used, such as it matched the historical distribution of storms that have occurred in the project area, etc.

*310 CMR 10.05(6)(k)4.e.iii Storm distribution must be based on National Oceanic and Atmospheric Administration (NOAA) Atlas 14 Volume 10 (Version 3.0 or later versions are permissible) multiplied by 0.9.*

This is not a technically correct statement, since storm distributions should not be multiplied by 0.9, the storm depths corresponding to the 90% upper bound confidence interval should be multiplied by 0.9. This should be reworded and stated that storm distributions must be based on either the NRCS Type C or Type D distributions or using another distribution method, such as one of the quartiles from the NOAA distribution curves, with technical backup stating why that particular customized storm distribution was used.

*10.05(6)(k)3. Loss of annual recharge to ground water shall be avoided or minimized through the use of infiltration measures... This standard is met when underlying soils have a saturated hydraulic conductivity rate of at least 0.01 inch/hour, the recharge practice is designed to infiltrate the runoff into the ground fully within 72 hours, and a volume of at least 1-inch of runoff multiplied by the impervious area is designed to infiltrate the runoff into the ground.*

The proposed Standard 3 (310 CMR 10.05(6)(k)3.), requires a recharge volume of 1” times the proposed impervious area onsite regardless of in-situ Hydrologic Soil Group (HSG), unless the site is comprised of entirely HSG D soils, in which case the 1” recharge volume must be met to the maximum extent practicable. The language requires the recharge standard to be met on the project site.

DEP should consider allowing or requiring a portion of the recharge requirement to be met offsite but within the same HUC12 or smaller watershed area for redevelopment projects where existing conditions such as contamination, HSG D soils, or shallow bedrock prevent the standard from being met onsite. This would be consistent with the allowable off-site mitigation included in the revisions to Standard 7 for pollutant removal.

*10.05(6)(k)4 Stormwater management systems for new development shall be designed to remove 90% of the average annual post-construction load of Total Suspended Solids (TSS)...*

The Department could define the TSS particle size so that proprietary systems can be required and designed to meet a comparable standard to non-proprietary BMPs.

*10.05(6)(k)4, Table 1 – MassDEP Crosswalk*

WSE has identified areas for potential inconsistencies with the MS4 permit which may result in conflicting or confusing standards for applicants making local applications.

*Non-Structural, Street Cleaning*

Pollutant Removal for Street Cleaning could defer to the BATT Tool or EPA Calculation Methodology as included in the MS4 Permit.

*Non-Structural, Catch Basin Cleaning (Omitted)*

Pollutant Removal for Catch Basin Cleaning is included in the MS4 Permit, but not in this table. Will communities no longer be able to claim TSS/TP removal credit for catch basin cleaning? This will impact many communities' phosphorus control planning efforts and impact the resources needed to meet their required phosphorus reductions.

*Structural Pretreatment, Proprietary Separators*

No more than 50% TSS removal credit should be granted to Proprietary Manufactured Separators, based on studies performed by the New Jersey DEP and the International Stormwater BMP Database, unless more recent studies indicate otherwise.<sup>1,2</sup> No phosphorus removal credit should be granted to Proprietary Manufactured Separators.

*10.05(6)(k)5 For Land Uses with Higher Potential Pollutant Loads, source control and pollution prevention shall eliminate or reduce the discharge of stormwater runoff from such land uses to the Maximum Extent Practicable.*

The proposed Standard 5 (310 CMR 10.05(6)(k)5.) could set a benchmark or threshold for “reducing” discharges of stormwater runoff from LUHPPLs.

*10.05(6)(k)6...Stormwater Management Systems located in and stormwater discharges to a Zone I or Zone A are prohibited, unless essential to the operation of the public water supply.*

Is the intent of the Department to require communities to remove existing stormwater management systems or exclusively to prohibit the construction of new ones within a Zone I or Zone A?

*10.05(6)(k)7.c. ...All provisions of 310 CMR 10.05(6)(k)4. Apply to Redevelopment Projects, except that Stormwater Management Systems for redevelopment shall be designed to remove 80% of the average annual post-construction load of TSS and 50% of the average annual post-construction load of TP. This standard is to be met on the Project Site unless Impracticable as demonstrated by a written alternatives analysis, in which case Offsite Mitigation for Redevelopment must be implemented to achieve the removal standard of 80% TSS and 50% TP...*

The MS4 Permit allows for offsite mitigation for redevelopment projects without an alternatives analysis. The proposed regulations do not provide clear guidance on what should be included in the alternatives

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<sup>1</sup> NJDEP Certifications for Stormwater Manufactured Treatment Devices:  
<https://dep.nj.gov/stormwater/stormwater-manufactured-treatment-devices/>

<sup>2</sup> International Stormwater BMP Database 2020 Summary Statistics:  
[https://www.waterrf.org/system/files/resource/2020-11/DRPT-4968\\_0.pdf](https://www.waterrf.org/system/files/resource/2020-11/DRPT-4968_0.pdf)

analysis, or what criteria must be met in order for offsite mitigation to be allowed to meet this standard. More guidance regarding the alternative analysis should be included in the final regulations or in an updated Stormwater Report Checklist.

*310 CMR 10.05(6)(q) The following minimum Setbacks from any component of a Stormwater Management System shall be met.*

“Components” is not defined. Historically, the Department has included pipes and culverts as “components” within a Zone A to a Public Water Supply. Is it the Department’s intent to ban stormwater components within 50-feet of BWVs? BWVs are often at the lowest portion of the site where stormwater components often discharge. If stormwater components are to be setback 50-feet from a BWV, is any credit for use of a buffer available for treatment compliance?

*310 CMR 10.10 (15) (15) The amendments to 310 CMR 10.00 concerning Stormwater Management at 310 CMR 10.04; 10.05(6)(k) -(q); and 10.58 shall apply to Notices of Intent filed more than six months after [the effective date of these regulations]. The amendments concerning Public Shared Use Paths at 310 CMR 10.02(2)(b)2. r., 10.24(7)(c)8., and 10.53(3)(u); Bordering Land Subject to Flooding at 310 CMR 10.57(2)(a)3. - 6.; Extended Drought at 310 CMR 10.04: Pond and 310 CMR 10.58(2)(a)1. f.; and perennial and intermittent streams at 310 CMR 10.58(2)(a)1. f., shall not apply to any Request for Determination of Applicability, Abbreviated Notice of Resource Area Delineation, Abbreviated Notice of Intent, or Notice of Intent filed prior to [the effective date of these regulations]. Any Notice of Intent submitted to the Department prior to six months after [the effective date] shall be considered under the standards and criteria in effect prior to [the effective date].*

*The amendments to 310 CMR 10.00 concerning Land Subject to Coastal Storm Flowage shall apply to Requests for Determinations of Applicability, Abbreviated Notices of Resource Area Delineation, and Notices of Intent filed on or after [the effective date of these regulations], except when a draft environmental impact report was submitted pursuant to M.G.L. c. 30, § 62B, on or before [one year prior to date of promulgation], and the project received a certificate on the final environmental impact report or a building permit was issued on or before [six months prior to promulgation].*

Resiliency projects currently under design are extensive undertakings, many are subject to grants issued prior to the contemplation of these proposed regulatory changes. DEP could consider an extension to the grace period to a year or including those that have received or applied for grant monies prior to implementation of the change(s).

*310 CMR 10.36(1) When Land Subject to Coastal Storm Flowage is significant to storm damage prevention and flood control, the following characteristics are critical to the protection of those interests:*

- (a) The ability of the area to dissipate wave energy and to decrease the velocity of moving water;*
- (b) The ability of the area to receive coastal flood waters that spread laterally and landward and percolate downward into the soil and sediment;*
- (c) The ability of the area to allow flood water to flow across the landform without redirecting or channeling flow or increasing the velocity of the flood waters;*

*(d) The ability of the vegetative cover in the area to slow moving water, thereby reducing erosion and sedimentation; and*

*(e) the ability of the area to store flood waters that are confined by a natural or manmade feature (e.g., seawall, culvert, bridge, dike, bulkhead, revetment, or topographic depression) until such time as it can slowly return to the ocean or infiltrate into the ground.*

The proposed regulations go on to state in several locations that no fill or structures can be placed in these areas (for example):

*310 CMR 10.36(5) through (7)*

*(5) No activity within a V Zone or MoWA Zone shall have an adverse effect on the critical characteristics identified in Section 3.0 above by:*

*(a) impeding ability of the area to dissipate wave energy and decrease velocity of moving water by altering the area's topography, vegetation, soil and sediment characteristics and the erodibility, transportability and permeability of the soil and sediment.*

*(b) causing unnatural redirection, refraction, diffraction, or reflection of coastal flood waters that cause storm damage from erosion, scour and backrush*

*(c) adding fill or a structure that redirects or channelizes flow and increases velocity of the flood waters..."*

Is the intent of these new regulations to prohibit the installation or development of any type of flood control barriers or berms in land that is currently mapped as LSCSF? And prohibit the raising of elevations (altering the areas topography) to get critical infrastructure out of the flood plain? If so, how are municipalities expected to address sea level rise impacts and protection to critical infrastructure in the future for sites within LSCSF based on future sea level rise and storm surge impacts?

*310 CMR 10.36(8)(f) The placement of fill for flood control purposes may be allowed in a MiWA Zone where impervious surfaces have predominantly replaced the natural coastal floodplain; provided that there shall be no redirection of wave energy or of flood waters to other properties, and other requirements of 310 CMR 10.36(7) and (8) have been met.*

*310 CMR 10.36(8)(g) The elevation in height of an existing seawall or the construction of a berm with associated fill for flood control purposes in a V Zone or a MoWA Zone of LSCSF in an area where impervious surfaces have predominantly replaced the natural coastal floodplain may be allowed when conducted by the public agency responsible for the infrastructure, or in the case of private seawalls or berms, when supported by the municipality.*

Both allowances for building and modifying berms/seawalls for redevelopment purposes speak heavily of impervious surfaces replacing natural coastal floodplain. However, many of our municipalities maintain open space/recreational areas within LSCSF, which require protection. During the redevelopment of these open and recreational spaces, are berms and seawalls going to be allowed to protect these highly valued properties, as well as properties behind these open space/recreational areas from flooding?



*310 CMR 10.57(2)(a)3.a. The NOAA Type C or D storm distribution (U.S. National Resources Conservation Service Engineering Field Handbook Chapter 2, National Engineering Handbook Part 650, Massachusetts Supplement for the Implementation of NOAA Atlas 14, Volume 10 Rainfall Data, dated June 17, 2016) or a customized storm distribution developed using the NOAA Atlas 14 upper confidence multiplied by 0.9 shall be utilized.*

Similar comment as above. It is not clear what “customized storm distribution developed using the NOAA Atlas 14 upper confidence interval...” is. It should be updated to state using either Type C or Type D distribution method or using another distribution method, such as one of the quartiles from the NOAA distribution curves, with technical backup stating why that particular customized storm distribution was used, such as it matched the historical distribution of storms that have occurred in the project area, etc.

*310 CMR 10.57(2)(b)*

This section is omitted as unchanged, however in several instances the language for Isolated Land Subject to Flooding mimics that of Bordering Land Subject to Flooding at 10.57(2)(a).

Is it the intent to have two different standards for vernal pools and calculation of the 1% annual flood boundary? Is the annual storm for ILSF determination going to remain based upon TP-40? The regulations should be revised for consistency and additional time for comment for the ILSF revisions be afforded to stakeholders.

*310 CMR 10.57(6)*

The revised regulations remove the limitation for certification of a vernal pool at the time of filing a Notice of Intent.

Will an ORAD be able to issue a determination that no vernal pool(s) exist in the order? There needs to be some certainty for applicants during design.

#### Comments of Draft Third Edition of MA Stormwater Handbook

The following general comments are provided on the Draft Third Edition of the Stormwater Handbook:

1. The exclusion of soil evaluators pursuant to 310 CMR 15.017 and 15.018 should be reconsidered. Title V soil evaluators are suited for determination of estimated seasonal high water table based on redoximorphic features and soil textural classifications. Hydraulic conductivity should be limited to Competent Soil Professionals as newly defined.
2. Standard 2: Peak Rate Attenuation: Revised handbook states “The NOAA Type C or D storm distribution (NRCS Engineering Field Handbook Chapter 2, National Engineering Handbook Part 650, Massachusetts Supplement for the Implementation of NOAA Atlas 14, Volume 10 Rainfall Data, dated June 17, 2016) or a customized storm distribution developed using the NOAA Atlas 14 upper confidence multiplied by 0.9 shall be utilized.”

This is not a technically correct statement, since a customized storm distribution should not be multiplied by 0.9, the storm depths corresponding to the 90% upper bound confidence interval should be multiplied by 0.9. This should be reworded and stated that storm distributions must be based on either the NRCS Type C or Type D distributions or using another distribution



method, such as one of the quartiles from the NOAA distribution curves, with technical backup stating why that customized storm distribution was used.

3. The new requirement for a Long-Term Pollution Prevention Plan appears to be complimentary to the requirement for an Operation & Maintenance Plan. The requirements could be combined under Standard 4 or 9 to simplify permitting and streamline long-term inspections, good housekeeping, and maintenance. The objective of both requirements is long-term system function to reduce pollution—they may be easier to develop and implement if all action items live in the same document.
4. Under “Bioretention” Linear Practices may be used to meet Standard 2 provided...” The ponded water shall be held no more than 24-hours, so that peak runoff reduction is available for a subsequent storm. Peak runoff computations shall evaluate a 26-hour period to demonstrate no runoff occurs beyond 24-hours for the 2-year, 10-year and 100-year 24-hour storms. Design storms must be based on NOAA Atlas 14 data with a scaling factor, as described in Section 6.2.2.

Section 6.2.2 does not include any reference to what storm distribution should be used. This is important, especially to quantify the ponding depth beyond the 24hr storm duration. Hence Section 6.2.2 should be updated to include the recommended storm distributions of using NRCS Type C or Type D distributions or using another distribution method, such as one of the quartiles from the NOAA distribution curves, with technical backup stating why that particular customized storm distribution was used.

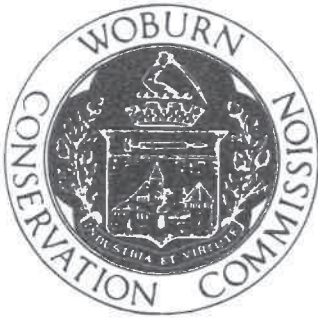
#### **General comment on the “MEMORANDUM MassDEP NOAA14 PLUS – Summary of Technical Review November 15, 2022”.**

The analysis presented in this memorandum should be updated using the most recent Intensity Duration Frequency (IDF) curves projections that have been developed by Cornell University as part of the Climate and Hydrologic Risk Project conducted by the Massachusetts Executive Office of Energy and Environmental Affairs (EOEEA)<sup>3</sup>. These projections have also been integrated into the Climate Resilience Design Standards Tool, and this Tool is directly being referenced in the MEPA Interim Protocol on Climate Change Adaptation and Resiliency Effective Date: October 1, 2021. Since this data is now readily available to EEA, a similar analysis at different locations in MA should be conducted to check if the new IDF projections for the near-term (2030) should be used instead of the NOAA Plus approach.

Additional specific comments submitted by the Weston & Sampson Technical Team on March 19th, 2020 as part of the RMAT project are still applicable as part of the NOAA Plus review process.

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<sup>3</sup> Steinschneider, S., & Najibi, N. (2022). Observed and Projected Scaling of Daily Extreme Precipitation with Dew Point Temperature at Annual and Seasonal Scales across the Northeastern United States, *Journal of Hydrometeorology*, 23(3), 403-419. <https://journals.ametsoc.org/view/journals/hydr/23/3/JHM-D-21-0183.1.xml>



*City of Woburn  
Conservation Commission*

*City Hall  
10 Common Street  
Woburn, Massachusetts 01801-4139  
(781) 897-5933*

April 30, 2024

MassDEP - BWR Wetlands Program  
Attn: *Wetlands-401 Resilience Comments*  
100 Cambridge Street, Suite 900  
Boston, MA 02114

Via Email: [dep.wetlands@mass.gov](mailto:dep.wetlands@mass.gov)

**Subject: Wetlands-401 Resilience Comments**

Dear MassDEP:

As the Conservation Administrator for the Woburn Conservation Commission, I welcome the opportunity to provide comments on the proposed regulatory changes to Wetlands Protection Act Regulations 310 CMR 10.00. The comments contained herein are based on my vast experience working closely with the public, guiding property owners and project proponents through the filing and public hearing process and assisting the Woburn Conservation Commission with administering the Wetlands Protection Act and Regulations.

I appreciate the efforts of the Massachusetts Department of Environmental Protection (MassDEP) to revise the wetlands regulations focusing on ways to make the Commonwealth and its wetland resources more resilient to climate change.

The comments that follow are arranged by section in the order in which they appear in the proposed regulations.

**310 CMR 10.02(2)(b) Minor Activities within the Buffer Zone:  
10.02(2)(b)2.r.**

I support allowing the maintenance of shared use paths without the need for permitting, but believe subsection **r.iv.** is overly complicated. Furthermore, without oversight, it is unlikely to be followed. If activities warrant an exemption from filing, the criteria should be straightforward and simple. The proposed language should clarify whether "hand methods" includes the use of a handheld chainsaw. I recommend removing the language between "To prevent the possible export of invasive plants..." and "...properly disposed." It may be beneficial to allow some branches to remain on the ground to provide habitat value. I agree that it is very

important to prevent the spread of invasive species. It would be extremely helpful for MassDEP to provide a guidance document (for a general audience) describing methods and measures to be taken to prevent the spread of invasive species, with a listing of available resources for assistance.

In subsection r.v., I suggest deleting the language between "... and no work on any component of a Stormwater Management System..." and "... drainage swales".

### **310 CMR 10.04 Definitions:**

#### *General comment:*

Some definitions are confusing and could be more concise. Definitions provided in this section should apply to the entirety of the regulations. Rather than parsing out sections with phrases such as "for the purposes of...", there should be one readily understood definition that applies throughout the regulations. The section-specific details should be contained within the pertinent sections.

#### **Alter**

The proposed change to this definition may have unintended consequences. This change should be reconsidered.

#### **Best Management Practices (BMPs)**

(See *General comment*.) The distinction between **Best Management Practices** and **Stormwater Control Measure** is not readily clear to the reader.

#### **Compacted Gravel or Soil**

(See *General comment*.)

#### **Effective Impervious Cover Reduction**

(See *General comment*.)

#### **General Performance Standards**

The portion of the last sentence which reads "... found in 310 CMR 10.25 through 10.36, 10.37, and..." should be corrected to "... 310 CMR 10.25 through 10.37, and..."

#### **Highway Specific Considerations**

I suggest this definition be reconsidered. The term "highway" is not defined. The regulations should not be applied differently depending on the governing agency. Regulations should be based on potential adverse impacts. Consideration should be given to the size and scale of the project, the size and type of roadway and the projected public benefit.

#### **Impervious Surface**

(See *General comment*.) The proposed definition includes solar arrays but is not clear what part of the solar array is considered impervious. This could lead to inconsistent interpretation and implementation. It should be clarified as to whether it includes the footprint of the supports, land below each panel, or the entire array field. Further, the definition does not make any

distinction between pervious and impervious surface below panels and/or to which they drain. This definition specifies that Public Shared Use Paths are impervious. The definition of **Public Shared Use Paths** states that they may be paved or unpaved but does not say that they are all considered impervious. I believe there should be a distinction between paved and unpaved surfaces. Otherwise, it may create an unintended incentive to install pavement.

#### **Impracticable**

(See *General comment*.) This definition is confusing and inconsistent with the definition of **Practicable**.

#### **Improvement of an Existing Public Roadway**

(See *General comment*.) There may be confusion over whether this includes private ways (publicly accessible, but privately maintained) or only publicly accepted streets.

#### **Macro-Approach**

This definition is less prone to multiple interpretations if the word “development” is removed.

#### **Maintenance Log**

(See *General comment*.)

#### **Maintenance of an Existing Public Roadway**

There may be confusion over whether this includes private ways (publicly accessible, but privately maintained) or only publicly accepted streets. Does this definition expressly exclude private driveways, commercial parking lots, and public parking lots?

#### **Maximum Extent Practicable**

(See *General comment*.)

#### **Near**

(See *General comment*.) This definition and reference to it in **10.05(6)(k)** is vague. The terms “strong likelihood” and “significant impact” lend itself to inconsistent interpretation and application.

#### **Offsite Mitigation**

(See *General comment*.) This definition and related references in **10.05(6)(k)7 and 11** and **10.53(3)(u)5**, includes locations outside the project site, which could be difficult or impossible to adequately evaluate. The drafted language could include a site outside the jurisdiction of Conservation Commission, in a different municipality, or even outside of the Commonwealth.

#### **Qualifying Pervious Areas**

(See *General comment*.)

#### **Retrofit Projects**

(See *General comment*.)

### **Seasonal High Groundwater Elevation**

(See *General comment*.)

### **Setback**

Could different terminology be used to avoid confusion with zoning setbacks measured from property boundaries? Although there is an existing definition for **Resource Area**, neither the term “wetland” nor the term “wetland resource area” is defined within the Wetland Regulations! It should be clarified if the definition for **Setback** includes or excludes Land Subject to Flooding and Riverfront Area.

### **Stormwater Control Measure**

This definition should be revised to be simpler and more concise. (See *comment for Best Management Practices*.)

### **Watershed**

This definition could be simpler and clearer. Descriptions provided by other agencies for example include: “A watershed is an area of land that drains all the streams and rainfall to a common outlet such as the outflow of a reservoir, mouth of a bay, or any point along a stream channel” (USGS); “A watershed – the land area that drains to one stream, lake or river – affects the water quality in the water body that it surrounds.” (EPA); and “A watershed is an area of land that channels rainfall, snowmelt, and runoff into a common body of water.” (NOAA Fisheries)

### **Zone A**

Although the proposed definition references 310 CMR 22.00 Drinking Water, the text is inconsistent and conflicting. The draft (10.00) uses the term “surface water” where the Drinking Water (22.00) uses the term “surface water source”, which is defined therein as a public water supply. Surface water is not defined as a public water supply.

## **310 CMR 10.05 Procedures**

### **10.05(4) Notices of Intent**

#### **10.05(4)(a)**

The regulations should not require such a high level of stormwater management detail for every Notice of Intent filing.

The difference between a long-term pollution prevention plan and an operation and maintenance plan is not clear. These terms should be defined.

The phrasing “... and no illicit discharge compliance statement”, should be corrected. Possible rephrasing could be: “a signed statement by the property owner certifying that there are no illicit discharges...”

## **10.05(6) Orders of Conditions Regulating Work and Orders of Resource Area Delineation**

### **10.05(6)(k)**

Should the wording “Impracticable due to physical site constraints” be in this section, and not just in the definitions?

### **10.05(6)(k)**

Is the minimum Setback, the same as that described in the table in section 10.05(6)q? It is vague in this section.

### **10.05(6)(k)3.**

There should be requirements or guidelines for the level of detail that needs to be included in the alternatives analysis. It should be clarified if the analysis needs to include a plan, written narrative, or simply a written statement. Should there be a reference to “as further described in the SW Handbook or a guidance document?

### **10.05(6)(k)4.c.ii.**

There appears to be missing text or a numbering mistake.

### **10.05(6)(k)7**

*(See comment for **Offsite Mitigation.**)*

### **10.05(6)(l)5.**

The numeral “5.” is mislocated. It should precede the text “Gardens...” not follow it.

### **10.05(6)(m)6.**

More clarification would be helpful. Does this include boardwalks? Paved sidewalks are excluded. Are concrete sidewalks excluded?

### **10.05(6)(o)**

The language is unclear. Is a plan needed for the alternatives analysis or just a written narrative? Why do costs need to be included to determine the highest practicable level of stormwater management? This seems contrary to the proposed definition of Impracticable.

### **10.05(6)(q)**

Could this language be more concise? Clearer language might be: “Setback of at least 10 feet outside of bv, and bank”.

### **10.05(6)(q)**

Why is land under water bodies/waterways/ocean included in “Surface Waters”, but not Bank? The difference between the minimum 10-foot setback and the 50-foot setback is not clearly explained.

## **310 CMR 10.12 Notice of Intent for an Ecological Restoration Project**

### **10.12(1)(l)**

I suggest using the word “evidence” in place of “demonstration”.



**10.12(2)**

Reference to 310 CMR 10.12(1) and (2) should change due to the new numbering of the subsections. It should only include 310 CMR 10.12(1).

**310 CMR 10.13 Eligibility Criteria for Restoration Order of Conditions**

**10.13(f)**

I suggest using the word “evidence” in place of “demonstration”.

**310 CMR 10.53 General Provisions**

**10.53(3)(u)4**

Is the wording “...within 25 feet of the bank or any body of water” correct or should it read “...bank of any body of water”?

**10.53(3)(u)8**

Allowing an Extension for 5 years in this section appears to be inconsistent with 310 CMR 10.05(8)

**10.53(3)(u)9**

The term “hand methods” should be defined. Are piles of plowed or stored snow beyond the shoulder also prohibited?

**310 CMR 10.53(4) Ecological Restoration Limited Projects**

**10.53(4)(e)5**

There is a typographical error in “...set forth in 310 CMR 10.53(4)(a) though (d)...” The letter “r” is missing in the word “through”.

**Massachusetts Stormwater Management Handbook**

The Table of Contents, List of Abbreviations and Definitions at the beginning of the handbook is helpful.

**Background**

**1.1**

In the second sentence, suggest adding the word “provide” before “source control and pollution prevention”.

**2.2**

A statement of applicability would be helpful. Are the standards meant to be applicable to all projects subject to regulation under C.131 s. 40 except for the 5 listed exceptions? Do the standards apply to repair/overlay of existing parking lot pavement if no additional impervious areas are created?

**2.3**

A concise listing of the 11 stormwater standards would be helpful prior to the definitions and explanations of each standard.

### 2.3.3

The Stormwater Handbook is referenced as the “2022 Edition” in two places. Is this an error?

## Recommendations for Regulatory Reform Package 2.0

### **Include a list of abbreviations and acronyms in the Regulations.**

Including a list of common abbreviations and acronyms used in the regulations would be very helpful. This could be at the beginning of the regulations, in the Definition section, or in an index at the end.

### **Include headers with complete subsection reference.**

Providing headers on each page with the complete section and subsection reference would facilitate navigation and proper referencing of specific portions of the regulations.

## **10.04 - Definitions**

### **Reviewable Decision**

This definition includes a typo. There should be an “s” at the end of the word condition. It should be corrected to “superseding order of conditions”.

## **10.05(8) - Extensions**

Subsection (8)(a) states that the “... Issuing Authority may extend an Order for one or more periods...”, but subsection (8)(b) lists only five circumstances where the Issuing Authority may deny the request for an extension. The issuing authority should be given additional discretion not to issue an extension. There have been cases where permits remain valid for decades, through multiple regulatory changes and changes in Conservation Commission membership. Old permits could theoretically continue in perpetuity.

## **10.05(11)(f) – Test Projects**

There is an incorrect reference to 10.05(8)(d) and (e). The reference should be to 10.05(8)(c) and (d).

## **10.13 – Eligibility Criteria for Restoration Order of Conditions**

Ecological restoration projects should be encouraged and should not be limited to only the project types listed in 310 CMR 10.13(2) through (7). Projects that improve wildlife habitat, remove and control invasive species, improve flood storage capacity, reduce erosion, scour, and sedimentation, should be able to be considered. The issuing authority could be granted more flexibility if 10.13(1)(a) is revised to read: “The project is an Ecological Restoration Project as defined in 310 CMR 10.04, and if it is a project type listed in 310 CMR 10.13(2) through (7), and the applicant has submitted a Notice of Intent that meets all applicable requirements of 310 CMR 10.12.”

**WPA Forms**

I suggest updating the forms issued by Conservation Commissions to include one line for the date of the vote and one line for the date of issuance. There should only be one place for the date of issuance to prevent any errors or typos that could lead to confusion with conflicting dates of issuance. I suggest the date of issuance be either on the first page or the last page, but not on the signature page. It would be helpful to also have a line for the date the Order was Amended if applicable.

There should be more flexibility with the Determination of Applicability Form to allow for minor projects within Riverfront Area which don't meet the criteria for an exemption from filing, such as the conversion of existing lawn to an accessory use to a house (shed, deck, etc.) which is located closer than 50 feet to the highwater mark and/or bordering vegetated wetland. There isn't an appropriate category to cover this on the current form.

There should be additional boxes for the Invalid category on the Certificate of Compliance Form to cover projects that have been partially done but the Order of Conditions has expired, or that have been withdrawn by the Applicant after the recording of the Order of Conditions.

**Conclusion**

In addition to the comments contained herein, I fully support the comment letters submitted by the Massachusetts Society of Municipal Conservation Professionals (MSMCP) and the Massachusetts Association of Conservation Commissions (MACC).

I appreciate the time and effort taken to draft the proposed regulation revisions. Thank you for allowing me the opportunity to provide comments, and for your consideration of them.

Sincerely,



Theresa Murphy, Conservation Administrator  
Woburn, Massachusetts



TO: Lisa Rhodes  
Massachusetts DEP  
100 Cambridge Street, Suite 900  
Boston, MA 02114

DATE: April 30, 2024

RE: Wetlands-401 Resilience Comments, MassDEP – BWR

Dear Ms. Rhodes,

We appreciate the opportunity to submit comments on the proposed updates to the Massachusetts Stormwater Handbook.

We submit the following comments for your consideration:

1. Section 5.1.1 states that retrofits must meet setback requirements summarized by Section 2.5. However, Section 2.3.7 (Standard 7: Redevelopment) states that redevelopment projects are required to meet setback requirements only to the maximum extent practicable. We recommend that the handbook is revised to specify if certain setback requirements must be met while others may be met only to the maximum extent practicable.
2. Section 5.1.1 states that beginning in the 1970s many new developments were constructed with dry detention basins. Despite preceding November 18, 1996 (the effective date of the MA Stormwater Management Standards), many of these basins may have been designed and constructed in accordance with local stormwater management and wetland protection regulations. After decades of receiving stormwater runoff, these basins may develop wetland features. We would recommend Section 3.2.3 provide additional clarification and guidance on the procedures for permitting maintenance and retrofit activities within stormwater basins constructed before November 18, 1996, if wetland features are present.
3. Street cleaning/sweeping credit presented in Appendix A, Non-Structural SCMs is only model-based and does not appear to allow for measured-based credit. The University of New Hampshire's Stormwater Center (UNHSC) published a Clean Sweep memorandum in September 2022 that outlines a measured-based credit policy. We recommend that this is incorporated into the updated handbook.
4. The bioretention maintenance section in Appendix A specifies fertilizing annually during the growing season. To prevent unintended adverse effects and avoid a net increase in nutrient loading to the watershed, we recommend that the handbook establishes specific nutrient limits for fertilizers.
5. Table 2-6 provides a list of SCMs that are appropriate for treating certain target TMDL pollutants. The table appears to have some inconsistencies with the published performance curves in the MA MS4 GP for suitability to remove TN and TP. For example, the wet pond SCM type listed on Table 2-6 and the corresponding section in Appendix



A states that wet ponds are not suitable to treat TP or TN as a TMDL pollutant. However, there is an EPA performance curve, established in Appendix F of the MA MS4 GP, for this system type (Wet Basin), that can achieve greater than 60% total phosphorus reduction. We recommend that the appendix sections and Table 2-6 are updated to align with the performance established in the MS4 GP.

6. The draft Wetlands Rule and Stormwater Handbook reference the 2003 TARP Tier II Field Monitoring Protocol for evaluating proprietary SCMs for TSS and TP removal credit. It is our understanding that TARP member states have updated their guidance to reference the Technology Acceptance Protocol-Ecology (TAPE) field protocol, administered by the Washington State Dept. of Ecology (Ecology). We recommend that the handbook reference the TAPE field protocol instead of TARP.
7. The MS4 General Permit allows for mitigation in the same HUC-12 watershed. The proposed handbook indicates that a written alternatives analysis must be provided when proposing off-site mitigation. We recommend the handbook provides clarification on the level of detail required for the alternatives analysis.
8. Appendix A provides a specification for the engineered bioretention soil mix (BSM) for infiltrating and filtering bioretention practices. We recommend that the handbook provide a soil composition range for sand, silt, and shredded woodchips, with a broader upper limit allowable for sand. Additionally, we recommend that the regulations allow for the use of alternative BSMs to achieve certain performance goals (e.g. incorporate use of activated alumina, biochar, coir, iron aggregates, etc.).

Thank you for your consideration.

Sincerely,

WOODARD & CURRAN, INC.

*Ross Tsantoulis*

Ross Tsantoulis  
Technical Manager

*Carly Quinn*

Carly Quinn, PE  
Project Engineer

April 23, 2024

MassDEP BWR Waterways Program  
Attention: Wetlands 401 Resilience Comments  
100 Cambridge Street, Suite 900  
Boston, MA 02114

Sent via email: [dep.wetlands@mass.gov](mailto:dep.wetlands@mass.gov)

**Re: Wetlands-401 Resilience Comments**

Dear MassDEP Wetlands Staff:

Woods Hole Group, Inc. would like to thank you for this opportunity to submit the following comments regarding the proposed revisions to the Wetlands regulations (310 CMR 10.00) and corresponding revisions to the 401WQC regulations (314 CMR 9.00) to improve the Commonwealth's resilience to impacts of climate change:

1. We would like to see greater clarity on stipulations for resource area conversion. Resource area conversion is noted as allowed, however there "shall be no loss of salt marsh, no alteration of primary frontal dune..." Does this mean that salt marsh and primary frontal dune are excluded from the resource area conversion allowance?
2. Regarding 310 CMR 10.05(12):
  - These proposed changes are minimally different from current NOI procedures. How can these be amended to improve feasibility and success of research projects?
  - Could research projects be permitted through an RDA?
  - The 1-year time limit and 1,000 sf footprint limit are exceptionally restrictive and prevent long-term studies and whole systems-scale studies.
  - What about scientific research projects that will also require Ch91, WQC, CZM, and/or USACE permits?
  - Define "negligible" effect.
3. Regarding 310 CMR 10.24(1)(b) that says the Issuing Authority may allow the conversion of one Resource Area to other Resource Areas to achieve greater shoreline resiliency, but there shall be no loss of Salt Marsh, no alteration of Primary Frontal Dune, and no cumulative net loss of or adverse effects on Resource Areas:
  - Can "no loss" of salt marsh be interpreted as no net loss?
  - Can salt marsh in an impacted area be restored and still meet the requirement of 'no loss of Salt Marsh'?





- Salt marsh quality (really applies to any resource area) can be highly variable – is there any accommodation made for replacement of existing poor quality (regulatory salt marsh) with a healthier restored salt marsh?
  - “no alteration” of primary frontal dune may be overly restrictive, including no vegetation destruction, even if the project is net positive for area of primary frontal dune (thinking here of the parking lot retreat projects). No adverse effect would be more flexible or no permanent vegetative destruction.
  - “No alteration” of primary frontal dune also does not consider being able to work/nourish on the back side of the dune.
  - What would be acceptable methods to address cumulative net loss/adverse effects?
4. Regarding 310 CMR 10.24(7)(c)1:
- Clarify how these changes impact ACECs.
  - Can you also include public railway or other public transportation infrastructure and any associated utilities?
5. Regarding 310 CMR 10.24(7)(c)1a:
- What about an increase in side slope footprint to stabilize a higher road surface? A larger footprint will be needed if using a nature-based solution, but if not allowed, then will need hard solutions for stabilization.
6. Regarding 310 CMR 10.24(7)(c)1c:
- Please clarify what this means – i.e. if there is a roadway elevation increase but no proposed culvert changes (or maybe there is no culvert at all) would culverts then be required?
  - “No adverse flooding impacts to landward properties”. We are wondering if this includes precipitation based riverine flooding as well. Seems a raised road could impound more volume in certain scenarios and increase upstream flooding. Can you clarify one way or the other?
7. Regarding 310 CMR 10.24(7)(c)9:
- How do you see this working relative to the new requirements in LSCSF?
8. Regarding 310 CMR 10.24(7)(c)9a:
- Negatively or adversely impact would be more specific.
  - Is restoration post-construction sufficient if monitoring is included?
  - Requirement to return to natural conditions seems too strict, what if a trade could be made, relocating a non-water dependent site and replacing with a water-dependent or recreation-based one?
9. Regarding 310 CMR 10.24(7)(c)9e:
- Requirement to not impact flood stage or velocity should only be necessary if such flood stage or velocity results in increased storm damage.



10. See attached PDF of sections of the draft Redlined 310 CMR 10.00 Wetlands regulations that have additional comments added to the document where they apply.

General Comment #1 for future revisions: Consider amending the Wetland Restriction Orders to take into account sea level rise and to exempt Ecological Restoration Projects.

General Comment #2 for future revisions: Consider amending the ACEC regulations, which will provide greater flexibility for resilience projects.

If you have any questions, or require any additional information, please call me at 508-495-6240 or send an email to [bgurney@woodsholegroup.com](mailto:bgurney@woodsholegroup.com). Thank you.

Sincerely,

Beth Gurney  
Environmental Permitting Specialist

Enclosure

cc: Matt Shultz, Woods Hole Group, Inc.  
Leslie Fields, Wood Hole Group, Inc  
Bradford Bower, Woods Hole Group, Inc.

DRAFT – SUBJECT TO REVISION

**Preface for Reviewers to the Proposed 2023 Revisions to the Wetlands Protection and Water Quality Certification Regulations for Stormwater Management**

The Department is proposing for public comment the following major revisions to the Stormwater Management Standards in the Wetlands Protection Act (WPA) regulations (310 CMR 10.00), the Water Quality Certification (WQC) regulations (314 CMR 9.00), and the associated Massachusetts Stormwater Handbook (Stormwater Handbook): 1) promote nature-based Environmentally Sensitive Site Design (ESSD) and Low Impact Development (LID) in project designs; 2) revise the WPA/WQC Stormwater Management Standards and Stormwater Handbook to more closely align with the EPA General Permits for Stormwater Discharges from Small Municipal Separate Storm Sewer Systems in Massachusetts (MS4 Permit); 3) replace outdated precipitation frequency estimates used for design storms with more recent and accurate precipitation estimates to reflect more current, higher precipitation associated with extreme storms; and 4) add a new standard for achievement of Total Maximum Daily Loads (TMDLs).

Updating the Massachusetts WPA/WQC regulations will allow the Commonwealth to further the eight interests of the WPA (the eight interests of the WPA are to (1) protect private or public water supply, (2) protect ground water, (3) provide flood control, (4) prevent storm damage, (5) prevent pollution, (6) protect land containing shellfish, (7) protect wildlife habitat, and (8) protect fisheries); restore and maintain the chemical, physical and biological integrity of water resources as required by the WQC regulations; improve climate resilience and protection of water quality that is afforded by wetland Resource Areas; and strengthen compliance with TMDLs. The proposed updates to the WPA/WQC Stormwater Management Standards (310 CMR 10.05(6)(k) and 314 CMR 9.06(6)(a)) pertain to new discharges, peak discharge rate, recharge, and pollutant removal for new development and Redevelopment (as defined in 310 CMR 10.04). The proposed updates will also affect other wetland Resource Area performance standards that rely on design storms such as bordering land subject to flooding. Projects subject to WPA and WQC jurisdiction require approval by local Conservation Commissions and/or MassDEP.

The joint EPA/MassDEP MS4 Permit authorizes approximately 260 municipalities in Massachusetts as well as MassDOT highways and other non-traditional MS4s (such as certain state universities and colleges), approximately 242 Department of Conservation and Recreation facilities (including certain state parks and parkways), and Department of Correction facilities (including certain state prisons), to discharge stormwater to the waters of the United States. The MS4 Permit requires compliance with the Massachusetts WQC regulations and design specifications in the Stormwater Handbook. However, the WPA/WQC regulations and the MS4 Permit's stormwater standards currently differ in some instances. This amendment will increase consistency to the extent possible as described in more detail below. In particular, the MS4 Permit's focus is on removal of pollutants including Total Suspended Solids and Total Phosphorus and discharges subject to requirements related to an approved TMDL. The WPA/WQC regulations require removal of different amounts of Total Suspended Solids, and currently do not require removal of Total Phosphorus. Although MassDEP does require

compliance with TMDLs, more emphasis is needed in this area. Municipalities that are classified as MS4s by EPA are required to adopt a local ordinance or bylaw to require compliance with the MS4 Permit's stormwater standards. Additionally, as MassDOT Highway is a regulated MS4 entity, its stormwater discharges to waters of the U.S. will be regulated through an EPA issued Transportation Separate Storm Sewer System permit.

MassDEP's stormwater standards and associated Stormwater Handbook have wide-reaching implications across the Commonwealth. For example, the standards are directly incorporated into the WPA/WQC regulations and the Handbook is frequently referenced in the regulations. Both are referenced in the MS4 Permit and they are expected to be referenced in the Transportation Separate Storm Sewer System Permit. Additionally, an Underground Injection Control registration may need to be obtained for certain subsurface stormwater infiltration wells. Also, MassDEP is proposing a new stormwater standard that will require a higher level of stormwater treatment to meet the load allocations where a TMDL has been established due to water quality impairment, and project proponents will be obligated to reduce pollutant loads to those waterbodies. Whether specific load allocations are assigned in TMDL watersheds or not, specific standards for stormwater management will assist in attaining higher water quality and increased climate resilience.

The WPA/WQC regulations and Stormwater Handbook currently require ESSD that incorporates LID to be "considered" as part of the Redevelopment design. MassDEP proposes to require that ESSD/LID design strategies be incorporated unless such practices are infeasible for both new development and Redevelopment. This is similar to EPA's requirement in its MS4 Permit. ESSD involves identifying important natural features, placing buildings and roadways in areas less sensitive to disturbance, and designing stormwater management systems that create relationships between development and natural hydrology. LID includes landscaping and design techniques to maintain the natural, pre-developed ability of a site to manage rainfall, and to capture water on site, filter it through vegetation, and let it soak into the ground. This standard is proposed to be strengthened since sites designed with nature-based solutions better handle increases in runoff and associated pollutants expected from increasing precipitation.

To better align with the MS4 Permit, MassDEP is proposing to incorporate the use of EPA Performance Removal Curves to determine pollutant removal efficiency credits. However, because some commonly used stormwater control measures do not have an EPA Performance Removal Curve, the MassDEP method currently used to award pollutant removal credits will continue to exist, parallel to the EPA curves. Where there is no established EPA Pollutant Removal Curve, the MassDEP water quality volume (*e.g.*, first 1-inch of runoff) will be used for sizing of stormwater control measures, to determine the pollutant removal credit. Further, MassDEP proposes to amend the WPA/WQC regulations to adopt the EPA MS4 Permit's numeric criteria to require removal of 90% Total Suspended Solids and 60% Total Phosphorus from the average annual pollutant loads, and no additional water quality volume would be required with certain exceptions.

The WPA/WQC regulations' Stormwater Management Standards and other standards (such as for Bordering Land Subject to Flooding), and the Stormwater Handbook currently specify design storms that rely on precipitation data from the 1961 U.S. Weather Bureau Technical Paper 40

(TP40). MassDEP proposes to require that the National Oceanic and Atmospheric Administration Precipitation Atlas 14 Volume 10 (NOAA Atlas 14), most recently updated in 2019, be used in place of the outdated TP40. This change would be reflected in the Stormwater Handbook (*e.g.*, peak rate discharge) as well as in other parts of the WPA regulations, such as 310 CMR 10.57, where design storms are specified. TP40 substantially underrepresents current conditions. Use of the NOAA Atlas 14 will bring Massachusetts up to date with current conditions. A scaling factor is also proposed to be incorporated to account for uncertainty in extreme precipitation represented by larger currently observed storms documented in the NOAA Atlas 14 data, and which are predicted to occur more often in the future. The scaling factor to account for larger currently observed storms is the NOAA Atlas 14 upper (90%) confidence interval multiplied by 0.9. The scaling factor accounts for most of the uncertainty in the NOAA Atlas 14 precipitation frequency estimates and provides resiliency in sizing stormwater management systems and determining the extent of lands subject to flooding. In addition, MassDEP is proposing to require attenuation of runoff from the 1% chance (100-year) storm.

The current numerical recharge targets based on Hydrologic Soil Groups (HSG) are failing to approximate the annual recharge volume lost as a result of new development. To offset the loss of recharge from the post-development site, when using the static design method, MassDEP proposes that recharge systems need to be sized to a minimum of at least 1-inch multiplied by the impervious area for new development for all HSGs, except for HSG D which will remain a Maximum Extent Practicable (MEP) standard. Other methods will be allowed including the simple dynamic and dynamic field methods, and the continuous simulation method. The proposed increased recharge requirement will, in part, help achieve minimum reduction requirements for Total Suspended Solids and Total Phosphorus, in addition to maintaining wetland levels, baseflow that supports streams and rivers, water supply, and reducing stormwater runoff volumes/peak flows.

For Redevelopment projects, the MS4 Permit requires that, to improve existing conditions on site, stormwater treatment systems must be designed to retain the volume of runoff equivalent to, or greater than, 0.80 inch multiplied by the total post-construction impervious surface area on the site or remove 80% of the average annual post-construction load of Total Suspended Solids and 50% of the average annual load of Total Phosphorus generated from the total postconstruction impervious surface area on the site. MassDEP proposes to adopt the MS4 Permit requirements for pollution reduction on Redevelopment sites to replace the current Maximum Extent Practicable (MEP) requirement in the WPA/WQC regulations (Stormwater Management Standard 7 for Redevelopment) for pollutant removal. Using the MS4 Permit's numeric criteria for pollutant removal will result in greater water quality protection in wetland areas and downstream locations and will facilitate achievement of TMDLs. Water quality improvements that are sufficient to meet TMDLs may not be achieved with the current MEP standard for water quality in Redevelopment. Redevelopment projects will still have to meet the other standards to the MEP as defined under the existing Stormwater Management Standard 7. Further, MassDEP proposes that existing stormwater exemptions and projects subject to the MEP standard as defined in 310 CMR 10.05(6)(l) and (m) will not change, however there are additional categories of projects that will be subject to the MEP standard (including Stormwater Management Standard 7) such as existing public roadway maintenance. MassDEP also proposes to allow the applicant to meet the Redevelopment pollutant removal and recharge standards off-site when the

issuing authority determines that on-site mitigation cannot be fully provided or can only be partially provided.

Finally, MassDEP proposes to add a new Stormwater Management Standard 11 for projects that discharge to waters designated with a TMDL for phosphorus, nitrogen, metals, or pathogens. While the existing Stormwater Handbook contains language to facilitate TMDL achievement, the inclusion of this proposed standard will add emphasis to that goal. Stormwater runoff is a leading cause of water quality impairments in the Commonwealth's rivers, lakes, ponds, and marine waters. Point and non-point discharges of pollution to watersheds for which TMDLs have been approved are required to reduce pollutant loads to their waterbodies based, in part, on standards outlined in the Stormwater Handbook. These recommended changes are a key component of meeting pollutant reduction goals set by TMDLs and for improving wetlands water quality. It is part of MassDEP's core mission to protect public health and enhance the quality and value of the water resources of the Commonwealth. MassDEP is also directed (MGL c. 21, §§ 26 through 53) to take all action necessary or appropriate to secure to the Commonwealth the benefits of the federal Clean Water Act, 33 U.S.C. § 1251 *et. seq.* the objective of which is the restoration and maintenance of the chemical, physical, and biological integrity of the Nation's waters. Inclusion of this specification as a standard will improve success in meeting TMDL goals and ultimately removal of impaired waters from the 303(d) list.

### **Preface For Reviewers to the 2023 Revisions to the Wetlands Protection Act Regulations for Land Subject to Coastal Storm Flowage**

The Department is proposing for public comment revisions to its regulations under the Wetlands Protection Act to add provisions for Land Subject to Coastal Storm Flowage. This Resource Area extends from the mean low water line to the farthest landward extent of the coastal floodplain, typically described as the area that has a 1% annual chance of flooding in a coastal storm. The other coastal Resource Areas, such as Dune, Barrier Beach, and Coastal Bank, are sometimes found within Land Subject to Coastal Storm Flowage and have been subject to performance standards since the late 1970s. Land Subject to Coastal Storm Flowage varies depending on topography, geomorphology, and exposure to the predominant storms - Nor'easters and hurricanes. There is often extensive development within this Resource Area, which is increasingly at risk as climate change leads to sea level rise and more frequent and intense storms. Land Subject to Coastal Storm Flowage buffers the effects of coastal storms, reducing damage to property, infrastructure, and the environment. Inappropriate construction and other human modifications can adversely impact its ability to reduce storm damage, resulting in threats to public health and safety, government-subsidized flood insurance claims, and reoccurring public expenditures to address damage to private and public property.

These regulations implement recommendations of the Massachusetts State Hazard Mitigation and Climate Adaptation Plan (September 2018). Municipalities regulate development in the floodplain through planning and zoning that meet the minimum requirements for participation in the National Flood Insurance Program (NFIP), and the Massachusetts State Building Code sets construction standards conforming to the NFIP. The NFIP program is based on Flood Insurance Rate Maps (FIRM) produced by the Federal Emergency Management Administration (FEMA),



which show the boundaries of the 1% annual chance floodplain and other zones within it based on past conditions. The regulations for Land Subject to Coastal Storm Flowage are based on FEMA's maps, which depict the information necessary for permitting activities in this Resource Area. Applicants are also encouraged to supplement the required evaluations by consulting the Massachusetts Coast Flood Risk Model Maps, referenced in the Massachusetts State Hazard Mitigation and Climate Adaptation Plan, which show probability and depth of inundation under projected future conditions for various scenarios of sea level rise and changing climate conditions.

While projects within Land Subject to Coastal Storm Flowage are typically subject to the Building Code or other regulations with different objectives, the purpose of the Wetlands Protection Act review is to ensure that activities affecting Resource Areas contribute to identified public interests. Land Subject to Coastal Storm Flowage is either *per se* or presumed significant to the public interests of flood control and storm damage prevention. Flood control is defined as the prevention or reduction of flooding and storm damage. Storm damage prevention is defined as the prevention of damage caused by water from storms, including erosion and sedimentation, damage to vegetation, property or buildings, or damage caused by flooding and water-borne debris. The regulations promote resilience by preserving and restoring natural floodplain functions that Land Subject to Coastal Storm Flowage provides.

The Department's regulations are not concerned with the standards for construction or materials of buildings, which are governed by the state Building Code, but do address the adverse effects of proposed buildings, other structures, or alterations on the floodplain functions of the Resource Area. The Department has designed its regulations for Land Subject to Coastal Storm Flowage to coordinate requirements to the extent possible with other state and federal law, but its role is distinct and unambiguous. The purpose of review under the Wetlands Regulations for Land Subject to Coastal Storm Flowage is the same as for other Resource Areas: to protect the interests of the Act when proposed work sited there could affect its capacity to contribute to flood control and storm damage prevention.

Land Subject to Coastal Storm Flowage is divided into zones that reflect the magnitude of wave energy of flood waters in the 1% annual chance storm event and are shown on the FIRM. The Velocity Zone, or V-Zone, is generally the most seaward zone and contains wave heights three feet or greater. Buildings and infrastructure along the Massachusetts coastline damaged or destroyed during storms are typically located in the V-Zone, resulting in significant and often repetitive private and public costs. The siting of buildings in the V-Zone diminishes the capacity of the V-Zone and other Resource Areas to prevent storm damage. Roads built in the V-Zone are also being inundated by rising seas, resulting in the need for reconstruction or elevation, which can further impair Resource Areas. Under these proposed regulations, activities in the V-Zone are therefore limited. New buildings, even on piles, are not allowed in the V-Zone, because the turbulent wave action causes scour around the piles and erosion beneath structures, decreasing the ability of these Resource Areas to recover after storm events. As this occurs, the V-Zone becomes less effective at absorbing wave energy – a critical floodplain function even more important with sea level rise. This requirement is consistent with the Department's Title 5 regulations, which prohibit new septic tanks and soil absorption systems in the V-Zone.

The Moderate Wave Action (MoWA) Zone is inland of the V-Zone and contains wave heights equal to or greater than 1.5 feet but less than 3 feet. Damage to buildings has also been documented to occur in the MoWA Zone, attributable to siting and alterations within the Resource Area. Buildings on solid foundations and elevated structures below flood elevation can redirect waves and obstruct flows during storms, increasing flood velocity, elevation, and volume to other properties. Where buildings are damaged during storms, debris can further obstruct flows and damage Land Subject to Coastal Storm Flowage and other Resource Areas, reducing their ability to perform the functions of flood control and storm damage prevention. Therefore, new buildings in the MoWA must be elevated on Open Piles to allow flood water to flow across the floodplain and preserve the Resource Area's ability to reduce impacts to landward areas. To protect Land Subject to Coastal Storm Flowage and other Resource Areas, these regulations require buildings in the MoWA Zone to be elevated an additional two feet above the base flood elevation, which provides a margin of error due to the effects of climate change and for uncertainty in determining flood elevations. Such additional elevation (sometimes called "freeboard") is used by many states to account for sea level rise, shoreline erosion, topographic and bathymetric changes, and changes in land use that may increase flood elevations and are not reflected in the base flood elevation shown on the FIRM. Although other coastal Resource Areas are generally governed by their own performance standards, the elevation requirements are to apply across all coastal Resource Areas. Within the V-Zones and MoWA Zones, where wave energy poses the greatest potential for damage to buildings and to Resource Areas, the performance standards are designed to ensure that any activities will have no adverse effect on the Resource Area.

Land Subject to Coastal Storm Flowage also includes the landward coastal floodplain called the Minimum Wave Action (MiWA) Zone where waves are less than 1.5 feet and flooding occurs at varying depths. In this area, NFIP standards require elevation of new buildings above the base flood elevation, but solid foundations may be allowed. Elevating structures in this area as required by the Building Code and these wetlands regulations accounts for the effects of climate change and uncertainty in determining flood elevations in the MiWA Zone to ensure protection of the flood control and storm damage interests in the future. Additional elevation or an open foundation may be required when a building is proposed where wave action may occur within the Buffer Zone of another Resource Area. The performance standards for the MiWA Zone are designed to minimize adverse effects on the Resource Area by preserving soils and vegetation and reducing impervious surfaces to decrease the velocity of flood waters and increase infiltration. Structures or changes in topography must not increase flood velocities, volume, or elevations causing damage to other properties. Applicants must provide mitigation for alterations that would redirect flood waters or would increase flood velocity, volume, or elevations within a topographic depression or confined basin where a manmade or natural feature significantly impedes or prevents the return flow of flood waters to the ocean. Unclear where this would apply, need a figure to illustrate

Much of Land Subject to Coastal Storm Flowage along the Massachusetts coast is developed, including areas within several cities. The regulations contain provisions for Redevelopment, similar to those for Riverfront Area, recognizing that Redevelopment may raise different concerns than new construction in undisturbed areas. In fact, existing development often exacerbates storm damage or flooding. The provisions require, at a minimum, an improvement in existing conditions to promote resiliency as part of any Redevelopment. Elevation, with the exception of Historic Structures, is a

Unclear what the floodplain function benefits are of elevation, if not on open piles.

primary means of preserving, protecting, or improving the function of the Resource Area and is required for buildings with new foundations, substantial improvement, or repair of substantial damage. Determinations as to the condition of buildings under the State Building Code are to be made by the building official rather than the Issuing Authority, as building officials have jurisdiction for their decisions under the Code. Specific provisions allow flood control projects.

Finally, the draft regulations include a provision intended to enable Salt Marsh and Coastal Dune migration into Land Subject to Coastal Storm Flowage. Salt Marsh is widely considered the most important of the Commonwealth's wetland Resource Areas, and the most at risk from sea level rise. Coastal Dunes will naturally tend to migrate inland, and both Salt Marsh and Coastal Dunes protect inland areas from storm damage. The Department is proposing a provision which would allow owners of Land Subject to Coastal Storm Flowage, particularly when adjacent to these other Resource Areas, to prepare or set aside land for landward migration. Although the area of land on individual parcels may be small, the pace of migration slow, and knowledge of how best to accommodate migration currently limited, the Department seeks to provide a pathway that will be available to interested landowners to participate in this resource protection effort. The provision for ecological restoration projects remains available for applicants proposing work in other Resource Areas.

**[NOTE TO REVIEWERS:**

*MassDEP IS SETTING FORTH IN THIS DOCUMENT PROPOSED AMENDMENTS TO THE CURRENT REGULATION AT 310 CMR 10.00 IN REDLINE AND STRIKEOUT FORMAT. REDLINES SHOW ADDITIONS TO THE CURRENT REGULATORY TEXT AND STRIKEOUTS SHOW PROPOSED DELETIONS. SINCE THE REGULATION IS VERY LONG, MassDEP IS PUBLISHING ONLY THOSE PORTIONS OF THE REGULATION FOR WHICH THE AGENCY IS PROPOSING TO MAKE AMENDMENTS. MassDEP HAS INCLUDED TEXT JUST PRIOR TO (and in some cases text just after) NEW INSERTED TEXT TO MAKE IT CLEAR WHERE THE NEW TEXT IS PROPOSED TO BE INSERTED INTO THE CURRENT REGULATIONS. REVIEWERS CAN FIND THE FULL UNOFFICIAL TEXT OF 310 CMR 10.00 IN ITS CURRENT FORM ON MassDEP'S WEBSITE AND THE OFFICIAL VERSION CAN BE PURCHASED THROUGH THE STATE HOUSE LIBRARY.]*

**310 CMR 10.00: WETLANDS PROTECTION**

Section

Regulations for All Wetlands

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- ~~(10.36: Reserved: Variance Provision is found at 310 MCR 10.05(10))~~ Land Subject to Coastal Storm Flowage
- 10.37: Estimated Habitats of Rare Wildlife (for Coastal Wetlands)

#### Additional Regulations for Inland Wetlands

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- 10.58: Riverfront Area
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- 10.60: Wildlife Habitat Evaluations

#### ~~Appendices: Prefaces to Previous Regulatory Revisions~~

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~~Rights of Way Management; 1987~~

~~1983 Regulatory Revisions~~

~~Fees; 1989~~

~~Technical Changes; 1992~~

~~Maintenance and Improvement of Land in Agricultural Use; 1993~~

~~Preface to Wetlands Regulatory Revisions Effective January 1, 1994~~

#### **10.01: Introduction and Purpose**

(1) Introduction. 310 CMR 10.00 is promulgated by the Commissioner of the Massachusetts Department of Environmental Protection pursuant to the authority granted under The Wetlands Protection Act, M.G.L. c. 131, § 40. 310 CMR 10.00 shall complement M.G.L. c. 131, § 40, and shall have the force of law.

310 CMR 10.01 through 10.10 provide definitions and procedures. 310 CMR 10.01 through 10.10 pertains to both inland and coastal areas subject to protection under M.G.L. c. 131, § 40. 310 CMR 10.21 through 10.60 provide standards for work within those areas. 310 CMR 10.21 through 10.37 pertains only to coastal areas and 310 CMR 10.51 through 10.57 and 10.60 pertains only to inland areas. Riverfront Area at 310 CMR

10.58 may be coastal or inland. A project may be subject to regulation under 310 CMR 10.00 in which case compliance with all applicable regulations is required.

(2) Purpose. M.G.L. c. 131, § 40 sets forth a public review and decision-making process by which activities affecting Areas Subject to Protection under M.G.L. c. 131, § 40 are to be regulated in order to contribute to the following interests:

- protection of public and private water supply
- protection of ground water supply
- flood control
- storm damage prevention
- prevention of pollution
- protection of land containing shellfish
- protection of fisheries
- protection of wildlife habitat

The purpose of 310 CMR 10.00 is to define and clarify that process by establishing standard definitions and uniform procedures by which conservation commissions and the Department may carry out their responsibilities under M.G.L. c. 131, § 40. Applicants and issuing authorities shall use forms provided by the Department to implement 310 CMR 10.00.

310 CMR 10.00 is intended solely for use in administering M.G.L. c. 131, § 40; nothing contained in 310 CMR 10.00 should be construed as preempting or precluding more stringent protection of wetlands or other natural resource areas by local by-law, ordinance or regulation.

## **10.02: Statement of Jurisdiction**

(1) Areas Subject to Protection under M.G.L. c. 131, § 40. The following areas are subject to protection under M.G.L. c. 131, § 40:

- |     |                         |           |             |
|-----|-------------------------|-----------|-------------|
| (a) | Any bank,               |           | the ocean   |
|     | any freshwater wetland, |           | any estuary |
|     | any coastal wetland,    |           | any creek   |
|     | any beach,              | bordering | any river   |
|     | any dune,               | on        | any stream  |
|     | any flat,               |           | any pond    |
|     | any marsh,              |           | or any lake |
|     | or any swamp            |           |             |
- (b) Land under any of the water bodies listed above
- (c) Land subject to tidal action
- (d) Land subject to coastal storm flowage
- (e) Land subject to flooding
- (f) Riverfront area.

(2) Activities Subject to Regulation under M.G.L. c. 131, § 40.



(a) Activities Within the Areas Subject to Protection under M.G.L. c. 131, § 40.

Any activity proposed or undertaken within an area specified in 310 CMR 10.02(1), which will remove, fill, dredge or alter that area, is subject to Regulation under M.G.L. c. 131, § 40 and requires the filing of a Notice of Intent except:

1. minor activities within the ~~r~~Riverfront ~~a~~A Area meeting the requirement of 310 CMR 10.02(2)(b)1. and 2.; ~~and~~
2. activities conducted to maintain, repair or replace, but not substantially change or enlarge an existing and lawfully located structure or facility used in the service of the public and used to provide electric, gas, water, sewer, telephone, telegraph and other communication services, provided said work utilizes the ~~B~~best ~~P~~practical ~~M~~measures to avoid or minimize impacts to wetland ~~R~~resource ~~A~~areas outside the footprint of said structure or facility. A project proponent claiming that work to remove, fill, dredge or alter an area specified in 310 CMR 10.02(1) does not require the filing of a Notice of Intent has the burden of establishing that the work is not subject to Regulation under M.G.L. c. 131, § 40; ~~and-~~

**[INSERT NEW SUBSECTION 3. AS FOLLOWS:]**

3. minor activities in the Minimum Wave Action Zone of Land Subject to Coastal Storm Flowage as prescribed in 310 CMR 10.02(2)(a)3.a. through f.; provided that such minor activities are located outside any other areas subject to protection specified in 310 CMR 10.02(1)(a), (b), (c), (e), or (f) and any Buffer Zone:

- a. fencing with a minimum of 50% opening;
- b. sheds less than 100 sq. ft. in size;
- c. planting of native species of trees, shrubs or ground cover;
- d. vista pruning;
- e. conversion of impervious surfaces to pervious surfaces; or
- f. conversion of lawn to another vegetated use, such as a vegetable garden.

Any other work in Land Subject to Coastal Storm Flowage, and any work in any other coastal Resource Area, requires compliance with the procedures at 310 CMR 10.05 and any applicable performance standards.

(b) Activities Within the Buffer Zone. Any activity other than minor activities identified in 310 CMR 10.02(2)(b)2. proposed or undertaken within 100 feet of an area specified in 310 CMR 10.02(1)(a) (hereinafter called the Buffer Zone) which, in the judgment of the issuing authority, will alter an Area Subject to Protection under M.G.L. c. 131, § 40 is subject to regulation under M.G.L. c. 131, § 40 and requires the filing of a Notice of Intent. (See also 310 CMR 10.05(3)(a)2.). The areas subject to jurisdiction identified in 310 CMR 10.02(1)(b) through (f) do not have a buffer zone.

1. Minor activities, as described in 310 CMR 10.02(2)(b)2., within the buffer zone and outside any areas specified in 310 CMR 10.02(1)(a) through (e) are not otherwise subject to regulation under M.G.L. c. 131, §

40 provided that the work is performed: solely within the buffer zone, as prescribed in 310 CMR 10.02(2)(b)2.a. through ~~41.~~, in a manner so as to reduce the potential for any adverse impacts to the resource area during construction, and with post-construction measures implemented to stabilize any disturbed areas. Factors to consider when measuring the potential for adverse impacts to resource areas include the extent of the work, the proximity to the resource area, the need for erosion controls, and the measures employed to prevent adverse impacts to resource areas during and following the work.

2. The following minor activities, provided that they comply with 310 CMR 10.02(2)(b)1., are not otherwise subject to regulation under M.G.L.

c. 131, § 40:

- a. Unpaved pedestrian walkways less than 30 inches wide for private use and less than three feet wide for public access on conservation property;
- b. Fencing, provided it will not constitute a barrier to wildlife movement; stonewalls; stacks of cordwood;
- c. Vista pruning, provided the activity is located more than 50 feet from the mean annual high water line within a Riverfront Area or from Bordering Vegetated Wetland, whichever is farther. (Pruning of landscaped areas is not subject to jurisdiction under 310 CMR 10.00.);
- d. Plantings of native species of trees, shrubs, or groundcover, but excluding turf lawns;
- e. The conversion of lawn to uses accessory to residential structures such as decks, sheds, patios, pools, replacement of a basement bulkhead and the installation of a ramp for compliance with accessibility requirements, provided the activity, including material staging and stockpiling is located more than 50 feet from the mean annual high-water line within the Riverfront Area, Bank or from Bordering Vegetated Wetland, whichever is farther, and erosion and sedimentation controls are implemented during construction. The conversion of such uses accessory to existing single family houses to lawn is also allowed. (Mowing of lawns is not subject to jurisdiction under 310 CMR 10.00);
- f. The conversion of impervious to vegetated surfaces, provided erosion and sedimentation controls are implemented during construction;
- g. Activities that are temporary in nature, have negligible impacts, and are necessary for planning and design purposes (e.g., installation of monitoring wells, exploratory borings, sediment sampling and surveying and percolation tests for septic systems provided that resource areas are not crossed for site access);

- h. Installation of directly embedded utility poles and associated anchors, push braces or grounding mats/rods along existing paved or unpaved roadways and private roadways/driveways, and their existing maintained shoulders, or within existing railroad rights-of-way, provided that all work is conducted within ten feet of the road or driveway shoulder and is a minimum of ten feet from the edge of the Bank or Bordering Vegetated Wetland and as far away from resource areas as practicable, with no additional tree clearing or substantial grading within the buffer zone, and provided that all vehicles and machinery are located within the roadway surface during work;
- i. Installation of underground utilities (e.g., electric, gas, water) within existing paved or unpaved roadways and private roadways/driveways, provided that all work is conducted within the roadway or driveway and that all trenches are closed at the completion of each workday;
- j. Installation and repair of underground sewer lines within existing paved or unpaved roadways and private roadways/driveways, provided that all work is conducted within the roadway or driveway and that all trenches are closed at the end of completion of each workday;
- k. Installation of new equipment within existing or approved electric or gas facilities when such equipment is contained entirely within the developed/disturbed existing fenced yard;
- l. Installation of access road gates at public or private road entrances to existing utility right-of-way access roads, provided that all vehicles and machinery are located within the roadway surface during work;
- m. Removal of existing utility equipment (poles, anchors, lines) along existing or approved roadways or within existing or approved electric, water or gas facilities, provided that all vehicles and machinery are located within the roadway surface during work;
- n. Vegetation cutting for road safety maintenance, limited to the following:
  - i. Removal of diseased or damaged trees or branches that pose an immediate and substantial threat to driver safety from falling into the roadway;
  - ii. Removal of shrubbery or branches to maintain clear guardrails; such removal shall extend no further than six feet from the rear of the guardrail;
  - iii. Removal of shrubbery or branches to maintain sight distances at existing intersections; such removal shall be no

farther than five feet beyond the "sight triangles" established according to practices set forth in American Association of State Highway and Transportation Officials (AASHTO) A Policy on Geometric Design of Highways and Streets, 2011, 6th edition, and such removal is a minimum of ten feet from a resource area, other than Riverfront Area; and

iv. Removal of shrubbery, branches, or other vegetation required to maintain the visibility of road signs and signals.

Cuttings of shrubs and branches from mature trees will be performed with suitable horticultural equipment and methods that do not further damage the trees. To prevent the possible export of invasive plants, cut vegetation should be chipped and evenly spread on site, provided the chips are spread outside the buffer zone, and raked to a depth not to exceed three inches, clear of all drainage ways.

Alternatively, all cuttings and slash shall be removed from the site and properly disposed;

o. Installation, repair, replacement or removal of signs, signals, sign and signal posts and associated supports, braces, anchors, and foundations along existing paved roadways and their shoulders, provided that work is conducted as far from resource areas as practicable, and is located a minimum of ten feet from a resource area, any excess soil is removed from the project location, and any disturbed soils are stabilized as appropriate;

p. Pavement repair, resurfacing, and reclamation of existing roadways within the right-of-way configuration provided that the roadway and shoulders are not widened, no staging or stockpiling of materials, all disturbed road shoulders are stabilized within 72 hours of completion of the resurfacing or reclamation, and no work on the drainage system is performed, other than adjustments and/or repairs to respective structures within the roadway;

q. The repair or replacement of an existing and lawfully located driveway servicing not more than two dwelling units provided that all work remains within the existing limits of the driveway and all surfaces are permanently stabilized within 14 days of final grade.

r. Public Shared Use Path vegetation cutting for public safety and pavement repair and resurfacing in the Buffer Zone and Riverfront Area, limited to the following:

i. Removal of diseased or damaged trees or branches that pose an immediate and substantial threat to public safety from falling into the Public Shared Use Path;

ii. Removal of shrubbery or branches to maintain vertical clearances and horizontal trail edges and shoulders by trimming vegetation as needed to provide for public safety. Trimming and removal may occur up to six feet beyond the outer edge of the shoulder; and

iii. Removal of shrubbery, branches, or other vegetation required to maintain the visibility of Public Shared Use Path signs.

iv.

For activities described in 310 CMR 10.02(2)(b)2.r.i. through iii., cutting of shrubs and branches from mature trees will be performed with hand methods that do not further damage the trees. To prevent the possible export of invasive plants, cut vegetation may be chipped and evenly spread on the Project Site; provided that the chips are spread outside the Buffer Zone and not within a Resource Area, and raked to a depth not to exceed three inches, clear of all drainage ways, or -alternatively, all cuttings and slash shall be removed from the Project Site and properly disposed.——

v. Pavement repair, resurfacing, and reclamation of existing paved Public Shared Use Paths and bicycle paths; provided that the Public Shared Use Paths and bicycle paths are not widened, measures are implemented during milling and grinding to prevent any sidecast of asphalt or concrete dust to Resource Areas, no asphalt mulch is utilized, coal tar-based pavement sealants are not utilized, there is no staging or stockpiling of materials, all disturbed surfaces are fully stabilized within 72 hours of completion of the resurfacing or reclamation, and no work on any component of a Stormwater Management System is performed, including but not limited to drainage swales.

3. Activities within the buffer zone which do not meet the requirements of 310 CMR 10.02(2)(b)1. and 2. are subject to preconstruction review through the filing of a Determination of Applicability to clarify jurisdiction or a Notice of Intent under the provisions of 310 CMR 10.05(4) and 10.53(1).

(c) Notwithstanding the provisions of 310 CMR 10.02(1) and (2)(a) and (b), stormwater management systems designed, constructed, installed, operated, maintained, and/or improved as defined in 310 CMR 10.04 in accordance with the *Stormwater Management Standards* as provided in the *Stormwater Management*

*Policy (1996)* or 310 CMR 10.05(6)(k)~~-1. through -11. through (q)~~ do not by themselves constitute Areas Subject to Protection under M.G.L. c. 131, § 40<sub>2</sub> or Buffer Zone provided that:

1. the system was designed, constructed, installed, and/or improved as defined in 310 CMR 10.04 on or after November 18, 1996; and

2. if the system was constructed in an Area Subject to Protection under M.G.L. c. 131, § 40<sub>2</sub> or Buffer Zone, the system was designed, constructed, and installed in accordance with all applicable provisions in 310 CMR 10.00.

(d) Activities Outside the Areas Subject to Protection under M.G.L. c. 131, § 40<sub>2</sub> and the Buffer Zone. Any activity proposed or undertaken outside the areas specified in 310 CMR 10.02(1) and outside the Buffer Zone is not subject to regulation under M.G.L. c. 131, § 40<sub>2</sub> and does not require the filing of a Notice of Intent unless and until that activity actually alters an Area Subject to Protection under M.G.L. c. 131, § 40. In the event that the issuing authority determines that such activity has in fact altered an Area Subject to Protection under M.G.L. c. 131, § 40, it may require the filing of a Notice of Intent and/or issuance of an Enforcement Order and shall impose such conditions on the activity or any portion thereof as it deems necessary to contribute to the protection of the interests identified in M.G.L. c. 131, § 40.

(3) Notwithstanding the provisions of 310 CMR 10.02(1) and (2), the maintenance of a stormwater management system constructed and/or improved as defined in 310 CMR 10.04 from November 18, 1996 through January 1, 2008, in accordance with the *Stormwater Management Standards*, as provided in the *Massachusetts Stormwater Policy*, issued by the Department on November 18, 1996 or on or after January 2, 2008, in accordance with the *Stormwater Management Standards* as provided in 310 CMR 10.05(6)(k)~~-1. through -11. through (q)~~ is not subject to regulation under M.G.L. c. 131, § 40<sub>2</sub> provided that:

(a) if the system was constructed in an Area Subject to Protection under M.G.L. c. 131, § 40<sub>2</sub> or associated Buffer Zone, the system was constructed in accordance with all applicable provisions of 310 CMR 10.00;

(b) the work to maintain the stormwater management system is limited to maintenance of a stormwater management system as defined in 310 CMR 10.04; and

(c) said work utilizes Best Practical Masures to avoid and minimize impacts to wetland

resource areas outside the footprint of the stormwater management system.

Notwithstanding the provisions of 310 CMR 10.02(1) and (2), any bordering vegetated wetland, bank, land under water, land subject to flooding, or riverfront area created solely for the purpose of stormwater management shall not require the filing of a Notice of Intent to maintain the stormwater management system, provided that:

1. the work to maintain the stormwater management system is limited to the maintenance of a stormwater management system as defined in 310 CMR 10.04;



2. the stormwater management system was proposed in a Notice of Intent filed before January 2, 2008, and conforms to an Order of Conditions issued after April 1, 1983;
3. the area is not altered for other purposes; and
4. said work utilizes ~~B~~best ~~P~~practical ~~M~~measures to avoid and minimize impacts to wetland resource areas outside the footprint of the stormwater management system.

(4) Notwithstanding anything to the contrary in 310 CMR 10.00, work other than maintenance that may alter or affect a stormwater management system (including work to repair or replace the stormwater management system, and any change to the site that increases the total or peak volume of stormwater managed by the system, directs additional stormwater to the system, and/or increases the volume of stormwater exposed to land uses with higher potential pollutant loads) that was designed, constructed, installed and/or improved after November 18, 1996, as defined in 310 CMR 10.04, and if constructed in an Area Subject to Protection under M.G.L. c. 131, § 40~~2~~, or Buffer Zone, as described in 310 CMR 10.02(1) and (2)(a) through (d), the system was constructed in accordance with all applicable provisions of 310 CMR 10.00, solely for the purpose of stormwater management, in accordance with the *Stormwater Management Standards* as provided in the *Stormwater Management Policy (1996)* or 310 CMR 10.05(6)(k)-~~1. through -11. through (q)~~, may be permitted through an Order of Conditions, or Negative Determination of Applicability provided that the work:

- (a) at a minimum provides the same capacity as the original design to attenuate peak discharge rates, recharge the ground water, and remove ~~T~~total ~~S~~suspended ~~S~~solids;
- (b) complies with the Stormwater Management Standards as provided in 310 CMR 10.05(6)(k)-~~1. through -11. through (q)~~; and
- (c) meets all the applicable performance standards for any work that expands the existing stormwater management system into an Area Subject to Protection under M.G.L. c. 131, § 40~~2~~, or Buffer Zone as described in 310 CMR 10.02(1) and (2)(a) through (d).

(5) For purposes of 310 CMR 10.02(2)(c) and (4), the applicant has the burden of proving that the proposed project involves a stormwater management system designed, constructed, installed, operated, maintained and/or improved as defined at 310 CMR 10.04 in accordance with the Stormwater Management Standards as provided in the *Stormwater Management Policy (1996)* or 310 CMR 10.05(6)(k)-~~1. through -11. through (q)~~ and that the system was designed, constructed, installed and/or improved on or after November 18, 1996. The applicant also has the burden of establishing whether said stormwater management system was installed in an Area Subject to Protection under M.G.L. c. 131, § 40~~2~~, or associated Buffer Zone, and, if so, that the system was constructed in accordance with all applicable provisions of 310 CMR 10.00. An applicant shall use the best evidence available to meet the burden of proof required. For purposes of 310 CMR 10.02(2)(c) and (4), the best evidence is the Order of Conditions, Order of Resource Area Delineation or Determination of Applicability for the project served by the stormwater management system together with the plans referenced in and accompanying such Order or Determination, and, if applicable, the Certificate of Compliance. If the best evidence is available, the date the system was designed shall be the date the Notice of Intent, Request for Determination or Notice of Resource Area Delineation was filed. If the best evidence is not

available, the applicant shall rely on other credible evidence to meet the required burden of proof such as local approval of the stormwater management system along with the plans referenced in and accompanying said approval and any wetland conservancy maps and wetland change maps for the relevant time period published by the Department on MassGIS.

#### Commentary

The Department has determined that activities within Areas Subject to Protection under M.G.L. c. 131, § 40 are so likely to result in the removing, filling, dredging or altering of those areas that preconstruction review is always justified, and that the issuing authority shall therefore always require the filing of a Notice of Intent for said activities.

The Department has determined that activities within 100 feet of those areas specified in 310 CMR 10.02(1)(a) are sufficiently likely to alter said areas that preconstruction review may be necessary. Therefore, a request for a Determination of Applicability must be filed for some activities within the Buffer Zone. The issuing authority shall then make a determination as to whether the activity so proposed will alter an Area Subject to Protection under M.G.L. c. 131, § 40 and, if so, shall require the filing of a Notice of Intent for said activities. The issuing authority shall not require the filing of a Notice of Intent if it determines that the activity proposed within the Buffer Zone will not alter an Area Subject to Protection under M.G.L. c. 131, § 40.

The Department has determined that activities outside the Areas Subject to Protection under M.G.L. c. 131, § 40 and outside the Buffer Zone are so unlikely to result in the altering of Areas Subject to Protection under M.G.L. c. 131, § 40 that preconstruction review is not required, and therefore the issuing authority shall not regulate said activities unless and until they actually result in the altering of an Area Subject to Protection under M.G.L. c. 131, § 40.

### **10.03: General Provisions**

#### **(1) Burden of Proof.**

(a) Any person who files a Notice of Intent to perform any work within an Area Subject to Protection under M.G.L. c. 131, § 40 or within the Buffer Zone has the burden of demonstrating to the issuing authority:

1. that the area is not significant to the protection of any of the interests identified in M.G.L. c. 131, § 40; or
2. that the proposed work within a resource area will contribute to the protection of the interests identified in M.G.L. c. 131, § 40 by complying with the general performance standards established by 310 CMR 10.00 for that area.
3. that proposed work within the buffer zone will contribute to the protection of the interests identified in M.G.L. c. 131, § 40, except that proposed work which lies both within the riverfront area and within all or a portion of the buffer zone to another resource area shall comply with the performance standards for riverfront areas at 310 CMR 10.58. For minor activities as specified in 310 CMR 10.02(2)b.1. within the riverfront area or the buffer zone to another resource area, the Department has determined that additional conditions are not necessary to contribute to the protection of the interests identified in M.G.L. c. 131, § 40.

(b) Any person who requests the issuing authority to regulate work taking place outside an Area Subject to Protection under M.G.L. c. 131, § 40 and outside the Buffer Zone has the burden of demonstrating to the satisfaction of the issuing authority that the work has in fact altered an Area Subject to Protection under M.G.L. c. 131, § 40.

(2) Burden of Going Forward. The burden of going forward means having to produce at least some credible evidence from a competent source in support of the position taken. This burden shall be upon the person contesting the Department's position when the Department has been requested to hold an adjudicatory hearing. In the event that under the provisions of 310 CMR 10.03 two or more persons have the burden of going forward, said burden may be placed on all or any number of them, in the discretion of the hearing officer.

(3) Presumption Concerning 310 CMR 15.000: The State Environmental Code, Title 5: Standard Requirements for the Siting, Construction, Inspection, Upgrade and Expansion of On-site Sewage Treatment and Disposal Systems and for the Transport and Disposal of Septage. A subsurface sewage disposal system that is to be constructed in compliance with the requirements of 310 CMR 15.000: *The State Environmental Code, Title 5: Standard Requirements for the Siting, Construction, Inspection, Upgrade and Expansion of On-site Sewage Treatment and Disposal Systems and for the Transport and Disposal of Septage*, or more stringent local board of health requirements, shall be presumed to protect the eight interests identified in M.G.L. c. 131, § 40, but only if none of the components of said system is located within the following resource areas:

(a) Coastal.

1. coastal bank;
2. coastal beach;
3. coastal dune;
4. salt marsh.

(b) Inland.

- |                |           |         |
|----------------|-----------|---------|
| 1. wet meadows |           | creek;  |
| 2. marsh       | bordering | river;  |
| 3. swamp       | on any    | stream; |
| 4. bog pond;   |           | lake.   |

and only if the soil absorption system of said system is set back at least 50 feet horizontally from the boundary of said areas, as required by 310 CMR 15.211: *Minimum Setback Distances*, or a greater distance as may be required by more stringent local ordinance, by-law or regulation. To protect wildlife habitat within riverfront areas, the soil absorption system shall not be located within 100 feet of the mean annual high-water line unless there is no alternative location on the lot which conforms to 310 CMR 15.000: *The State Environmental Code, Title 5: Standard Requirements for the Siting, Construction, Inspection, Upgrade and Expansion of On-site Sewage Treatment and Disposal Systems and for the Transport and Disposal of Septage* without requiring a variance as determined by the local Board of Health, with less adverse effects on resource areas.

This presumption, however, shall apply only to impacts of the discharge from a sewage disposal system, and not to the impacts from construction of that system, such as erosion and siltation from the excavation, placement of fill, or removal of vegetation. Impacts from construction shall be minimized by the placement of erosion and sedimentation controls during excavation, limiting the placement of fill, confining the removal of vegetation to that necessary for the footprint of the system, and taking other measures deemed necessary by the issuing authority.

The setback distance specified above shall be determined by measuring from the boundary of the area in question, from the contour at the mean annual flood elevation in inland areas, or from the top of a coastal bank or the contour at the highest spring tide elevation in coastal areas, whichever is further from the water body.

The setback distance specified above shall not be required for the renovation or replacement (but is required for the substantial enlargement) of septic systems constructed prior to the effective date of 310 CMR 10.00, provided no alternative location is available on the lot and such work has been approved by the local board of health or the Department, as required by law.

This presumption may be overcome only by credible evidence from a competent source that compliance with 310 CMR 15.000: *The State Environmental Code, Title 5: Standard Requirements for the Siting, Construction, Inspection, Upgrade and Expansion of On-site Sewage Treatment and Disposal Systems and for the Transport and Disposal of Septage* or more stringent local requirements will not protect the interests identified in M.G.L. c. 131, § 40.

(4) Presumption Concerning Point-source Discharges. If the Department has issued a permit pursuant to M.G.L. c. 21, § 43, ~~in conjunction with and/or the U.S. Environmental Protection Agency has issued~~ a federal NPDES (National Pollutant Discharge Elimination System) permit for any new point-source discharge of pollutants, or ~~either entity~~ will issue such a permit(s) prior to commencement of the discharge, the effluent limitations established in the permit(s) shall be presumed to protect the eight interests identified in M.G.L. c. 131, § 40, with respect to the effects of the discharge on water quality. The permit(s) and any subsequent ~~amendments-modification(s)~~ thereto shall be referenced in the Order and deemed incorporated therein.

This presumption shall apply only to impacts of the discharge from the source, and not to impacts from construction of the source.

This presumption may be overcome only by credible evidence from a competent source that said effluent limitations will not protect the interests identified in M.G.L. c. 131, § 40.

(5) Presumption of Significance. Each Area Subject to Protection under M.G.L. c. 131, § 40 is presumed to be significant to one or more of the interests identified in M.G.L. c. 131, § 40. These presumptions are rebuttable and are set forth in 310 CMR 10.21 through 10.60.

For riverfront areas, the issuing authority may find that the presumptions of significance are partially rebutted as provided in 310 CMR 10.58(3).

(6) Presumption Concerning Application of Herbicides.

(a) Any application of herbicides within any Area Subject to Protection under M.G.L. c. 131, § 40 or the Buffer Zone associated with a structure or facility which is:

1. existing and lawfully located;
2. used in the service of the public; and
3. used to provide electric, gas, water, sewer, telephone, telegraph and other telecommunication services

shall be presumed to constitute work performed in the course of maintaining such structure or facility, and shall be accorded the exemption of such work under M.G.L. c. 131, § 40, only if the application of herbicides to that structure or facility is performed in accordance with such plans as are required by the Department of Food and Agriculture pursuant to 333 CMR 11.00: *Rights of Way Management*, effective July 10, 1987.

(b) Any application of herbicides within the Buffer Zone, other than as provided in 310 CMR 10.03(6)(a), shall be presumed not to alter an Area Subject to Protection under M.G.L. c. 131, § 40, only if the work is performed in accordance with such plans as are required by the Department of Food and Agriculture pursuant to 333 CMR 11.00: *Rights of Way Management*, effective July 10, 1987. This presumption shall apply only if the person proposing such activity has requested and obtained a determination of the boundaries of the Buffer Zone and Areas Subject to Protection under M.G.L. c. 131, § 40 in accordance with 310 CMR 10.05(3)(a)1. and 2.; and has submitted that determination as part of the Vegetation Management Plan.

(c) Any application of herbicides for management of rights of way within a riverfront area not subject to 310 CMR 10.03(6)(a) or (b), provided the area is outside any other resource area and qualifies under the provisions of 310 CMR 10.58(6)(a), shall be accorded an exemption of such work under M.G.L. c. 131, § 40, provided that the application of herbicides is performed in accordance with such plans as are required by the Department of Food and Agriculture pursuant to 333 CMR 11.00: *Rights of Way Management*.

(7) Fees.

(a) General Fee Provisions.

1. Notices of Intent. All Notices of Intent filed pursuant to 310 CMR 10.00 shall be accompanied by a filing fee, the amount of which shall be determined by 310 CMR 4.00: *Timely Action Schedule and Fee Provisions* and a brief statement indicating how the applicant calculated the fee. 50% of any filing fee in excess of \$25.00 shall be made payable, by check or money order, to the Commonwealth of Massachusetts and shall be sent to the DEP Lock Box accompanied by the Notice of Intent Fee Transmittal Form. The remainder of said fee shall be made payable, by check or money order, to the city or town in which the work is proposed.
2. Requests for Action by the Department. Any person who files a Request for a Superseding Determination of Applicability (310 CMR 10.05(3)(c)), a Request for Superseding Order of Conditions or superseding Order of Resource Area Delineation (310 CMR 10.05(7)(a)), a Request for

Adjudicatory Hearing (310 CMR 10.05(7)(j)), a Request to Intervene in any Adjudicatory Hearing (310 CMR 1.01(9)(a)), or a Request for a Variance, (310 CMR 10.05(10)), (*see also* 310 CMR 10.03(7)(e)), shall simultaneously submit a filing fee, in the amount specified by 310 CMR 4.00: *Timely Action Schedule and Fee Provisions*. All such fees shall be paid by check or money order payable to the Commonwealth of Massachusetts and shall be sent to the DEP Lock Box, accompanied by the Request for Departmental Action Fee Transmittal Form. A copy of the Request for Departmental Action Fee Transmittal Form and a copy of the check shall accompany the request for Departmental action.

(b) Specific Provisions for Notice of Intent Fees. In accordance with General Instructions for Completing a Notice of Intent and Abbreviated Notice of Intent, the minimum submittal requirements shall include payment of the filing fee specified in 310 CMR 10.03(7)(c). A conservation commission shall notify, in writing, the appropriate Department Regional Office and the applicant when the correct filing fee has not been paid to the city or town and the filing is therefore incomplete. Said notification shall specify the correct fee amount. The Department shall also notify, in writing, the applicant and the conservation commission when the fee due to the Department has not been paid to the Department and the filing is therefore incomplete. Said notification shall specify the fee due to the Department. The fee will be based on the initial project design as proposed in the Notice of Intent.

1. Disputes over Notice of Intent Filing Fees. Whenever the conservation commission or the Department determines that an inadequate fee has been paid, the time period for the conservation commission or the Department to act shall be stayed until the balance of the fee is paid.

a. Where, in the opinion of the conservation commission or the Department, less than the full filing fee has been included with the Notice of Intent, the Notice shall be deemed complete (assuming all other minimum submittal requirements have been met), and the stay shall be lifted, upon payment of the additional fee specified by the Department or the conservation commission. If the applicant has disputed all or a part of the balance of the fee, after issuance of a Final Order which resolves the fee dispute, in favor of the applicant any disputed funds paid by the applicant in excess of the filing fee as determined in the Final Order shall be paid to the applicant by the Commonwealth and the city or town.

b. In *lieu* of paying any disputed amount of the filing fee, the applicant may file a Request for Determination of Applicability under 310 CMR 10.05(3)(a), with sufficient information to enable the conservation commission to determine the extent of the area, or the type and extent of the activity, subject to protection under M.G.L. c. 131, § 40.

When a Request for Determination of Applicability is filed by an Applicant to resolve a dispute over the filing fee, all proceedings under the Notice of Intent shall be stayed until all



appeal periods for the Determination have elapsed or, if the Determination is appealed until all proceedings before the Department have been completed.

A Final Determination of Applicability as to the area, or the type and extent of the activity, subject to protection under M.G.L. c. 131, § 40 shall be binding on all parties and shall be used in calculating the fee.

(c) Activities Subject to Notice of Intent Fees. The following activity descriptions are intended to include all activities subject to filing of a Notice of Intent under M.G.L. c. 131, § 40. The fees imposed by 310 CMR 10.03 are applicable only to those activities subject to jurisdiction under M.G.L. c. 131, § 40. The fee for work proposed under a single Notice of Intent that involves more than one activity noted below, shall be determined by adding the fees for each of the proposed activities. When the work involves activities within the riverfront area as well as another resource area or the buffer zone, the fee shall be determined by adding an additional 50% of the fee calculated for activities in another resource area(s) or the buffer zone to another resource area for each of the proposed activities within the riverfront area. When the work involves activities within the riverfront area but no other resource area, the fee shall be determined by adding the fees for each of the proposed activities within the riverfront area.

1. Category 1.

- a. Any work on a single family residential lot including a house addition, deck, garage, garden, pool, shed, or driveway. Activities excluded from Category 1 include driveways reviewable under 310 CMR 10.53(3)(e) (*See* Category 2f.); construction of an unattached single family house; and construction of a dock, pier, or other coastal engineering structure.
- b. Site preparation of each single family house lot, including removal of vegetation, excavation and grading, where actual construction of the house is not proposed under the Notice of Intent.
- c. Control of nuisance vegetation by removal, herbicide treatment or other means, from a resource area, on each single family lot, as allowable under 310 CMR 10.53(4).
- d. Resource improvement allowed under 310 CMR 10.53(4), other than removal of aquatic nuisance vegetation, as allowed under 310 10.53(4).
- e. Construction, repair, replacement or upgrading of a subsurface septic system or any part of such a system.
- f. Activities associated with installation of a monitoring well, other than construction of an access roadway thereto.
- g. New agriculture, including forestry on land in forest use (310 CMR 10.53(3)(r) and (s)), and aquacultural projects.

2. Category 2.

- a. Construction of each single family house (including single family houses in a subdivision), any part of which is in a buffer

zone or resource area. Any activities associated with the construction of said house(s), including associated site preparation and construction of retention/detention basins, utilities, septic systems, roadways and driveways other than those roadways or driveways reviewable under 310 CMR 10.53(3)(e) (*See* Category 2f.), shall not be subject to additional fees if all said activities are reviewed under a single Notice of Intent. (For apartment/condominium type buildings *See* Category 3.)

b. Parking lot of any size.

c. The placement of sand for purposes of beach nourishment.

d. Any projects reviewable under 310 CMR 10.24(7)(a) through (c).

e. Any activities reviewable under 310 CMR 10.53(3)(d) and (f) through (l), except for those subject to 310 CMR 10.03(7)(c)4.b.

Where more than one activity is proposed within an identical footprint (*e.g.*, construction of a sewer within the footprint of a new roadway), only one fee shall be payable.

f. Construction of each crossing for a driveway associated with an unattached single family house, reviewable under 310 CMR 10.53(3)(e).

g. Any point source discharge.

h. Control of nuisance vegetation, other than on a single family lot, by removal, herbicide treatment or other means, reviewable under 310 CMR 10.53(4).

i. Raising or lowering of surface water levels for flood control or any other purpose.

j. Any other activity not described in Categories 1, 3, 4, 5 or 6 (*e.g.*, the determination of whether a stream is perennial or intermittent).

k. The exploration for (but not development, construction, expansion, maintenance, operation or replacement of) public water supply wells or wellfields derived from groundwater, reviewable under 310 CMR 10.53(3)(o).

l. Test projects pursuant to 310 CMR 10.05(11) and Scientific Research Projects pursuant to 310 CMR 10.05(12).

3. Category 3.

a. Site preparation, for any development other than an unattached single family house(s), including the removal of vegetation, excavation and grading, where actual construction is not proposed in the Notice of Intent.

b. Construction of each building for any commercial, industrial, institutional, or apartment/condominium/townhouse-type development, any part of which is in a buffer zone or resource area. Any activities associated with the construction of said building, including associated site preparation and construction of retention/detention basins, septic systems, parking lots, utilities,

point source discharges, package sewage treatment plants, and roadways and driveways other than those roadways or driveways reviewable under 310 CMR 10.53(3)(e), shall not be subject to additional fees if all said activities are reviewed under a single Notice of Intent.

c. Construction of each roadway or driveway, not reviewable under 310 CMR 10.53(3)(e), and not associated with construction of an unattached single family house.

d. Any activity associated with the clean up of hazardous waste, except as otherwise noted in Category 4, including excavation, destruction of vegetation, change in subsurface hydrology, placement of collection wells or other structures for collection and treatment of contaminated soil and/or water.

e. The development, construction, expansion, maintenance, operation, or replacement of (but not exploration for) public water supply wells or wellfields derived from groundwater, reviewable under 310 CMR 10.53(3)(o).

4. Category 4.

a. Construction of each crossing for a limited project access roadway or driveway reviewable under 310 CMR 10.53(3)(e) associated with a commercial, industrial, or institutional development or with any residential construction (other than a roadway or driveway associated with construction of an unattached single family house).

b. Construction, modification, or repair of a flood control structure such as a dam, reservoir, tidegate, sluiceway, or appurtenant works.

c. Creation, operation, maintenance or expansion of a public or private landfill.

d. Creation, operation, maintenance or expansion of a public or private sand and/or gravel operation including but not limited to excavation, filling, and stockpiling.

e. Construction of new railroad lines or extensions of existing lines, including ballast area, placement of track, signals and switches and other related structures.

f. Construction, reconstruction, expansion, or maintenance of any bridge, except to gain access to a single family house lot.

g. Any alteration of a resource area(s) to divert water for the clean up of a hazardous waste site, for non-exempt mosquito control projects, or for any other purpose not expressly identified elsewhere in this fee schedule.

h. Any activities, including the construction of structures, associated with a dredging operation conducted on land under a waterbody, waterway, or the ocean. If the dredging is directly associated with the construction of a new dock, pier or other

structure identified in Category 5, only the Category 5 fee shall apply.

i. Construction of, or the discharge from, a package sewage treatment plant.

j. Airport vegetation removal projects reviewable under 310 CMR 10.24(7)(c)5. and 10.53(3)(n).

k. Landfill closure projects reviewable under 310 CMR 10.24(7)(c)4. and 10.53(3)(p).

l. Any activities, including the construction of structures, associated with the assessment, monitoring, containment, mitigation, and remediation of, or other response to, a release or threat of release of oil and/or hazardous material reviewable under 310 CMR 10.24(7)(c)6. or 10.53(3)(q).

5. Category 5. Construction, reconstruction, repair or replacement of docks, piers, revetments, dikes, or other engineering structures on coastal or inland resource areas, including the placement of rip rap or other material on coastal or inland resource areas.

6. Category 6. The linear delineation (e.g. bordering vegetated wetland, riverfront area, bordering land subject to flooding) of each resource area under an Abbreviated Notice of Resource Area Delineation constitutes a separate activity. The fee associated with each resource area delineation proposed under an Abbreviated Notice of Resource Area Delineation shall be determined by adding the fees for each type of resource area delineation.

(d) Requests for Action by the Department. Any person's request for action by the Department will not be deemed complete and time periods, if any, shall not commence, unless the person making the request has paid the appropriate filing fee specified in 801 CMR 4.02: *Fees of Licenses, Permits, and Services to Be Charged by State Agencies* (310).

(e) Fees for Requests for Action by Department. The following requests for action by the Department are subject to the fees established in 310 CMR 4.00: *Timely Action Schedule and Fee Provisions*.

1. Request for a Superseding Determination of Applicability.
2. Request for a Superseding Order of Conditions.
3. Request for an Adjudicatory Hearing or for a Variance which is necessary to avoid an unconstitutional taking.
4. Request to Intervene in an Adjudicatory Proceeding.
5. Request for a Variance, except where necessary to avoid an unconstitutional taking.

(f) Waivers and Exemptions. See 310 CMR 4.00: *Timely Action Schedule and Fee Provisions* for provisions concerning waivers or exemptions from the requirements of 310 CMR 10.03(7).

#### **10.04: Definitions**

**[NOTE TO REVIEWERS: MassDEP is proposing to amend, add or delete definitions in this section 310 CMR 10.04 as indicated by the redlining and strikeout in this document. If a definition is shown without any redlining or stricken text, then it is used in this document only to indicate the order of insertion of new definitions. Any definitions without redline or strikeout in this draft and all other definitions in the current regulations at 310 CMR 10.04 that are not included in this document are to remain the same as in the current document.]**

Abutter means the same as owner of land abutting the activity.

Act means the Wetlands Protection Act, M.G.L. c. 131, § 40.

Activity means any form of draining, dumping, dredging, damming, discharging, excavating, filling or grading; the erection, reconstruction or expansion of any buildings or structures; the driving of pilings; the construction or improvement of roads and other ways; the changing of run-off characteristics; the intercepting or diverging of ground or surface water; the installation of drainage, sewage and water systems; the discharging of pollutants; the destruction of plant life; and any other changing of the physical characteristics of land.

Aggrieved means the same as person aggrieved.

Agriculture. For the purposes of 310 CMR 10.04 the following words and phrases have the following meanings:

(a) Land in Agricultural Use means land within resource areas or the Buffer Zone presently and primarily used in producing or raising one or more of the following agricultural commodities for commercial purposes:

1. animals, including but not limited to livestock, poultry, and bees;
2. fruits, vegetables, berries, nuts, maple sap, and other foods for human consumption;
3. feed, seed, forage, tobacco, flowers, sod, nursery or greenhouse products, and ornamental plants or shrubs; and
4. forest products on land maintained in forest use, including but not limited to biomass, sawlogs, and cordwood, but not including the agricultural commodities described in 310 CMR 10.04: Agriculture(a)1. through 3.

Additionally, land in agricultural use means land within resource areas or the Buffer Zone presently and primarily used in a manner related to, and customarily and necessarily used in, producing or raising such commodities, including but not limited to: existing access roads and livestock crossings; windbreaks; hedgerows; field edges; bee yards; sand pits; landings for forest products; fence lines; water management projects such as reservoirs, farm ponds, irrigation systems, field ditches, cross ditches, canals/channels, grass waterways, dikes, sub-surface drainage systems, watering facilities, water transport systems, and water storage systems; agricultural composting sites; agricultural storage and work areas; and land under farm structures.

Land in agricultural use may lie inactive for up to five consecutive years unless it is under a United States Department of Agriculture (USDA) contract for a longer term pursuant to the Conservation Reserves Program (the Food Securities Act of 1985, as amended by the Food, Agriculture, Conservation and Trade Act of 1990; and 7 CFR 1410), or it is used for the forestry

purposes described in 310 CMR 10.04: Agriculture(b)14. through 17. The issuing authority may require appropriate documentation, such as a USDA Farm Plan or aerial photography, to demonstrate agricultural use.

(b) Normal Maintenance of Land in Agricultural Use, which in all cases does not include placing substantial amounts of fill in Bordering Land Subject to Flooding or filling or dredging a Salt Marsh, means the following activities, without enlargement as to geographical extent, that are occurring on land in agricultural use, when directly related to production or raising of the agricultural commodities referenced in 310 CMR 10.04: Agriculture(a), when undertaken in such a manner as to prevent erosion and siltation of adjacent water bodies and wetlands, and when conducted in accordance with federal and state laws:

1. all crop management practices, not to include drainage in a Bordering Vegetated Wetland, customarily employed to enhance existing growing conditions, including but not limited to: tillage, trellising, pruning, mulching, shading, and irrigating; and all customary harvesting practices such as digging, picking, combining, threshing, windrowing, baling, curing, and drying;
2. the use of fertilizers, manures, compost materials, and other soil amendments; pesticides and herbicides; traps; and other such materials;
3. the repair or replacement of existing access roads and livestock crossings;
4. the maintenance of:
  - a. existing forest boundary lines up to five feet wide limited to cutting vegetation within the existing boundary lines;
  - b. windbreaks;
  - c. hedgerows; and
  - d. fire breaks on land maintained in forest use and owned by the Metropolitan District Commission, the Department of Environmental Management, or the Department of Fisheries, Wildlife, and Environmental Law Enforcement;
5. the management of existing field edges, limited to within 100 feet from the land in production, including the following practices:
  - a. mowing;
  - b. burning;
  - c. brush cutting; and
  - d. removing trees.

The management of any field edge that falls within a Bordering Vegetated Wetland is not intended to allow the conversion of Bordering Vegetated Wetland into cropland. Therefore, the field management practices described in 310 CMR 10.04: Agriculture (b)(5)a. through d. may occur in a Bordering Vegetated Wetland provided that:

- i. the cutting or removal of trees and understory vegetation shall not occur within 25 feet of the bank of a water body that is not managed within the land in production (field ditches, cross ditches, grass waterways, irrigation systems, and farm ponds are examples of managed water bodies) unless the trees or understory vegetation are removed to control alternative hosts but no more than 50% of the canopy may be removed, or except to maintain existing dikes;



- ii. slash, branches, and limbs resulting from the cutting and removal operations shall not be placed within 25 feet of the bank of a water body that is not managed within the land in production; and
  - iii. no tilling, filling, excavation, or other change in the existing topography shall occur within the field edge;
- 6. the maintenance and repair of existing fences and the management of temporary fence lines;
- 7. the cleaning, clearing, grading, repairing, dredging, or restoring of existing man-made or natural water management systems such as reservoirs, farm ponds, irrigation systems, field ditches, cross ditches, canals/channels, grass waterways, dikes, sub-surface drainage systems, watering facilities, water transport systems, vents, and water storage systems, all in order to provide drainage, prevent erosion, provide more effective use of water, or provide for efficient use of equipment, and all for the purpose of maintaining favorable conditions for ongoing growing or raising of agricultural commodities;
- 8. the maintenance and repair of ongoing agricultural composting sites, storage areas, and work areas and the storage of fertilizers, pesticides, manures, compost materials, and other soil amendments, provided that such storage occurs only in the Buffer Zone or Bordering Land Subject to Flooding;
- 9. the repair and maintenance of existing farm structures;
- 10. the seeding of eroded or disturbed areas;
- 11. maintaining the flow of existing natural waterways;
- 12. the keeping of livestock and poultry and the management of beehives;
- 13. the cultivation of cranberries, including the following practices:
  - a. the activities described in 310 CMR 10.04: Agriculture(b)1. through 11.;
  - b. the application of sand to existing bogs and the excavation of sand from sand pits;
  - c. the repair and reconstruction of water control structures including flumes, pumps, dikes, and piping above and below the ground;
  - d. the regrading, including modification of drainage, and replanting of existing cranberry bogs;
  - e. the repair and replacement of dikes;
  - f. water harvesting activities; and
  - g. flooding and flood release;
- 14. the cutting and removal of trees for the purpose of selling the trees or any products derived therefrom, when carried out in accordance with a Forest Cutting Plan approved by the Department of Environmental Management (DEM) under the provisions of M.G.L. c. 132, §§ 40 through 46, and subject to the following:
  - a. the cutting and removal of trees within Bordering Vegetated Wetland shall be limited to no more than 50% of the basal area of the area to be cut and the work shall be conducted when the soil is frozen, dry or otherwise stable to support the equipment used;

- b. except for the construction or maintenance of access described in 310 CMR 10.04(b)16., there shall be no filling, excavation, or other change in topography or hydrology of resource areas;
- c. all soils that are exposed during or after any work described in 310 CMR 10.04: Agriculture(b)14. shall be stabilized to prevent the soils from eroding into Bordering Vegetated Wetlands beyond the work area or into open water bodies, in accordance with the Massachusetts Forestry Best Management Practices Manual;
- d. the person claiming the exemption shall submit by certified mail or hand delivery at the same time to the conservation commission and the appropriate DEM Regional Office not less than ten days prior to the commencement of the activity, a copy of the Forest Cutting Plan that describes the proposed cutting and removal of trees and any activity within resource areas or the Buffer Zone. The conservation commission shall have the opportunity to comment to DEM on the plan;
- e. landings for forest products shall not be located in Bordering Vegetated Wetland or Bank; and
- f. any Forest Cutting Plan that is not affirmatively approved by DEM under M.G.L. c. 132, §§ 40 through 46 but instead is deemed approved due to the expiration of some period of time following the submittal of the plan to DEM for approval shall not be considered "approved" by DEM for the purposes of 310 CMR 10.04.

15. notwithstanding the use of the words "for commercial purposes" in the first sentence of 310 CMR 10.04: Agriculture(a), the cutting of trees within resource areas and the Buffer Zone by owners for their own use, not to exceed 5,000 board feet or ten cords of wood during any 12 month period without an approved Forest Cutting Plan or the cutting of trees within resources areas of greater than 5,000 board feet or ten cords but less than 10,000 board feet or 20 cords of wood during any 12 month period with an approved Forest Cutting Plan, provided that:

- a. after the cutting, the remaining trees in the resource area (and the Buffer Zone, if the activity is being conducted without an approved Forest Cutting Plan) shall be evenly distributed throughout the area where cutting occurred and the crown cover shall not be less than 50%. Crown cover is determined as the percent of the ground's surface that would be covered by a vertical projection of foliage from trees with a diameter at breast height of five inches or greater, where minor gaps between branches are disregarded and areas of overlapping foliage are counted only once;
- b. the cutting and removal of trees shall occur only during those periods when the ground is sufficiently frozen, dry, or otherwise stable to support the equipment used;
- c. the cutting, removal, or other destruction of trees and understory vegetation without a Forest Cutting Plan shall not occur within 25 feet of the Bank, except for the purpose of providing access for the activities described in 310 CMR 10.04: Agriculture(b)15.;
- d. the placement of slash, branches, and limbs resulting from the cutting and removal operations shall not occur within 25 feet of Bank;

- e. no filling, excavation, or other change shall occur in the existing topography or hydrology of a resource area;
- f. landings for forest products shall not be located in Bordering Vegetated Wetland or Bank; and
- g. any Forest Cutting Plan that is not affirmatively approved by DEM under M.G.L. c. 132, §§ 40 through 46, but instead is deemed approved due to the expiration of some period of time following the submittal of the plan to DEM for approval shall not be considered "approved" by DEM for the purposes of 310 CMR 10.04.

16. the construction of new temporary access or the maintenance of existing legally constructed access for forestry activities described in 310 CMR 10.04:

Agriculture(b)14. or 15. provided that:

- a. every practicable effort shall be made to avoid access, including stream crossings, and the construction of landings through and in resource areas;
- b. where access, including stream crossings, through resource areas cannot be avoided, every practicable effort shall be made to minimize impacts resulting from construction of new access including, but not limited to, maintaining and improving (but not enlarging) existing access. Activities shall be conducted when the soil is frozen, dry, or otherwise stable to support the equipment used;
- c. where DEM has determined through its review and approval of the Forest Cutting Plan that access is impracticable without constructing new access or stream crossings:
  - i. access shall be designed, constructed, and maintained in accordance with the Massachusetts Forestry Best Management Practices Manual;
  - ii. stream crossings shall be stabilized to prevent erosion using methods described in the Massachusetts Forestry Best Management Practices Manual. When crossings involve fill, culverts or other structures that will obstruct flow, they shall be designed, constructed, and maintained in accordance with the Massachusetts Forestry Best Management Practices Manual to allow the unobstructed passage of existing flows for at least the 25 year storm;
  - iii. access or stream crossings shall be removed within one year of completion of the work described in the approved Forest Cutting Plan;
  - iv. following removal of access, the topography and site conditions shall be substantially restored to allow pre-existing vegetation to be reestablished; and
  - v. activities shall be conducted when the soil is frozen, dry, or otherwise stable to support the equipment used.

17. non-harvest management practices for forest products on land maintained in forest use limited to pruning, pre-commercial thinning or planting of tree seedlings.

(c) Normal Improvement of Land in Agricultural Use, which in all cases does not include filling or dredging a Salt Marsh, includes but is not limited to:

1. the following activities when they occur on land in agricultural use or when they occur within the Buffer Zone or Bordering Land Subject to Flooding that is not land in agricultural use, when they are directly related to production or raising of the agricultural commodities referenced in 310 CMR 10.04: Agriculture(a), and when they are undertaken in such a manner as to prevent erosion and siltation of adjacent water bodies and wetlands and the activity is conducted in accordance with federal and state laws:

- a. the installation of permanent fencing, windbreaks, hedgerows, or the cutting of vegetation to create forest boundaries up to five feet wide;
- b. the installation of dikes within a cranberry bog;
- c. the construction of farm structures, not including habitable dwellings, provided that the footprint of the farm structure does not exceed 4,000 square feet and no filling of Bordering Land Subject to Flooding occurs beyond the footprint of the building;
- d. the squaring-off of fields and bogs, provided that the activity does not alter a Bordering Vegetated Wetland, there is no increase in the amount of land in production beyond the minimum increase necessarily resulting from making the boundary of any field or bog more regular, and no fill is placed within Bordering Land Subject to Flooding;
- e. the construction of by-pass canals/channels and tail water recovery systems;
- f. a change in commodity other than from maple sap production or forest products to any other commodity, provided that there is no filling of Bordering Vegetated Wetland and drainage ditches or the subsurface drainage system are not increased or enlarged;
- g. the construction of a water management system such as a reservoir, farm pond, irrigation system, field ditch, cross ditch, canal/channel, grass waterway, dike, sub-surface drainage system, watering facility, water transport system, vent, or water storage system, or of a livestock access; and
- h. the construction of composting and storage areas.

For the activities described in 310 CMR 10.04: Agriculture(c)(1)d. through h. there shall be no net loss of flood storage capacity; and

2. the reconstruction of existing dikes, the reconstruction and expansion of existing ponds and reservoirs, and the construction of tailwater recovery ponds and by-pass canals/channels occurring partly or entirely within a Bordering Vegetated Wetland, when directly related to production or raising of the agricultural commodities referenced in 310 CMR 10.04: Agriculture(a), in accordance with the following:

- a. Prior to performing the work, the person claiming the exemption shall submit to the conservation commission for its review at a public meeting that portion of a certified farm Conservation Plan (CP) which relates to the work to be conducted in a Bordering Vegetated Wetland. The CP must be prepared in cooperation with the U.S.D.A. Natural Resource Conservation

Service (NRCS), Memorandum of Understanding (MOU) between the Department and NRCS concerning CPs;

b. The conservation commission may, within 21 days of receiving the CP, provide the person claiming the exemption with written notification containing specific comments detailing the manner in which the CP has not been prepared in compliance with the terms of the MOU;

c. The person claiming the exemption shall provide SCS with a complete copy of the notification;

d. All revisions to the CP that relate to the delineation of Bordering Vegetated Wetlands shall be submitted to the conservation commission in accordance with 310 CMR 10.04: Agriculture(c)2.;

e. All work shall be done in accordance with the CP; and

f. The maximum amount of Bordering Vegetated Wetland which may be altered by the above activities is:

i. 5,000 square feet for reconstruction of an existing dike;

ii. 10,000 square feet for expansion of an existing pond or reservoir;

iii. 10,000 square feet for construction of a tailwater recovery pond; and

iv. 5,000 square feet for construction of a by-pass canal/channel.

Alter means to change the condition of any Area Subject to Protection under M.G.L. c. 131,

§ 40. Examples of alterations include, but are not limited to, the following:

(a) the changing of pre-existing drainage characteristics, flushing characteristics, salinity distribution, sedimentation patterns, flow patterns and flood retention areas;

(b) the ~~lowering~~changing of the water level or water table;

(c) the destruction of vegetation;

(d) the changing of water temperature, biochemical oxygen demand (BOD), and other physical, biological or chemical characteristics of the receiving water.;

(e) increasing of the volume of untreated stormwater runoff directed to a wetland Resource Area.

Provided, that when the provisions of 310 CMR 10.03(6) and 10.05(3) or 333 CMR 11.03(9) have been met, the application of herbicides in the Buffer Zone in accordance with such plans as are required by the Department of Food and Agriculture pursuant to 333 CMR 11.00: *Right of Way Management*, effective July 10, 1987, is not an alteration of any Area Subject to Protection under M.G.L. c. 131, § 40.

Applicant means any person who files a Notice of Intent, or on whose behalf such a notice is filed.

Aquaculture.

(a) Land in Aquacultural Use means land presently and primarily used in the growing of aquatic organisms under controlled conditions, including one or more of the following uses: raising, breeding or producing a specified type of animal or vegetable life including, but not limited to, municipal shellfish propagation, finfish such as carp, catfish, black

bass, flatfishes, herring, salmon, shad, smelt, sturgeon, striped bass, sunfishes, trout, whitefish, eel, tilapia; shellfish such as shrimp, crabs, lobster, crayfish, oysters, clams, periwinkles, scallops, mussels, squid; amphibians such as frogs; reptiles such as turtles; seaweeds such as irish moss and dulse; and edible freshwater plants.

(b) Normal Maintenance or Improvement of land in aquacultural use means the following activities, when done in connection with the production of aquatic organisms as defined above: draining, flooding, heating, cooling, removing, filling, grading, compacting, raking, tilling, fertilizing, seeding, harvesting, filtering, rafting, culverting or applying chemicals in conformance with all state and federal laws; provided, however, that such activities are clearly intended to improve and maintain land in aquacultural use and that Best Available Measures are utilized to ensure that there will be no adverse effect on wetlands outside the area in aquacultural use, and further provided that removing, filling, dredging or altering of a salt marsh is not to be considered normal maintenance or improvement of land in aquacultural use.

Area Subject to Protection under M.G.L. c. 131, § 40 means any area specified in 310 CMR 10.02(1). It is used synonymously with Resource Area, each one of which is defined in greater detail in 310 CMR 10.21 through 10.66.

Bank (Coastal) is defined in 310 CMR 10.30(2).

Bank (Inland) is defined in 310 CMR 10.54(2).

Beach (Barrier) is defined in 310 CMR 10.29(2).

Beach (Coastal) is defined in 310 CMR 10.27(2).

Beach (Inland), a naturally occurring inland beach, means an unvegetated bank as defined in 310 CMR 10.54(2).

Bedrock means solid rock exposed at the surface or overlain by unconsolidated gravel, sand, silt and/or clay. Bedrock includes weathered or saprolitic components thereof.

Best Available Measures means the most up-to-date technology or the best designs, measures or engineering practices that have been developed and that are commercially available.

Best Management Practices (BMPs) means, for purposes of stormwater management (310 CMR 10.05(6)(k)-(q)), construction period erosion and sedimentation control practices and post-construction good housekeeping practices, including but not limited to: source controls; pollution prevention measures; operating procedures and practices to control site runoff; spillage or leaks; sludge or waste disposal; or drainage from raw material storage. For purposes of post-construction stormwater management, see 310 CMR 10.04, definition of Stormwater Control



Measure. For purposes of forestry management, BMPs include those described in the Massachusetts Forestry Best Management Practices Manual, dated 2013.

Best Practical Measures means technologies, designs, measures or engineering practices that are in general use to protect similar interests.

Bordering means touching. An area listed in 310 CMR 10.02(1)(a) is bordering on a water body listed in 310 CMR 10.02(1)(a) if some portion of the area is touching the water body or if some portion of the area is touching another area listed in 310 CMR 10.02(1)(a) some portion of which is in turn touching the water body.

Bordering Vegetated Wetland is defined in 310 CMR 10.55(2).

Boundary means the boundary of an Area Subject to Protection under M.G.L. c. 131, § 40. A description of the boundary of each area is found in the appropriate section of 310 CMR 10.00. For coastal areas, *see* 310 CMR 10.21 through 10.37; for inland areas, *see* 310 CMR 10.51 through 10.60.

Breeding Areas mean areas used by wildlife for courtship, mating, nesting or other reproductive activity, and rearing of young.

Buffer Zone means that area of land extending 100 feet horizontally outward from the boundary of any area specified in 310 CMR 10.02(1)(a).

Certificate of Compliance means a written determination by the issuing authority that work or a portion thereof has been completed in accordance with an Order. It shall be made on Form 8.

Coastal Wetlands are defined in M.G.L. c. 131, § 40, para. ~~75~~.

Cold-water Fishery means waters in which the mean of the maximum daily temperature over a seven day period generally does not exceed 68°F (20°C) and, when other ecological factors are favorable (such as habitat) are capable of supporting a year round population of cold-water stenothermal aquatic life such as trout. Waters designated as cold-water fisheries by the Department in 314 CMR 4.00: *Massachusetts Surface Water Quality Standards* and waters designated as cold-water fishery resources by the Division of Fisheries and Wildlife are cold-water fisheries. Waters where there is evidence based on a fish survey that a cold-water fish population and habitat exist are also cold-water fisheries. Cold-water fish include but are not limited to brook trout (*Salvelinus fontinalis*), rainbow trout (*Oncorhynchus mykiss*), brown trout (*Salmo trutta*), creek chubsucker (*Erimyzon oblongus*) and fallfish (*semotilus corporalis*).

~~Combined Application means an application that may serve as a Notice of Intent pursuant to 310 CMR 10.00, an application for a 401 Water Quality Certification pursuant to 314 CMR 9.00: 401 Water Quality Certification for Discharge of Dredged or Fill Material, Dredging, and Dredged Material Disposal in Waters of the United States Within the Commonwealth, and/or an application for a Chapter 91 license, permit or other written approval for a water-dependent use;~~

~~pursuant to 310 CMR 9.00: *Waterways*. Notwithstanding the foregoing, a Combined Application may not serve as an application for an annual permit for a mooring, float, raft or small structure accessory to a residence in accordance with 310 CMR 9.07: *Activities Subject to Annual Permit*, an application for a Chapter 91 license for a small structure accessory to a residence in accordance with the simplified process set forth in 310 CMR 9.10: *Simplified Procedures for Small Structures Accessory to Residences* or the certification submitted as an application for a General License in accordance with 310 CMR 9.29: *Permitting of Test Projects*.~~

~~Combined Permit means a decision issued in response to a Combined Application that serves as two or more of the following: a Superseding Order of Conditions issued pursuant to 310 CMR 10.00; a 401 Water Quality Certification issued pursuant to 314 CMR 9.00: *401 Water Quality Certification for Discharge of Dredged or Fill Material, Dredging, and Dredged Material Disposal in Waters of the United States Within the Commonwealth*; and/or a Chapter 91 permit, license or other written approval issued pursuant to 310 CMR 9.00: *Waterways*. Commissioner means the Commissioner of the Department of Environmental Protection~~

Commissioner means the Commissioner of the Department of Environmental Protection pursuant to St. 1989, c. 240, § 101.

Compacted Gravel or Soil means, for purposes of stormwater management (310 CMR 10.05(6)(k)-(q)), gravel roads, gravel parking lots, dirt roads, dirt parking lots, and unvegetated areas that have historically provided or have been designed to provide a compacted surface for use by vehicles, pedestrians, bicycles and/or animals. Compacted gravel and soil do not include lawns, roadway median strips, landscaped areas, and natural turf athletic fields. The presumption that a soil is compacted can be overcome by a showing that the soil strength is less than 10 bars of pressure (approximately 145 pounds per square inch or 10<sup>6</sup> pascals).

Conditions means those requirements set forth in a written Order issued by a conservation commission or the Department for the purpose of permitting, regulating or prohibiting any activity that removes, fills, dredges or alters an Area Subject to Protection under M.G.L. c. 131, § 40. (See also 310 CMR 10.05(6).)

Confined Disposal Facility means a facility created in open water or wetlands consisting of confinement walls or berms built up or extending into existing land and is a “confined disposal facility” as defined in 314 CMR 9.02: *Definitions*.

Conservation Commission means that body comprised of members lawfully appointed pursuant to M.G.L. c. 40, § 8C. For the purposes of M.G.L. c. 131, § 40 and 310 CMR 10.00, it shall also mean a mayor or board of selectmen, where no conservation commission has been established under M.G.L. c. 40, § 8C.

Creek means the same as a stream, as defined in 310 CMR 10.04.

Critical Areas mean Outstanding Resource Waters as designated in 314 CMR 4.00: *Massachusetts Surface Water Quality Standards*; Special Resource Waters as designated in 314 CMR 4.00: *Massachusetts Surface Water Quality Standards*; recharge areas for public water

supplies as defined in 310 CMR 22.02: *Definitions* (Zone Is, Zone IIs, and Interim Wellhead Protection Areas for ground water sources and Zone As for surface water sources); bathing beaches as defined in 105 CMR 445.000: *State Sanitary Code Chapter VII: Minimum Standards for Bathing Beaches*; ~~(State Sanitary Code: Chapter VII)~~; ~~C~~old-water ~~F~~fisheries; and ~~S~~hellfish ~~G~~rowing ~~A~~reas.

Dam means for the purposes of 310 CMR 10.11 through 310 CMR 10.14, 310 CMR 10.24(8), and 10.53(4) any artificial barrier placed across a watercourse that raises or has the potential to raise the level of water or which impounds and/or diverts water.

Date of Issuance means the date an Order is mailed, as evidenced by a postmark, or the date it is hand delivered.

Date of Receipt means the date of delivery to an office, home or usual place of business by mail or hand delivery.

Densely Developed Area means a riverfront area that has been designated by the Secretary of the Executive Office of Energy and Environmental Affairs at the request of a city or town, limited to an area of ten acres or more that is being utilized, or includes existing vacant structures or vacant lots formerly utilized as of January 1, 1944 or sooner, for intensive industrial, commercial, institutional, or residential activities or combinations of such activities, including, but not limited to the following: manufacturing, fabricating, wholesaling, warehousing, or other commercial or industrial activities; retail trade and service activities; medical and educational institutions; residential dwelling structures at a density of three or more per two acres; and mixed or combined patterns of the above. Land which is zoned for intensive use but is not utilized for such use as of January 1, 1997 shall not be designated as a densely developed area. Rivers within the municipalities identified in 310 CMR 10.58(2)(a)3.a. also have 25 foot riverfront areas.

Department ~~(or MassDEP)~~ means the Department of Environmental Protection, and shall include the Commissioner and any other person employed by said Department, pursuant to St. 1989, c. 240, § 101.

Designated Port is defined in 310 CMR 10.26(2)

Determination.

(a) a Determination of Applicability means a written finding by a conservation commission or the Department as to whether a site or the work proposed thereon is subject to the jurisdiction of M.G.L. c. 131, § 40. It shall be made on Form 2.

(b) a Determination of Significance means a written finding by a conservation commission, after a public hearing, or by the Department, that the area on which the proposed work is to be done, or which the proposed work will alter, is significant to one or more of the interests identified in M.G.L. c. 131, § 40. It shall be made as part of the Order, on Form 5.

(c) a Notification of Non-significance means a written finding by a conservation commission, after a public hearing, or by the Department, that the area on which the

proposed work is to be done, or which the proposed work will alter, is not significant to any of the interests of M.G.L. c. 131, § 40. It shall be made on Form 6.

Direct Case means the evidence that a party seeks to introduce in support of its position, as well as any legal argument the party wishes to provide. The Direct Case may include, but is not limited to, statements under oath by lay witnesses and expert witnesses, technical reports, studies, memoranda, maps, plans, and other information that a party seeks to have the Presiding Officer review as part of the adjudicatory proceeding.

Disposal Site means a structure, well, pit, pond, lagoon, impoundment, ditch, landfill, or other place or area, excluding ambient air or surface water, where uncontrolled oil or hazardous material has come to be located as a result of any spilling, leaking, pouring, ponding, emitting, emptying, discharging, injecting, escaping, leaching, dumping, discarding or otherwise disposing of such oil or hazardous material and is a “disposal site” as defined in M.G.L. c. 21E.

Dredge means to deepen, widen or excavate, either temporarily or permanently, land below the mean high tide line in coastal waters and below the high water mark for inland waters. The term dredge shall not include activities in Salt Marsh, and Bordering Vegetated Wetlands or isolated vegetated wetlands.

Dune means coastal dune, as defined in 310 CMR 10.28(2).

Ecological Restoration Project means a project whose primary purpose is to restore or otherwise improve the natural capacity of a Resource Area(s) to protect and sustain the interests identified in M.G.L. c. 131, § 40, when such interests have been degraded or destroyed by anthropogenic influences. The term Ecological Restoration Project shall not include projects specifically intended to provide mitigation for the alteration of a Resource Area authorized by a Final Order or Variance issued pursuant to 310 CMR 10.00 or a 401 Water Quality Certification issued pursuant to 314 CMR 9.00: *401 Water Quality Certification for Discharge of Dredged or Fill Material, Dredging, and Dredged Material Disposal in Waters of the United States Within the Commonwealth* other than projects implemented pursuant to a US Army Corps of Engineers approved in-lieu fee program.

Ecological Restoration Limited Project means an Ecological Restoration Project that meets the eligibility criteria set forth in 310 CMR 10.24(8) or 10.53(4).

Effective Impervious Cover Reduction means the reduction of impervious cover for accounting purposes from the total area of impervious cover on a Project Site for purposes of stormwater management (310 CMR 10.05(6)(k)-(q)) due to the use of practices that effectively disconnect stormwater from the drainage system. Impervious cover is deducted for accounting purposes when the following are utilized: tree canopy enhancement, rain barrels/cisterns, and green roofs, recognizing that these practices more closely mimic pervious surfaces. The impervious cover deducted for accounting purposes is the area of tree canopy, or roof top. For example, if a 200 square foot roof has 50 square feet of green roof, then 50 square feet can be deducted from the size of the area that needs to be treated by the rest of the Stormwater Management System.

~~Estimated Habitat Map of State-listed Rare Wetlands Wildlife means the map of the estimated habitats of state-listed rare wetlands wildlife published by the Natural Heritage and Endangered Species Program (the Program or NHESP) in accordance with 321 CMR 10.12: *Delineation of Priority Habitat of State-listed Species*.~~

~~Environmental Protection Agency Performance Removal Curve (EPA-PRC) means the pollutant removal curves located in the BMP Accounting & Tracking Tool (BATT) published by the U.S. Environmental Protection Agency (EPA). These curves show percent reduction of various pollutants based on volume of stormwater runoff that is treated. The EPA-PRC results in the BATT tool are in tabular form. The BATT tool and user guide can be found at:~~

~~<https://www.epa.gov/npdes-permits/stormwater-tools-new-england#swbmp>~~

~~Graphical representations of the EPA-PRC are published in Appendix B of the Massachusetts Stormwater Handbook [2023 Edition] and may not reflect any future updates to the BATT.~~

~~Environmentally Sensitive Site Design (ESSD) means a suite of practices using nature-based solutions to treat stormwater while reducing or eliminating structural Stormwater Control Measures needed to meet certain Stormwater Management Standards. More specifically, ESSD means designs that incorporates ~~Low~~ ~~Impact~~ ~~Development~~ techniques or practices to prevent the generation of stormwater and non-point source pollution by reducing ~~Impervious~~ ~~Surfaces~~, disconnecting stormwater sheet flow paths and treating stormwater at its source, maximizing open space, minimizing disturbance, protecting natural features and processes, and/or enhancing wildlife habitat.~~

~~Environmentally Sensitive Site Design Credit (ESSD Credit) means a credit for the use of ESSD that counts towards compliance with requirements to: (i) attenuate the peak discharge rate pursuant to 310 CMR 10.05(6)(k)2.; (ii) recharge a depth of stormwater in inches pursuant to 310 CMR 10.05(6)(k)3.; or (iii) remove a percent of Total Suspended Solids and Total Phosphorus pursuant to 310 CMR 10.05(6)(k)4 and 310 CMR 10.05(6)(k)7.~~

~~Estimated Habitat Map of State-listed Rare Wetlands Wildlife means the map of the estimated habitats of state-listed rare wetlands wildlife published by the Natural Heritage and Endangered Species Program (the Program or NHESP) in accordance with 321 CMR 10.12: *Delineation of Priority Habitat of State-listed Species*.~~

Estuary means:

- (a) any area where fresh and salt water mix and tidal effects are evident; or
- (b) any partially enclosed coastal body of water where the tide meets the current of any stream or river.

Extension Permit means a written extension of time within which the authorized work shall be completed. It shall be made on Form 7.



FEMA means the Federal Emergency Management Agency, an agency of the United States Department of Homeland Security whose primary purpose is to coordinate response to disasters.

Fill means to deposit any material so as to raise an elevation, either temporarily or permanently.

Final Order means the Order issued by the Commissioner after an adjudicatory hearing or, if no request for hearing has been filed, the Superseding Order or, if no request for a Superseding Order has been filed, the Order of Conditions.

Flat (Tidal) is defined in 310 CMR 10.27(2)(b).

Flood Control means the prevention or reduction of flooding and flood damage.

Formerly or Presently Owned means owned by the same owner at any time on or after August 1, 1996.

Freshwater Wetlands are defined in M.G.L. c. 131, § ~~407~~, para. ~~87~~.

General Performance Standards means those requirements established by 310 CMR 10.00 for activities in or affecting each of the Areas Subject to Protection under M.G.L. c. 131, § 40. They are found in 310 CMR 10.25 through 10.3~~65~~, 10.37, and 10.54 through 10.60.

Ground Water Supply means water below the earth's surface in the zone of saturation.

Highway Specific Considerations are design specifications and other measures that the Massachusetts Department of Transportation (MassDOT) may use to comply with or be presumed to comply with the Stormwater Management Standards. The Highway Specific Considerations include provisions in the Massachusetts Stormwater Handbook [2023 Edition] for use of linear SCMs for pollutant removal, recharge, and peak discharge rate reduction; specifications for deep sump catch basin inlet grates and hoods; and an operation and maintenance approach that will be presumed to meet the Stormwater Management Standards. Highway Specific Considerations also include use of the Macro-Approach and the Watershed-scale Accounting Method, as applicable, in order to meet the Stormwater Management Standards.

Historic Mill Complex means the mill complexes in, but not limited to, Holyoke, Taunton, Fitchburg, Haverhill, Methuen, and Medford in existence prior to 1946 and situated landward of the waterside facade of a retaining wall, building, sluiceway, or other structure existing on August 7, 1996. An historic mill complex also means any historic mill included on the *Massachusetts Register of Historic Places*. An historic mill complex includes only the footprint of the area that is or was occupied by interrelated buildings (manufacturing buildings, housing, utilities, parking areas, and driveways) constructed before and existing after 1946, used for any type of manufacturing or mechanical processing and including associated structures to provide water for processing, to generate water power, or for water transportation.



Hydrologic Unit Code 10 (HUC 10) means a fifth level sub-watershed delineated by the U.S. Geological Survey using a national standard hierarchical system based on surface hydrologic features.

Hydrologic Unit Code 12 (HUC 12) means a sixth level sub-watershed delineated by the U.S. Geological Survey using a national standard hierarchical system based on surface hydrologic features.

Illicit Discharge means a discharge that is not entirely comprised of stormwater, except pursuant to a National Pollutant Discharge Elimination System (NPDES) permit (other than the NPDES permit for discharges from a municipal separate storm sewer) and discharges resulting from fire fighting activities. Notwithstanding the foregoing, an illicit discharge does not include discharges from the following activities or facilities: firefighting, water line flushing, landscape irrigation, uncontaminated ground water, potable water sources, foundation drains, air conditioning condensation, footing drains, individual resident car washing, flows from riparian habitats and wetlands, dechlorinated water from swimming pools, water used for street washing and water used to clean residential buildings without detergents.

Impervious Surface means, for purposes of stormwater management (310 CMR 10.05(6)(k)-(q)), any surface that prevents or significantly impedes the infiltration of water into the underlying soil, including, but not limited to artificial turf, Compacted Gravel or Soil, roads, building rooftops, solar arrays, parking lots, Public Shared Use Paths, bicycle paths, and sidewalks paved with concrete, asphalt, or other similar materials. For purposes of this definition, porous pavements are Impervious Surfaces in order to size the depth of the underlying reservoir course to meet recharge and Total Suspended Solids/Total Phosphorus removal requirements pursuant to 310 CMR 10.05(6)(k)3. and 4.

Important Wildlife Habitat Functions means important food, shelter, migratory or overwintering areas, or breeding areas for wildlife.

Impracticable for use in 310 CMR 10.05(6)(k)-(q) for purposes of stormwater management means impossible in practice to do or carry out based solely on physical constraints.

Improvement of an Existing Public Roadway means, for purposes of Redevelopment stormwater management in 310 CMR 10.05(6)(k)7., activities undertaken to a roadway that increase the total impervious area by less than a single lane width. This can include activities such as, widening roadways (less than a single lane), adding shoulders, correcting substandard intersections, expansion or making other structural changes to an existing drainage system, and installing new sidewalks. Improvement of an Existing Public Roadway may include New Stormwater Discharges.

Innovative Technology means technology that has not been commercially deployed or is in limited deployment in Massachusetts, and includes, but is not limited to, energy technology that

obtains energy from the ocean, waterway, or conditions associated with the ocean or waterway, or other forms of renewable energy technology.

Interests Identified in M.G.L. c. 131, § 40 means public or private water supply, ground water supply, flood control, storm damage prevention, prevention of pollution, protection of land containing shellfish, protection of fisheries, and protection of wildlife habitat.

Interim Wellhead Protection Area (IWPA) is defined in 310 CMR 22.00: *Drinking Water*.

Issuing Authority means a conservation commission, mayor, the selectmen or the Department, whichever is applicable.

Lake means any open body of fresh water with a surface area of ten acres or more, and shall include great ponds.

Land Containing Shellfish is defined in 310 CMR 10.34(2).

Land Subject to Coastal Storm Flowage means land subject to any inundation caused by coastal storms up to and including that caused by the 100-year storm, surge of record or storm of record, whichever is greater.

Land Subject to Flooding is defined in 310 CMR 10.57(2).

Land Subject to Tidal Action means land subject to the periodic rise and fall of a coastal water body, including spring tides.

Land under Salt Ponds is defined in 310 CMR 10.33(2).

Land under Water Bodies and Waterways means the bottom of, or land under, the surface of the ocean or any estuary, creek, river, stream, pond, or lake. Land under the ocean and estuaries is further defined in 310 CMR 10.25(2); land under inland water bodies is further defined in 310 CMR 10.56(2).

Land Uses with Higher Potential Pollutant Loads mean the following land uses: land uses identified in 310 CMR 22.20B(2), 22.20C(2)(a) through (k) and (m), 22.21(2)(a)1. through 8., and (b)1. through 6.; areas within a site that are the location of activities that are subject to an individual National Pollutant Discharge Elimination System (NPDES) permit or the NPDES Multi-sector General Permit; auto fueling facilities (gas stations); exterior fleet storage areas; exterior vehicle service and equipment cleaning areas; marinas and boatyards; parking lots with high intensity use; confined disposal facilities and disposal sites.

Landowner means the owner of record of land or an interest in land that is subject of a Reviewable Decision.

Linear-shaped Project, for purposes of 310 CMR 10.05(4), means a project that is substantially longer than it is wide and is a project for the construction, reconstruction, or substantial

enlargement of facilities that will be used in the service of the public to provide electric, gas, sewer, water, telephone, telegraph and other communication services, a project by a public agency or authority for the construction, reconstruction, expansion, repair or maintenance of public roads, bike paths or other paths for pedestrians, or public railways.

Lot means an area of land in one ownership, with definite boundaries.

Low Impact Development (LID) Techniques means innovative stormwater management systems that are modeled after natural hydrologic features. LID techniques manages rainfall at the source using uniformly distributed, decentralized, micro-scale controls. LID techniques uses small, cost-effective landscape features located at the lot level. LID takes the form of techniques (e.g., porous pavement); -or practices (e.g., reduced front yard setback).

Macro-Approach means a compliance approach for new development or Redevelopment of highways where Stormwater Control Measures are implemented within the Project Locus rather than the Project Site.

Maintenance Log means, for purposes of 310 CMR 10.05(6)(k)9., a written log listing each Stormwater Management System maintenance activity and long-term pollution prevention plan measure that has occurred, with the corresponding date that the maintenance and pollution prevention measure occurred.

Maintenance of a Stormwater Management System means the work required to keep a stormwater management system functional and in good repair so that it may continue to operate as originally designed. Maintenance of a stormwater management system does not include work that:

- (a) reduces the capacity of the system to treat stormwater, provide recharge or attenuate peak flow;
- (b) increases the total and peak volume of the stormwater managed by the system;
- (c) directs additional stormwater discharges to the system; or
- (d) results in reduced use of above ground Stormwater Control Measures or Best Management Practices.

Maintenance of an Existing Public Roadway means activities undertaken to a roadway that do not increase impervious area. Such activities include, but are not limited to, grinding, scarifying, repaving, resurfacing, replacing existing drainage pipes, or resetting curbs or catch basin frames. Maintenance of an Existing Public Roadway does not include widening, installing new shoulders, installing new sidewalks, or creating New Stormwater Discharges from existing roads.

Major or Complex means an appeal of a Reviewable Decision issued for work in a resource area that will be so designated due to the complexity or novelty of the issues, the magnitude of the project, the potential for environmental harm or benefit, significant public interest or public

financing or other relevant consideration, as determined by the Commissioner or a Presiding Officer.

Majority means more than half of the members of the conservation commission then in office.

Marsh is defined in M.G.L. c. 131, § 40, para. 1~~10~~.

Massachusetts Erosion and Sediment Control Guidelines means the *Massachusetts Erosion and Sediment Control Guidelines for Urban and Suburban Areas* originally prepared by the Franklin, Hampden, and Hampshire Conservation Districts in 1997, for the Massachusetts Executive Office of Environmental Affairs State Commission for Conservation of Soil, Water and Related Resources, the Massachusetts Department of Environmental Protection, the U.S. Environmental Protection Agency, Region I, and the Natural Resources Conservation Service, United States Department of Agriculture and reprinted in May 2003. This is now incorporated as Massachusetts Stormwater Handbook Appendix C [2023 Edition].

Massachusetts River and Stream Crossing Standards or the Stream Crossing Standards means the standards developed by the River and Stream Continuity Partnership as corrected on March 8, 2012 (<https://www.mass.gov/doc/massachusetts-river-and-stream-crossing-standards/download>).

Maximum Extent Practicable, for purposes of stormwater management (310 CMR 10.05(6)(k)-(q)), as is defined at 310 CMR 10.05(6)(o).

Meadow (or Wet Meadow) is defined in M.G.L. c. 131, § 40, para. ~~109~~.

Mean Annual High-water Line is defined at 310 CMR 10.58(2).

MEPA means the Massachusetts Environmental Policy Act, M.G.L. c. 30, §§ 6 through 62H, and 301 CMR 11.00: *General Application and Administration Environmental Code, Title 1*.

Migratory Areas mean those areas used by wildlife moving from one habitat to another, whether seasonally or otherwise.

Mitigation means rectifying an adverse impact by repairing, rehabilitating or restoring the affected ~~R~~resource ~~A~~area or compensating for an adverse impact by enhancing or providing replacement ~~R~~resource ~~A~~areas.

Near means, for purposes of stormwater management (310 CMR 10.05(6)(k)(6)), where a stormwater discharge has a strong likelihood of causing a significant impact to Critical Area, taking into account site-specific factors. Issuing authorities may use their discretion to determine if a discharge is Near a Critical Area except that Near always includes any untreated or increased stormwater discharge within a Buffer Zone, Riverfront Area or Bordering Land Subject to Flooding.

New Stormwater Conveyance means a new, confined and discrete manmade component of a Stormwater Management System, which directs stormwater run-off to wetland Resource Areas, and includes but is not limited to pipes, pipe outlets (outfalls), curbs, gutters, scuppers, storm drains, constructed channels, swales, tunnels, aqueducts, or inlets to storm drains, pipes or catch basins.

New Stormwater Discharge means new or increased runoff directed to a Resource Area from new Impervious Surface or through a New Stormwater Conveyance. Increased runoff means additional stormwater volume or higher discharge rate than currently exists. Stormwater discharges can be from public or privately owned Impervious Surfaces or conveyances.

Notice of Intent means the written notice filed by any person intending to remove, fill, dredge or alter an Area Subject to Protection under M.G.L. c. 131, § 40. It shall be made on Form 3 or 4.

NRCS means the Natural Resources Conservation Service, an agency of the United States Department of Agriculture, formerly known as the Soil Conservation Service (SCS).

Ocean means the Atlantic Ocean and all contiguous waters subject to tidal action.

Offsite Mitigation for Redevelopment means, for purposes of 310 CMR 10.05(6)(k)7., a compliance approach where Stormwater Control Measures are implemented at a location other than the Project Site to meet the recharge and pollutant removal requirements of 310 CMR 10.05(6)(k)7. and 11.

Openness Ratio means the cross-sectional area of a structure opening divided by crossing length when measured in consistent units. For a box culvert, the openness ratio equals (height x width)/length. For crossing structures with multiple cells or barrels openness is calculated separately for each cell or barrel. The embedded portion of a culvert is not included in the calculation of the cross-sectional area.

Order means an Order of Conditions, Order of Resource Area Delineation, Superseding, Order or Final Order, whichever is applicable.

Order of Conditions means the document issued by a conservation commission containing conditions which regulate or prohibit an activity. It shall be made on Form 5.

Outstanding Resource Water means a surface water of the Commonwealth so designated in the Massachusetts Surface Water Quality Standards at 314 CMR 4.00: *Massachusetts Surface Water Quality Standards*.

Owner of Land Abutting the Activity means the owner of land sharing a common boundary or corner with the site of the proposed activity in any direction, including land located directly across a street, way, creek, river, stream, brook or canal.

Party to any proceeding before the Department means the applicant, the conservation commission and the Department, and pursuant to 310 CMR 10.05(7)(a) may include the owner of the site, any abutter, any person aggrieved, any ten residents of the city or town where the land is located and any ten persons pursuant to M.G.L. c. 30A, § 10A.

Person Aggrieved means any person who, because of an act or failure to act by the issuing authority, may suffer an injury in fact which is different either in kind or magnitude from that suffered by the general public and which is within the scope of the interests identified in M.G.L. c. 131, § 40. Such person must specify in writing sufficient facts to allow the Department to determine whether or not the person is in fact aggrieved.

Plans means such data, maps, engineering drawings, calculations, specifications, schedules and other materials, if any, deemed necessary by the issuing authority to describe the site and/or the work, to determine the applicability of M.G.L. c. 131, § 40 or to determine the impact of the proposed work upon the interests identified in M.G.L. c. 131, § 40. (See also General Instructions for Completing Notice of Intent (Form 3) and Abbreviated Notice of Intent (Form 4).)

Pond (Coastal) means Salt Pond as defined in 310 CMR 10.33(2).

Pond (Inland) means any open body of fresh water with a surface area observed or recorded within the last ten years of at least 10,000 square feet. Ponds may be either naturally occurring or human-made by impoundment, excavation, or otherwise. Ponds shall contain standing water except for periods of extended drought. Periods of extended drought for purposes of 310 CMR 10.00 shall be those periods, in those specifically identified geographic locations, determined to be at the “~~Advisory Level 1 – Mild Drought~~” or more severe drought level by the ~~Massachusetts Drought Management Task Force Secretary of, as established by the Executive Office of Energy and Environmental Affairs and the Massachusetts Emergency Management Agency in 2001~~, in accordance with the Massachusetts Drought Management Plan ~~(MDMP)~~, dated September 2019.

Notwithstanding the above, the following human-made bodies of open water shall not be considered ponds:

- (a) basins or lagoons which are part of wastewater treatment plants;
- (b) swimming pools or other impervious human-made basins; and
- (c) individual gravel pits or quarries excavated from upland areas unless inactive for five or more consecutive years.

Practicable means available and capable of being done after taking into consideration costs, existing technology, proposed use, logistics and potential adverse consequences, (e.g., degradation of Rare Species habitat, increased flood impacts to the built environment) in light of the overall project purposes and is permissible under existing federal and state statutes and regulations.



Pretreatment Practices means structural and nonstructural practices used as part of a treatment train, designed, operated, and maintained to remove an initial amount of a pollutant such as Total Suspended Solids from stormwater runoff prior to discharge to a Terminal Treatment Practice. Examples of Pretreatment Practices are deep sump catch basins and proprietary manufactured separators (structural) and street cleaning (nonstructural). Pretreatment Practices are not Terminal Treatment Practices.

Prevention of Pollution means the prevention or reduction of contamination of surface or ground water.

Primary Frontal Dune or Primary Dune means a continuous or nearly continuous mound or ridge of sediment with relatively steep seaward and landward slopes immediately landward and adjacent to the beach and subject to erosion and overtopping from high tides and waves during coastal storms. The Primary Frontal Dune is the dune closest to the beach. The inland limit of the Primary Frontal Dune occurs at the point where there is a distinct change from a relatively steep slope to a relatively mild slope.

Private Water Supply means any source or volume of surface or ground water demonstrated to be in any private use or demonstrated to have a potential for private use.

Project Locus means the lot on which an applicant proposes to perform an activity subject to regulation under M.G.L. c. 131, § 40.

Project Purpose means the general, functional description of an activity proposed within the riverfront area (e.g., construction of a single family house, expansion of a commercial development).

Project Site means the area within the Project Locus that comprises the limit of work for activities, including but not limited to, the dredging, excavating, filling, grading, the erection, reconstruction or expansion of a building or structure, the driving of pilings, the construction or improvement of roads or other ways, and the installation of drainage, stormwater treatment, Environmentally Sensitive Site Design practices, sewage systems, and water systems.

Protection of Fisheries means protection of the capacity of an Area Subject to Protection under M.G.L. c. 131, § 40:

- (a) to prevent or reduce contamination or damage to fish; and
- (b) to serve as their habitat and nutrient source. Fish includes all species of fresh and salt water finfish and shellfish.

See also the definition of Marine Fisheries contained in 310 CMR 10.23(15).

Protection of Land Containing Shellfish means protection of the capacity of an Area Subject to Protection under M.G.L. c. 131, § 40:

- (a) to prevent or reduce contamination or damage to shellfish; and
- (b) to serve as their habitat and nutrient source.

See also the definitions of Shellfish and Land Containing Shellfish in 310 CMR 10.34(2).

Public Shared Use Paths means accessible paved and unpaved paths restricted solely to pedestrian and non-motorized vehicle travel (with the exception of wheelchairs, other power-driven mobility devices by individuals with a mobility disability, electric bicycles and electric scooters, emergency vehicles, and vehicles performing periodic maintenance). They are located either on public property or on private property pursuant to an easement that provides for public access. Accessible means a surface that complies with the Americans with Disabilities Act regulations, 28 CFR Part 35 and Part 36. Public Shared Use Paths do not include sidewalks intended solely for pedestrian use and do not include parking areas for motorized vehicles.

Public Water Supply means any source or volume of surface or ground water demonstrated to be in public use or approved for water supply pursuant to M.G.L. c. 111, § 160 by the Drinking Water Program ~~Division of Water Supply~~ of the Department, ~~or~~ demonstrated to have a potential for public use.

Qualifying Pervious Areas (QPA) means, for purposes of stormwater management (310 CMR 10.05(6)(k)-(q)), fully stabilized natural or vegetated areas where stormwater discharge is directed via sheet flow and not as a point source discharge.

Rare Species mean those vertebrate and invertebrate animal species officially listed as endangered, threatened, or of special concern by the Massachusetts Division of Fisheries and Wildlife under 321 CMR 10.60.

Redevelopment means replacement, rehabilitation, or expansion of existing structures, ~~Improvement of~~ an Eexisting Public Roadways or reuse of ~~degraded or~~ previously developed areas for purposes of 310 CMR 10.58, governing work in the Riverfront Aarea, and 310 CMR 10.36, governing work in Land Subject to Coastal Storm Flowage.

For purposes of the Stormwater Management Standards as provided in 310 CMR 10.05(6)(k)-~~through (q)~~, ~~through (q)~~, Redevelopment is defined to include the following projects:

- (a) ~~maintenance and~~ Improvement of an Eexisting Public Roadways; ~~including widening less than a single lane, adding shoulders, correcting substandard intersections, and improving existing drainage systems and repaving;~~
- (b) development, rehabilitation, expansion and phased projects on previously developed sites provided the Redevelopment results in no net increase in impervious area; and
- (c) remedial projects specifically designed to provide improved stormwater management such as projects to separate storm drains and sanitary sewers ~~and stormwater retrofit projects.~~

Remove means to take away any type of material, thereby changing an elevation, either temporarily or permanently.

Request for Determination of Applicability means a written request made by any person to a conservation commission or the Department for a determination as to whether a site or work thereon is subject to M.G.L. c. 131, § 40. It shall be submitted on Form 1.

Resource Area means any of the areas specified in 310 CMR 10.25 through 10.3~~65~~ and 10.54 through 10.58. It is used synonymously with Area Subject to Protection under M.G.L. c. 131, § 40, each one of which is enumerated in 310 CMR 10.02(1).

Restoration Order of Conditions means an Order of Conditions issued pursuant to 310 CMR 10.05(6) and 10.14 for a project that meets the eligibility criteria set forth in 310 CMR 10.13.

Retrofit Projects means, for purposes of stormwater management (310 CMR 10.05(6)(k)-(q)), projects that make site--specific changes designed solely to improve water quality, reduce peak discharge rates, increase recharge, or reduce or eliminate combined sewer overflows (CSO). Retrofit Projects are not new development or maintenance.

Reviewable Decision means a ~~MassDEP~~Department decision that is a superseding order of condition or superseding denial of an order of conditions, a superseding determination of applicability, and/or a superseding order of resource area delineation, or a variance.

River means any natural flowing body of water that empties to any ocean, lake, pond, or other river and which flows throughout the year. River is defined further at 310 CMR 10.58(2).

Riverfront Area is defined at 310 CMR 10.58(2).

Rocky Intertidal Shore is defined in 310 CMR 10.31(2).

Salt Marsh is defined in 310 CMR 10.32(2).

Saturated Hydraulic Conductivity Test means a field test to determine the rate at which water percolates through saturated soils to transmit a volume of water per unit time in the vertical direction in a defined area as determined by one of the following methods: constant head Guelph permeameter - ASTM D5126-16e1 Method; Falling head permeameter – ASTM D5126-16e1 Method; Double ring permeameter or infiltrometer - ASTM D3385-18, D5093-15e1, D5126-16e1 Methods; or constant head Amoozometer or Amoozegar permeameter. A Title 5 percolation test, as defined at 310 CMR 15.002, is not an acceptable Saturated Hydraulic Conductivity Test for purposes of stormwater management (310 CMR 10.05(6)(k)-(q)).

Seasonal High Groundwater Elevation: means, for purposes of stormwater management (310 CMR 10.05(6)(k)-(q)), the highest elevation of soil or rock that is seasonally or permanently saturated. The elevation shall be determined based on:

- a. Soil color using the Munsell system, the abundance, size and contrast of redoximorphic features, if present; or
- b. When redoximorphic features are not present, the following methods may be utilized:

1. observation of actual water table during times of annual high water table (typically March or April) compared to long-term USGS observation wells located within the same major river basin; or
2. use of the USGS Frimpter method which is described in the following publications: 1) Frimpter, M.H. "Probable High Ground-Water Levels in Massachusetts," Open File Report 80-1205, USGS; 2) Frimpter, M.H. and G.C. Belfit, 2006, "Estimation of High Ground-Water Levels for Construction and Land Use Planning, A Cape Cod, Massachusetts, Example," Barnstable, MA, Cape Cod Commission Technical Bulletin 92-001, updated 2006; 3) Barclay, J.R., and Mullaney, J.R., 2020, "Updating Data Inputs, Assessing Trends, and Evaluating a Method to Estimate Probable High Groundwater Levels in Selected Areas of Massachusetts," U.S. Geological Survey Scientific Investigations Report 2020-5036; 45 p.; and 4) Barclay, J.R., and Mullaney, J.R., 2020, "Data on Well Characteristics and Well-Pair Characteristics for Estimating High Groundwater Levels in Selected Areas of Massachusetts: U.S. Geological Survey data release."

Setback means the distance of a structure, Impervious Surface or other developed feature from a wetland Resource Area or other feature (such as Critical Areas, Water Supply Wells, or septic system).

Severe Weather Emergency Declaration is a declaration issued by the Commissioner, following a destructive weather event, which authorizes widespread emergency recovery, debris cleanup, or roadway or utility repair, necessary for the protection of the health or safety of the residents of the Commonwealth, without filing a Notice of Intent or requesting an emergency certification or authorization pursuant to 310 CMR 10.06(1) through (7).

Sediment, for the purpose of dredging, means all inorganic or organic matter including detritus situated under tidal waters below the mean high water line as defined in 310 CMR 10.23, and for inland waters, below the upper boundary of a bank, as defined in 310 CMR 10.54(2).

Shellfish Growing Area means land under the ocean, tidal flats, rocky intertidal shores and marshes and land under salt ponds when any such land contains shellfish. Shellfish Growing Areas include land that has been identified and shown on a map published by the Division of Marine Fisheries as a Shellfish Growing Area including any area identified on such map as an area where shellfishing is prohibited. Shellfish growing areas shall also include land designated by the Department in 314 CMR 4.00: *Massachusetts Surface Water Quality Standards* as suitable for shellfish harvesting with or without depuration. In addition, Shellfish Growing Areas shall include Shellfish Growing Areas designated by the local shellfish constable as suitable for shellfishing based on the density of shellfish, the size of the area and the historical and current importance of the area for recreational and commercial shellfishing.

Shellfish Suitability Area means an area located within land containing shellfish and identified on maps prepared in May 2011 by the Massachusetts Division of Marine Fisheries with input from local Shellfish Constables and commercial fishermen as suitable for shellfish. The areas covered include sites where shellfish have been observed since the mid 1970s but may not currently support shellfish and thus represent both existing and potential shellfish habitat areas.

Shelter means protection from the elements or predators

Significant means plays a role. A ~~R~~esource ~~A~~rea is significant to an interest identified in M.G.L. c. 131, § 40 when it plays a role in the provision or protection, as appropriate, of that interest. Within the context of the protection of the riverfront area, no significant adverse impact means the level of protection of the performance standards provided under 310 CMR 10.58.

Soil Absorption System means a system of trenches, galleries, chambers, pits, field(s) or bed(s) together with effluent distribution lines and aggregate which receives effluent from a septic tank or treatment system.

Special Flood Hazard Area means the area of land in the flood plain that is subject to a 1% chance of flooding in any given year as determined by the best available information, including, but not limited to, the currently effective or preliminary Federal Emergency Management Agency (FEMA) Flood Insurance Study or Rate Map (except for any portion of a preliminary map that is the subject of an appeal to FEMA) for Land Subject to Coastal Storm Flowage, the Velocity Zone as defined in 310 CMR 10.04, and the Flood Insurance Study for Bordering Land Subject to Flooding as defined in 310 CMR 10.57.

Special Resource Water means a surface water of the Commonwealth so designated in 314 CMR 4.00: *Massachusetts Surface Water Quality Standards*.

Spring Tides means those tides which occur with the new and full moons, and which are perceptibly higher and lower than other tides.

State-listed Species mean the same as rare species, as defined in 310 CMR 10.04.

Storm Damage Prevention means the prevention of damage caused by water from storms, including, but not limited to, erosion and sedimentation, damage to vegetation, property or buildings, or damage caused by flooding, water-borne debris or water-borne ice.

Stormwater Best Management Practice means a structural or nonstructural technique for managing stormwater to prevent or reduce non-point source pollutants from entering surface waters or ground waters. A structural stormwater best management practice includes a basin, discharge outlet, swale, rain garden, filter or other stormwater treatment practice or measure either alone or in combination including without limitation any overflow pipe, conduit, weir control structure that:

- ~~(a) is not naturally occurring;~~
  - ~~(b) is not designed as a wetland replication area; and~~
  - ~~(c) has been designed, constructed, and installed for the purpose of conveying, collecting, storing, discharging, recharging, or treating stormwater.~~
- ~~Nonstructural stormwater best management practices include source control and pollution prevention measures.~~

Stormwater Control Measure (SCM) means a structural or nonstructural technique for managing stormwater to prevent or reduce point or non-point source pollutants from entering surface waters or ground waters. A Nonstructural Stormwater Control Measure includes but is not limited to source control, Environmentally Sensitive Site Design, some Low Impact Development techniques or practices, street cleaning and pollution prevention measures. A structural Stormwater Control Measure includes, but is not limited to, a basin, discharge outlet, swale, rain garden, filter, some Low Impact Development techniques or practices, or other stormwater treatment practice or measure either alone or in combination, including without limitation, any overflow pipe, conduit, weir control structure that:

- (a) is not naturally occurring;
- (b) is not designed as a wetland replication area; and
- (c) has been designed, constructed, and installed for the purpose of conveying, collecting, storing, discharging, recharging or treating stormwater.

Stormwater Management Standards means the regulations specified at 310 CMR 10.05(6)(k)1. through 11.

Stormwater Management System means a system for conveying, collecting, storing, discharging, recharging or treating stormwater on-site including Sstormwater Control Measures or Bbest Mmanagement Ppractices and any pipes and outlets intended to transport and discharge stormwater to the ground water, a surface water or a municipal separate storm sewer system.

Stormwater Management System Improvement means:

- (a) expansion of a stormwater management system beyond its existing geographic footprint to provide treatment for additional stormwater volume, provide additional groundwater recharge or enhance groundwater recharge or pollutant removal capability such as the addition of treatment train components; or
- (b) modification to, or addition of, features within the existing geographic footprint of a stormwater management system to enhance groundwater recharge or pollutant removal capability, such as modifying outlet control structures.

Stream means a body of running water, including brooks and creeks, which moves in a definite channel in the ground due to a hydraulic gradient, and which flows within, into or out of an Area Subject to Protection under M.G.L. c. 131, § 40. A portion of a stream may flow through a culvert or beneath a bridge. Such a body of running water which does not flow throughout the year (*i.e.*, which is intermittent) is a stream except for that portion upgradient of all bogs, swamps, wet meadows and marshes.



Substitute EPA-PRC means a percent removal of Total Suspended Solids and Total Phosphorus that has been approved by MassDEP in instances where EPA has not listed an EPA-PRC in the BATT Tool. The percent removal is credited to SCMs pursuant to 310 CMR 10.05(6)(k)4 and 310 CMR 10.05(6)(k)7. All Substitute EPA-PRC approved by MassDEP are listed in Table 1 Crosswalk.

Superseding Determination means a determination of applicability, of significance or of non-significance, as the case may be, issued by the Department. It shall be made on Form 2.

Superseding Order means a document issued by the Department containing conditions which regulate or prohibit an activity. It shall be made on Form 5.

Surface Waters means all waters other than ground water within the jurisdiction of the Commonwealth including, without limitation, rivers, streams, lakes, ponds, springs, impoundments, estuaries, wetlands, and coastal waters.

Swamp is defined in M.G.L. c. 131, § 40, para. 98.

Terminal Treatment Practices mean structural and nonstructural practices used as part of a treatment train, designed, operated, and maintained to remove pollutants such as Total Suspended Solids and Total Phosphorus from stormwater runoff prior to discharge to a Resource Area or Waters of the Commonwealth. Examples of Terminal Treatment Practices are infiltration basins and constructed stormwater treatment wetlands (structural) and Environmental Sensitive Site Design (nonstructural). Terminal Treatment Practices are not Pretreatment Practices.

Test Project means the installation or deployment of water dependent Innovative Technology in situ for purposes of evaluating its performance and environmental effects.

Time of Year Restriction means the date ranges established by the Massachusetts Department of Fish and Game, Division of Fisheries and Wildlife and Division of Marine Fisheries, to provide protection to resources including inland streams, rare species habitat and marine resources in Massachusetts during times when there is a higher risk of known or anticipated significant lethal, sublethal, or behavioral impacts.

Total Impervious Area Reduction means the reduction of impervious area on a Project Site. For example, if 200 square feet of parking lot pavement is replaced with a vegetated surface, then 200 square feet can be deducted from the size of the area that needs to be treated by the Stormwater Management System.

Total Maximum Daily Load (TMDL) means the sum of a receiving water's individual waste load allocations and load allocations and natural background, which, together with a margin of safety

that takes into account any lack of knowledge concerning the relationship between effluent limitations and water quality, represents the maximum amount of a pollutant that a waterbody can receive and still meet water quality standards in all seasons. TMDLs are developed by MassDEP to meet the Surface Water Quality Standards at 314 CMR 4.00: *Massachusetts Surface Water Quality Standards*, and are approved by EPA. Alternative TMDLs are pathways approved by MassDEP to attain and maintain Surface Water Quality Standards that may not be numerical.

Total Phosphorus (TP) means the total phosphate content in stormwater including all particulate and dissolved phosphorus, in both organic and inorganic forms.

Total Suspended Solids (TSS) means solids suspended in stormwater, determined using EPA Method 160.2 (1971).

Underground Injection Control Program or UIC Program means the Underground Injection Control Program under Part C of the Federal Safe Drinking Water Act, 42 U.S.C. §§ 300f *et seq.*, which is implemented and enforced in Massachusetts by the Department pursuant to 310 CMR 27.00: *Underground Injection Control Regulations*.

USGS means the United States Geological Survey, within the United States Department of the Interior.

Velocity Zone or V-~~z~~Zone also known as the Coastal High Hazard Area means an area within the Special Flood Hazard Area that is subject to high velocity wave action from storms or seismic sources. The Velocity Zone Boundaries are determined by reference to the currently effective or preliminary Flood Insurance Rate Map (FIRM) prepared by the Federal Emergency Management Agency (FEMA), whichever is more recent (except for any portion of a preliminary map that is the subject of an appeal to FEMA), or at a minimum to the inland limit of the Primary Frontal Dune, whichever is farther landward.

Vernal Pool Habitat means confined basin depressions which, at least in most years, hold water for a minimum of two continuous months during the spring and/or summer, and which are free of adult fish populations, as well as the area within 100 feet of the mean annual boundaries of such depressions, to the extent that such habitat is within an Area Subject to Protection under M.G.L. c. 131, § 40 as specified in 310 CMR 10.02(1). These areas are essential breeding habitat, and provide other extremely important wildlife habitat functions during non breeding season as well, for a variety of amphibian species such as wood frog (*Rana sylvatica*) and the spotted salamander (*Ambystoma maculatum*), and are important habitat for other wildlife species.

Vista Pruning means the selective thinning of tree branches or understory shrubs to establish a specific "window" to improve visibility. Vista pruning does not include the cutting of trees which would reduce the leaf canopy to less than 90% of the existing crown cover and does not include the mowing or removal of understory brush.

Wastewater Residuals Landfill means a facility or part of a facility approved by the Department for the disposal of wastewater residuals into or on land, but not including a site where

wastewater residuals are land applied in accordance with 310 CMR 32.00: *Land Application of Sludge and Septage*.

Water-dependent Uses mean those uses and facilities which require direct access to, or location in, marine, tidal or inland waters and which therefore cannot be located away from said waters, including but not limited to: marinas, public recreational uses, navigational and ~~commercial~~commercial fishing and boating facilities, water-based recreational uses, navigation aids, basins, and channels, industrial uses dependent upon waterborne transportation or requiring large volumes of cooling or process water which cannot reasonably be located or operated at an upland site, crossings over or under water bodies or waterways (but limited to railroad and public roadway bridges, tunnels, culverts, as well as railroad tracks and public roadways connecting thereto which are generally perpendicular to the water body or waterway), and any other uses and facilities as may further hereafter be defined as water-dependent in 310 CMR 9.00: *Waterways*.

Waters of the Commonwealth means all waters within the jurisdiction of the Commonwealth, including without limitation, rivers, streams, lakes, ponds, springs, impoundments, estuaries, wetlands, coastal waters and ground waters.

Water Supply Well means any public or private source of groundwater used for human consumption, including but not limited to, a source approved for such use by the local board of health or the Department.

Watershed means any region or area measured in a horizontal topographic divide which directs water runoff from precipitation, normally by gravity, into a stream, a body of impounded surface water, or a coastal embayment, or any region or area measured by a groundwater divide which directs groundwater into a stream, a body of impounded surface water, or a coastal embayment.

Watershed-scale Accounting Method means a Highway Specific Consideration under which MassDOT Redevelopment may comply with the Stormwater Management Standards by implementing Stormwater Control Measures within the HUC 10, rather than or in addition to meeting them on the Project Site. The Watershed-scale Accounting Method may be used only when the Macro-Approach and Offsite Mitigation for Redevelopment are not practicable. Under the Watershed-scale Accounting Method, Stormwater Control Measures must be implemented within a three-year period from issuance of the final Order.

Wildlife means all mammals, birds, reptiles and amphibians and, for the purposes of 310 CMR 10.37 and 10.59, all vertebrate and invertebrate animal species which are officially listed in 321 CMR 8.00: *Endangered Wildlife and Wild Plants* as endangered, threatened, or of special concern.

Wildlife Habitat means an Area Subject to Protection under M.G.L. c. 131, § 40, which due to its plant community, composition and structure, hydrologic regime or other characteristics provides important food, shelter, migratory or overwintering areas or breeding areas for wildlife.

Wildlife Specialist means an individual with at least a masters degree in wildlife biology or ecological science from an accredited college or university, or other competent professional with at least two years experience in wildlife habitat evaluation.

Work means the same as activity.

Zone I means the protective radius required around a public water supply well or wellfield, as defined in 310 CMR 22.00: *Drinking Water*.

Zone II means that area of an aquifer which contributes water to a well under the most severe pumping and recharge conditions that can realistically be anticipated, as defined in 310 CMR 22.00: *Drinking Water*.

Zone A, as defined in 310 CMR 22.00: *Drinking Water*, means (a) the land area between the surface water source and the upper boundary of the bank; (b) the land area within a 400 foot lateral distance from the upper boundary of the bank of a Class A surface water used as a drinking water source, as defined in 314 CMR 4.00: *Massachusetts Surface Water Quality Standards*; and (c) the land area within a 200 foot lateral distance from the upper boundary of the bank of a tributary or associated surface water body.

#### **10.05: Procedures**

**[NOTE TO REVIEWERS; MassDEP IS SETTING FORTH IN THIS DOCUMENT PROPOSED AMENDMENTS TO THE CURRENT REGULATION AT 310 CMR 10.00 IN REDLINE AND STRIKEOUT FORMAT. REDLINES SHOW ADDITIONS TO THE CURRENT REGULATORY TEXT AND STRIKEOUTS SHOW PROPOSED DELETIONS. SINCE THE REGULATION IS VERY LONG, MassDEP IS PUBLISHING ONLY THOSE PORTIONS OF THE REGULATION FOR WHICH THE AGENCY IS PROPOSING TO MAKE AMENDMENTS. MassDEP HAS INCLUDED TEXT JUST PRIOR TO (and in some cases text just after) NEW INSERTED TEXT TO MAKE IT CLEAR WHERE THE NEW TEXT IS PROPOSED TO BE INSERTED INTO THE CURRENT REGULATIONS. **THERE ARE NO EDITS TO SECTIONS 10.05(1), 10.05(2) or 10.05(3) and the EXISTING REGULATION LANGUAGE FOR THESE SECTIONS WILL REMAIN THE SAME.**]**

...

#### **(4) Notices of Intent.**

(a) Any person who proposes to do work that will remove, fill, dredge or alter any Area Subject to Protection under M.G.L. c. 131 § 40, shall file a Notice of Intent on Form 3 and other application materials in accordance with the submittal requirements set forth in the *General Instructions for Completing Notice of Intent (Form 3)*. If the applicant is not a landowner of the Project Locus, the applicant shall obtain written permission from thea landowner(s) prior to filing a Notice of Intent for proposed work, except for work proposed on Great Ponds or Commonwealth tidelands. A construction period erosion, sedimentation and pollution prevention plan prepared in accordance with 310 CMR 10.05(6)(b) and 310 CMR 10.05(6)(k)8. shall accompany the Notice of Intent for all

Activities. For projects subject to the Stormwater Management Standards (310 CMR 10.05(6)(k)1. through 11.), the following shall also be included with the Notice of Intent: stormwater report checklist stamped by a registered professional engineer, long-term pollution prevention plan, operation and maintenance plan, and no illicit discharge compliance statement. For Redevelopment projects, for the purposes of the Stormwater Management Standards, the following submittals shall also be included with the Notice of Intent: the Redevelopment checklist, and the written alternatives analysis, when needed. Two copies of the completed Notice of Intent with supporting plans and documents shall be sent by certified mail or hand delivery to the conservation commission, and one copy of the same shall be sent concurrently in like manner to the Department. ~~If the project requires a 401 Water Quality Certification pursuant to 314 CMR 9.00: 401 Water Quality Certification for Discharge of Dredged or Fill Material, Dredging, and Dredged Material Disposal in Waters of the United States Within the Commonwealth and/or is a water-dependent use project that requires a permit, license or written approval pursuant to 310 CMR 9.00: Waterways the applicant may file a Notice of Intent that is a Combined Application. In that event, an additional copy of the Combined Application shall be sent to the Department's Boston Office.~~

Concurrent with the filing of the Notice of Intent, the applicant shall provide notification to all Abutters. Notwithstanding the foregoing, the requirement to provide Abutter notification is subject to the following limits. An applicant is required to provide notification to an Abutter whose Lot is separated from the Project Locus by a public or private street or body of water only if the Abutter's Lot is within 100 feet from the property line of the Project Locus. An applicant who proposes work solely within Land under Water Bodies or Waterways, or solely within a Lot with an area greater than 50 acres, is required to provide notification only to Abutters whose Lot is within one hundred feet from the Project Site. An applicant proposing a Linear- shaped Project greater than 1,000 feet in length is required to provide notification only to Abutters whose Lot is within 1,000 feet from the Project Site. Abutter notification is not required for projects proposed by the Massachusetts Department of Transportation Highway Division pursuant to St. 1993, c. 472 as approved on January 13, 1994. The applicant shall provide notification at the mailing addresses shown on the most recent applicable tax list from the municipal assessor. Notification shall be at the applicant's expense. The notification shall state where within the municipality copies of the Notice of Intent may be examined or obtained and where information on the date, time, and location of the public hearing may be obtained. To ensure compatibility with local procedures, applicants must comply with any rules of the local conservation commission pertaining to the location for examining or obtaining the Notice of Intent and information about the hearing. The applicant shall provide written notification to all Abutters required to be notified by hand delivery or certified mail, return receipt requested, or by certificates of mailing. Mailing at least seven days prior to the public hearing shall constitute timely notice. The applicant shall present either the certified mail receipts or certificate of mailing receipts for all Abutters at the beginning of the public hearing. The presentation of the receipts for all abutters required to be notified as identified on the tax list shall constitute compliance with Abutter notification requirements. The conservation commission shall determine whether the applicant has complied with Abutter notification requirements. The Department will dismiss Requests for Action based on allegations of



failure to comply with Abutter notification requirements, absent a clear showing by an Abutter seeking Department action that the applicant failed to notify the Abutter. An applicant submitting a Notice of Intent for a project that is also subject to 310 CMR 9.00: *Waterways* and/or 314 CMR 9.00: *401 Water Quality Certification for Discharge of Dredged or Fill Material, Dredging, and Dredged Material Disposal in Waters of the United States Within the Commonwealth* may provide joint public notice by appending to the public notice required by 310 CMR 9.13: *Public Notice and Participation Requirements* and/or 314 CMR 9.00: *Submission of an Application*, as applicable, notification that a Notice of Intent is pending before the issuing authority, provided the notification complies with 310 CMR 10.05(4). ~~An applicant may provide a joint public notice, even if the Notice of Intent is not a Combined Application.~~

(b) For certain purposes, other forms of Notices may be used.

1. For certain projects, applicants may at their option use the Abbreviated Notice of Intent. This latter form may only be used when all three of the following circumstances exist:

**[NOTE TO REVIEWERS; MassDEP IS SETTING FORTH IN THIS DOCUMENT PROPOSED AMENDMENTS TO THE CURRENT REGULATION AT 310 CMR 10.00 IN REDLINE AND STRIKEOUT FORMAT. REDLINES SHOW ADDITIONS TO THE CURRENT REGULATORY TEXT AND STRIKEOUTS SHOW PROPOSED DELETIONS. SINCE THE REGULATION IS VERY LONG, MassDEP IS PUBLISHING ONLY THOSE PORTIONS OF THE REGULATION FOR WHICH THE AGENCY IS PROPOSING TO MAKE AMENDMENTS. MassDEP HAS INCLUDED TEXT JUST PRIOR TO (and in some cases text just after) NEW INSERTED TEXT TO MAKE IT CLEAR WHERE THE NEW TEXT IS PROPOSED TO BE INSERTED INTO THE CURRENT REGULATIONS. THERE ARE NO EDITS TO SECTIONS 10.05(4)(b) through 10.05(4)(g) and the EXISTING REGULATION LANGUAGE FOR THESE SECTIONS WILL REMAIN THE SAME.]**

...

(h) The issuing authority may require that supporting plans and calculations be prepared and stamped by a registered professional engineer (PE) when, in its judgment, the complexity of the proposed work warrants this professional certification. The issuing authority may also require the preparation of supporting materials by other professionals including, but not limited to, registered landscape architect, registered land surveyor, environmental scientist, geologist or hydrologist when in its judgment the complexity of the proposed work warrants the relevant specialized expertise. The issuing authority may require a delineation in an Abbreviated Notice of Resource Area Delineation to be performed by a professional with relevant specialized expertise. ~~If the Notice of Intent is a Combined Application, the supporting plans and calculations shall also conform to the requirements of 310 CMR 9.11(3)(b) and 314 CMR 9.05(1): Application Requirements to the extent they are applicable.~~



(5) Public Hearings by Conservation Commissions.

(a) A public hearing shall be held by the conservation commission within 21 days of receipt of the minimum submittal requirements set forth in the General Instructions for Completing Notice of Intent (Form 3), Abbreviated Notice of Intent (Form 4) and Abbreviated Notice of Resource Area Delineation, and shall be advertised in accordance with M.G.L. c. 131, § 40 and the requirements of the open meeting law, M.G.L. c. 39, § 23B.

(b) Public hearings may be continued as follows:

1. without the consent of the applicant to a date, announced at the hearing, within 21 days, of receipt of the Notice of Intent;
  2. with the consent of the applicant, to an agreed-upon date, which shall be announced at the hearing; or
  3. with the consent of the applicant for a period not to exceed 21 days after the submission of a specified piece of information or the occurrence of a specified action.
- The date, time and place of said continued hearing shall be publicized in accordance with M.G.L. c. 131, § 40, and notice shall be sent to any person at the hearing who so requests in writing.

(6) Orders of Conditions Regulating Work and Orders of Resource Area Delineation.

(a) Within 21 days of the close of the public hearing, the conservation commission shall either:

1. make a determination that the area on which the work is proposed to be done, or which the proposed work will remove, fill, dredge or alter, is not significant to any of the interests identified in M.G.L. c. 131, § 40, and shall so notify the applicant and the Department on Form 6;
2. make a determination that the area on which the work is proposed to be done, or which the proposed work will remove, fill, dredge or alter, is significant to one or more of the interests identified in M.G.L. c. 131, § 40, and shall issue an Order of Conditions for the protection of said interest(s), on Form 5. If the issuing authority also determines that the project meets the eligibility criteria for issuance of a Restoration Order of Conditions set forth in the applicable provisions of 310 CMR 10.00, the Order of Conditions for the project shall be a Restoration Order of Conditions; or
3. make a determination that bordering vegetated wetland and other resource areas subject to jurisdiction have been identified and delineated according to the definitions in 310 CMR 10.00 and shall issue an Order of Resource Area Delineation to confirm or modify the delineations submitted. The Order of Resource Area Delineation shall be effective for three years.

The standards and presumptions to be used by the issuing authority in determining whether an area is significant to the interests identified in M.G.L. c. 131, § 40, are found in 310 CMR 10.21 through 10.37 (for coastal wetlands) and 10.51 through 10.60 (for inland wetlands).

(b) The Order of Conditions shall impose such conditions as are necessary to meet the performance standards set forth in 310 CMR 10.21 through 10.60 for the protection of those areas found to be significant to one or more of the interests identified in M.G.L. c. 131, § 40, and the Stormwater Management Standards provided in 310 CMR 10.05(6)(k) 1. through -

~~11. through (q).~~ The Order shall prohibit any work or any portion thereof that cannot be conditioned to meet said standards.

The Order shall impose conditions only upon work or the portion thereof that is to be undertaken within an Area Subject to Protection under M.G.L. c. 131, § 40, or within the Buffer Zone. The Order shall impose conditions to control erosion and sedimentation within ~~R~~esource ~~A~~reas and the Buffer Zone. The Order shall impose conditions setting limits on the quantity and quality of discharge from ~~a~~ point sources (both closed and open channel) ~~and non-point sources~~, when said limits are necessary to protect the interests identified in M.G.L. c. 131, § 40; provided, however, that the point of discharge falls within an Area Subject to Protection under M.G.L. c. 131, § 40, or within the Buffer Zone, and further provided that said conditions are consistent with the limitations set forth in 310 CMR 10.03(4).

Notwithstanding the foregoing, when the issuing authority has determined that an Activity outside the Areas Subject to Protection under M.G.L. c. 131, § 40 and outside the Buffer Zone has in fact altered an Area Subject to Protection under M.G.L.c. 131, § 40, it shall impose such conditions on any portion of the activity as are necessary to contribute to the protection of the interests identified in M.G.L.c. 131, § 40.

When the ~~I~~ssuing ~~A~~uthority determines that a project meets the eligibility criteria for a Restoration Order of Conditions, the ~~I~~ssuing ~~A~~uthority shall impose only the conditions set forth in the applicable provisions of 310 CMR 10.00 for that Restoration Order of Conditions. A Restoration Order of Conditions may reference the plans and specifications approved by the issuing authority. ~~If the Department issues a Combined Permit, the Department may append to the Restoration Order of Conditions any conditions that the Department has authority to impose pursuant to 310 CMR 9.00: Waterways and 314 CMR 9.00: 401 Water Quality Certification for Discharge of Dredged or Fill Material, Dredging, and Dredged Material Disposal in Waters of the United States Within the Commonwealth to the extent they are applicable. The requirement that an Order shall impose conditions only upon work or the portion thereof that is to be undertaken within an Area Subject to Protection under M.G.L. c. 131, § 40, or within the Buffer Zone does not restrict the authority of the Department to append to a Combined Permit any conditions that the Department has authority to impose under 310 CMR 9.00: Waterways and 314 CMR 9.00: 401 Water Quality Certification for Discharge of Dredged or Fill Material, Dredging, and Dredged Material Disposal in Waters of the United States Within the Commonwealth to the extent they are applicable.~~

(c) If the conservation commission finds that the information submitted by the applicant is not sufficient to describe the site, the work or the effect of the work on the interests identified in M.G.L. c. 131, § 40, it may issue an Order prohibiting the work. The Order shall specify the information which is lacking and why it is necessary.

(d) Except as provided in M.G.L. c. 131, § 40 for maintenance dredging, an Order of Conditions, Order of Resource Area Delineation, or Notification of Non-significance shall be valid for three years from the date of its issuance; provided, however, that the issuing authority may issue an Order for up to five years where special circumstances warrant and where those special circumstances are set forth in the Order. An Order of Resource Area Delineation shall be valid for three years, and may be extended by the issuing authority for one or more years up to three years each under 310 CMR 10.05(8) upon written confirmation by a professional with relevant expertise that the resource area delineations remain accurate.

(e) The Order or Notification of Non-significance shall be signed by a majority of the conservation commission and shall be mailed by certified mail (return receipt requested) or hand delivered to the applicant or his or her agent or attorney, and a copy mailed or hand delivered at the same time to the Department. If the Order imposes conditions necessary to meet any performance standard contained in 310 CMR 10.37 or 10.59, a copy shall be mailed or hand delivered at the same time to the Massachusetts Natural Heritage and Endangered Species Program.

(f) A copy of the plans describing the work and the Order shall be kept on file by the conservation commission and by the Department, and shall be available to the public at reasonable hours.

(g) Prior to the commencement of any work permitted or required by the Final Order, including a Final Order of Resource Area Delineation, or Notification of Non-significance, the Order or Notification shall be recorded in the Registry of Deeds or the Land Court for the district in which the land is located, within the chain of title of the affected property. In the case of recorded land, the final order shall also be noted in the Registry's Grantor Index under the name of the owner of the land upon which the proposed work is to be done. In the case of registered land, the final order shall also be noted on the Land Court Certificate of Title of the owner of the land upon which the proposed work is to be done. Certification of recording shall be sent to the issuing authority on the form at the end of Form 5. If work is undertaken without the applicant first recording the Order, the issuing authority may issue an Enforcement Order (Form 9) or may itself record the Order of Conditions.

(h) Notwithstanding the provisions contained in 310 CMR 10.10(1) and (3), any Order of Conditions not containing an expiration date, issued for work proposed in a Notice of Intent filed under M.G.L. c. 131, § 40 prior to November 18, 1974, shall expire on April 17, 1986.

(i) An Order of Conditions does not grant any property rights or any exclusive privileges; it does not authorize any injury to private property or invasion of property rights.

(j) Failure to comply with conditions stated in the Order and with all related statutes and other regulatory measures shall be deemed cause to revoke or modify the Order of Conditions.

(k) ~~No Area Subject to Protection under M.G.L. c. 131, § 40 other than bordering land subject to flooding, isolated land subject to flooding, land subject to coastal storm flowage, or riverfront area may be altered or filled for the impoundment or detention of stormwater, the control of sedimentation or the attenuation of pollutants in stormwater discharges, and the applicable performance standards shall apply to any such alteration or fill.~~ Except as expressly provided, stormwater runoff from all industrial, commercial, institutional, office, residential and transportation projects that are subject to regulation under M.G.L. c. 131, § 40 ~~including site preparation, construction, and redevelopment~~ and all point and non-point source stormwater discharges from said projects within an Area Subject to Protection under M.G.L. c. 131, § 40 or within the Buffer Zone shall be provided with Environmentally Sensitive Site Design (ESSD) and Low Impact Development (LID) techniques or stormwater best management practices to attenuate pollutants ~~and to provide a setback from the receiving waters and wetlands unless it is Impracticable, and to provide a Ssetback from the receiving waters and wetlands in accordance with the following Stormwater Management Standards as further defined and specified in the Massachusetts Stormwater Handbook~~ Other types of Stormwater Control Measures (SCMs) and related stormwater Best Management Practices (BMPs) shall only be used to meet those portions

of the Stormwater Management Standards that cannot be fully met by ESSD or LID to attenuate pollutants and by providing a Setback. ESSD, LID, SCMs, and related stormwater BMPs, will be presumed to meet the Stormwater Management Standards if they are designed, constructed and maintained to the specifications listed in the *Massachusetts Stormwater Handbook* [2023 Edition] and its appendices (e.g., *SCM Specifications - Appendix A, Massachusetts Erosion and Sediment Control Guidelines for Urban and Suburban Areas – Appendix C*). All components of ESSD, LID, SCMs, BMPs, and stormwater discharges shall be set back from wetland Resource Areas in accordance with 310 CMR 10.05(6)(q), however, a Setback reduced in accordance with the *Massachusetts Stormwater Handbook* [2023 Edition] will be presumed to meet the Setback requirement in 310 CMR 10.05(6)(q). Soil evaluation must be performed to meet 310 CMR 10.05(6)(k)2. through 4., and 7. The soil evaluation shall include a site investigation and shall consist of identifying the U.S. NRCS Soil Series, NRCS soil texture, the Hydrologic Soil Group, depth to the Seasonal High Groundwater Elevation, and the saturated hydraulic conductivity of the soil. A soil evaluation conducted in accordance with the *Massachusetts Stormwater Handbook* [2023 Edition] shall be presumed to meet this requirement. Additionally, no Area Subject to Protection under M.G.L. c. 131, § 40, other than Bordering Land Subject to Flooding, isolated land subject to flooding, Land Subject to Coastal Storm Flowage, or Riverfront Area, may be altered or filled for the impoundment or detention of stormwater, infiltration, the control of sedimentation or the attenuation of pollutants in stormwater discharges, and the applicable performance standards shall apply to any such alteration or fill in the aforementioned other areas. MassDOT may use the Highway Specific Considerations, including the Macro-Approach and the Watershed-scale Accounting Method, to comply with or be presumed to comply with applicable Stormwater Management Standards. MassDOT will be presumed to comply with applicable Stormwater Management Standards when applicable Highway Specific Considerations are implemented in accordance with Section 5.7 of the *Massachusetts Stormwater Handbook* [2023 Edition]. MassDOT-funded municipal roadway projects where MassDOT has approved the design may use the Highway Specific Considerations except for the operation and maintenance approach and the Watershed-scale Accounting Method.

All projects shall be designed, constructed, and operated to comply with the following Stormwater Management Standards:

1. No New Stormwater Conveyances (e.g., outfalls) may discharge untreated stormwater directly to or cause erosion or scour to in wetlands or Waters of the Commonwealth.
2. Stormwater Management Systems shall be designed so that post-development peak discharge rates do not exceed pre-development peak discharge rates. This standard is to be met on the Project Site at each point of discharge. This standard may be waived for stormwater discharges to coastal Resource Areas and subject to coastal storm flowage as defined in 310 CMR 10.21 to 10.3604, unless the discharge is to a coastal Resource Area located up-gradient of an existing or proposed stream crossing, culvert or bridge. The post-development peak discharge rate must be designed to be equal to or less than the pre-development rate from the 2-year, 10-year, and 100-year 24-hour storms to avoid an increase in peak discharge rate from the Project Site. The peak discharge rate computations must be conducted using the NRCS Technical Release WinTR20 Project Formulation Method (Version 3.20 or later versions are permissible) or WinTR55 Small Watershed Hydrology Method (Version 1.00.10 or later versions are permissible). When calculating the peak discharge rate, the upper confidence of the precipitation



frequencies listed in the National Oceanic and Atmospheric Administration (NOAA) Atlas 14 Volume 10 (Version 3.0 or later versions are permissible) multiplied by 0.9 shall be utilized. The NOAA Type C or D storm distribution (NRCS Engineering Field Handbook Chapter 2, National Engineering Handbook Part 650, Massachusetts Supplement for the Implementation of NOAA Atlas 14, Volume 10 Rainfall Data, dated June 17, 2016) or a customized storm distribution developed using the NOAA Atlas 14 upper confidence multiplied by 0.9 shall be utilized.

3. Loss of annual recharge to ground water shall be **avoided** or minimized through the use of infiltration measures including **ESSD**, **LID** techniques **or practices**, **SCMs**, **BMPs**, and good operation and maintenance **practices**. **To meet this recharge standard, ESSD or LID techniques or practices must be used unless demonstrated to be Impracticable based on a written alternatives analysis to be submitted with the Notice of Intent. Other types of SCMs shall only be used to meet those portions of the recharge standard that cannot be fully met by ESSD and LID. ESSD, LID, and, where necessary, SCMs, should be dispersed throughout a Project Site. This recharge standard must be met on the Project Site.** At a minimum, the annual recharge from the post-development site shall approximate the annual recharge from the pre-development conditions ~~based on soil type~~.

This ~~s~~Standard is met when underlying soils have a saturated hydraulic conductivity rate of at least 0.01 inch/hour, the recharge practice is designed to infiltrate the runoff into the ground fully within 72 hours, stormwater management system is designed to infiltrate the required recharge volume as determined in accordance with the Massachusetts Stormwater Handbook and a volume of at least one inch 1-inch of runoff multiplied by the impervious area is designed to infiltrate the runoff into the ground. Mounding analysis is required when the vertical separation from the bottom of an exfiltration system to Seasonal High Groundwater Elevation is less than four feet and the recharge system is proposed to attenuate the peak discharge from a 10-year or higher 24-hour storm (e.g., 10-year, 25-year, 50-year, or 100-year 24-hour storm). The mounding analysis must demonstrate that the seasonal high groundwater does not elevate into the infiltration practice, rise above the ground surface, or elevate the water surface of any Resource Areas over a 72-hour period. The 1-inch volume of infiltration is presumed to be provided when the recharge system is sized using one or more of the following methods described in the *Massachusetts Stormwater Handbook* [2023 Edition]:

- a. The Static Method;
- b. The Simple Dynamic -or Dynamic Field Methods using in-situ Saturated Hydraulic Conductivity Tests;
- c. The Continuous Simulation Method using in-situ Saturated Hydraulic Conductivity Tests where the static volume designed to be infiltrated represents at least 70% of the average annual precipitation at the three closest weather stations for which annual precipitation data is available through the NOAA National Centers for Environmental Information (formerly the National Climatic Data Center) within the same major river basin using a weighted average method, for the climate normal period 1991-2020, demonstrated through continuous simulation by using an automated spreadsheet provided by MassDEP in the *Massachusetts Stormwater Handbook* [2023 Edition].

~~a.d.~~ When Project Sites are composed entirely of NRCS Hydrologic Soil Group D Soil, bedrock within 2-feet of the existing ground surface, hazardous waste sites or solid waste landfill closures, the standard is met when one-inch to the Maximum Extent Practicable is provided.

4. Stormwater management systems for new development shall be designed to remove 80% 90% of the average annual post-construction load of Total Suspended Solids (TSS) and 60% of the average annual post-construction load of Total Phosphorus (TP). To meet this TSS/TP removal standard, ESSD or LID must be used unless demonstrated to be Impracticable based on a written alternatives analysis to be submitted with the Notice of Intent. Other SCMs and related stormwater Best Management Practices shall only be used to meet those portions of this TSS/TP removal Standard that cannot be fully met by ESSD and LID. ESSD, LID and, where necessary, SCMs and related stormwater Best Management Practices should be dispersed throughout a Project Site. A long-term pollution prevention plan (LTPPP) shall be prepared to eliminate or reduce the generation of runoff of TSS, TP, pathogens, nutrients and other contaminants. This standard is to be met on the Project Site.

This ~~s~~Standard is met when:

a. Suitable practices for source control and pollution prevention are identified in a LTPPP that is submitted with the Notice of Intent and thereafter are implemented and maintained.

b. ~~Structural stormwater best management practices are sized to capture the required water quality volume determined in accordance with Massachusetts Stormwater Handbook; and~~ The LTPPP incorporates source reduction measures to eliminate or reduce the generation and runoff of TSS, TP, pathogens, nutrients, and other contaminants such as polycyclic aromatic hydrocarbons. Furthermore, the LTPPP must address measures to properly dispose of snow outside of wetland Resource Areas and minimize snow disposal in the Buffer Zone. Source reductions and pollution prevention measures to be incorporated into the LTPPP include, but are not limited to, restricting fertilizer use, properly covering any solid waste stored exterior to a building so it does not come in contact with runoff, prohibiting use of coal tar-based pavement sealants which contain polycyclic aromatic hydrocarbons, restricting use of winter sand application to paved surfaces, and prohibiting use of oil application to unpaved roads and automotive parking areas. To reduce further nutrient loading, the LTPPP shall prohibit fertilizers that contain phosphorus, in accordance with 330 CMR 31.00: *Plant Nutrient Application Requirements for Agricultural Land and Non-Agricultural Turf and Lawns*; and shall prohibit fertilizers to be applied when precipitation greater than 0.5 inches is forecast in the next 48 hours. The LTPPP shall be presumed to meet these requirements when it includes the source control and pollution prevention measures specified in this regulation and the additional measures listed in the *Massachusetts Stormwater Handbook* [2023 Edition].

c. ~~Pretreatment is provided in accordance with the Massachusetts Stormwater Handbook. ESSD, LID techniques or practices, SCMs and related stormwater BMPs are sized:~~



—to capture the volume required to meet the 90% TSS and 60% TP pollutant reduction standard using the EPA-PRC or other Substitute EPA-PRC approved by MassDEP elisted in 310 CMR 10.05(6)(k)4. Table 1 MassDEP Crosswalk;

i.

to capture the required one-inch water quality volume when discharges are Near or discharge to Critical Areas; from Land Uses with Higher Potential Pollutant Loads, or when no EPA-PRC or other Substitute EPA-PRC approved by MassDEP is listed in 310 CMR 10.05(6)(k)4. Table 1 MassDEP Crosswalk, except for ESSD; or

ii.

iii. to meet the TSS and TP pollutant removal reduction standard for the ESSD Credits listed in 310 CMR 10.05(6)(k)4. Table 1 MassDEP Crosswalk. The credits are presumed to be provided when the ESSD is sized in accordance with the dimensional specifications of the Massachusetts Stormwater Handbook Appendix A [2023 Edition].

d. Pretreatment for TSS removal is provided in accordance with 310 CMR 10.05(6)(k)4.d.i. through iii. Use of EPA-PRC requires that pretreatment be provided, however, the credit for the pretreatment is already incorporated into the EPA-PRC. Therefore, pretreatment must be provided but no additional TSS pretreatment credits shall be applied to meet the 90% TSS removal for those SCMs that have an EPA-PRC. For other SCMs listed in 310 CMR 10.05(6)(k)4. Table 1 MassDEP Crosswalk that require pretreatment, TSS removal credit shall be provided and applied to meet the 90% TSS removal.

i. At least 44% TSS pretreatment is required prior to discharge to an infiltration structure if the discharge is: within a Zone II or Interim Wellhead Protection Area; Near an Outstanding Resource Water or Special Resource Water; Near a Shellfish Growing Area, Cold-water Fishery, or bathing beach; from Land Uses with Higher Potential Pollutant Loads; or within an area with a rapid infiltration rate (greater than 2.4 inches per hour).

ii. At least 25% TSS pretreatment is required for all other discharges to structural treatment SCMs, including infiltration structures, except for rooftop runoff directed to a dry well or roof dripline filters.

iii. Metals pretreatment is provided for runoff from metal roofs located within Zone II or the Interim Wellhead Protection Area of a public water supply and/or an industrial site by a SCM capable of removing metals, such as a sand filter, organic filter or filtering bioretention area. Metal roofs are galvanized steel or copper, regardless if they are coated or painted.

e. When a proprietary manufactured separator, proprietary media filter, or other treatment practice is proposed for which no TSS or TP removal credit has been designated at 310 CMR 10.05(6)(k)4. Table 1 MassDEP Crosswalk, written documentation shall be submitted to the Issuing Authority with the Notice of Intent substantiating the removal percentages being claimed and that the structure will treat the 1-inch water quality volume through submission of a computation converting the 1-inch water quality volume to a peak flow rate.

The peak flow rate for the computations must be based on the upper confidence of the precipitation frequencies listed in the National Oceanic and Atmospheric Administration (NOAA) Atlas 14 Volume 10 (Version 3.0 or later versions are permissible) multiplied by 0.9. Computations based on the U.S. Weather Bureau Technical Paper 40 are not acceptable. Storm distribution must be based on National Oceanic and Atmospheric Administration (NOAA) Atlas 14 Volume 10 (Version 3.0 or later versions are permissible) multiplied by 0.9. Use of the NRCS Type III storm is not acceptable to meet the computation requirement. Computations converting the 1-inch water quality volume to a peak flow rate that are performed in accordance with Appendix D of the Massachusetts Stormwater Handbook [2023 Edition] will be presumed to demonstrate that the structure can treat the 1-inch water quality volume. The Issuing Authority shall review the written documentation on a case-by-case basis and determine whether the use of the proposed Stormwater Control Measure will meet or partially meet the TSS and TP pollutant requirements specified at 310 CMR 10.05(6)(k)4. or 10.05(6)(k)7.c., and for proprietary manufactured pretreatment practices, 310 CMR 10.05(6)(k)4.d. However, proprietary manufactured practices designated as pretreatment practices shall only be used for pretreatment. Said proprietary manufactured practices shall be sized to treat at least the first 1-inch of runoff multiplied by the impervious area. The written documentation to be submitted to the Issuing Authority shall consist of scientific studies that adhere to the *Technology Acceptance Reciprocity Partnership (TARP) Protocol for Stormwater Best Management Practices Demonstrations*, August 2001, updated July 2003, published on MassDEP's website and endorsed by the States of California, Massachusetts, Maryland, New Jersey, Pennsylvania, and Virginia (<https://www.mass.gov/files/documents/2016/08/rd/swprotoc.pdf>). All studies must be conducted in the field. Laboratory studies are not acceptable. The procedures specified in the *Massachusetts Stormwater Handbook* [2023 Edition] for review of Proprietary Manufactured Stormwater Control Measures provide guidance to Issuing Authorities about how to review scientific studies conducted pursuant to the *Technology Acceptance Reciprocity Partnership (TARP) Protocol for Stormwater Best Management Practices Demonstrations*.

310 CMR 10.05(6)(k)4. Table 1 MassDEP Crosswalk (Note that all EPA Performance Removal Curves (EPA-PRC) -referenced in this Table can be found at the EPA-PRC BATT Tool and Appendix B of the *Massachusetts Stormwater Handbook* [2023 Edition]. See 310 CMR 10.04: Definitions. In certain cases where an EPA-PRC is not available, MassDEP has approved Substitute EPA-PRCs in 310 CMR 10.05(6)(k)4. and 310 CMR 10.05(6)(k)7., Table 1 MassDEP Crosswalk (below). The credits are presumed to be provided when the SCM or ESSD is sized in accordance with the dimensional specifications of the *Massachusetts Stormwater Handbook* [2023 Edition] Appendix A.

<u>MassDEP SCM</u>	<u>Credit Method</u>	<u>Does SCM Require Pretreatment?</u>	<u>Pollutant Removal Credit</u>	
			<u>TSS</u>	<u>TP</u>
<u>Non-Structural</u>				
<u>Street Cleaning</u>	<u>MassDEP-</u>	<u>No</u>	<u>3% to 16% depending on type of cleaner and frequency</u>	<u>2% to 7% depending on type of cleaner and frequency</u>
<u>ESSD Credits</u>				
<u>Credit 1: General ESSD</u>	<u>MassDEP</u>	<u>No</u>	<u>90%</u>	<u>60%</u>
<u>Credit 2: Solar ESSD</u>	<u>MassDEP</u>	<u>No</u>	<u>90%</u>	<u>60%</u>
<u>Credit 3: Roof Runoff to Qualifying Pervious Area A, B and C soils for Hydrologic Soil Group</u>	<u>EPA-PRC</u>	<u>No</u>	<u>90% when Impervious Area (IA) to Pervious (PA) Ratio for HSG A is 1:1 to 1:50; for HSG B is 1:1 to 1:50; and HSG C 1:2 to 1:50.</u>	<u>60% when Impervious Area (IA) to Pervious (PA) Ratio for HSG A is 1:1 to 1:50; for HSG B is 1:1 to 1:50; and HSG C 1:2 to 1:50.</u>
<u>Credit 4: Road Runoff to Qualifying Pervious Area Hydrologic Soil Group A, B and C soils</u>	<u>EPA-PRC</u>	<u>No</u>	<u>90% when Impervious Area (IA) to Pervious (PA) Ratio for HSG A is 1:1 to 1:50; for HSG B is 1:1 to 1:50; and HSG C 1:2 to 1:50.</u>	<u>60% when Impervious Area (IA) to Pervious (PA) Ratio for HSG A is 1:1 to 1:50; for HSG B is 1:1 to 1:50; and HSG C 1:2 to 1:50.</u>
<u>Credit 5: Tree Canopy</u>	<u>MassDEP</u>	<u>No</u>	<u>Effective Impervious Cover Reduction</u>	<u>Effective Impervious Cover Reduction</u>
<u>Credit 6: Reduce Impervious Area</u>	<u>MassDEP</u>	<u>No</u>	<u>Total Impervious Area Reduction</u>	<u>Total Impervious Area Reduction</u>
<u>Credit 7: Buffer Zone Improvement</u>	<u>EPA-PRC</u>	<u>No</u>	<u>90% when Impervious Area (IA) to Pervious (PA) Ratio for HSG A is 1:1 to 1:50; for HSG B is 1:1 to 1:50; and HSG C 1:2 to 1:50.</u>	<u>60% when Impervious Area (IA) to Pervious (PA) Ratio for HSG A is 1:1 to 1:50; for HSG B is 1:1 to 1:50; and HSG C 1:2 to 1:50.</u>
<u>Structural Pretreatment</u>				
<u>Deep Sump Catch Basin</u>	<u>MassDEP</u>	<u>No</u>	<u>25%</u>	<u>No Treatment</u>
<u>Oil/Grit Separator</u>	<u>MassDEP</u>	<u>No</u>	<u>25%</u>	<u>No Treatment</u>
<u>Proprietary Manufactured Separator</u>	<u>MassDEP</u>	<u>No</u>	<u>44% minimum, higher credit if determined by Issuing Authority in accordance with 310 CMR 10.05(6)(k)4.e.</u>	<u>No Treatment minimum, higher credit if determined by Issuing Authority in accordance with 310 CMR 10.05(6)(k)4.e.</u>
<u>Sediment Forebay</u>	<u>MassDEP</u>	<u>No</u>	<u>25%</u>	<u>No Treatment</u>
<u>Vegetated Filter Strip (≥ 25-ft length)</u>	<u>MassDEP</u>	<u>No</u>	<u>25%</u>	<u>No Treatment</u>
<u>Vegetated Filter Strip (≥ 50-ft length)</u>	<u>MassDEP</u>	<u>No</u>	<u>45%</u>	<u>No Treatment</u>
<u>Pea Gravel Diaphragm</u>	<u>MassDEP</u>	<u>No</u>	<u>45% Pretreatment, only used for</u>	<u>No Treatment</u>

<u>MassDEP SCM</u>	<u>Credit Method</u>	<u>Does SCM Require Pretreatment?</u>	<u>Pollutant Removal Credit</u>	
			<u>TSS</u>	<u>TP</u>
			<u>Bioretention Areas, Infiltration Trenches, ESSD Credit 3, ESSD Credit 4 and ESSD Credit 7</u>	
<u>Grass / Gravel Combination</u>	<u>MassDEP</u>	<u>No</u>	<u>45% Pretreatment, only used for Bioretention Areas, Infiltration Trenches, ESSD Credit 3, ESSD Credit 4 and ESSD Credit 7</u>	<u>No Treatment</u>
<b><u>Structural Treatment</u></b>				
<u>Bioretention Area (Exfiltrating)</u>	<u>Substitute- EPA-PRC</u>	<u>Yes</u>	<u>EPA infiltration Basin Curve</u>	<u>EPA infiltration Basin Curve</u>
<u>Bioretention Area (Filtering)</u>	<u>Substitute EPA-PRC</u>	<u>Yes</u>	<u>EPA Biofiltration Curve</u>	<u>EPA Biofiltration Curve</u>
<u>Constructed Stormwater Wetland</u>	<u>Substitute -EPA-PRC</u>	<u>Yes</u>	<u>EPA Gravel Wetland Curve</u>	<u>EPA Gravel Wetland Curve</u>
<u>Extended Dry Detention Basin</u>	<u>EPA-PRC</u>	<u>Yes</u>	<u>EPA Dry Pond Curve</u>	<u>EPA Dry Pond Curve</u>
<u>Gravel Wetland</u>	<u>EPA-PRC</u>	<u>Yes</u>	<u>EPA Gravel Wetland Curve</u>	<u>EPA Gravel Wetland Curve</u>
<u>Proprietary Media Filter</u>	<u>MassDEP</u>	<u>Yes</u>	<u>60% minimum, higher credit if determined by Issuing Authority in accordance with 310 CMR 10.05(6)(k)4.e.</u>	<u>30% minimum, higher credit if determined by Issuing Authority in accordance with 310 CMR 10.05(6)(k)4.e.</u>
<u>Sand/Organic Filter</u>	<u>EPA-PRC</u>	<u>Yes</u>	<u>EPA Sand Filter Curve</u>	<u>EPA Sand Filter Curve</u>
<u>Tree Box Filter (Exfiltrating)</u>	<u>Substitute -EPA-PRC</u>	<u>No</u>	<u>EPA Infiltration Trench Curve</u>	<u>EPA Infiltration Trench Curve</u>
<u>Tree Box Filter (Filtering)</u>	<u>Substitute -EPA-PRC</u>	<u>No</u>	<u>EPA Biofiltration Curve</u>	<u>EPA Biofiltration Curve</u>
<u>Wet Basin</u>	<u>EPA-PRC</u>	<u>Yes</u>	<u>EPA Wet Pond Curve</u>	<u>EPA Wet Pond Curve</u>
<u>Roof Dripline Filter (exfiltrating type)</u>	<u>Substitute EPA-PRC</u>	<u>No, except for metal roofs in industrial sites in Zone II</u>	<u>EPA Infiltration Trench Curve</u>	<u>EPA Infiltration Trench Curve</u>
<u>Roof Dripline Filter (filtering type)</u>	<u>Substitute -EPA-PRC</u>	<u>No, except for metal roofs in industrial sites in Zone II</u>	<u>EPA Infiltration Trench Curve</u>	<u>EPA Infiltration Trench Curve</u>
<b><u>Structural Conveyance</u></b>				
<u>Drainage Channel</u>	<u>MassDEP</u>	<u>No</u>	<u>No Treatment</u>	<u>No Treatment</u>
<u>Grass Channel (Biofilter Swale)</u>	<u>Substitute -EPA-PRC</u>	<u>Yes</u>	<u>EPA Grass Swale Curve</u>	<u>EPA Grass Swale Curve</u>
<u>Water Quality Swale (Dry/Wet)</u>	<u>MassDEP</u>	<u>Yes</u>	<u>70%</u>	<u>No Treatment</u>
<b><u>Structural Infiltration</u></b>				
<u>Dry Well</u>	<u>Substitute -EPA-PRC</u>	<u>Varies</u>	<u>EPA Infiltration Trench Curve</u>	<u>EPA Infiltration Trench Curve</u>
<u>Infiltration Basin</u>	<u>EPA-PRC</u>	<u>Yes</u>	<u>EPA Infiltration Basin Curve</u>	<u>EPA Infiltration Basin Curve</u>

<u>MassDEP SCM</u>	<u>Credit Method</u>	<u>Does SCM Require Pretreatment?</u>	<u>Pollutant Removal Credit</u>	
			<u>TSS</u>	<u>TP</u>
<u>Infiltration Trench</u>	<u>EPA-PRC</u>	<u>Yes</u>	<u>EPA Infiltration Trench Curve</u>	<u>EPA Infiltration Trench Curve</u>
<u>Leaching Catch Basin</u>	<u>Substitute -EPA-PRC</u>	<u>Yes</u>	<u>EPA Infiltration Basin Curve</u>	<u>EPA Infiltration Basin Curve</u>
<u>Porous pavement</u>	<u>EPA-PRC</u>	<u>Yes</u>	<u>EPA Porous Pavement Curve</u>	<u>EPA Porous Pavement Curve</u>
<u>Subsurface Infiltrator</u>	<u>Substitute -EPA-PRC</u>	<u>Yes</u>	<u>EPA Infiltration Basin Curve</u>	<u>EPA Infiltration Basin Curve</u>
<u>Structural Other</u>				
<u>Dry Detention Basin</u>	<u>MassDEP</u>	<u>No</u>	<u>No Treatment</u>	<u>No Treatment</u>
<u>Green Roof</u>	<u>MassDEP</u>	<u>No</u>	<u>Effective Impervious Cover Reduction</u>	<u>Effective Impervious Cover Reduction</u>
<u>Rain Barrels &amp; Cisterns</u>	<u>MassDEP</u>	<u>No</u>	<u>Effective Impervious Cover Reduction</u>	<u>Effective Impervious Cover Reduction</u>

5. For Land Uses with Hhigher Ppotential Ppollutant Lloads, source control and pollution prevention shall eliminate or reduce the discharge of stormwater runoff from such land uses to the Maximum Extent Practicable. The written Long Term Pollution Prevention Plan ~~(LTPPP)~~ required by 310 CMR 10.05(6)(k)4.a.- shall address source controls and pollution measures. This standard will be presumed to be met if source control and pollution prevention measures listed in the LTPPP are proposed to be implemented in accordance with the *Massachusetts Stormwater Handbook [2023 Edition]* ~~to eliminate or reduce the discharge of stormwater runoff from such land uses to the maximum extent practicable. If through source control and/or pollution prevention, A~~ all Land Uses with Hhigher Ppotential Ppollutant Lloads ~~must~~ cannot be completely protected from exposure to rain, snow, snow melt and stormwater runoff through source control and pollution prevention measures. This standard shall be presumed to be met when the proponent ~~shall use~~ the specific structural stormwater BMPs, source control and pollution prevention practices determined by the Department to be suitable for such use as provided in the *Massachusetts Stormwater Handbook [2023 Edition]*. Stormwater discharges from Land Uses with Hhigher Ppotential Ppollutant Lloads shall also comply with the requirements of the Massachusetts Clean Waters Act, M.G.L. c. 21, §§ 26 through 53, and the regulations promulgated thereunder at 314 CMR 3.00: *Surface Water Discharge Permit Program*, 314 CMR 4.00: *Massachusetts Surface Water Quality Standards* and 314 CMR 5.00: *Ground Water Discharge Permit Program*.

6. When sStormwater discharges are within the Zone II or Interim Wellhead Protection Area of a public water supply ~~or and stormwater discharges N~~ near or that discharge to any other Critical Area, structural and non-structural SCM’s shall be implemented to remove pathogens and reduce the temperature of the stormwater being discharged. The written LTPPP required by 310 CMR 10.05(6)(k)4.a. shall address source controls and pollution measures to prevent direct and indirect alterations to Critical Areas. When SCMs and BMPs specifically described in the Massachusetts Stormwater Handbook [2023 Edition] as appropriate for Critical Areas are provided, t ~~This portion of the standard is presumed to be met. when require the use of the specific SCM~~ source control



and pollution prevention measures and the specific structural stormwater best management practices, as well as and Best Management Practices determined by the Department to be suitable for managing discharges to such area described in as provided in the *Massachusetts Stormwater Handbook [2023 Edition]* as suitable for Critical Areas, are provided. A discharge is near a critical area, if there is a strong likelihood of a significant impact occurring to said area, taking into account site-specific factors. Stormwater discharges and all components of structural and nonstructural SCMs, located Near or that discharge to Outstanding Resource Waters, and Special Resource Waters, and Cold-water Fisheries Critical Areas, shall be removed and set back from the receiving water or wetland in accordance with 310 CMR 10.05(6)(q) and receive the highest and best practical method of treatment. Unless a discharge to a Cold-water Fishery is infiltrated or an ESSD practicable measure is used, the temperature of the stormwater shall not exceed 68 degrees F at the discharge point to ensure that there will be no thermal impact to the existing ambient temperature of the receiving water. A “storm water discharge” as defined in 314 CMR 3.04(2)(a) or (b) to an Outstanding Resource Water or Special Resource Water shall comply with 314 CMR 3.00: *Surface Water Discharge Permit Program* and 314 CMR 4.00: *Massachusetts Surface Water Quality Standards*. Stormwater Management Systems located in and S stormwater discharges to a Zone I or Zone A are prohibited, unless essential to the operation of the public water supply.

7. Redevelopment Projects shall be subject to the following:-

- a. A Redevelopment project is required to meet the following Stormwater Management Standards only to the Maximum Extent Practicable: Standard 2310 CMR 10.05(6)(k)2, Standard 3310 CMR 10.05(6)(k)3, and the pretreatment and structural S stormwater C control M measures and related stormwater B best M management P practice requirements of 310 CMR 10.05(6)(k) Standards 4, 310 CMR 10.05(6)(k)5, and 6, and the Setback requirements at 310 CMR 10.05(6)(q). Existing stormwater discharges shall comply with Standard 4310 CMR 10.05(6)(k)1, only to the Maximum Extent Practicable.
- b. A Redevelopment projects shall also comply with all other requirements of the Stormwater Management Standards and improve existing conditions by reducing the peak discharge rate, increasing stormwater recharge, and removing pollutants such as Total Suspended Solids (TSS) and Total Phosphorus (TP) from the discharge.
- c. All provisions of 310 CMR 10.05(6)(k)4. apply to Redevelopment Projects, except that Stormwater Management Systems for Redevelopment shall be designed to remove 80% of the average annual post-construction load of TSS and 50% of the average annual post-construction load of TP. This standard is to be met on the Project Site unless Impracticable as demonstrated by a written alternatives analysis, in which case Offsite Mitigation for Redevelopment must be implemented to achieve the removal standard of 80% TSS and 50% TP. Offsite Mitigation for Redevelopment may be used to fully meet the 80% TSS and 50% TP removal standard, or to meet the portion of the 80% TSS and 50% TP removal standard that cannot be fully met on the Project Site. Offsite Mitigation for Redevelopment may also be allowed for the requirements of 310 CMR 10.05(6)(k)3 and 310 CMR 10.05(6)(k)11.d. when the written alternatives analysis determines Maximum Extent Practicable cannot be achieved on the Project Site.



- d. Offsite Mitigation for Redevelopment shall be evaluated in the following order: same Project Site, same Project Locus, adjacent site, same wetland Resource Area, same municipality, and the same stream reach within the Hydrologic Unit Code (HUC) 12 sub-watershed. All instances of Offsite Mitigation for Redevelopment shall be within the same HUC -12 sub-watershed. MassDOT may use the Watershed-scale Accounting Method within the HUC 10 within a three--year period after the final Order is issued to meet the requirements of 310 CMR 10.05(6)(k)7. The Watershed-scale Accounting Method may be used rather than or in addition to meeting 310 CMR 10.05(6)(k)7 on the Project Site, through the Macro-Approach, or by using Offsite Mitigation for Redevelopment, if these options are Impracticable. The implementation of SCMs through the Watershed-scale Accounting Method must be tracked by an annual report available to the Issuing Authority and to MassDEP.
- e. Retrofit Projects shall comply with 310 CMR 10.05(6)(k)1., 5., 6., 8., 9., and 10. Retrofit Projects shall not have to comply with 310 CMR 10.05(6)(k)2., 3., 4., and 11., except they must improve existing conditions for at least peak discharge rate, recharge, or water quality treatment.
8. A plan to control construction-related impacts including erosion, sedimentation and other pollutant sources during construction and land disturbance activities (construction period erosion, sedimentation and pollution prevention plan) shall be developed and implemented. This standard shall be presumed to be met when the construction period erosion, sedimentation and pollution prevention plan is prepared in accordance with the Massachusetts Stormwater Handbook [2023 Edition]. No construction period runoff may be directed to the post construction SCMs or other BMPs. The construction period erosion, sedimentation and pollution prevention plan shall be submitted with the Notice of Intent for review and approval by the Issuing Authority. A condition shall be included in the Order of Conditions that specifies that failure to comply with the construction period erosion, sedimentation and pollution prevention plan as approved in the Order of Conditions shall be deemed to be noncompliance. Field inspections of construction period BMPs identified in the construction period erosion, sedimentation and pollution prevention plan shall be performed at least once every seven calendar days during the construction period and maintenance or corrective actions shall be taken to ensure compliance. Inspections and maintenance or corrective actions shall be documented in a report and made available to the issuing authority upon request.
9. A long-term operation and maintenance plan shall be developed and implemented to ensure that the stormwater management system functions as designed. This standard is presumed to be met when the maintenance proposed in the long-term operation and maintenance plan occurs with the frequencies listed in Appendix A of the Massachusetts Stormwater Handbook [2023 Edition] and when the plan is otherwise prepared in accordance with the Handbook. The long-term operation and maintenance plan shall be submitted with the Notice of Intent, for review and approval by the Issuing Authority. After a Certificate of Compliance has been issued or the Order of Conditions has expired, a Maintenance Log shall list the maintenance activities and LTPPP measures that have occurred and the specific dates of the maintenance and pollution prevention activities. The Maintenance Log shall be kept up-to-date. The Maintenance Log shall be made available to the Issuing Authority no later than 5 business days after any request.

10. All ~~Illicit~~ ~~Discharges~~ to Waters of the Commonwealth and/or the ~~S~~stormwater ~~M~~management ~~S~~ystem are prohibited.

11. If the project will discharge stormwater to a wetland Resource Area for which a TMDL has been approved by EPA, or an Alternative TMDL has been accepted by EPA, for phosphorus, nitrogen, pathogens, and/or metals, Source Control Measures shall be identified in the LTPPP required by 310 CMR 10.05(6)(k)4. to eliminate or reduce such pollution and shall thereafter be implemented. The Stormwater Management System, including ESSD and LID, shall be presumed to meet this standard when:

- a. SCMs listed in the *Massachusetts Stormwater Handbook* [2023 Edition] that specifically address any applicable TMDL or Alternative TMDL are implemented;
- b. A LTPPP is implemented;
- c. For new development, the Stormwater Management System is designed to comply with 310 CMR 10.05(6)(k)3. and 4.; and
- d.

For Redevelopment, the Stormwater Management System is designed to comply with 310 CMR 10.05(6)(k)7. for recharge to the Maximum Extent Practicable, and the SMS provides water quality treatment for 80% TSS and 50% TP removal and adequate pretreatment.

(l) The Stormwater Management Standards shall not apply to the following:

- 1. A single-family house;
- 2. Housing development and ~~R~~edevelopment projects comprised of detached single-family dwellings on four or fewer lots, provided that there are no stormwater discharges that may potentially affect a ~~C~~ritical ~~A~~rea;
- 3. Multi-family housing development and ~~R~~edevelopment projects, with four or fewer units, including condominiums, cooperatives, apartment buildings and townhouses, provided that there are no stormwater discharges that may potentially affect a ~~C~~ritical ~~A~~rea; and
- 4. Emergency repairs to roads or their drainage systems; provided that Emergency Certification is obtained pursuant to 310 CMR 10.06; and  
—Gardens; provided that there are no new Impervious Surfaces. Gardens do not include greenhouses.

5.

(m) The Stormwater Management Standards shall apply to the ~~M~~maximum ~~E~~extent ~~P~~racticable to the following:

- 1. Housing development and ~~R~~edevelopment projects comprised of detached single-family dwellings on four or fewer lots that have a stormwater discharge that may potentially affect a ~~C~~ritical ~~A~~rea;
- 2. Multi-family housing developments and ~~R~~edevelopment projects with four or fewer units, including condominiums, cooperatives, apartment buildings, and townhouses, that have a stormwater discharge that may potentially affect a ~~C~~ritical ~~A~~rea;
- 3. Housing development and ~~R~~edevelopment projects comprised of detached single-family dwellings, on five to nine lots, provided there is no stormwater discharge that may potentially affect a ~~C~~ritical ~~A~~rea;
- 4. Multi-family housing development and ~~R~~edevelopment projects, with five to nine

- units, including condominiums, cooperatives, apartment buildings and townhouses, provided there is no stormwater discharge that may potentially affect a Critical Area;
5. Marinas and boatyards provided that the hull maintenance, painting and service areas are protected from exposure to rain, snow, snowmelt, and stormwater runoff; and
6. Unpaved footpaths, unpaved and paved bicycle kepaths, and other unpaved or paved paths for pedestrian and/or nonmotorized vehicle access (with the exception of wheelchairs, other power-driven mobility devices by individuals with a mobility disability, electric bicycles and electric scooters, emergency vehicles, and vehicles performing periodic maintenance), not including paved sidewalks located near or adjacent to private or public roads.
7. Maintenance of an Existing Public Roadway.

(n) For phased projects the determination of whether the Stormwater Management Standards apply is made on the entire project as a whole including all phases. When proposing a development or Redevelopment project subject to the Stormwater Management Standards, proponents shall utilize Environmentally Sensitive Site Design (ESSD) and Low Impact Development (LID) techniques or practices unless Impracticable. Other SCMs and related stormwater BMPs shall only be used to meet those portions of the Stormwater Management Standards that cannot be fully met by ESSD or LID. consider environmentally sensitive site design that incorporates low impact development techniques in addition to stormwater best management practices.

(o) Project proponents seeking to demonstrate compliance with some or f all of the Stormwater Management Standards to the Maximum Extent Practicable shall demonstrate that:

1. They have made all reasonable efforts to meet each of the sStandards;
2. They have made a written alternatives analysis complete evaluation of possible stormwater management measures including ESSD and LID Techniques or practices that minimize land disturbance and Impervious Surfaces, structural SCMs, BMPs, pollution prevention, erosion and sedimentation control, and proper operation and maintenance of stormwater Best Management Practices BMPs, physical constraints (e.g., high groundwater), and costs; and
3. If full compliance with the sStandards cannot be achieved, the written alternatives analysis makes a clear showing that they are implementing the

highest practicable level of stormwater management.

~~(p) Notwithstanding anything to the contrary in 310 CMR 10.00, stormwater runoff from all industrial, commercial, institutional, office, residential and transportation projects subject to regulation under M.G.L. c. 131, § 40, including site preparation, construction, and redevelopment, and all point source stormwater discharges from said projects within an Area Subject to Protection under M.G.L. c. 131, § 40, or within the Buffer Zone, for which a Notice of Intent or Notice of Resource Area Delineation has been filed prior to January 2, 2008 shall be managed according to the Stormwater Management Standards as set forth in the Stormwater Policy issued by the Department on November 18, 1996.~~

~~(pq)~~ Compliance with the Stormwater Management Standards set forth in 310 CMR 10.05(6)(k) 1. through 11. through (q) does not relieve a discharger of the obligation to comply with all applicable Federal, State, and local laws, regulations and permits including without limitation

all applicable provisions of 310 CMR 10.00, 314 CMR 3.00: *Surface Water Discharge Permit Program*, 314 CMR 4.00: Massachusetts Surface Water Quality Standards, 314 CMR 5.00: Ground Water Discharge Permit Program, 314 CMR 9.00: 401 Water Quality Certification for Discharge of Dredged or Fill Material, Dredging, and Dredged Material Disposal in Waters of the United States Within the Commonwealth, local land use controls adopted to comply with 310 CMR 22.21: *Ground Water Supply Protection* or the NPDES General Permit for Small Municipal Separate Storm Sewer Systems, the requirements of the NPDES General Stormwater permits such as the Construction General Permit, and the Multi-sector General Permit.

(q) The following minimum Setbacks from any component of a Stormwater Management System shall be met. Horizontal Setbacks for purposes of stormwater management (310 CMR 10.05(6)(k)-(q)) must be measured from the outermost portions of Stormwater Control Measures to the Resource Area boundary. Vertical Setbacks must be measured from the lowest engineered portion of a Stormwater Control Measure to the Seasonal High Groundwater Elevation. However, a Setback reduced in accordance with the *Massachusetts Stormwater Handbook* [2023 Edition] shall be presumed to meet this minimum Setback requirement:

<u>Resource</u>	<u>Minimum Setback from any component of a Stormwater Management System to Resource (all Setbacks horizontal except as otherwise stated)</u>
<u>Zone I, Interim Wellhead Protection Area (IWPA) to a Public Water Supply Well, Zone A, ORWs, and Special Resource Waters</u>	<u>Setback at least 10 feet outside Zone I, -IWPA, Zone A, ORWs, and Special Resource Waters, except within Zone I and Zone A when essential to operation of public water supply.</u>
<u>Certified Vernal Pools, Shellfish Growing Areas, bathing beaches, and Cold-water Fisheries</u>	<u>100 feet</u>
<u>All wetland Resource Areas except for Bordering Land Subject to Flooding (BLSF), Isolated Land Subject to Flooding (ILSF), Land Subject to Coastal Storm Flowage (LSCSF), and Riverfront Area</u>	<u>Setback at least 10 feet outside of all wetland Resource Areas except for BLSF, ILSF, LSCSF, and Riverfront Area. There is no Setback for BLSF, ILSF, LSCSF, and Riverfront Area.</u>
<u>Surface Waters (including but not limited to BVW, salt marsh, land under water bodies and waterways, and land under ocean)</u>	<u>50 feet (additional Setback may be necessary to prevent groundwater mound from breaking upward into recharge practice, ground outside of recharge practice, or Resource Area)</u>
<u>Property Line</u>	<u>10 feet</u>
<u>Soil Absorption System and any component of septic system</u>	<u>50 feet</u>

<u>Resource</u>	<u>Minimum Setback from any component of a Stormwater Management System to Resource (all Setbacks horizontal except as otherwise stated)</u>
<u>Building Foundation</u>	<u>10 -feet, except for roof drip line filter.</u>
<u>Seasonal High Groundwater Elevation</u>	<u>2 feet vertical separation from lowest engineered portion of SCM (includes media), except for constructed stormwater wetlands, wet basins and wet water quality swales</u>
<u>Bedrock (only applies to structural infiltration practices)</u>	<u>2 feet vertical separation from lowest engineered portion of SCM (includes media)</u>
<u>Well that is not a Public Water Supply</u>	<u>100 feet</u>
<u>Slope</u>	<u>100 feet from any slope greater than 5% to an infiltration basin, surface exposed or underground infiltration trench, or infiltrating bioretention area.</u>

(7) Requests for Actions by the Department (Appeals).

**[NOTE TO REVIEWERS: MassDEP IS SETTING FORTH IN THIS DOCUMENT PROPOSED AMENDMENTS TO THE CURRENT REGULATION AT 310 CMR 10.00 IN REDLINE AND STRIKEOUT FORMAT. REDLINES SHOW ADDITIONS TO THE CURRENT REGULATORY TEXT AND STRIKEOUTS SHOW PROPOSED DELETIONS. SINCE THE REGULATION IS VERY LONG, MassDEP IS PUBLISHING ONLY THOSE PORTIONS OF THE REGULATION FOR WHICH THE AGENCY IS PROPOSING TO MAKE AMENDMENTS. MassDEP HAS INCLUDED TEXT JUST PRIOR TO (and in some cases text just after) NEW INSERTED TEXT TO MAKE IT CLEAR WHERE THE NEW TEXT IS PROPOSED TO BE INSERTED INTO THE CURRENT REGULATIONS. THERE ARE NO EDITS TO SECTIONS 10.05(7)(a) through 10.05(7)(h) and the EXISTING REGULATION LANGUAGE FOR THESE SECTIONS WILL REMAIN THE SAME.]**

...

(i) After receipt of a request for a Superseding Determination or Order, the Department may conduct an informal meeting and may conduct an inspection of the site. In the event an inspection is conducted, all parties shall be invited in order to present any information necessary or useful to a proper and complete review of the proposed activity and its effects upon the interests identified in M.G.L. c. 131, § 40. Any party presenting information as a result of such a meeting shall provide copies to the other parties.

Based upon its review of the Notice of Intent, the Order, any informal meeting or site inspection, and any other additional plans, information, or documentation submitted under 310 CMR 10.05(7)(f) or (g), the Department shall issue a Superseding Order for the protection of the interests identified in M.G.L. c. 131, § 40. The Superseding Order shall impose such conditions



as are necessary to meet the performance standards set forth in 310 CMR 10.21 through 10.60 and stormwater standards set forth at 301 CMR 10.05(6)(k) for the protection of those interests. The Superseding Order shall prohibit any work or any portions thereof that cannot be conditioned to protect such interests. The Department may issue a Superseding Order which affirms the Order issued by the conservation commission. The Department shall issue a Restoration Order of Conditions as the Superseding Order of Conditions in the event it determines that the project meets the eligibility criteria for a Restoration Order of Conditions. ~~If the applicant submitted a Combined Application for a project that requires a 401 Water Quality Certification pursuant to 314 CMR 9.00: 401 Water Quality Certification for Discharge of Dredged or Fill Material, Dredging, and Dredged Material Disposal in Waters of the United States Within the Commonwealth, or a water-dependent use project that requires a Chapter 91 license, permit or other written approval pursuant to 310 CMR 9.00: Waterways, the Department may issue a Combined Permit that serves as the Superseding Order of Conditions, the 401 Water Quality Certification, and/or the Chapter 91 permit, license or other written approval, whichever is applicable, provided the Department determines that the project meets the requirements for obtaining such Order, Certification, permit, license or other written approval.~~

(j) Administrative Hearings.

**[NOTE TO REVIEWERS: MassDEP IS SETTING FORTH IN THIS DOCUMENT PROPOSED AMENDMENTS TO THE CURRENT REGULATION AT 310 CMR 10.00 IN REDLINE AND STRIKEOUT FORMAT. REDLINES SHOW ADDITIONS TO THE CURRENT REGULATORY TEXT AND STRIKEOUTS SHOW PROPOSED DELETIONS. SINCE THE REGULATION IS VERY LONG, MassDEP IS PUBLISHING ONLY THOSE PORTIONS OF THE REGULATION FOR WHICH THE AGENCY IS PROPOSING TO MAKE AMENDMENTS. MassDEP HAS INCLUDED TEXT JUST PRIOR TO (and in some cases text just after) NEW INSERTED TEXT TO MAKE IT CLEAR WHERE THE NEW TEXT IS PROPOSED TO BE INSERTED INTO THE CURRENT REGULATIONS. THERE ARE NO EDITS TO SECTIONS 10.05(7)(j)1. through 10.05(7)(j)9. and the EXISTING REGULATION LANGUAGE FOR THESE SECTIONS WILL REMAIN THE SAME.]**

...

10. Coordination of Appeals. ~~The Department may coordinate adjudicatory hearings under 310 CMR 10.05(7)(j), 310 CMR 9.17: Appeals, and 314 CMR 9.10: Appeals or other administrative appeals.~~

- a. If a 401 Water Quality Certification been issued pursuant to 314 CMR 9.00: 401 Water Quality Certification for Discharge of Dredged or Fill Material, Dredging, and Dredged Material Disposal in Waters of the United States Within the Commonwealth and/or a permit, license or other written approval has been issued pursuant to 310 CMR 9.00: Waterways, the Department may exclude issues solely within the jurisdiction of 314 CMR 9.00: 401 Water Quality Certification for Discharge of Dredged or Fill Material, Dredging, and Dredged Material Disposal in Waters of the United States Within the Commonwealth and/or 310 CMR 9.00: Waterways at an adjudicatory hearing held under 310 CMR 10.05(7)(j).



b. If an adjudicatory hearing has been requested in accordance with 310 CMR 9.17: Appeals and/or 314 CMR 9.10: Simplified Procedures for Small Structures Accessory to Residences, or another administrative appeal, the Department may consolidate the proceedings.

~~c. In the event that the Department has issued a Combined Permit that serves as a Superseding Order of Conditions and/or a 401 Water Quality Certification issued pursuant to 314 CMR 9.00: 401 Water Quality Certification for Discharge of Dredged or Fill Material, Dredging, and Dredged Material Disposal in Waters of the United States Within the Commonwealth and/or a permit, license or other written approval issued pursuant to 310 CMR 9.00: Waterways, the appeal may include issues solely within the jurisdiction of 314 CMR 9.00: 401 Water Quality Certification for Discharge of Dredged or Fill Material, Dredging, and Dredged Material Disposal in Waters of the United States Within the Commonwealth and/or 310 CMR 9.00: Waterways only as follows: The appeal may include issues solely within the jurisdiction of 314 CMR 9.00: 401 Water Quality Certification for Discharge of Dredged or Fill Material, Dredging, and Dredged Material Disposal in Waters of the United States Within the Commonwealth, only if the appeal has been requested in accordance with the requirements of 314 CMR 9.10: Simplified Procedures for Small Structures Accessory to Residences. The appeal may include issues solely with the jurisdiction of 310 CMR 9.00: Waterways, only if the appeal has been requested in accordance with the requirements of 310 CMR 9.17: Appeals.~~

(k) No work shall be undertaken until all administrative appeal periods from an Order or Notification of Non-significance have elapsed or, if such an appeal has been taken, until all proceedings before the Department have been completed.

(8) Extensions of Orders of Conditions and Orders of Resource Area Delineations.

(a) The issuing authority may extend an Order for one or more periods of up to three years each, except as otherwise provided in 310 CMR 10.05(11)(f) (extensions for Test Projects) and 310 CMR 10.05(12)(f) (extensions for Scientific Research Projects). Any extension granted by the issuing authority shall be made on Form 7. The request for an extension shall be made to the issuing authority at least 30 days prior to expiration of the Order.

(b) The issuing authority may deny the request for an extension and require the filing of a new Notice of Intent for the remaining work or a new Abbreviated Notice of Resource Area Delineation in the following circumstances:

1. where no work has begun on the project, except where such failure is due to an unavoidable delay, such as appeals, in the obtaining of other necessary permits;
2. where new information, not available at the time the Order was issued, has become available and indicates that the Order is not adequate to protect the interests identified in M.G.L. c. 131, § 40; or
3. where incomplete work is causing damage to the interests identified in M.G.L. c. 131, § 40;
4. where work has been done in violation of the Order or 310 CMR 10.00; or
5. where a resource area delineation or certification under 310 CMR 10.02 (2)(b)2. in an Order of Resource Delineation is no longer accurate.

(c) If issued by the conservation commission, the Extension Permit shall be signed by a majority of the commission. A copy of the Extension Permit shall be sent to the conservation commission or the Department, whichever is appropriate, by the issuing authority.

(d) The Extension Permit shall be recorded in the Land Court or the Registry of Deeds, whichever is appropriate. Certification of recording shall be sent to the issuing authority on the form at the end of Form 7. If work is undertaken without the applicant so recording the Extension Permit, the issuing authority may issue an Enforcement Order (Form 9) or may itself record the Extension Permit.

(9) Certificates of Compliance.

(a) Upon completion of the work described in a Final Order of Conditions, but not later than the three year term of an Order of Resource Area Delineation or any extension thereunder, the applicant shall request in writing the issuance of a Certificate of Compliance stating that the work has been satisfactorily completed. Upon written request by the applicant, a Certificate of Compliance shall be issued by the issuing authority within 21 days of receipt thereof, and shall certify on Form 8 that the activity or portions thereof described in the Notice of Intent and plans has been completed in compliance with the Order. If issued by the Conservation Commission, the Certificate of Compliance shall be signed by a majority of the commission. A copy of the Certificate of Compliance shall be sent to the conservation commission or the Department, whichever is appropriate, by the issuing authority.

(b) Prior to the issuance of a Certificate of Compliance, a site inspection shall be made by the issuing authority, in the presence of the applicant or the applicant's agent. If the Department is the issuing authority, it shall notify the conservation commission of the request and the date of the site inspection.

(c) If the issuing authority determines, after review and inspection, that the work has not been done in compliance with the Order, it may refuse to issue a Certificate of Compliance. Such refusal shall be issued within 21 days of receipt of a request for a Certificate of Compliance, shall be in writing and shall specify the reasons for denial.

(d) If a project has been completed in accordance with plans stamped by a registered professional engineer, architect, landscape architect or land surveyor, a written statement by such a professional person certifying substantial compliance with the plans and setting forth what deviation, if any, exists from the plans approved in the Order shall accompany the request for a Certificate of Compliance.

(e) If the final order contains conditions which continue past the completion of the work, such as maintenance or monitoring, the Certificate of Compliance shall specify which, if any, of such conditions shall continue. The Certificate shall also specify to what portions of the work it applies, if it does not apply to all the work regulated by the Order.

(f) The Certificate of Compliance shall be recorded in the Land Court or Registry of Deeds, whichever is appropriate. Certification of recording shall be sent to the issuing authority on the form at the end of Form 8. Upon failure of the applicant to so record, the issuing authority may do so.

(10) Variance.

(a) The Commissioner may waive the application of any regulation(s) in 310 CMR 10.21 through 10.60 when he or she finds that:

1. there are no reasonable conditions or alternatives that would allow the project to proceed in compliance with 310 CMR 10.21 through 10.60;
2. that mitigating measures are proposed that will allow the project to be conditioned so as to contribute to the protection of the interests identified in M.G.L. c. 131, § 40; and

3. that the variance is necessary to accommodate an overriding community, regional, state or national public interest; or that it is necessary to avoid an Order that so restricts the use of property as to constitute an unconstitutional taking without compensation.

(b) Procedure. A request for a variance shall be made in writing and shall include, at a minimum, the following information:

1. a description of alternatives explored that would allow the project to proceed in compliance with 310 CMR 10.21 through 10.60 and an explanation of why each is unreasonable;
2. a description of the mitigating measures to be used to contribute to the protection of the interests identified in M.G.L. c. 131, § 40; and
3. evidence that an overriding public interest is associated with the project which justifies waiver of 310 CMR 10.21 through 10.60, or evidence that the Superseding Order so restricts the use of the land that it constitutes an unconstitutional taking without compensation.

The request for a variance shall be sent to the Department by certified mail or hand delivered and a copy thereof shall at the same time be sent by certified mail or hand delivered to the conservation commission and any other parties.

The Department will place a notice in the *Environmental Monitor* published by the Massachusetts Environmental Policy Act Office of the Executive Office of Energy and Environmental Affairs to solicit public comments on the request. The Department shall conduct a public hearing on a request for a variance. After reviewing the information submitted with the request for a variance and any other information submitted by any party within the public comment period, the Commissioner shall issue a decision as to whether to grant the variance. Within ten days of the date of issuance of the Commissioner's decision on the variance, any person who submitted comments during the public comment period may, according to the procedures specified in 310 CMR 10.05(7)(j), request an adjudicatory hearing on the decision. On a request for a variance based on overriding public interest, the Commissioner may dismiss the request to hold an adjudicatory hearing if the request repeats matters adequately considered in the variance decision, renews claims or arguments previously raised, or attempts to raise new claims or arguments not raised during the public comment period. On a request for a variance to avoid restrictions that would constitute an unconstitutional taking, the Commissioner shall hold an adjudicatory hearing. If an adjudicatory hearing is held, the applicant has the burden of demonstrating that the project meets the criteria necessary for a variance. Other parties to the adjudicatory hearing may introduce evidence either in favor of or opposing the request for a variance.

For projects in which all of the proposed work will be undertaken on land within the boundaries of one city or town, the request for a variance shall not be filed until the applicant first files a Notice of Intent with the Conservation Commission. The Commission shall review the project in accordance with the procedures set forth in 310 CMR 10.01 through 10.10 and issue an Order of Conditions consistent with 310 CMR 10.21 through 10.60. Within ten days of the issuance of the Order of Conditions, the applicant may request the Department to issue a Superseding Order. The Department staff shall review the project in accordance with the procedures set forth in 310 CMR 10.01 through 10.10 and shall issue a Superseding Order consistent with the provisions of 310 CMR 10.21 through 10.60. Within ten days of the issuance of the Superseding Order, the applicant may request an adjudicatory

hearing on that order and/or a variance under 310 CMR 10.05(10) according to the procedure previously described.

For projects in which the proposed work will be undertaken on land within the boundaries of more than one city or town, the applicant may file a request for a variance directly with the Commissioner, with a copy to each affected conservation commission. If, after public notice, the Commissioner finds that a project meets the variance criteria, he shall specify which regulation(s) has been waived and what general requirements or conditions must be met to satisfy the variance criteria listed in 310 CMR 10.05(10)(a). The applicant shall then file a Notice of Intent with the appropriate conservation commissions in accordance with the procedures contained in 310 CMR 10.01 through 10.10. The conservation commissions shall issue Orders of Conditions consistent with all provisions of 310 CMR 10.21 through 10.60 except those waived by the Commissioner and containing any additional conditions or requirements imposed by the Commissioner in the variance. The usual procedures contained in 310 CMR 10.01 through 10.10 for requesting Superseding Orders and adjudicatory hearings remain applicable.

### Commentary

310 CMR 10.05(10), which provides that the Commissioner may waive the application of one or more of the regulations on the basis of overriding public benefit, is intended to be employed only in rare and unusual cases. The provision authorizing a variance request directly to the Commissioner for projects on land within more than one city or town is intended to apply to projects that involve functionally related work in several contiguous towns (e.g., transportation and energy transmission facilities) and to provide for a single uniform determination concerning alternative locations and the other variance criteria.

### (11) Permitting of Test Projects.

(a) General. The purpose of 310 CMR 10.05(11) is to establish procedures for permitting Test Projects to promote the development of potential new renewable energy technologies and other Innovative Technologies. Innovative Technologies must be proven through field testing before any large scale commercial deployment can occur in order to develop the data and information needed to support siting and full-scale deployment in a cost-effective manner. 310 CMR 10.05(11) will facilitate and encourage the development, testing and demonstration of Innovative Technologies, including water dependent renewable energy technologies, through review procedures for Test Projects. Given their limited scope and duration, these projects are expected to have minimal adverse environmental impacts and, therefore, are permissible under 310 CMR 10.05(11), provided that the applicant provides for adequate post-installation monitoring to identify any unanticipated adverse environmental impacts that occur in the course of the project. The issuing authority may require the alteration or removal of the project if the monitoring study or other information indicates that the project has unexpected or more than minimal adverse environmental impacts. Pre-application consultation with the issuing authority is recommended. Proposed Test Projects that do not meet the eligibility criteria in 310 CMR 10.05(11)(b) may be permitted provided they meet all applicable requirements of 310 CMR 10.24 through 10.365

for projects in coastal ~~R~~esource ~~A~~reas and 310 CMR 10.54 through 10.58 and 10.60 for projects in inland ~~R~~esource ~~A~~reas.

(b) Eligibility Criteria. Notwithstanding the provisions of 310 CMR 10.24 through 10.3~~65~~, 10.53 through 10.58, and 10.60, the issuing authority may issue an Order of Conditions, and impose such conditions as will contribute to the interests identified in M.G.L. c. 131, § 40, to permit Test Projects (although no such project may be permitted which will have any adverse effect on specified habitat sites of Rare Species, as identified by procedures established under 310 CMR 10.37 and 10.59) provided:

1. the applicant documents the readiness of the device or technology for in situ testing with the results of laboratory testing, modeling, technical evaluations, or similar forms of supporting material;
2. the structures associated with the project will not be located in specified habitat sites of Rare Species located within a resource area or Buffer Zone;
3. the structures associated with the project are not located within a salt marsh or seagrass bed; and
4. any structures associated with the project can be easily and quickly removed with minimal disruption to resource areas.

(c) Application Requirements. For the purpose of authorizing eligible Test Projects pursuant to 310 CMR 10.05(11), the following provisions shall apply:

1. In *lieu* of plans prepared by a Registered Professional Engineer or Registered Land Surveyor a Notice of Intent for a Test Project may include documentation that appropriate laboratory testing and/or modeling has occurred and show the proposed location of the project on a plan designating all project components by coordinates referenced to the Massachusetts State Plane Coordinate System.

2. In addition to the documentation provided in 310 CMR 10.11(c)1., a Notice of Intent for a Test Project shall include the following:

- a. a description of the device or technology to be tested and the purpose of the project;
- b. a description of the installation process and schedule for installation, testing, and removal of the devices, technologies and associated equipment;
- c. a demonstration that the project complies with the eligibility requirements of 310 CMR 10.05(11)(b)1. through 4.;
- d. a plan for the restoration of all disturbed resource areas to pre-existing conditions and a schedule for completing the restoration before the Order of Conditions expires;
- e. an environmental monitoring plan sufficiently broad to ensure the project meets all applicable regulatory standards; and
- f. a plan for prompt removal of the components of the project if the Department or conservation commission determines that the project threatens public health, safety or the environment.

(d) Order of Conditions. At a minimum, the Order of Conditions authorizing a Test Project pursuant to 310 CMR 10.05(11) shall require the applicant to implement the monitoring plan and the restoration plan submitted with the Notice of Intent as approved by the issuing authority. The Order of Conditions shall also provide that if the Department or the conservation commission determines that the Test Project threatens the public health, safety or the environment, the applicant shall implement the removal plan submitted with the Notice of Intent as approved by

the issuing authority, or modify the project as directed by the conservation commission or the Department.

(e) Term. Notwithstanding the provisions of 310 CMR 10.05(6)(b), an Order of Conditions for a Test Project issued under 310 CMR 10.05(11) shall be valid for no more than one year.

(f) Extension Permits. An Order of Conditions for a Test Project issued in accordance with 310 CMR 10.05(11) may be extended for one additional year upon written application by the applicant in accordance with 310 CMR 10.05(8)(a). The issuing authority may deny a request for an extension, if it determines that: the project objectives have not been advanced during the initial term; the continuation of the project would not adequately protect public health, safety, or the environment; or the extension should be denied based on the one or more of the circumstances identified in 310 CMR 10.05(8)(c). An extension permit issued for a Test Project in accordance with 310 CMR 10.05(11) is subject to the provisions of 310 CMR 10.05(8)(d) and (e).

(g) Appeals. The provisions governing Department action and adjudicatory hearings set forth in 310 CMR 10.05(7) shall apply to decisions authorizing Test Projects pursuant to 310 CMR 10.05(11). In the event that the Department issues a Superseding Order of Conditions denying a Test Project on the ground that it does not meet the eligibility criteria set forth in 310 CMR 10.05(11)(b), the applicant may file a Notice of Intent seeking authorization for the Test Project under the applicable provisions of 310 CMR 10.24 through 10.37, 10.53 through 10.58 and 10.60 in *lieu* of requesting an adjudicatory hearing.

#### (12) Scientific Research Projects.

(a) General. The purpose of 310 CMR 10.05(12) is to establish procedures and standards for permitting Scientific Research Projects that are solely intended to gather information or test hypotheses on the ability of coastal wetland Resource Areas to respond to the effects of climate change or sea level rise. Scientific Research Projects must be supported by reliable field, laboratory, or modelling data in order to demonstrate that the intended study will be credible and will have a negligible or no adverse effect on the Resource Area's ability to protect the interests identified in M.G.L. c. 131, § 40. The project shall be designed and conducted by an individual with the requisite expertise in environmental science. Given their limited scope and duration, these projects are expected to have negligible or no adverse effect, and therefore are permittable under 310 CMR 10.05(12); provided that the project design includes appropriate post-installation monitoring to identify any unanticipated adverse environmental impacts that occur in the course of the project. The Issuing Authority shall require the alteration or removal of the project if the monitoring study or other information indicates that the project has more than negligible adverse effects. Pre-application consultation with the Issuing Authority and other relevant environmental agencies is recommended. The Issuing Authority or the Department may require the applicant to consult with the Office of Coastal Zone Management or the Division of Marine Fisheries prior to the issuance of a file number when it determines such assistance is necessary and it may require the applicant to incorporate any recommendations made through such consultation in the Notice of Intent.

(b) Eligibility Criteria. Notwithstanding the provisions of 310 CMR 10.25 to 10.28 and 10.30 to 10.36, the Issuing Authority may issue an Order of Conditions and impose such conditions as will contribute to the interests identified in MGL c. 131, §40, to permit Scientific Research Projects; provided that:



1. the Applicant is an established entity or institution, such as a college/university, environmental agency, or an environmental nonprofit organization that demonstrates it has the requisite expertise in environmental science necessary to design and conduct the research;
2. the project must have as its sole goal the collection of data or testing of hypotheses directly related to the ability of coastal wetland Resource Areas to respond to climate change or sea level rise through associated changes in salinity, sediment distribution, flow patterns, chemistry of soils or water, changes in vegetation, or the capacity to reduce flooding and prevent storm damage;
3. the Applicant must demonstrate the readiness of the project to be subject to field testing with the results of laboratory testing, modeling, technical evaluations, historical research, peer reviewed research or similar forms of supporting material and/or data;
4. the project shall be limited in duration to no longer than one year;
5. the Project Site of the project shall be limited in geographic extent to the minimum necessary to accomplish the research goal, and no more than 1,000 square feet of Salt Marsh, 100 linear feet of Coastal Bank, and 1,000 square feet of any other coastal Resource Area;
6. the project shall have no more than negligible adverse effects and no permanent impacts on wetland Resource Areas, including no changes to hydraulic or hydrologic characteristics that could result in indirect or secondary alterations beyond the Project Site. Any structures associated with the project, including but not limited to elements and materials used in the project itself, must be easily and quickly removed if adverse effects should occur and shall be entirely removed upon completion of data gathering; and any structures associated with the project may not be located within Barrier Beach, an area with a recorded Restriction Order, or seagrass bed, or have any adverse effect on specified habitat sites of Rare Species as identified under the procedures established at 310 CMR 10.37.

(c) Application Requirements. For the purpose of authorizing eligible Scientific Research Projects pursuant to 310 CMR 10.05(12), the following provisions also shall apply:

1. At least 14 days prior to the filing of a Notice of Intent for a Scientific Research Project, the Applicant shall submit written notification of the proposed filing for publication in the Environmental Monitor. The notification shall include a brief description of the project, the Conservation Commission which will review the project, and the anticipated date of filing. Comments on the project shall be sent to the Conservation Commission and the Department.
2. If the proposed Scientific Research Project will take place within a coastal waterbody, the applicant shall obtain from the Division of Marine Fisheries a determination whether the project requires a Time of Year Restriction or is compatible with the requirements of a fish run.
3. The Notice of Intent shall include the following information:
  - a. plans and details showing the location of the Project Site and the boundaries of all Resource Areas within the Project Site, as well as all other information required in the Notice of Intent form issued by the Department;

- b. a demonstration that the eligibility criteria of 310 CMR 10.05(12)(b)1. through 6. have been met;
- c. a description of the hypothesis or method to be tested, the project purpose and all supporting information and data;
- d. plans showing the pre-project conditions of wetland Resource Areas within the Project Site including but not limited to elevations, contours, cross-sections and vegetative cover;
- e. a description of the installation process and schedule of installation, testing, reporting and removal of the components and any related equipment;
- f. a plan for restoration of all disturbed Resource Areas to pre-existing conditions and a schedule for completing the restoration before the Order of Conditions expires; and
- g. a monitoring plan and a contingency plan that includes a description of the applicant's capacity, including expected funding, to ensure prompt removal of all components of the project prior to completion if the Conservation Commission or the Department determines that the project threatens public health, safety or the environment, or results in more than a negligible adverse effect on the Resource Area's ability to protect the interests identified in M.G.L. c. 131, § 40.

(d) Order of Conditions. At a minimum, the Order of Conditions authorizing a Scientific Research Project pursuant to 310 CMR 10.05(12) shall require the Applicant to implement the monitoring plan and the restoration plan submitted with the Notice of Intent as approved by the Issuing Authority. The Order of Conditions shall also provide that if the Department or the Conservation Commission determines that the project threatens the public health, safety or the environment, the Applicant shall implement the removal plan submitted with the Notice of Intent as approved by the Issuing Authority, or modify the project as directed by the Conservation Commission or the Department. The Applicant shall provide on-going, post-installation monitoring and reporting to ensure any restored vegetation is stabilized and to identify any unanticipated adverse environmental impacts that occur in the course of the project. The Order shall require that the Applicant submit a copy of the findings of the research project to the Conservation Commission and the Department;

(e) Term. Notwithstanding the provisions of 310 CMR 10.05(6)(b), an Order of Conditions for a Scientific Research Project issued under 310 CMR 10.05(12) can be for no more than three years, of which no more than one year may be research, with site restoration completed within the following two years. A Certificate of Compliance shall not be issued until any areas of disturbed vegetation are reestablished with indigenous wetlands plant species and non-vegetated areas are restored.

(f) Extensions. An Order of Conditions for a Scientific Research Project issued in accordance with 310 CMR 10.05(12) may be extended for no more than one additional year upon written application by the applicant in accordance with 310 CMR 10.05(8)(a). The request shall state the status of the research and progress toward completion. The Issuing Authority may deny a request for an extension if it determines that the project objectives have not been advanced during the initial term; the continuation of the project would not adequately protect public health, safety or the environment; or the extension

should be denied based on one or more of the circumstances identified in 310 CMR 10.05(8)(b). An extension permit issued for a Scientific Research Project is subject to the provisions of 310 CMR 10.05(8)(c) and (d).

(g) -Notice of Intent for Project based on Scientific Research. An applicant may file Notice of Intent under the procedures of 310 CMR 10.05(1) through (10) to leave in place work allowed under an Order of Conditions for a Scientific Research Project either during the year allowed for research, or during an extension approved under 310 CMR 10.05(12)(f). The Issuing Authority shall review the Notice of Intent based upon the applicable performance standards for the Resource Areas at the site or the provisions at 310 CMR 10.11 through 10.14 if applicable.

(h) Appeals. The provisions governing Department action and adjudicatory hearings set forth in 310 CMR 10.05(7) shall apply to decisions authorizing Scientific Research Projects pursuant to 310 CMR 10.05(12).

***[NOTE TO REVIEWERS: MassDEP IS SETTING FORTH IN THIS DOCUMENT PROPOSED AMENDMENTS TO THE CURRENT REGULATION AT 310 CMR 10.00 IN REDLINE AND STRIKEOUT FORMAT. REDLINES SHOW ADDITIONS TO THE CURRENT REGULATORY TEXT AND STRIKEOUTS SHOW PROPOSED DELETIONS. SINCE THE REGULATION IS VERY LONG, MassDEP IS PUBLISHING ONLY THOSE PORTIONS OF THE REGULATION FOR WHICH THE AGENCY IS PROPOSING TO MAKE AMENDMENTS. MassDEP HAS INCLUDED TEXT JUST PRIOR TO (and in some cases text just after) NEW INSERTED TEXT TO MAKE IT CLEAR WHERE THE NEW TEXT IS PROPOSED TO BE INSERTED INTO THE CURRENT REGULATIONS. THERE ARE NO EDITS TO SECTIONS 10.06 (Emergencies) or Section 10.07 (Compliance with M.G.L. c. 30 §§ 61 through 62H) and the EXISTING REGULATION LANGUAGE FOR THESE SECTIONS WILL REMAIN THE SAME. ]***

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#### **10.08: Enforcement Orders**

- (1) When the conservation commission, the Department or the Office of Law Enforcement of the Executive Office of Energy and Environmental Affairs determines that an activity is in violation of M.G.L. c. 131, § 40, 310 CMR 10.00 or a Final Order, the conservation commission, Department or the Office of Law Enforcement may issue an Enforcement Order. Violations include:
  - (a) failure to comply with a Final Order, Final Determination, Emergency Declaration, or Emergency Certification, such as failure to observe a particular condition or time period specified in the Order, Declaration, or Certification;
  - (b) failure to complete work described in a Final Order or Final Determination, Emergency Declaration, or Emergency Certification when such failure causes damage to the interests identified in M.G.L. c. 131, § 40;
  - (c) failure to obtain a valid Final Order or Extension Permit prior to conducting an Activity Subject to Regulation under M.G.L. c. 131, § 40 as defined in 310 CMR 10.02(2);

(d) making any false, inaccurate, or misleading statements in any certification filed under 310 CMR 10.00, including any certification that the requirements of 310 CMR 10.02(2)(b)2. will be met.

(e) failure to comply with any certification on project plans or eligibility under 310 CMR 10.02(2)(b)2.

(f) leaving in place unauthorized fill or otherwise fail to restore illegally altered land to its original condition, or the continuation of any other activity in violation of M.G.L. c. 131, § 40.

(g) failure to provide any information requested by the Department pursuant to 310 CMR 10.00 or a permit, approval or order issued pursuant to 310 CMR 10.00.

The conservation commission, its members and agents, and Department employees may enter upon privately owned land for the purpose of performing their duties under M.G.L. c. 131, § 40, subject to constitutional limitations.

(2) A Final Order, Emergency Declaration, or Emergency Certification may be enforced by either the conservation commission or the Department regardless of which is the issuing authority. The members, officers, employees and agents of the conservation commission and the Department may enter upon privately owned land for the purpose of performing their duties under M.G.L. c. 131, § 40, and 310 CMR 10.00.

(3) An Enforcement Order issued by a conservation commission shall be signed by a majority of the commission. In a situation requiring immediate action, an Enforcement Order may be signed by a single member or agent of the commission, if said Order is ratified by a majority of the members at the next scheduled meeting of the commission.

#### **10.09: Severability**

If any provision of any part of 310 CMR 10.00 or the application thereof, is held to be invalid, such invalidity shall not affect any other provision of 310 CMR 10.00.

#### **10.10: Effective Date**

(1) 310 CMR 10.01 through 10.10 and 10.51 through 10.60 shall take effect on April 1, 1983 and shall apply to all Notices of Intent filed on or after that date and any subsequent procedures related to such filings made on or after that date. 310 CMR 10.01 through 10.10 and 10.51 through 10.60 shall not apply to any Notice of Intent filed prior to the effective date of 310 CMR 10.00, or to any extensions of any Order of Conditions the Notice of Intent for which was filed prior to said effective date, except as otherwise provided in 310 CMR 10.05(4)(g) and (h).

(2) The effective date of 310 CMR 10.21 through 10.37 is August 10, 1978. 310 CMR 10.21 through 10.37 shall not apply to any Notice of Intent filed prior to August 10, 1978, or to any extensions to an Order of Conditions when the Notice of Intent upon which such Order was based was filed prior to August 10, 1978.

(3) All proceedings and actions commenced under M.G.L. c. 131, § 40 prior to the effective date of 310 CMR 10.00 shall remain in full force and effect under the prior applicable regulations, except as otherwise provided in 310 CMR 10.05(4)(g) and (6)(h).

(4) The amendments to 310 CMR 10.00 concerning application of herbicides to rights of way contained in 310 CMR 10.03(6), 10.04: Alter, 10.05(3)(a)2., (b)1. and (d)1. shall be effective on July 10, 1987.

(5) The amendments to 310 CMR 10.00 published in the Massachusetts Register on October 16, 1987, concerning primarily the protection of wildlife habitat, shall take effect on November 1, 1987, and shall apply to all Notices of Intent filed on or after that date and any subsequent procedures related to such filing made on or after that date. The amendments to 310 CMR 10.00, concerning primarily the protection of wildlife habitat, shall not apply to any Notice of Intent filed prior to November 1, 1987, or to any extensions of any Order of Conditions the Notice of Intent for which was filed prior to November 1, 1987, except as otherwise provided in 310 CMR 10.05(4)(g) and (6)(h). All proceedings and actions commenced under M.G.L. c. 131, § 40 prior to November 1, 1987, and shall remain in full force and effect under the prior applicable regulations, except as otherwise provided in 310 CMR 10.05(4)(g) and (6)(h).

(6) The amendment to 310 CMR 10.55 concerning work in Bordering Vegetated Wetlands that are within an Area of Critical Environmental Concern contained in 310 CMR 10.55(4)(e) shall be effective on April 23, 1993, and shall not apply to any Notice of Intent filed prior to the effective date.

(7) The amendments to 310 CMR 10.00 concerning normal maintenance and improvement of land in agricultural use contained in 310 CMR 10.04: -Agriculture, 10.06(6), and 10.53(5) shall be effective on May 21, 1993, and shall not apply to any Notice of Intent filed prior to the effective date.

(8) The provisions of 310 CMR 10.03(7)(c)2.k., 3.e., and 4.j. through l., 10.06(7), 10.24(7)(c)4. through 6., 10.53(3)(m) through (q), and the revisions to 310 CMR 10.03(7)(c)2.e., and 4.b., 10.06(3) and (5), and 10.53(3)(i) promulgated on December 3, 1993, shall take effect on January 1, 1994. They shall not apply to any Notice of Intent filed before January 1, 1994, nor to any extensions to an Order of Conditions when the Notice of Intent upon which such Order was based was filed prior to that date.

(9) The effective date of 310 CMR 10.55(1) and (2) is June 30, 1995.

(10) The revisions to 310 CMR 10.02 through 10.05, 10.21, 10.53, 10.58, and 10.60 to incorporate St. 1996, c. 258 amendments to M.G.L. c. 131, § 40, and the deletion of 310 CMR 10.99, shall be effective on October 6, 1997 and shall apply to Requests for Determination of Applicability and Notices of Intent filed after that date. Applicants who have received an Order of Conditions before August 7, 1996 or filed a Notice of Intent before August 7, 1996 and received a Final Order of Conditions before August 7, 1997, or later pending resolution of an adjudicatory hearing, shall not be subject to the



requirements of 310 CMR 10.58 for the work permitted by the Order. A Determination of Applicability issued before August 7, 1996 is valid only for the resource areas specified in the Determination and not for the riverfront area.

(11) The amendments to 310 CMR 10.00 concerning drought (found at 310 CMR 10.04: Pond; 310 CMR 10.58(2)(a)1.f.) and perennial and intermittent streams (found at 310 CMR 10.58(2)(a)) shall take effect on December 20, 2002 and shall not apply to any Request for Determination of Applicability, Abbreviated Notice of Resource Area Delineation, Abbreviated Notice of Intent, or Notice of Intent filed prior to the effective date.

(12) The provisions of 310 CMR 10.00 promulgated in 2005 shall take effect on March 1, 2005. They shall not apply to any Notice of Intent or and Notice of Resource Area Delineation filed prior to March 1, 2005.

(13) The revised procedures for wetland appeals set forth 310 CMR 10.05(7)(j) take effect on October 31, 2007 and shall apply to all wetland appeals for which a notice of claim is filed on or after October 31, 2007.

(14) The amendments to 310 CMR 10.00 concerning Combined Applications, Combined Permits, Restoration Order of Conditions, Ecological Restoration Limited Projects and procedures for filing a Notice of Intent shall apply to Notices of Intent filed on or after October 24, 2014.

(15) The amendments to 310 CMR 10.00 concerning Stormwater Management at 310 CMR 10.04; 10.05(6)(k)-(q); and 10.58 shall apply to Notices of Intent filed more than six months after [the effective date of these regulations]. The amendments concerning Public Shared Use Paths at 310 CMR 10.02(2)(b)2.r., 10.24(7)(c)8., and 10.53(3)(u); Bordering Land Subject to Flooding at 310 CMR 10.57(2)(a)3. - 6.; Extended Drought at 310 CMR 10.04: Pond and 310 CMR 10.58(2)(a)1.f.; and perennial and intermittent streams at 310 CMR 10.58(2)(a)1.f., shall not apply to any Request for Determination of Applicability, Abbreviated Notice of Resource Area Delineation, Abbreviated Notice of Intent, or Notice of Intent filed prior to [the effective date of these regulations]. Any Notice of Intent submitted to the Department prior to six months after [the effective date] shall be considered under the standards and criteria in effect prior to [the effective date].

Can this process be extended to E/ENFs and the MEPA Cert when an EIR is not required?

The amendments to 310 CMR 10.00 concerning Land Subject to Coastal Storm Flowage shall apply to Requests for Determinations of Applicability, Abbreviated Notices of Resource Area Delineation, and Notices of Intent filed on or after [the effective date of these regulations], except when a draft environmental impact report was submitted pursuant to M.G.L. c. 30, § 62B, on or before [one year prior to date of promulgation], and the project received a certificate on the final environmental impact report or a building permit was issued on or before [six months prior to promulgation].

Re: MEPA would be kinder if referenced date of EENF Certificate

### **10.11: Actions Required Before Submitting a Notice of Intent for an Ecological Restoration Project**



An applicant shall take the following actions before filing a Notice of Intent for an Ecological Restoration Project that meets the eligibility criteria for a Restoration Order of Conditions set forth in 310 CMR 10.13 or for approval as an Ecological Restoration Limited Project pursuant to 310 CMR 10.24(8) or 10.53(4).

(1) At least 14 days prior to the filing a Notice of Intent for an Ecological Restoration Project, the applicant shall submit written notification of the proposed filing for publication in the Environmental Monitor. At a minimum, the written notification shall contain a brief description of the proposed project, the anticipated date of submission of the Notice of Intent, the name and address of the conservation commission that will review the Notice of Intent and shall state where copies of the Notice of Intent may be examined or obtained and where information on the date, time, and location of the public hearing may be obtained.

(2) If the project will impact an area located within estimated habitat which is indicated on the most recent *Estimated Habitat Map of State-listed Rare Wetlands Wildlife* published by the Natural Heritage and Endangered Species Program (the Program), the applicant shall obtain a written preliminary determination from the Program as to whether the Rare Species identified on the aforementioned map are likely to continue to be located on or near the project and, if so, whether the Resource Area to be altered by the proposed project is in fact part of the habitat of the Rare Species. If the Program issues a preliminary determination that the Resource Area that would be altered by the proposed project is in fact within the habitat of a Rare Species, the preliminary determination shall identify the Rare Species whose habitat would be altered and recommend any changes or conditions that are necessary to ensure that the project will have no short or long term adverse effect on the habitat of the local population of the Rare Species or the project will be carried out in accordance with a habitat management plan that has been approved in writing by the Natural Heritage and Endangered Species Program and submitted with the Notice of Intent.

(3) If the project will occur within a coastal waterbody with a restricted Time of Year, as identified in Appendix B of the Division of Marine Fisheries Technical Report TR 47 *Marine Fisheries Time of Year Restrictions (TOYs) for Coastal Alteration Projects* dated April 2011, the applicant shall obtain a written determination from the Division of Marine Fisheries as to whether the proposed work requires a TOY restriction, and if so, the written determination shall specify the recommended TOY restriction and any other recommended conditions on the proposed work.

(4) If the project may affect a diadromous fish run as identified in the Division of Marine Fisheries Technical Reports TR 15 through 18, dated 2004, the applicant shall obtain a written determination from the Division of Marine Fisheries as to whether the design specifications and operational plan for the project are compatible with the passage requirements of the fish run.

(5) If the project involves silt-generating, in-water work that will impact a non-tidal perennial river or stream, the in-water work shall either occur between May 1<sup>st</sup> and August 30<sup>th</sup> or the applicant shall obtain a determination from the Division of Fisheries and Wildlife as to whether the proposed work requires a TOY restriction, and if so, the written determination shall specify the recommended TOY restriction and any other recommended conditions on the proposed work.

(6) If the Ecological Restoration Project involves dredging of 100 cubic yards or more in a Resource Area or dredging of any amount in an Outstanding Resource Water, the applicant shall ~~obtain file~~ an application for a Water Quality Certification pursuant to 314 CMR 9.00: *401 Water Quality Certification for Discharge of Dredged or Fill Material, Dredging, and Dredged Material Disposal in Waters of the United States Within the Commonwealth* prior to submitting a Notice of Intent.

### **10.12: Notice of Intent for an Ecological Restoration Project**

A Notice of Intent for an Ecological Restoration Project that meets the eligibility criteria for a Restoration Order of Conditions set forth in 310 CMR 10.13, or for approval as an Ecological Restoration Limited Project in accordance with 310 CMR 10.24(8) or 10.53(4), shall comply with the requirements of 310 CMR 10.12(1) and (2).

(1) At a minimum, a Notice of Intent for an Ecological Restoration Project shall include the following:

- (a) the project's ecological restoration goals;
- (b) the location of the Ecological Restoration Project;
- (c) the construction sequence for completing the project;
- (d) a map of the Areas Subject to Protection under M.G.L. c. 131, § 40, that will be temporarily or permanently altered by the project or include habitat for Rare Species, Habitat of Potential Regional and Statewide Importance, eel grass beds, or Shellfish Suitability Areas;
- (e) an evaluation of any flood impacts that may affect the built environment, including without limitation, buildings, wells, septic systems, roads or other man-made structures or infrastructure as well as any proposed flood impact mitigation measures;
- (f) a plan for invasive species prevention and control;
- (g) any preliminary written determinations obtained from the Natural Heritage and Endangered Species Program in accordance with 310 CMR 10.11(2);
- (h) any Time of Year restrictions and/or other conditions recommended by the Division of Marine Fisheries or the Division of Fisheries and Wildlife in accordance with 310 CMR 10.11(3) through (5);
- (i) proof that notice was published in the Environmental Monitor as required by 310 CMR 10.11(1);
- (j) a certification by the applicant under the penalties of perjury that the project meets the eligibility criteria set forth in 310 CMR 10.13, 10.24(8) or 10.53(4), whichever is applicable;

(k) if the Ecological Restoration Project involves the construction, repair, replacement or expansion of infrastructure, an operation and maintenance plan to ensure that the infrastructure will continue to function as designed;

(l) If the project involves dredging of 100 cubic yards or more or dredging of any amount in an Outstanding Resource Water, demonstration that an application for a -Water Quality Certification issued by the Department pursuant to 314 CMR 9.00: *401 Water Quality Certification for Discharge of Dredged or Fill Material, Dredging, and Dredged Material Disposal in Waters of the United States Within the Commonwealth*; has been submitted to the Department.

(m) if the Ecological Restoration Project involves work on a stream crossing, information sufficient to make the showing required by 310 CMR 10.24(10) for work in a coastal resource area and 310 CMR 10.53(8) for work in an inland resource area; and

(n) if the Ecological Restoration Project involves work on a stream crossing, baseline photo-points that capture longitudinal views of the crossing inlet, the crossing outlet and the upstream and downstream channel beds during low flow conditions. The latitude and longitude coordinates of the photo-points shall be included in the baseline data.

~~(2) If the Notice of Intent for an Ecological Restoration Project is a Combined Application that serves as the application for a license, permit or other written approval for a water-dependent use project pursuant to 310 CMR 9.00 Waterways, the Notice of Intent shall also state:~~

~~(a) whether the project has the potential to impact any docks, piers or boat ramps and, if so, describe the nature of those impacts and any necessary mitigation;~~

~~(b) whether the project involves any structures that have been authorized under Chapter 91; and~~

~~(c) whether the project has the potential to impact private water supply wells including agricultural or aquacultural wells or surface water withdrawal points.~~

~~(23)~~ Notwithstanding the provisions of 310 CMR 10.54(4)(a)5., 10.56(4)(a)4., and 10.60, a person submitting a Notice of Intent for an Ecological Restoration Project that meets the requirements of 310 CMR 10.12(1) and (2) is exempt from the requirement to perform a wildlife habitat evaluation in accordance with 310 CMR 10.60.

### **10.13: Eligibility Criteria for Restoration Order of Conditions**

Notwithstanding the provisions of 310 CMR 10.25 through 10.3~~65~~, 10.54 through 10.58, and 10.60, an Ecological Restoration Project shall be permitted by a Restoration Order of Conditions provided that the project meets all applicable eligibility criteria in 310 CMR 10.13. Ecological Restoration Projects permitted by a Restoration Order of Conditions may result in the temporary or permanent loss of Resource Areas and/or the conversion of one Resource Area to another when such loss and/or conversion is necessary to the achievement of the project's ecological restoration goals.

(1) An Ecological Restoration Project shall be permitted by a Restoration Order of Conditions if it meets all of the following eligibility criteria:

(a) The project is an Ecological Restoration Project as defined in 310 CMR 10.04, is a project type listed in 310 CMR 10.13(2) through (7), and the applicant has submitted a Notice of Intent that meets all applicable requirements of 310 CMR 10.12.

(b) The project will further at least one of the interests identified in M.G.L. c. 131, § 40.

(c) The project will not have any short-term or long-term adverse effect, as identified by the procedures established by 310 CMR 10.11, on specified habitat sites of Rare Species located within the Resource Areas that may be affected by the project or will be carried out in accordance with a habitat management plan that has been approved in writing by the Natural Heritage and Endangered Species Program and submitted with the Notice of Intent.

(d) To the maximum extent practicable, the project will:

1. avoid adverse impacts to Resource Areas and the interests identified in M.G.L. c. 131, § 40, that can be avoided without impeding the achievement of the project's ecological restoration goals;
2. minimize adverse impacts to Resource Areas and the interests identified in M.G.L. c. 131, § 40, that are necessary to the achievement of the project's ecological restoration goals; and
3. utilize best management practices such as erosion and siltation controls and proper construction sequencing to prevent and minimize adverse construction impacts to Resource Areas and the interests identified in M.G.L. c. 131, § 40

(e) The project will not have significant adverse effects on the interests of flood control and storm damage prevention in relation to the built environment (*i.e.*, the project will not result in a significant increase in flooding or storm damage affecting buildings, wells, septic systems, roads or other human-made structures or infrastructure).

(f) If the project will involve the dredging of 100 cubic yards of sediment or more or dredging of any amount in an Outstanding Resource Water, the Notice of Intent includes a demonstration that an application for a Water Quality Certification ~~issued by the Department in accordance with~~ pursuant to 314 CMR 9.00: 401 *Water Quality Certification for Discharge of Dredged or Fill Material, Dredging, and Dredged Material Disposal in Waters of the United States Within the Commonwealth* ~~has been submitted to the Department.~~

(g) The project will not substantially reduce the capacity of a Resource Area to serve the habitat functions identified in 310 CMR 10.60(2). A project will be presumed to meet this eligibility criteria if the project as proposed in the Notice of Intent will be carried out in accordance with any time of year restrictions or other conditions recommended by the Division of Marine Fisheries for coastal waters, and by the Division of Fisheries and Wildlife for inland waters in accordance with 310 CMR 10.11(3) through (5). As set forth in 310 CMR 10.12(3), a person submitting a Notice of Intent for an Ecological Restoration Project that meets the requirements of 310 CMR 10.12(1) and (2) is exempt from the requirement to perform a wildlife habitat evaluation in accordance with 310 CMR 10.60.

(h) If the Ecological Restoration Project involves work on a stream crossing, the stream crossing has been designed in accordance with 310 CMR 10.24(10) for work in coastal resource areas and 310 CMR 10.53(8) for work in inland resource areas, as applicable.

(i) The Ecological Restoration Project will not result in a discharge of dredged or fill material within 400 feet of the high water mark of a Class A surface water (exclusive of its tributaries) unless the project is conducted by a public water system under 310 CMR 22.00: *Drinking Water* or a public agency or authority for the maintenance or repair of existing public roads or railways in accordance with 314 CMR 4.06(1)(d)1.

- (j) The Ecological Restoration Project will not result in a discharge of dredged or fill material to a vernal pool certified by the Division of Fisheries and Wildlife.
- (k) The Ecological Restoration Project will not result in a point source discharge to an Outstanding Resource Water.
- (l) The Ecological Restoration Project will not involve the armoring of a Coastal Dune or Barrier Beach.

(2) Additional Eligibility Criteria for Dam Removal Projects. If the Ecological Restoration Project is a dam removal project, the project shall be presumed to meet the eligibility criteria set forth in 310 CMR 10.13(1)(d), if the project is consistent with the Department's guidance entitled *Dam Removal and the Wetlands Regulations*, dated December 2007. If the Ecological Restoration Project is a dam removal project, the Ecological Restoration Project shall be approved by a Restoration Order of Conditions, provided that in addition to the eligibility criteria set forth in 310 CMR 10.13(1), the project meets all of the following eligibility criteria:

- (a) The project will not involve the removal of a dam that was constructed or is managed for flood control by a municipal, state or federal agency.
- (b) The project will not adversely impact public water supply wells or water withdrawals permitted or registered under the Water Management Act, M.G.L. c. 21G, and 310 CMR 36.00: *Massachusetts Water Resources Management Program* within the reach of the stream impacted by the impoundment.
- (c) The project will not adversely impact private water supply wells including agricultural or aquacultural wells or surface water withdrawal points.
- (d) The project provides for the removal of the full vertical extent of the dam such that no remnant of the dam will remain at or below the streambed as determined prior to commencement of the dam removal project, or if such determination cannot be made at that time, as determined during construction of the project.
- (e) The project provides for the removal of enough of the horizontal extent of the dam such that after removal no water will be impounded during the 500 year flood event.
- (f) The project will not involve a hydroelectric facility requiring a Federal Energy Regulatory Commission (FERC) license or an amendment to a FERC license.
- (g) The applicant has obtained from the Department of Conservation and Recreation Office of Dam Safety a written determination that the dam is not subject to the jurisdiction of the Office under 302 CMR 10.00: *Dam Safety*, a written determination that the dam removal does not require a permit under 302 CMR 10.00: *Dam Safety* or a permit authorizing the dam removal in accordance with 302 CMR 10.00: *Dam Safety* has been issued.
- (h) If the project is exempt from the requirement to obtain a license or permit under 310 CMR 9.05(3)(n), the project will not have an adverse effect on navigation or on any docks, piers or boat ramps authorized under 310 CMR 9.00: *Waterways*.

(3) Additional Eligibility Criteria for Freshwater Stream Crossing Repair and Replacement Projects. If the Ecological Restoration Project is a freshwater stream crossing repair or replacement project, the Ecological Restoration Project shall be approved by a Restoration Order of Conditions, provided that in addition to the eligibility criteria set forth in 310 CMR 10.13(1), the project meets all of the following eligibility criteria:

- (a) The width of the structure will be at least 1.2 times bankfull width to facilitate the movement of fish and other aquatic organisms and wildlife species that may utilize riparian corridors.
- (b) The structure will be an open-bottom span where practicable or if an open-bottom span is not practicable, the structure bottom will be embedded in a substrate that matches the substrate of the stream channel and that shall be designed to maintain continuity of aquatic and benthic elements of the stream including appropriate substrates and hydraulic characteristics within the culvert (water depths, turbulence, velocities, and flow patterns).
- (c) The structure will have an Openness Ratio of at least 0.82 feet, or as close to 0.82 feet as is practicable.

(4) Additional Eligibility Criteria for Stream Daylighting Projects. If the Ecological Restoration Project is a stream daylighting project, the Ecological Restoration Project shall be approved by a Restoration Order of Conditions, provided that in addition to the eligibility criteria set forth in 310 CMR 10.13(1), the project meets all of the following eligibility criteria:

- (a) The project will meet the applicable performance standards for Bank, 310 CMR 10.54, and Land under Water Bodies and Waterways, 310 CMR 10.56. As set forth in 310 CMR 10.12(3), a person submitting a Notice of Intent that meets the requirements of 310 CMR 10.12 (1) and (2) for a stream daylighting project is exempt from the requirement to perform a wildlife habitat evaluation in accordance with 310 CMR 10.60, notwithstanding the provisions of 310 CMR 10.54(4)(a)5., 10.56(4)(a)4., and 10.60.
- (b) To the maximum extent practicable, the project is designed to include the revegetation of all disturbed areas with noninvasive indigenous species appropriate to the site.

(5) Additional Eligibility Criteria for Tidal Restoration Projects. If the Ecological Restoration Project is a Tidal Restoration Project designed to restore tidal flow that has been restricted or blocked by a man-made structure, the Ecological Restoration Project shall be approved by a Restoration Order of Conditions, provided that in addition to the eligibility criteria set forth in 310 CMR 10.13(1), the project meets all of the following eligibility criteria:

- (a) If the project will involve work in a Coastal Dune and/or a Coastal Beach, the project meets the applicable performance standard(s) at 310 CMR 10.27 and/or 10.28.
- (b) The project will not include a new or relocated tidal inlet/breach through a Barrier Beach or additional armoring of a Barrier Beach, but may include the modification, replacement or enlargement of an existing culvert or inlet through a Barrier Beach.
- (c) The project will not involve installation of new water control devices (*i.e.*, tide gates, flash boards and adjustable weirs) or a change in the management of existing water control devices, when the existing or proposed function of said devices is to prevent flooding or storm damage impacts to the built environment, including without limitation, buildings, wells, septic systems, roads or other human-made structures or infrastructure.
- (d) The project's physical specifications are compatible with passage requirements for diadromous fish runs identified at the project location by the Division of Marine Fisheries.

(6) Additional Eligibility Criteria for Rare Species Habitat Restoration. If the Ecological Restoration Project is a Rare Species habitat restoration project, the Ecological Restoration Project shall be approved by a Restoration Order of Conditions, provided that in addition to the



eligibility criteria set forth in 310 CMR 10.13(1), the project meets all of the following eligibility criteria:

- (a) The project is exempt from review under 321 CMR 10.00: *Massachusetts Endangered Species Act Regulations* as a project that involves the active management of Rare Species habitat for the purpose of maintaining or enhancing the habitat for the benefit of Rare Species. A project that involves the active management of Rare Species habitat and is exempt from review under 321 CMR 10.00: *Massachusetts Endangered Species Act Regulations* may include without limitation the mowing, cutting, burning or pruning of vegetation or the removal of exotic or invasive species.
- (b) The project is carried out in accordance with a Habitat Management Plan that has been approved in writing by the Natural Heritage and Endangered Species Program and submitted with the Notice of Intent.

(7) Additional Eligibility Criteria for Restoring Fish Passageways. If the Ecological Restoration Project involves the restoration or repair of a fish passageway as identified by the Division of Marine Fisheries in its Marine Fisheries Technical Reports, TR 15 through 18, dated 2004, the Ecological Restoration Project shall be approved by a Restoration Order of Conditions, provided that in addition to the eligibility criteria set forth in 310 CMR 10.13(1), the applicant has submitted a Fishway Permit Application to the Division of Marine Fisheries, pursuant to M.G.L. c. 130, §§ 1 and 19, and 322 CMR 7.01(4)(f) and (14)(m), and the fish passageway will be operated and maintained in accordance with an Operation and Maintenance Plan approved by the Division of Marine Fisheries.

#### **10.14: Restoration Order of Conditions**

If after reviewing a Notice of Intent for an Ecological Restoration Project, the issuing authority determines that the Ecological Restoration Project meets the eligibility criteria in 310 CMR 10.13(1) and the applicable provisions of 310 CMR 10.13(2) through (7), the issuing authority shall issue a Restoration Order of Conditions that contains the general conditions set forth in 310 CMR 10.14(1), and all applicable special conditions set forth in 310 CMR 10.14(2) through (7). The Restoration Order of Conditions may reference the plans and specifications for the Ecological Restoration Project approved by the issuing authority. ~~If the Restoration Order of Conditions is issued in response to a Combined Application for an Order of Conditions pursuant to 310 CMR 10.00, a 401 Water Quality Certification pursuant to 314 CMR 9.00: 401 Water Quality Certification for Discharge of Dredged or Fill Material, Dredging, and Dredged Material Disposal in Waters of the United States Within the Commonwealth, and/or a Chapter 91 license, permit or other written approval pursuant to 310 CMR 9.00: Waterways, the Department may append to the Restoration Order of Conditions any conditions that the Department has authority to impose pursuant to 310 CMR 9.00: Waterways and/or 314 CMR 9.00: 401 Water Quality Certification for Discharge of Dredged or Fill Material, Dredging, and Dredged Material Disposal in Waters of the United States Within the Commonwealth.~~ A Restoration ~~Project~~ Order of Conditions is subject to the provisions of 310 CMR 10.05 that apply to any Order of Conditions except as expressly provided otherwise is 310 CMR 10.00.

(1) General Conditions Applicable to all Ecological Restoration Projects. The Restoration Order of Conditions shall contain the following general conditions:

- (a) Failure to comply with all conditions stated herein and with all related statutes and other regulatory measures shall be deemed cause to revoke or modify this Restoration Order of Conditions.
- (b) This Restoration Order of Conditions does not grant any property rights or any exclusive privileges; it does not authorize any injury to private property or invasion of private rights.
- (c) This Restoration Order of Conditions does not relieve the permittee or any other person of the necessity of complying with all applicable federal, state or local statutes, ordinances, bylaws or regulations.
- (d) The work authorized under this Restoration Order of Conditions shall be completed within three years from the date of issuance of this General Order unless the General Order is extended in accordance with 310 CMR 10.05(6)(d) or by operation of law.
- (e) This Restoration Order of Conditions may be extended by the issuing authority for one or more periods of up to three years upon application to the issuing authority at least 30 days prior to the expiration date of this Restoration Order.
- (f) Any fill used in connection with this project shall be clean fill. Any fill shall contain no trash, refuse, rubbish or debris, including but not limited to lumber, bricks, plaster, wire, lath, paper, cardboard, pipe, trees, ashes, refrigerators, motor vehicles or parts of any of the foregoing.
- (g) This Restoration Order of Conditions is not final until all administrative appeal periods from this Restoration Order have elapsed or if such an appeal has been taken, until all proceedings before the Department have been completed.
- (h) No work shall be undertaken until the Restoration Order of Conditions has become final and has been recorded in the Registry of Deeds or the Land Court for the district in which the land is located within the chain of title to the affected property. In the case of recorded land, the Final Restoration Order of Conditions shall also be noted in the Registry's Grantor index under the name of the owner of the land upon which the proposed work is done. The recording information shall be submitted to the Issuing Authority prior to commencement of the work.
- (i) A sign that is not less than two square feet or more than three square feet shall be displayed at the site. The sign shall bear the words "Massachusetts Department of Environmental Protection" and include the File Number.
- (j) Where the Department is requested to issue a Superseding Order, the Conservation Commission shall be a party to all agency proceedings and hearings before the Department.
- (k) Upon completion of the work described herein, the applicant shall submit a Request for a Certificate of Compliance to the issuing authority.
- (l) The work shall conform to the plans and special conditions referenced in this Restoration Order of Conditions.
- (m) Any change to the plans approved in this Restoration Order of Conditions shall require the applicant to inquire of the Issuing Authority in writing whether the change is significant enough to require the filing of a new Notice of Intent.
- (n) Representatives of the Conservation Commission and the Department of Environmental Protection shall have the right to enter and inspect the area subject to this Restoration Order of Conditions at reasonable hours to evaluate compliance with the conditions set forth in this Restoration Order of Conditions and may require the submittal

of any data deemed necessary by the Conservation Commission or the Department for that evaluation.

(o) This Restoration Order of Conditions shall apply to any successor in interest or successor in control of the property subject to this Restoration Order of Conditions and to any contractor or other person performing work conditioned by this Order.

(p) Prior to the start of work, and if the project involves work adjacent to a Bordering Vegetated Wetland or Salt Marsh, the boundary of the wetland in the vicinity of the proposed work area shall be marked by wooden stakes or flagging. Once in place, the wetland boundary markers shall be maintained until a Certificate of Compliance has been issued by the issuing authority.

(q) All sedimentation barriers shall be maintained in good repair, until all disturbed areas have been fully stabilized with vegetation or other means. During construction, the applicant or his or her designee shall inspect the erosion controls on a daily basis and shall remove accumulated sediments as needed. The applicant shall immediately control any erosion problems that occur at the site and shall also immediately notify the issuing authority. The Issuing Authority reserves the right to require any additional erosion and/or damage prevention controls it deems necessary. Sedimentation barriers shall serve as the limit of work unless another limit of work line has been approved by this Order.

(r) The project shall be conducted in accordance with any preliminary written determination obtained from the Natural Heritage and Endangered Species Program as set forth in 310 CMR 10.11(2) and any time of year restrictions or other conditions recommended in writing by the Division of Marine Fisheries (for projects in coastal Resource Areas) and the Division of Fisheries and Wildlife (for projects in inland Resource Areas) as set forth in 310 CMR 10.11(3) through (5).

(s) The applicant shall implement the plan submitted with the Notice of Intent as approved by the Issuing Authority to prevent and control invasive species.

(t) If the project involves the dredging of 100 cubic yards or more in a Resource Area or dredging of any amount in an Outstanding Resource Water, the dredging and Dredged Material management shall be performed in accordance with the Water Quality Certification submitted with the Notice of Intent.

(u) If the project involves infrastructure, the owner shall operate and maintain the infrastructure in accordance with the operation and maintenance plan submitted with the Notice of Intent as approved by the Issuing Authority. Implementation of the operation and maintenance plan as approved by the Issuing Authority shall be a continuing condition that shall be set forth in the Certificate of Compliance.

(2) Special Conditions for Dam Removal Projects. If the Ecological Restoration Project involves dam removal, the Restoration Order of Conditions shall contain the following special conditions in addition to the general conditions set forth in 310 CMR 10.14(1):

(a) An as-built plan and a written statement from a registered professional engineer or other environmental professional expert in ecological restoration certifying substantial compliance with the design plan and construction specifications approved in the Restoration Order of Conditions shall be submitted to the Issuing Authority within 90 days of completion of the dam removal.

(b) The applicant shall monitor the dam removal site during the first two years following completion of the dam removal. Said monitoring shall include a topographic survey of

the longitudinal profile and stream cross-sections from downstream of the former dam through the upstream end of the former impoundment. The survey reference point shall comprise a permanent marker or recoverable survey point with known coordinates, such as a fixed point shown on the as-built plan, an existing bench mark, or a new benchmark. That marker should be identified or referenced on the plans and on the as-built plans. The applicant shall establish at least two photo-points for pre- and post-restoration monitoring at the dam removal site. At least one photo-point location shall be chosen to document a view of the dam pre-restoration and to document the same site after the dam is removed. A second location shall be chosen to document a view of the impoundment pre- and post-restoration. Photos shall be taken for two years after the dam removal is completed.

(c) The applicant shall submit a report detailing the results of this monitoring within six months of the completion of the two year post-construction monitoring period, or within 30 months after the dam removal is complete whichever is sooner. The report shall include a comparison of post-restoration survey data with pre-restoration survey data as illustrated by the photos taken during the monitoring period.

(3) Special Conditions for Freshwater Stream Crossing Repair and Replacement Projects. If the Ecological Restoration Project involves freshwater crossing repair or replacement, the Restoration Order of Conditions shall contain the following special conditions in addition to the general conditions set forth in 310 CMR 10.14(1):

(a) An as-built plan and/or a written statement from a registered professional engineer or other environmental professional expert in ecological restoration certifying substantial compliance with the design plans and construction specifications approved in the Restoration Order of Conditions shall be completed within 90 days of completion of construction. The as-built plan shall include the dimensions of the structure, the invert elevation of the upstream and downstream ends of the structure and the road or other surface elevation above the structure.

(b) The applicant shall monitor the site by collecting sufficient data within 12 months after construction is complete to evaluate the effect of the structure. At a minimum, when a Certificate of Compliance is requested, the applicant shall provide post-construction photo-points that capture longitudinal views of the crossing inlet, the crossing outlet and the upstream and downstream channel beds during low flow conditions. The photo-points shall be located at the same geographic photo-point latitude and longitude coordinates as required in the Notice of Intent per 310 CMR 10.12(1)(n). The applicant shall submit a report to the Issuing Authority detailing the results of this monitoring within 18 months after construction is complete. The report shall include a comparison of the post-restoration data with pre-restoration data.

(4) Special Conditions for Stream Daylighting Projects. If the Ecological Restoration Project involves stream daylighting, the Restoration Order of Conditions shall include the following special conditions in addition to the general conditions set forth in 310 CMR 10.14(1):

(a) An as-built plan and a written statement from a registered professional engineer or other environmental professional expert in ecological restoration certifying substantial compliance with the design plan and construction specifications approved in the Restoration Order of Conditions shall be submitted to the Issuing Authority within 90 days of completion of the project. At a minimum, when a Certificate of Compliance is

requested, the applicant shall provide post-construction photo-points that capture longitudinal views of the upstream and downstream channel beds of the daylighted reach during low flow conditions.

(b) The applicant shall conduct photo-point monitoring by establishing at least three photo-points for pre- and post-restoration monitoring at the stream daylighting site. One photo-point location shall be chosen to document the upstream end of the site and one photo-point location shall be chosen to document the downstream end of the site. A third photo-point shall be chosen to document conditions in the restored channel. Photos shall be taken during high flow and low (summer) flow of each year during the two years following completion of the project.

(c) Within 30 months after the completion of the project, the applicant shall submit a report describing the ecological changes observed at the ~~P~~project ~~S~~site during the two years following completion of the project, as illustrated by the photos.

(5) Special Conditions for Tidal Restoration Projects. If the Ecological Restoration Project involves restoration of tidal influence, the Restoration Order of Conditions shall contain the following special conditions in addition to the general conditions set forth in 310 CMR 10.14(1):

(a) If the project is a culvert or bridge replacement or repair project, an as-built plan and a written statement from a registered professional engineer or other environmental professional expert in ecological restoration certifying substantial compliance with the design plans and construction specifications approved in the Restoration Order of Conditions shall be submitted to the Issuing Authority within 90 days of completion of construction. The as-built plan shall include the dimensions of the structure, the invert elevation of the upstream and downstream ends of the structure and the road or other surface elevation above the structure.

(b) The applicant shall monitor pre- and post-construction tidal conditions upstream and downstream of the tidal restriction with water level readings measured at an interval no greater than every ten minutes over a minimum of a one-week period that includes a spring tide. Pre- and post-construction water level readings shall be taken at approximately the same locations and shall be referenced to the same vertical elevation datum. The applicant shall prepare a report detailing the results of this monitoring within 12 months after construction is complete. The report shall include and compare pre- and post-construction tidal elevation monitoring data to assess attainment of the project's predicted post-restoration tidal conditions.

(6) Special Conditions for Rare Species Habitat Restoration. If the Ecological Restoration Project is a Rare Species Habitat Restoration Project, the Restoration Order of Conditions shall in addition to the general conditions set forth in 310 CMR 10.14(1) include the following special conditions:

(a) An as-built plan and a written statement from a registered professional engineer or other environmental professional expert in ecological restoration certifying substantial compliance with the design plan, construction specifications, and the Habitat Management Plan submitted with the Notice of Intent as approved in the Restoration Order of Conditions shall be submitted to the Issuing Authority within 90 days of completion of the project.

(b) The applicant shall establish at least two photo-points for pre- and post-restoration monitoring at the ~~P~~project ~~S~~site. Photos shall be taken for two years after construction is complete. Within 30 months of completion of the project, the applicant shall submit to the Issuing Authority a report describing the ecological changes observed at the ~~P~~project ~~S~~site as illustrated by the photos.

(7) Special Conditions for Fish Passageway Restoration Projects. If the Ecological Restoration Project involves the repair or replacement of a fish passageway, the Restoration Order of Conditions shall in addition to the general conditions set forth in 310 CMR 10.14(1) contain the following special conditions:

(a) The property owner is responsible for maintaining and repairing the fishway in good condition so that it will support safe and efficient fish passage in accordance with an operation and maintenance plan approved by the Division of Marine Fisheries. This requirement is a continuing condition that shall be set forth in the Certificate of Compliance.

(b) A post-construction project summary using surveys, a narrative and photographs as needed, that confirm the fishway slope and entrance and exit elevations shall be submitted to and approved by the Division of Marine Fisheries, prior to submittal of a request for a Certificate of Compliance.

**[SECTIONS 10.15-10.20 DO NOT EXISTING IN THE EXISTING REGULATION.]**

### **10.21: Introduction**

310 CMR 10.21 through 10.37 apply to all work subject to M.G.L. c. 131, § 40, M.G.L. c. 131, § 40, which will alter, dredge, fill, or remove any coastal beach, coastal dune, tidal flat, coastal wetland, land subject to coastal storm flowage, coastal bank, land subject to tidal action, or land under an estuary, under a salt pond, under the ocean or under certain streams, ponds, rivers, lakes or creeks within the coastal zone that are anadromous/catadromous fish runs. This Part is in addition to and does not change the provisions set forth in 310 CMR 10.01 through 10.10. 310 CMR 10.21 through 10.37 are intended to ensure that development along the coastline is located, designed, built and maintained in a manner that protects the public interests in the coastal resources listed in M.G.L. c. 131, § 40. The proponent of the work must submit sufficient information to enable the issuing authority to determine whether the proposed work will comply with 310 CMR 10.21 through 10.37. Any proposed work may be subject to the requirements of sections concerning coastal beaches, coastal dunes and land containing shellfish. Thus, in order to determine which provisions apply to a proposed project, 310 CMR 10.00 must be read in its entirety. 310 CMR 10.21 through 10.37 are divided into 16 sections, 44 of which deal with specific coastal resources. Each coastal resource section begins with a preamble. In addition, the requirements for protection of the riverfront area in 310 CMR 10.58 apply within the coastal resource areas. The riverfront area may overlap other coastal resource areas and the performance standards for each resource area must be met. 310 CMR 10.24(7) applies to riverfront areas within coastal resource areas. The Preamble identifies the interests of M.G.L. c. 131, § 40 to which that resource is or is likely to be significant and describes the characteristics or factors of the resource which are critical to the protection of the interest to which the resource is significant. 310 CMR 10.21 through 10.37 are in the form of performance standards and shall



be interpreted to protect those characteristics and resources to the maximum extent permissible under M.G.L. c. 131, § 40.

The performance standards are intended to identify the level of protection the issuing authority must impose in order to contribute to the protection of the interests of M.G.L. c. 131, § 40. It is the responsibility of the issuing authority to order specific measures and requirements for each proposed project which will ensure that the project is designed and carried out consistent with the required level of protection. Such authority must then issue an Order of Conditions which is understandable and enforceable.

#### 10.22: Purpose

310 CMR 10.21 through 10.37 are promulgated pursuant to M.G.L. c. 131, § 40 and are intended to implement it. They are further intended to establish criteria and standards for the uniform and coordinated administration of the provisions of M.G.L. c. 131, § 40; to ensure coordination between the Department and other Executive Office of Energy and Environmental Affairs agencies; and to ensure consideration by the Department of relevant policies, laws or programs of other Executive Office of Energy and Environmental Affairs agencies. 310 CMR 10.21 through 10.37 is, in addition, intended to be consistent with and form a part of the Commonwealth's Coastal Zone Management Program as it has been promulgated and defined by 301 CMR 21.00: *Coastal Zone Management Program Federal Consistency Review Procedures*. 310 CMR 10.21 through 10.37, however, are adopted independently under M.G.L. c. 131, § 40 and would remain in full force and effect in the absence of 301 CMR 20.00: *Coastal Zone Management Program*.

The interpretation and application of 310 CMR 10.21 through 10.37 shall be consistent with the policies of 301 CMR 20.00: *Coastal Zone Management Program* to the maximum extent permissible under M.G.L. c. 131, § 40. M.G.L. c. 21A, § 2 establishes the CZM policies as part of 301 CMR 20.00, and the Department recognizes these policies as state environmental policy, which it will carry out in accordance with M.G.L. c. 21A, § 2. Specifically, 301 CMR 20.99: *Severability*, Coastal Hazards Policy #1, and #2, Energy Policy #1, Habitat Policy #1, Ocean Resources Policy #1, Ports and Harbors Policy #1, #2 and #3, Protected Areas Policy #1 and Water Quality Policy #1 and #2 are applicable to the administration of M.G.L. c. 21A, § 2, but the provisions of the more specific regulations contained in the following sections shall govern, unless the Secretary, pursuant to the conflict resolution procedures of M.G.L. c. 21A, 301 CMR 20.00 of the CZM Regulations, has resolved any conflict and has determined that the CZM policies should or should not apply.

#### 10.23: Additional Definitions for 310 CMR 10.21 through 10.37

The definitions contained in 310 CMR 10.23 apply to and are valid for 310 CMR 10.21 through 10.37. The following definitions are for terms used throughout 310 CMR 10.21 through 10.37. Other terms that are used only in specific sections of 310 CMR 10.21 through 10.37 are defined in those sections.

Act means the Wetlands Protection Act, M.G.L. c. 131, § 40.

Adverse Effect means a greater than negligible change in the resource area or one of its characteristics or factors that diminishes the value of the resource area to one or more of the specific interests of M.G.L. c. 131, § 40, as determined by the issuing authority.

Negligible means small enough to be disregarded.

Applicant means any person giving notice of intention to remove, fill, dredge or alter under M.G.L. c. 131, § 40.

Area of Critical Environmental Concern (ACEC) means an area which has been so designated by the Secretary in accordance with 301 CMR 12.00: *Areas of Critical Environmental Concern*. The term Area for Preservation or Restoration (APR) shall be synonymous with ACEC, as provided in the CZM Regulations.

Building means any residential, commercial, industrial, recreational or other similar structure. For the purposes of 310 CMR 10.00, building may be interpreted to include a large, substantial structure such as a utility tower.

Coastal Engineering Structure means, but is not limited to, any breakwater, bulkhead, groin, jetty, revetment, seawall, weir, riprap or any other structure that is designed to alter wave, tidal or sediment transport processes in order to protect inland or upland structures from the effects of such processes.

Coastal Zone means that area defined in 301 CMR 20.02: *Definitions*.

DMF means the Division of Marine Fisheries.

Grain Size means a measure of the size of a material or rock particle that makes up sediment.

Improvement Dredging means any dredging under a license in an area which has not previously been dredged or which extends the original dredged width, depth, length or otherwise alters the original boundaries of a previously dredged area.

Interests of the Act means the following eight interests specified in M.G.L. c. 131, § 40: public or private water supply, ground water supply, flood control, storm damage prevention, prevention of pollution, protection of land containing shellfish and protection of fisheries and wildlife habitat.

Issuing Authority means either a conservation commission or the Department, as appropriate.

Littoral Processes means the movement of sediment, including gravel, sand or cobbles, along the coast caused by waves or currents.

Maintenance Dredging means dredging under a license in any previously dredged area which does not extend the originally-dredged depth, width, or length but does not mean improvement dredging or backfilling.

Marine Fisheries means any animal life inhabiting the ocean or its adjacent tidal waters or the land thereunder that is utilized by man in a recreational and/or commercial manner or that is part of the food chain for such animal life.

Mean High Water Line means the line where the arithmetic mean of the high water heights observed over a specific 19-year metonic cycle (the National Tidal Datum Epoch) meets the shore and shall be determined using hydrographic survey data of the National Ocean Survey of the U.S. Department of Commerce.

Mean Low Water Line means the line where the arithmetic mean of the low water heights observed over a specific 19-year metonic cycle (the National Tidal Datum Epoch) meets the shore and shall be determined using hydrographic survey data of the National Ocean Survey of the U.S. Department of Commerce.

Minimize means to achieve the least amount of adverse effect that can be attained using ~~B~~best ~~A~~available ~~M~~measures or ~~B~~best ~~P~~practical ~~M~~measures, whichever is referred to in the pertinent section.

"Best ~~A~~available ~~M~~measures" means the most up-to-date technology or the best designs, measures or engineering practices that have been developed and that are commercially available. "Best Practical Measures" means technologies, designs, measures or engineering practices that are in general use to protect similar interests.

NPDES (National Pollutant Discharge Elimination System) Permit means the permit issued jointly by the federal and state governments, in accordance with 33 U.S.C. 1342 and M.G.L. c. 21, § 43, regulating liquid discharges from a point source.

Productivity means the rate of biomass production over a period of time.

Resource Area means any coastal bank; coastal wetland; coastal beach; coastal dune; tidal flat; or any land under the ocean or under an estuary or under a salt pond; land subject to tidal action or coastal 100 year storm flowage; or land under certain streams, ponds, rivers, lakes, or creeks within the coastal zone that are anadromous/catadromous fish runs.

Secretary means the Secretary of Energy and Environmental Affairs.

Significant. A resource area shall be found to be significant to an interest of M.G.L. c. 131, § 40 when such resource area plays a role in the provision or protection, as appropriate, of public or private water supply, ground water supply, flood control, storm damage prevention, prevention of pollution, land containing shellfish, fisheries, and/or wildlife habitat.

Turbidity means the amount of particulate matter suspended in water.

Water Circulation means the pattern of water movement in coastal waters.

#### **10.24: General Provisions**

(1) If the issuing authority determines that a Rresource Aarea is significant to an interest identified in M.G.L. c. 131, § 40 for which no presumption is stated in the Preamble to the applicable section, the issuing authority shall impose such conditions as are necessary to contribute to the protection of such interests.

(a) For work in the buffer zone subject to review under 310 CMR 10.02(2)(b)3., the issuing authority shall impose conditions to protect the interests of the Act identified for the adjacent Rresource Aarea. The potential for adverse impacts to Rresource Aareas from work in the buffer zone may increase with the extent of the work and the proximity to the resource area. The issuing authority may consider the characteristics of the buffer zone, such as the presence of steep slopes, that may increase the potential for adverse impacts on Rresource Aareas. Conditions may include limitations on the scope and location of work in the buffer zone as necessary to avoid alteration of Rresource Aareas. The issuing authority may require erosion and sedimentation controls during construction, a clear limit of work, and the preservation of natural vegetation adjacent to the Rresource Aarea and/or other measures commensurate with the scope and location of the work within the buffer zone to protect the interests of M.G.L. c. 131, § 40. Where a buffer zone has already been developed, the issuing authority may consider the extent of existing development in its review of subsequent proposed work and, where prior development is extensive, may consider measures such as the restoration of natural vegetation adjacent to the Rresource Aarea to protect the interests of M.G.L. c. 131, § 40. The purpose of preconstruction review of work in the buffer zone is to ensure that adjacent Rresource Aareas are not adversely affected during or after completion of the work.

(b) For work in any coastal Resource Area or Buffer Zone along the shoreline, the Applicant shall consider, and the Issuing Authority may require, the restoration, enhancement, or creation of wetland Resource Areas through natural methods and materials as an alternative to coastal engineering structures to promote resiliency along the shoreline. In planning shoreline protection projects, Applicants shall consult the resilientma.org website for the most current mapping and other available information related to shoreline change and sea level rise or similarly reliable local data acceptable to the Issuing Authority. Applicants and Issuing Authorities shall confirm that the proposed project design takes into account the characteristics of the site, including existing Resource Areas, wave energy, tidal range, elevation, intertidal slope, bathymetry, and erosion rate. The Issuing Authority shall require projects be designed to protect or enhance Resource Areas seaward of a seawall or other coastal engineering structure wherever practicable. Notwithstanding the provisions of 310 CMR 10.24(2), the Issuing Authority may allow the conversion of one Resource Area to other Resource Areas to achieve greater shoreline resiliency, but there shall be no loss of Salt Marsh, no alteration of Primary Frontal Dune, and no cumulative net loss of or adverse effects on Resource Areas. The Issuing Authority shall confirm that the project will not cause an increase in flood velocity, volume, or elevation on other properties resulting in storm damage. The purpose of preserving and

"No alteration of primary frontal dune" may be overly restrictive, including no vegetation destruction, even if the project is net positive for the resource area. "No Adverse Effects" would be more flexible

What would be acceptable methods to address cumulative net loss/adverse affects on Resource Areas?

Can "no loss" be interpreted as "no net loss?"

enhancing the adaptive capacities of Resource Areas whenever feasible is to provide coastal property owners with an effective means of shoreline protection in light of rising sea levels and increasing severity of coastal storms, while protecting the interests of M.G.L. c. 131, § 40.

(2) When the issuing authority determines that a project in one ~~R~~resource ~~A~~area would adversely affect another ~~R~~resource ~~A~~area, the issuing authority shall impose such conditions as will protect the interest to which each resource are significant to the same degree as required in 310 CMR 10.00 concerning each ~~R~~resource ~~A~~area.

(3) A determination which finds that a resource area is not significant to an interest to which it is presumed in 310 CMR 10.21 through 10.37 to be significant, or is significant to an interest to which it is presumed to be not significant, shall be made on Form 7. No such determination shall be effective unless a copy of this form and the accompanying written explanation for the determination required by 310 CMR 10.00 is sent on the day of issuance to the appropriate regional office of the Department.

(4) (a) 310 CMR 10.21 through 10.37 do not change the requirement of any other Massachusetts statute or by-law. A proposed project must comply with all applicable requirements of other federal, state and local statutes and by-laws, in addition to meeting the requirements of 310 CMR 10.00. Examples of such laws which may be applicable are the Coastal Restrictions Act (M.G.L. c. 130, § 105), the Ocean Sanctuaries Act (M.G.L. c. 132A, §§ 13 through 16 and 18), the Mineral Resources Act (M.G.L. c. 21, §§ 54 through 58), the Massachusetts Clean Water Act (M.G.L. c. 21, §§ 26 through 53), the Waterways laws (M.G.L. c. 91), the Massachusetts Environmental Policy Act (M.G.L. c. 30, §§ 61 through 62H), the act establishing the Martha's Vineyard Commission (St. 1974, c. 637) and the Scenic Rivers Act (M.G.L. c. 21, § 2. 17B).

(b) When the site of a proposed project is subject to a Restriction Order which has been duly recorded under the provisions of M.G.L. c. 130, § 105, such a project shall conform to 310 CMR 10.21 through 10.37.

(c) If an NPDES permit for any new point-source discharge has or will be obtained prior to the commencement of the discharge, the effluent limitations established in such permit shall be deemed to satisfy the water quality standards established in any section of 310 CMR 10.21 through 10.37 relative to the effects of the new point-source discharge on water quality. Such effluent limitations shall be incorporated or shall be deemed to be incorporated into the Order of Conditions.

(5) (a) When any area subject to 310 CMR 10.21 through 10.37 has been designated an Area of Critical Environmental Concern by the Secretary of Energy and Environmental Affairs pursuant to 301 CMR 20.00: *Coastal Zone Management Program*, and when the Secretary has made a finding of the significance of the area to one or more interests of M.G.L. c. 131, § 40, the issuing authority shall presume that such area is significant to those interests.

(b) When any portion of a designated Area of Critical Environmental Concern is determined by the Issuing Authority to be significant to any of the interests of M.G.L. c. 131, § 40, any proposed project in or impacting that portion of the Area of Critical Environmental Concern shall have no adverse effect upon those interests, except as

provided under 310 CMR 10.25(4) for maintenance dredging, under 310 CMR 10.11 through 10.14, 10.24(8) and 10.53(4) for Ecological Restoration Projects, and under 310 CMR 10.25(3) for improvement dredging conducted by a public entity for the sole purpose of the maintenance or restoration of historic, safe navigation channels or turnaround basins of a minimum length, width, and depth consistent with a Resource Management Plan adopted by the municipality(ies) and approved by the Secretary of the Executive Office of Energy and Environmental Affairs.

(6) Where any section of 310 CMR 10.00 provides that a proposed project “may be permitted” in certain circumstances, no such project shall be undertaken until all of the usual procedures required by M.G.L. c. 131, § 40 and 310 CMR 10.21 through 10.37 have been followed and a Final Order has been issued approving the work. The Issuing Authority shall impose such conditions on such projects as may be necessary to contribute to the protection of the interests of M.G.L. c. 131, § 40. Notwithstanding the foregoing, when the Issuing Authority determines that a project meets the eligibility criteria for a Restoration Order of Conditions, the Issuing Authority shall impose only the conditions set forth in the applicable provisions of 310 CMR 10.00. As set forth in 310 CMR 10.05(6)(b)-, a Restoration Order of Conditions may reference the plans and specifications approved by the Issuing Authority. ~~If the Department is the Issuing Authority for a project that is the subject of a Combined Application, the Department may attach to the Restoration Order of Conditions any conditions that the Department has authority to impose pursuant to 310 CMR 9.00: Waterways and 314 CMR 9.00: 401 Water Quality Certification for Discharge of Dredged or Fill Material, Dredging, and Dredged Material Disposal in Waters of the United States Within the Commonwealth to the extent they are applicable.~~

(7) Notwithstanding the provisions of 310 CMR 10.25 through 10.3~~56~~, the issuing authority may issue an Order of Conditions and impose such conditions as will contribute to the interests identified in M.G.L. c. 131, § 40, permitting the limited projects listed in 310 CMR 10.24(7)(a) through (c), although no such project may be permitted which will have any adverse effect on specified habitat sites of Rare Species, as identified by procedures established under 310 CMR 10.37. In determining whether to exercise its discretion to approve the limited projects listed in 310 CMR 10.24(7)(a) through (c), the Issuing Authority shall consider the following factors: the magnitude of the alteration and the significance of the project to the interests identified in M.G.L. c. 131, § 40, the availability of reasonable alternatives to the proposed activity, and the extent to which adverse impacts are minimized and the extent to which mitigation measures including replication or restoration are provided to contribute to the protection of the interests identified in M.G.L. c. 131, § 40. Adverse effects to be minimized include without limitation any adverse impacts on the relevant interests of M.G.L. c. 131, § 40, due to changes in wave action or sediment transport or adjacent coastal banks, coastal beaches, coastal dunes, salt marshes or barrier beaches. The provisions of 310 CMR 10.24(7)(a) through (c) are not intended to prohibit the Issuing Authority from imposing such additional conditions as are necessary to contribute to the interests of M.G.L. c. 131, § 40 where the indicated minimizing measures are not sufficient.

(a) The construction, reconstruction, operation and maintenance of the following structures associated with and essential to an electric generating facility may be permitted as a limited project pursuant to 310 CMR 10.24(7) provided the project is proposed to be



constructed and operated in accordance with all applicable provisions of 310 CMR 10.24(1) through (6), (7)(a)1. through 6., and (9) and (10):

1. Conduits for cooling water intake or discharge, which may be emplaced by trenching with a minimum depth of four feet of cover below original grade, except where they traverse salt ponds, salt marshes and barrier beaches, in which cases they may be emplaced only by tunneling;
  2. Headwalls and other essential structures appurtenant to 310 CMR 10.24(7)(a)1., except that these structures may not be constructed in salt marshes, salt ponds or barrier beaches;
  3. Pipelines or other conduits for the transmission of utilities essential to the facility (water, fuel, sewage, and power), which may be emplaced by trenching with a minimum depth of four feet of cover below original grade, or which may be carried above grade on pilings or similar supports, but only if the applicant demonstrates that there will be no adverse effect on the Resource Area by the construction, operation, and maintenance of such pipelines or other conduits. If such pipelines or conduits are emplaced through a Resource Area which adverse effects are required to be minimized by 310 CMR 10.25 through 10.36~~5~~, then that standard shall be applied, except that in no case shall fuel or sewage lines be operated or be designed to be operated so that they will have an adverse effect on the Resource Area.
  4. Structures necessary for navigation, berthing and protection of such vessels and vessel movements as may be necessary to the operation of the facility, but only on coastal banks, coastal beaches, rocky intertidal shores or land under the ocean;
  5. Structures for maritime dependent accessory activities essential to the facility, but only on coastal banks, coastal beaches, rock intertidal shores or land under the ocean;
  6. Coastal engineering structures necessary to the protection of such other structures as may be permitted under 310 CMR 10.24, but only on coastal banks, coastal beaches, rocky intertidal shores, or land under the ocean;
- (b) The construction, reconstruction, operation and maintenance of underground and overhead public utilities, limited to electrical distribution or transmission lines, or communication, sewer, water and natural gas lines, may be permitted as a limited project pursuant to 310 CMR 10.24(7) provided that the project complies with all applicable provisions of 310 CMR 10.24(1) through (6), (9) and (10), and (7)(b)1. through 9.:
1. For local distribution or connecting lines not reviewed by the Energy Facilities Siting Council, the Issuing Authority determines that alternative routes with fewer adverse effects are not physically or legally feasible;
  2. Adverse effects during construction are minimized using the Best Available Measures, which may include such equipment as Bailey bridges and helicopters;
  3. The surface vegetation and contours of the area are substantially restored;
  4. When a trench is made in a Salt Marsh, all spoil is removed from the Salt Marsh upon excavation. Clean sand or other appropriate material shall be used to restore the level of the trench to that of the surrounding undisturbed Salt Marsh. The surface vegetation shall be restored substantially to its original condition by immediately transplanting appropriate marsh plant nursery stock once

construction is completed. Baffles of concrete, clay or other non porous material shall be placed in the trench, if necessary, to prevent groundwater excursion.

During the first growing season, periodic maintenance of the marsh restoration area shall be required and shall include at least the replacement of non surviving transplants and the removal of all deposits of debris and organic litter.

During construction, equipment such as Bailey bridges and helicopters shall be used to minimize, using ~~B~~best ~~A~~available ~~M~~measures, the adverse effects of construction on the Salt Marsh. All vehicles shall be used only on swamp mats or in such a way as to prevent tire marks, trenches, or ruts;

5. No utility shall traverse a Salt Marsh unless the applicant has shown that any thermal influence on the Salt Marsh of such line subsequent to the project being completed will not alter the natural freezing and thawing patterns of the top 24 inches of the Salt Marsh surface. Thermal sand, concrete or other suitable material may be used to backfill the trench to a point no less than 24 inches below grade. Above this level, clean sand shall be used to restore the level of the trench to that of the surrounding undisturbed Salt Marsh;

6. No permanent access roads shall be permitted except in Designated Port Areas; and

7. All sewer lines shall be constructed so as to be watertight so as to prevent inflow and leakage.

8. All fuel lines shall be double cased and watertight so as to prevent inflow and leakage.

9. The conduits or structures shall be designed to minimize, using the ~~B~~best ~~A~~available ~~M~~measures, adverse effects on the relevant interests of M.G.L. c. 131, § 40 due to changes in wave action or sediment transport or adjacent coastal banks, coastal beaches, coastal dunes, salt marshes or barrier beaches.

(c) The following projects may be permitted as a limited project pursuant to 310 CMR 10.24(7) provided the project complies with all applicable provisions of 310 CMR 10.24(1) through (6) and (9) and (10):

1. Maintenance and improvement of existing public roadways, but limited to widening less than a single lane, adding shoulders, correcting substandard intersections, and improving drainage systems. Existing public roadways may be elevated to reduce impacts from sea level rise or coastal storm flowage; provided that:

a. the width of the elevated roadway surface is the same as the existing roadway surface;

— ii.b. unavoidable loss of Salt Marsh, if necessary for adjustment of the toe of slope, is mitigated by the restoration or creation of an equivalent area of Salt Marsh, with at least 75% of the area established with indigenous salt marsh plant species within two growing seasons, and, prior to the vegetative reestablishment, any exposed soil is temporarily stabilized to prevent erosion in accordance with standard NRCS methods;

— ii.c. the existing hydrology up to and including the highest spring tide of the year between both sides of the roadway is maintained, there is no restriction of flow and no increase in flood stage or velocity, and the existing hydrology is improved where not adequately sustaining the Salt

Marsh; provided the Issuing Authority has determined that no adverse flooding impacts to landward properties will occur; and  
—ivd. the work avoids and minimizes alterations of other coastal Resource Areas to the maximum extent practicable.

Does this include Percipitation based reverine flooding? In certain scenarios a raised road could impound more volume, increase upstream flooding. Please clarify.

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#### 10.24(7)(c)

7. The construction of a new access roadway, or the improvement, repair and/or replacement of an existing access roadway, needed to transport equipment to a renewable energy ~~P~~project ~~S~~site, provided that it is carried out in accordance with the following general conditions and any additional conditions deemed necessary by the issuing authority. Such projects shall be designed, constructed, implemented, operated, and maintained to meet all of the following standards to the maximum extent practicable:

- a. The work is limited to the following coastal resource areas or portions thereof: the portion of Land Subject to Coastal Storm Flowage that is outside the Velocity Zone, Designated Port Areas, and Banks of or Land under the Ocean, Ponds, Streams, Rivers, Lakes or Creeks that Underlie an Anadromous/Catadromous Fish Run.
- b. Hydrological changes to resource areas shall be minimized.
- c. Best management practices shall be used to minimize adverse impacts during construction. An applicant shall be presumed to use best management practices to minimize adverse impacts during construction if he or she implements erosion and sediment controls in accordance with the *Massachusetts Erosion and Sediment Control Guidelines*. This presumption may be rebutted by credible evidence from a competent source.
- d. No access road or other structure or activity shall restrict flows so as to cause an increase in flood stage or velocity.
- e. No change in the existing surface topography or the existing soil and surface water levels shall occur except for temporary access roads.
- f. Temporary structures and work areas in resource areas shall be removed within 30 days of completion of the work. Temporary alterations to resource areas shall be substantially restored to preexisting hydrology and topography. At least 75% of the surface of any area of disturbed vegetation shall be reestablished with indigenous wetland plant species within two growing seasons and prior to said vegetative reestablishment any exposed soil in the area of disturbed vegetation shall be temporarily stabilized to prevent erosion. Surface areas shall be presumed to be stabilized to prevent erosion if the applicant implements the procedures set forth in the *Massachusetts Erosion and Sediment Control*

*Guidelines.* This presumption may be rebutted by credible evidence from a competent source.

g. Work in resource areas shall occur only during those periods when the ground is sufficiently frozen, dry, or otherwise stable to support the equipment being used.

h. Slash, branches, and limbs resulting from cutting and removal operations shall not be placed within 25 feet of the bank of any water body.

8. Public Shared Use Paths within abandoned rail beds: The construction of a Public Shared Use Path of the minimum practical width within the footprint of the rail bed, or the minor improvement, repair, and/or replacement of an existing Public Shared Use Path within the footprint of the rail bed; provided that it is carried out in accordance with the following conditions and any additional conditions deemed necessary by the Issuing Authority. The Issuing Authority may approve a proposed route outside the footprint of the rail bed if a different alignment within the right-of-way is advantageous to reduce Resource Area alterations. Public Shared Use Paths are accessible paved and unpaved paths restricted solely to pedestrian and non-motorized vehicle travel (with the exception of wheelchairs, other power-driven mobility devices by individuals with a mobility disability, electric bicycles and electric scooters, emergency vehicles, and vehicles performing periodic maintenance). Accessible means a surface that complies with the Americans with Disabilities Act regulations, 28 CFR Part 35 and Part 36. Public Shared Use Paths do not include sidewalks intended solely for pedestrian use and do not include parking areas for motorized vehicles. Public Shared Use Paths shall be designed, constructed, operated, and maintained to meet all of the following standards:

- a. Any portion of a salt marsh within a designated Area of Critical Environmental Concern is presumed to be significant to the interests of M.G.L. c. 131, § 40, and no proposed Public Shared Use Path projects shall have an adverse effect upon those interests.
- b. No Public Shared Use Path, associated structure, or activity shall restrict flow so as to cause an increase in flood stage or velocity.
- c. Compensatory flood storage shall be provided for all flood storage volume that will be lost within the Special Flood Hazard Area within any portion of a wetland Resource Area, for any work located upgradient of a stream or wetland crossing, culvert, or bridge.
- d. Construction work in Resource Areas shall occur only during those periods when the ground is sufficiently frozen, dry, or otherwise stable enough to support the equipment being used.
- e. During construction, slash, branches, and limbs resulting from cutting and removal operations shall not be placed within 25 feet of the bank or any body of water.
- f. For any permanent alterations to Resource Areas, mitigation measures shall be implemented that contribute to the protection of the interests identified in M.G.L. c. 131 § 40, either in accordance with existing performance standards to the maximum extent practicable or an equivalent level of environmental protection where square footage is not a relevant measure, such as restoration or preservation. Mitigation may be offsite, but must be considered in the following order: same Project Site, same Project Locust, adjacent site, same wetland Resource Area, same municipality, and the same stream reach within the Hydrologic Unit Map (HUC) 12 sub-watershed. All instances of

Offsite Mitigation for Redevelopment shall be within the same HUC 12 sub-watershed.

g. All temporary alterations to Resource Areas and Buffer Zones shall be restored to preexisting hydrology and topography, and replanted with noninvasive native vegetation.

h. A separate NOI may be filed either concurrently to the filing of the NOI for the project, or after the Order is issued, for vegetation management and other activities as defined in 310 CMR 10.02(2)(b)2.i.-v. in wetlands Resource Areas. Orders of Conditions shall be valid for five years and may be extended by the issuing authority for one or more years up to five additional years, pursuant to 310 CMR 10.05(8).

i. After a Certificate of Compliance is obtained, minor activities as defined at 310 CMR 10.02(2)(b)2. may take place in the Buffer Zone and Riverfront Area to provide for vegetation management; provided that any such work is restricted to hand methods to the maximum extent practicable. No snow clearing beyond the shoulder shall occur, and the application of deicing and anti-icing agents and sanding is prohibited.

j. Stormwater shall be managed to the maximum extent practicable in accordance with 310 CMR 10.05(6)(m). A long-term operations and maintenance plan prepared in accordance with 310 CMR 10.05(6)(k)9. Shall also be provided.

k. Best Management Practices shall be used to minimize adverse impacts during construction, including prevention of erosion and siltation of adjacent water bodies and wetlands in accordance with the construction period erosion, sedimentation and pollution prevention plan (310 CMR 10.05(6)(k)8.).

9. The relocation of an existing public roadway, railway, or other public transportation infrastructure, and any associated utilities, when necessary to mitigate or avoid flooding or coastal storm damage; the relocation or reconfiguration of an existing Water-Dependent Use facility when necessary to mitigate or avoid flooding or coastal storm damage; or the construction, reconstruction, or reconfiguration of Water-dependent Use structures determined to be functionally dependent by the building official under 780 CMR: *Massachusetts State Building Code* and Referenced Standard ASCE 24-14. (Functionally dependent means a use which cannot perform its intended purpose unless it is located or carried out in close proximity to water. The term includes only docking facilities, port facilities that are necessary for the loading and unloading of cargo or passengers, and ship building and ship repair facilities, but does not include long-term storage or related manufacturing facilities.) The work shall be designed, constructed, implemented, operated, and maintained in accordance with the following general conditions and any additional conditions deemed necessary by the Issuing Authority:

a. Any work in a Salt Marsh shall meet the performance standards of 310 CMR 10.32, and shall not otherwise directly or indirectly impact the hydrology of a Salt Marsh;

b. The selection of a design shall be based on an alternatives analysis that evaluates all practicable alternatives to avoid and minimize adverse effects on Resource Areas and to minimize repetitive reconstruction. Alternatives shall include, at a minimum, improvement of an alternate route and relocation landward that avoids and minimizes adverse effects on other Resource Areas. When a road or facility is relocated, the former

How would this play out relative to the new Requirements in Land Subject to Coastal Storm Flowage?



site shall be restored to natural conditions, including the restoration or creation of any Resource Areas that naturally would occur at the site;

To the best  
extent  
practicable

c. **Best Management Practices shall be used to minimize adverse impacts during construction.** Best Management Practices used in accordance with the Massachusetts Erosion and Sediment Control Guidelines will be presumed to meet this standard;

d. Construction shall not take place during Time of Year Restrictions as identified in 310 CMR 10.35(4);

e. No road, other structure, or activity shall restrict flows or cause an increase in flood stage or velocity; and

f. Temporary structures and work areas in Resource Areas shall be removed as soon as possible but no more than 30 days after the scheduled completion of the work. Temporary alterations to Resource Areas shall be restored to preexisting hydrology, topography, and vegetation.

(8) Ecological Restoration Limited Project.

(a) Notwithstanding the requirements of 310 CMR 10.25 through 10.3~~6~~5, 10.54 through 10.58, and 10.60, the Issuing Authority may issue an Order of Conditions permitting an Ecological Restoration Project listed in 310 CMR 10.24(8)(e) as an Ecological Restoration Limited Project and impose such conditions as will contribute to the interests identified in M.G.L. c. 131, § 40, provided that:

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...

**10.32: Salt Marshes**

(1) Preamble. Salt marshes are significant to protection of marine fisheries, wildlife habitat, and where there are shellfish, to protection of land containing shellfish, and prevention of pollution and are likely to be significant to storm damage prevention and ground water supply.

A salt marsh produces large amounts of organic matter. A significant portion of this material is exported as detritus and dissolved organics to estuarine and coastal waters, where it provides the basis for a large food web that supports many marine organisms, including finfish and shellfish as well as many bird species. Salt marshes also provide a



spawning and nursery habitat for several important estuarine forage finfish as well as important food, shelter, breeding areas, and migratory and overwintering areas for many wildlife species.

Salt marsh plants and substrate remove pollutants from surrounding waters. The network of salt marsh vegetation roots and rhizomes binds sediments together.

The sediments absorb chlorinated hydrocarbons and heavy metals such as lead, copper, and iron. The marsh also retains nitrogen and phosphorous compounds, which in large amounts can lead to algal blooms in coastal waters.

The underlying peat also serves as a barrier between fresh ground water landward of the salt marsh and the ocean, thus helping to maintain the level of such ground water.

Salt marsh cord grass and underlying peat are resistant to erosion and dissipate wave energy, thereby providing a buffer that reduces wave damage.

When a proposed project involves the dredging, filling, removing or altering of a salt marsh, the issuing authority shall presume that such area is significant to the interests specified above. This presumption may be overcome only upon a clear showing that a salt marsh does not play a role in the protection of marine fisheries or wildlife habitat, prevention of pollution, ground water supply, or storm damage prevention, and if the issuing authority makes a written determination to such effect.

When a salt marsh is significant to one or more of the interests specified above, the following characteristics are critical to the protection of such interest(s):

- (a) the growth, composition and distribution of salt marsh vegetation, (protection of marine fisheries and wildlife habitat, prevention of pollution, storm damage prevention);
- (b) the flow and level of tidal and fresh water (protection of marine fisheries and wildlife habitat, prevention of pollution); and
- (c) the presence and depth of peat (ground water supply, prevention of pollution, storm damage prevention).

## (2) Definitions.

Salt Marsh means a coastal wetland that extends landward up to the highest high tide line, that is, the highest spring tide of the year, and is characterized by plants that are well adapted to or prefer living in, saline soils. Dominant plants within salt marshes typically include salt meadow cord grass (*Spartina patens*) and/or salt marsh cord grass (*Spartina alterniflora*), but may also include, without limitation, spike grass (*Distichlis spicata*), high-tide bush (*Iva frutescens*), black grass (*Juncus gerardii*), and common reedgrass (*Phragmites*). A salt marsh may contain tidal creeks, ditches and pools.

Spring Tide means the tide of the greatest amplitude during the approximately 14-day tidal cycle. It occurs at or near the time when the gravitational forces of the sun and the moon are in phase (new and full moons).

WHEN A SALT MARSH IS DETERMINED TO BE SIGNIFICANT TO THE PROTECTION OF MARINE FISHERIES, THE PREVENTION OF POLLUTION, STORM Effective 10/24/2014 310 CMR: DEPARTMENT OF ENVIRONMENTAL PROTECTION DAMAGE PREVENTION OR GROUND WATER SUPPLY, 310 CMR 10.32(3) THROUGH (6) SHALL APPLY:

(3) A proposed project in a salt marsh, on lands within 100 feet of a salt marsh, or in a body of water adjacent to a salt marsh shall not destroy any portion of the salt marsh and shall not have an adverse effect on the productivity of the salt marsh. Alterations in growth, distribution and composition of salt marsh vegetation shall be considered in evaluating adverse effects on productivity. 310 CMR 10.32(3) shall not be construed to prohibit the harvesting of salt hay.

(4) Notwithstanding the provisions of 310 CMR 10.32(3), a small project within a salt marsh, such as an elevated walkway or other structure which has no adverse effects other than blocking sunlight from the underlying vegetation for a portion of each day, may be permitted if such a project complies with all other applicable requirements of 310 CMR 10.21 through 10.37.

(5) Notwithstanding the provisions of 310 CMR 10.32(3), a project which will restore or rehabilitate a salt marsh, ~~or create a salt marsh,~~ may be permitted in accordance with 310 CMR 10.11 through 10.14, 10.24(8) and/or 10.53(4). Creation of a new salt marsh or conversion of another Resource Area to expand a salt marsh may be permitted; provided that the design is in accordance with Best Available Measures as defined in 310 CMR 10.04, notwithstanding the performance standards for the other Resource Area.

(6) Notwithstanding the provisions of 310 CMR 10.32(3) through (5), no project may be permitted which will have any adverse effect on specified habitat sites of Rare Species, as identified by procedures established under 310 CMR 10.37.

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**(10.36: ~~Reserved. Variance Provision is Found at 310 CMR 10.05(10))~~Land Subject to Coastal Storm Flowage**

(1) Preamble. Land Subject to Coastal Storm Flowage is likely to be significant to storm damage prevention and flood control. Land Subject to Coastal Storm Flowage reduces storm damage and flooding by diminishing and buffering the high energy effects of storms within the coastal floodplain. Velocity Zones (V-Zones) and Moderate Wave Action Zones (MoWA Zones), the seaward areas of Land Subject to Coastal Storm Flowage, are particularly subject to hazardous flooding, wave impact, erosion, backrush, sediment transport, and scour. The V-Zones and MoWA Zones within Land Subject to Coastal Storm Flowage are per se significant to storm damage prevention and flood control.

Wave energy and flood water movement are affected by topography, soil, and sediment characteristics (e.g., roughness, composition, size, and density), and the erodibility, transportability, and permeability of the land surface within Land Subject to Coastal Storm Flowage. Vegetation helps to prevent erosion, slow moving water, and filter sediments. Impervious surfaces and even smooth pervious surfaces can exacerbate wave energy and flooding by increasing the velocity of flood waters. The low-lying topography of Land Subject to Coastal Storm Flowage allows flood waters to spread laterally and landward, dissipating wave energy.

Not really cost-effective tools to collect and model things at this scale for engineering and permitting evaluation

The placement of solid fill structures or buildings within Land Subject to Coastal Storm Flowage may cause the refraction, diffraction, or reflection of waves, forcing wave energy and moving water onto adjacent properties. Development within V-Zones and MoWA Zones of Land Subject to Coastal Storm Flowage may increase the velocity and height of storm waves causing them to break further inland, increasing storm damage and flooding. Coastal flood water may be retained within basins which confine flood waters, preventing the return flow of the storm surge to the ocean and contributing to storm damage prevention and flood control.

increase the velocity of waves? Would think any obstructions would dissipate some of that energy. Basins are good? To prevent return flow?

Land Subject to Coastal Storm Flowage has a vertical dimension, extending from the ground to the base flood elevation of the 1% annual chance storm, storm of record, or surge of record. Where wave velocities are moderate, elevation of buildings on Open Piles above the base flood elevation can maintain more natural floodplain functions and provide a margin of safety for larger storms and sea level rise.

The V-Zone is the area within Land Subject to Coastal Storm Flowage that is most frequently subject to extreme wave action during coastal storms. The V-Zone may extend over other coastal Resource Areas, such as Coastal Beach and Dune, and the shape and location of these Resource Areas may change seasonally, with storm events, and with sea level rise. In the V-Zone, where wave action is most frequent and intense, Open Piles necessary to support buildings and other structures are likely to cause scour from the turbulence of asymmetrical waves and swash. Additionally, human activities associated with buildings typically result in loss of vegetation. During and after storm events, these areas cannot naturally recover as readily as undisturbed flood zones, frequently resulting in storm surge waves breaking further landward. When this occurs, the V-Zone within Land Subject to Coastal Zone Flowage is more susceptible to erosion because it becomes less effective at absorbing wave energy. Except as otherwise provided in 310 CMR 10.36(4), to prevent these conditions and to protect the interests of flood control and storm damage protection, new buildings, even on Open Piles, are not allowed in the V-Zone under these regulations.

Coastal banks are desired to provide sediment to seaward resource areas, but not coastal floodplains?

Other coastal and sometimes inland Resource Areas may be found within the boundaries of Land Subject to Coastal Storm Flowage and are regulated separately, with the exception of Rocky Intertidal Shore and Coastal Banks which are determined not to be significant to storm damage prevention or flood control because they do not supply sediment to Coastal Beach, Coastal Dune, or Barrier Beach. Except as otherwise provided in 310 CMR 10.36(4), the requirements for the elevation of structures on pile-supported foundations, which is required to dissipate the wave energy within V-Zones and MoWA Zones, apply within any coastal or inland Resource Areas within Land Subject to Coastal Storm Flowage. The area within 100 feet of other coastal or freshwater wetland Resource Areas is particularly important to protecting those Resource Areas due to potential adverse effects from development.

unclear what the implications of being regulated separately are, and how RIS and non-sediment supplying CB are regulated within this section. Does this refer only to the buffer zone provisions below - ie, buffer zones of RIS and non-sed CB are not included?

When a proposed activity involves dredging, filling, removal, or alteration of Land Subject to Coastal Storm Flowage within the V-Zone or MoWA Zone, these zones are per se significant to the interests of storm damage prevention and flood control. In other areas of Land

Subject to Coastal Storm Flowage, the Issuing Authority shall presume that the area is significant to the interests of storm damage prevention and flood control. This presumption may be overcome only upon a clear showing that such other areas of Land Subject to Coastal Storm Flowage do not play a role in storm damage prevention or flood control and if the Issuing Authority makes a written determination to that effect.

What methods would be acceptable to prove this, and that a project improves or minimizes impacts to the characteristics below?

When Land Subject to Coastal Storm Flowage is significant to storm damage prevention and flood control, the following characteristics are critical to the protection of those interests:

- (a) The ability of the area to dissipate wave energy and to decrease the velocity of moving water;
- (b) The ability of the area to receive coastal flood waters that spread laterally and landward and percolate downward into the soil and sediment;
- (c) The ability of the area to allow flood water to flow across the landform without redirecting or channeling flow or increasing the velocity of the flood waters;
- (d) The ability of the vegetative cover in the area to slow moving water, thereby reducing erosion and sedimentation; and
- (e) the ability of the area to store flood waters that are confined by a natural or manmade feature (e.g., seawall, culvert, bridge, dike, bulkhead, revetment, or topographic depression) until such time as it can slowly return to the ocean or infiltrate into the ground.

This is still unclear, are we talking compensatory coastal flood storage?

(2) Definitions. (See also definitions at 310 CMR 10.04, e.g., Land Subject to Coastal Storm Flowage, Primary Frontal Dune, Fill, Velocity Zone or V-Zone, Special Flood Hazard Area, Redevelopment, and definitions at 310 CMR 10.23).

A Zone or AE Zone mean areas subject to inundation by a 1%-annual-chance flood with wave heights and/or wave run-up depths less than 3 feet. The "E" in AE indicates that a predicted elevation of water has been determined and is designated on the FIRM.

AO Zone means an overwash area, usually sheet flow on sloping terrain, for which flood depths range from 1 to 3 feet and flow velocities and paths vary.

FIRM means a Flood Insurance Rate Map, prepared by FEMA as part of the National Flood Insurance Program, that depicts flood zones.

Historic Structure means any structure that is listed individually in the National Register of Historic Places, preliminarily determined by the U.S. Secretary of the Interior as meeting the requirements for individual listing on the National Register, or certified or preliminarily determined by the U.S. Secretary of the Interior as contributing to the historical significance of a registered historic district or a district preliminarily determined by the U.S. Secretary of the Interior to qualify as a registered historic district. Historic Structure also means any structure individually listed on the Massachusetts Register of Historic Places or individually listed on a local inventory of historic places in communities with historic preservation programs that have been certified by the Massachusetts Historical Commission.

Minimal Wave Action Zone or MiWA Zone means the area of Land Subject to Coastal Storm Flowage where base flood wave heights are less than 1.5 feet.

Moderate Wave Action Area or MoWA Zone means the area of Land Subject to Coastal Storm Flowage where base flood wave heights are equal to or greater than 1.5 feet but less than 3 feet.

One-Percent-Annual-Chance Flood (or 1% Annual Chance Flood) means the flood having a one percent chance of being equaled or exceeded in a given year (formerly referred to as the 100-year flood).

Open Piles means the vertical structures supporting an elevated building, without grade beams below the base flood elevation, without concrete footings or pads, and where the space below the building is free of obstruction.

Substantial Damage means as defined and determined by the building official under 780 CMR: *Massachusetts State Building Code*.

Substantial Improvement means as defined and determined by the building official under 780 CMR: *Massachusetts State Building Code*.

Substantial Repair of a Foundation means as defined and determined by the building official under 780 CMR: *Massachusetts State Building Code*.

(3) Boundaries. The boundaries of the V-Zone, MoWA Zone, and MiWA Zone within Land Subject to Coastal Storm Flowage shall be determined by reference to the currently effective or preliminary FIRM (after the FEMA appeal period has passed) prepared by FEMA (except for any portion of a preliminary map that is the subject of an appeal to FEMA), including any letter of map revision obtained by the Applicant from FEMA. The boundary between the MoWA Zone and the MiWA Zone may be referred to as the Limit of Moderate Wave Action (LiMWA) on the FIRM. These boundaries shall be presumed accurate. This presumption is rebuttable and, to show flood zones are more landward or expansive, may be overcome by credible evidence from a competent source, such as the methods and calculations in the most recent FEMA Guidelines and Specifications for Flood Risk Analysis and Mapping, other FEMA operating guidance, or information from the U.S. Geologic Survey Flood Event Viewer. The Issuing Authority may consider historical evidence relevant to the surge of record or storm of record greater than the 1% Annual Chance Flood to determine the landward boundary of Land Subject to Coastal Storm Flowage shown on the FIRM. The Issuing Authority shall use the best available information in determining the boundaries for purposes of applying the performance standards.

Seems like this is saying you can use FEMA methods (without doing a LOMR) to prove flooding is worse than shown, but not to show it is less than shown in a FIRM. If correct, this is going to spur a significant interest in LOMRs by property owners, especially where FEMA FIRMS are based on limited transects.

(4) Application of Performance Standards. The performance standards at 310 CMR 10.36(5)-(7) apply to new development and the performance standards at 310 CMR 10.36(8) apply to Redevelopment within Land Subject to Coastal Storm Flowage which does not overlie another coastal Resource Area, with certain additions and exceptions:

(a) The construction of new buildings proposed within the MoWA Zone or an AO Zone adjacent to a V-Zone shall be designed to allow flood water to flow completely unobstructed under the building during the 1% annual chance storm, with a minimum of

what about redevelopment that does overlie another coastal resource area?



two feet above the 1% annual chance base flood elevation, or the elevation required to meet the standards of 310 CMR 10.28 (Coastal Dunes) or 310 CMR 10.29 (Barrier Beaches), whichever elevation is higher. Open Piles shall not be considered an obstruction. The requirement to elevate new buildings two feet above the 1% annual chance base flood elevation may be waived for properties where demonstration can be made that, due to topography or proximity of surrounding structures, such buildings will not contribute to loss of Land Subject to Coastal Storm Flowage function of flood control and storm damage prevention to the project site and adjacent properties. This waiver is intended to be employed only in exceptional cases. Reconstruction or Redevelopment of buildings in the V-Zone shall conform to 310 CMR 10.36(8). The construction of new buildings in the V-Zone is prohibited.

What methods would one use to demonstrate this?

(b) For work on a Coastal Bank that does not supply sediment to Coastal Beach, Coastal Dune, or Barrier Beach, the provisions of 310 CMR 10.36(5) through (8) and 310 CMR 10.30 shall apply.

(c) -For work on a Rocky Intertidal Shore, the provisions of 310 CMR 10.36(5) through (8) and 310 CMR 10.31 shall apply.

(d) For work in a Designated Port Area related to water-dependent industrial uses as defined in 310 CMR 9.12(2)(b), the provisions of 310 CMR 10.36 shall not apply.

Big carve out

Any other work proposed within both Land Subject to Coastal Storm Flowage and another Coastal Resource Area that is not covered by 310 CMR 10.36(4)(a)-(c) shall meet the performance standards for the other Coastal Resource Area and not the standards at 310 CMR 10.36(5) through (8).

Confusing, what does this mean?

(5) Adverse Effects in the V-Zone and MoWA Zone. No activity within a V-Zone or MoWA Zone shall have an adverse effect on the critical characteristics identified in 310 CMR 10.36(1)(a) through (e) by:

What methods would be acceptable to prove this, and that a project improves or minimizes impacts to the characteristics below? Cost-effectively?

(a) Impeding the ability of the area to dissipate wave energy and decrease the velocity of moving water by altering the area's topography, vegetation, soil, and sediment characteristics (e.g., roughness, composition, size, shape and density of material) and the erodibility, transportability, and permeability of the soil and sediment;

(b) Causing unnatural redirection, refraction, diffraction, and/or reflection of coastal flood waters that cause or exacerbate storm damage from erosion, scour, and backrush;

(c) Adding fill or a structure that redirects or channelizes flow and increases velocity of the flood waters, which may cause erosion, scour, and increased storm damage to adjacent areas;

(d) Interfering with the ability of the vegetative cover in the area to reduce erosion, sedimentation, and pollution, particularly to other Resource Areas; or

(e) Increasing flood elevations within a topographic depressions or confined basin where a manmade or natural feature significantly impedes or prevents the return flow of coastal flood waters.

What is meant here?



(6) Activities in the V-Zone and MoWA Zone. New construction of a building, including on Open Piles, is prohibited in the V-Zone. Notwithstanding the provisions of 310 CMR 10.36(5), the Issuing Authority may permit the activities identified in 310 CMR 10.36(6)(a) through (e) in the V-Zone or MoWA Zone, and the activity identified in 310 CMR 10.36(6)(f) only in the MoWA Zone; provided that the Applicant demonstrates, to the satisfaction of the Issuing Authority, that Best Available Measures are utilized to minimize adverse effects on all critical characteristics of Land Subject to Coastal Storm Flowage, and provided that all other performance standards for underlying Resource Areas are met:

Is there a source of Best Available Measures that will come out soon?

(a) Plantings compatible with natural vegetative cover;

(b) Pedestrian walkways, designed to minimize the disturbance to the vegetative cover;

Unclear what minimizing would look like. Where Ch91 requires public access, may be conflicts.

(c) Commercial or public boat launching facilities, elevated open rack boat storage facilities, navigational aids, piers, docks, wharves and dolphins;

(d) Repair and maintenance of an existing coastal engineering structure to preserve its structural integrity;

How does this jive with CMR 9.37 standards re SLR? Is reconstruction allowed?

(e) Septic systems in compliance with 310 CMR 15.213; provided that fill for new mounded systems is not allowed; and

(f) A building on Open Piles, consistent with the elevation requirements of 310 CMR 10.36(4)(a), may be allowed in the MoWA Zone or AO Zone; provided that the structure and any alterations associated with the structure are located outside the V-Zone and as far landward on the lot as practicable. Alterations shall be minimized to the extent practicable and designed to preserve or restore the natural topography and vegetative cover. Limited areas for vehicle access shall use crushed stone, shells, or similar material, without curbing or walls.

This is very impractical and limiting. Is it really necessary? How about a max inch dimension?

Where an AO Zone shown on the FIRM borders a Velocity Zone, it shall be subject to the performance standards established for the MoWA Zone.

(7) Activities in the MiWA Zone. Any Applicant <sup>new?</sup>proposing development in the Minimum Wave Action (MiWA) Zone shall use Best Available Measures to minimize adverse effects on the critical characteristics of Land Subject to Coastal Storm Flowage identified in 310 CMR 10.36(1)(a) through (e) by:

a and b appear repetitive

(a) Allowing flood waters to spread inland and laterally by avoiding fill, structures, or topographic alterations which would increase velocity or redirect flow and cause increased erosion, channelization, storm damage, or flooding; on other properties?

(b) Avoiding fill, structures, or topographic alterations that would, in the judgment of the Issuing Authority, contribute incrementally to an increase in flood velocity, volume, or

Unclear what BAM would be to build a house in the MiWA and meet this standard, besides elevating on open piles.

elevation on other properties resulting in storm damage;

(c) Avoiding, or mitigating through flood easements or other means, any fill, structure, or topographic alteration that would increase flood velocity, volume, or elevations within a topographic depression or confined basin that can be identified using LiDAR or on a USGS topographic map where a manmade or natural feature significantly impedes or prevents the return flow of coastal flood waters;

Raising a seawall would do this...

(d) Preserving soils and vegetation at the site to reduce erosion to the maximum extent practicable and allow coastal flood waters to **percolate** downward;

(e) Reducing impervious surfaces to increase **permeability** and avoid increasing the velocity of floodwater;

(f) Managing stormwater as required by 310 CMR 10.05(6)(k) through (q); and

(g) **Elevating** any building on Open Piles or **a solid foundation** as allowed under the Massachusetts State Building Code. When, in the judgment of the Issuing Authority, **wave energy across the site may be significant** and the Project Site is within the 100 foot Buffer Zone of another coastal Resource Area, the Issuing Authority may require the elevation of the building on Open Piles at least two feet above the 1% annual chance base flood elevation, **elevation with an open foundation** to allow lateral movement of floodwater, or location of the building landward on the lot.

How can solid foundation meet a/b

How can it be in the MiWA?

how is this different from open piles?

(8) Redevelopment Within Previously Developed Land Subject to Coastal Storm Flowage. Notwithstanding the provisions of 310 CMR 10.36(5) through (7) which apply to new development, the Issuing Authority may allow work to redevelop a previously developed area within Land Subject to Coastal Storm Flowage; **provided that the work promotes resiliency by improving existing conditions to the maximum extent practicable.** Redevelopment means the replacement, rehabilitation, or expansion of existing structures, Improvement of an Existing Public Roadway, or reuse of previously developed areas. A previously developed area is one that contains structures or portions of structures, fill or other vertical impediments to flow, construction debris, or pavement. Activities shall conform to the standards specified in 310 CMR 10.36(4) through (7) when a site was previously developed but is not currently developed. Work to redevelop Land Subject to Coastal Storm Flowage shall conform to the following criteria:

(a) At a minimum, proposed work shall result in an improvement over existing conditions of the capacity of the Land Subject to Coastal Storm Flowage to protect the interests of storm damage prevention and flood control to the maximum extent practicable. **Existing conditions may be improved by topographical alterations to provide flood storage, planting of vegetation, reducing impervious surfaces, increasing permeability, removing vertical impediments to flowage, and restoring or creating coastal Resource Areas where they do not currently exist or are currently covered by impervious surfaces.** Where a previously developed coastal Resource Area **has not been regulated under the applicable performance standards** to protect the interests of flood control and storm damage prevention, the proposed

BAM?

Is this like existing development on a barrier beach or coastal dune? How would one restore those interests? Triggers a bunch of additional permitting considerations and costs...

work shall restore those interests to the extent practicable;

(b) Stormwater management is implemented as required by 310 CMR 10.05(6)(k) through -(q);

(c) No portion of any proposed new building may be located within the V-Zone and no portion of any newly reconstructed building may be located more seaward than its previously developed location within the MoWA Zone area of the lot. A building in the V-Zone that has been substantially damaged or is undergoing substantial improvement may be reconstructed only if elevated on Open Piles as specified in 310 CMR 10.36(4)(a) and if the building was constructed and received an occupancy permit prior to the effective date of this regulation. No reconstructed building may be larger than the building it replaces, so that the overall building footprint on the site is not increased;

unclear if this allows vertical expansion

(d) Mitigation, such as flood easements or other means, is implemented or any fill, structure, or topographic alteration that would increase flood velocity, volume, or elevations within a confined basin that can be identified using LiDAR or on a USGS topographic map, where a manmade or natural feature significantly impedes or prevents the return flow of coastal flood waters;

(e) Additional elevation shall be provided in the MoWA and MiWA Zones where the building official has determined under 780 CMR: Massachusetts State Building Code that the project includes certain work. This work includes: alteration of existing buildings with new foundations, replacement or Substantial Repair of a Foundation, repairs of Substantial Damage, or Substantial Improvement. Within the MoWA Zone, buildings shall be elevated to allow flood water to flow completely unobstructed under the building during the 1% annual chance storm, with a minimum of two feet above the 1% annual chance base flood elevation. Within the MiWA Zone, buildings shall be elevated with or without Open Piles as allowed under the Massachusetts State Building Code. When, in the judgment of the Issuing Authority, wave energy across the site may be significant and the Project Site is within the MiWA Zone and within another coastal Resource Area or the 100-foot Buffer Zone of another coastal Resource Area, the Issuing Authority may require the elevation of the building on Open Piles at least two feet above the 1% annual chance base flood elevation. Historic structures are exempt from the elevation requirements identified in 310 CMR 10.36(8);

(f) The placement of fill for flood control purposes may be allowed in a MiWA Zone where impervious surfaces have predominantly replaced the natural coastal floodplain; provided that there shall be no redirection of wave energy or of flood waters to other properties, and other requirements of 310 CMR 10.36(7) and (8) have been met; and

51%?

10.36(7)(a) seems incompatible with flood control.

If impervious surface is the measure, districting should consider using this as a primary factor

(g) The elevation in height of an existing seawall or the construction of a berm with associated fill for flood control purposes in a V-Zone or a MoWA Zone of Land Subject to Coastal Storm Flowage in an area where impervious surfaces have predominantly replaced the natural coastal floodplain may be allowed when conducted by the public agency responsible for the infrastructure, or in the case of private seawalls or berms,

Levee is probably the proper term rather than berm.

Have not seen flood easements defined, not familiar

Does this capture redevelopment projects where a building is demo and a new one constructed in its place?

how can one demonstrate support? are formal select board votes needed, or administrative letters of support? given that ConCom are an extension of municipality, is this problematic?

when supported by the municipality. The Issuing Authority shall determine that the proposed work will achieve the objectives of promoting resiliency and effective flood control in the area while preserving floodplain functions to the extent practicable. The work shall not redirect wave energy or flood waters to other properties or impede the return flow of flood waters. The project shall meet other requirements of 310 CMR 10.36(8) and any public access requirements established under 310 CMR 9.00: *Waterways*; provided that there are no adverse effects on any Resource Area or adjacent properties. Salt Marsh or Coastal Dune created through passive or active migration shall be subject to the provisions of 310 CMR 10.32 or 310 CMR 10.28, respectively. Work in Salt Marsh or Coastal Dune may be proposed under 310 CMR 10.24(8): Ecological Restoration Limited Project.

Assuming this can be demonstrated with drainage systems?

Is this qualifier in regards to Ch91 public access or the whole project? 10.24(1)(b) requires resource areas abutting seawalls to be protected or restored to extent practicable. This is different from no adverse effect. This makes any project with seaward impacts a no go under this provision?

(9) Salt Marsh and Coastal Dune Migration. Notwithstanding other provisions of 310 CMR 10.36(4) through (8), the Issuing Authority may issue an Order of Conditions permitting work to encourage the migration of Salt Marsh or Coastal Dune in Land Subject to Coastal Storm Flowage. Such work may be within the Buffer Zone of Salt Marsh or Buffer Zone of Coastal Dune where Land Subject to Coastal Storm Flowage overlies the Buffer Zone; provided that there are no adverse effects on any Resource Area or adjacent properties. Salt Marsh or Coastal Dune created through passive or active migration shall be subject to the provisions of 310 CMR 10.32 or 310 CMR 10.28, respectively. Work in Salt Marsh or Coastal Dune may be proposed under 310 CMR 10.24(8): Ecological Restoration Limited Project.

(10) Protection of Rare Species Habitat. Notwithstanding the provisions of 310 CMR 10.36(4) through (9), no project may be permitted which will have any adverse effect on specified habitat sites of rare vertebrate or invertebrate species, as identified by procedures established under 310 CMR 10.37.

### **10.37: Estimated Habitats of Rare Wildlife (for Coastal Wetlands)**

If a project is within estimated habitat which is indicated on the most recent Estimated Habitat Map of State-listed Rare Wetlands Wildlife (if any) published by the Natural Heritage and Endangered Species Program (hereinafter referred to as the Program), a fully completed copy of the Notice of Intent (including all plans, reports, and other materials required under 310 CMR 10.05(4)(a) and (b)) for such project shall be sent to the Program via the U.S. Postal Service by express or priority mail (or otherwise sent in a manner that guarantees delivery within two days). Such copy shall be sent no later than the date of the filing of the Notice of Intent with the issuing authority. Proof of timely mailing or other delivery to the Program of the copy of such Notice of Intent shall be included in the Notice of Intent which is submitted to the issuing authority and sent to the Department's regional office.

Estimated Habitat Maps shall be based on the estimated geographical extent of the habitats of all state-listed vertebrate and invertebrate animal species for which a reported occurrence within the last 25 years has been accepted by the Program and incorporated into its official data base.

Within 30 days of the filing of such a Notice of Intent with the issuing authority, the Program shall determine whether any state-listed species identified on the

technical terms not defined

aforementioned map are likely to continue to be located on or near the site of the original occurrence and, if so, whether the area to be altered by the proposed project is in fact part of such species' habitat. Such determination shall be presumed by the issuing authority to be correct. Any proposed project which would alter a resource area that is not located on the most recent Estimated Habitat Map (if any) provided to the conservation commission, shall be presumed not to be within a rare species' habitat. Both of these presumptions are rebuttable and may be overcome upon a clear showing to the contrary. If the issuing authority fails to receive a response from the Program within 30 days of the filing of such a Notice of Intent, a copy of which was received by the Program in a timely manner, it shall issue its Order of Conditions based on available information; however, the fact that a proposed project would alter a resource area that is located on an Estimated Habitat Map shall not be considered sufficient evidence in itself that such project is in fact within the habitat of a rare species.

If the Program determines that a resource area which would be altered by a proposed project is in fact within the habitat of a state-listed species, it shall provide in writing to the applicant and to the Conservation Commission and the Department, the identification of the species whose habitat would be altered by the proposed project, and all other relevant information which the Program has regarding the species' location and habitat requirements, insofar as such information may assist the applicant and the issuing authority to determine whether the project is or can be designed so as to meet the performance standard set in 310 CMR 10.37.

Notwithstanding 310 CMR 10.24(7) and 10.25 and 10.27 through 10.36~~5~~, if a proposed project is found by the issuing authority to alter a ~~R~~esource ~~A~~rea which is part of the habitat of a state-listed species, such project shall not be permitted to have any short or long term adverse effects on the habitat of the local population of that species. A determination of whether or not a proposed project will have such an adverse effect shall be made by the issuing authority. However, a written opinion of the Program on whether or not a proposed project will have such an adverse effect shall be presumed by the issuing authority to be correct. This presumption is rebuttable and may be overcome upon a clear showing to the contrary.

The conservation commission shall not issue an Order of Conditions under 310 CMR 10.05(6) regarding any such project for at least 30 days after the filing of the Notice of Intent, unless the Program before such time period has elapsed has either determined that the resource area(s) which would be altered by the project is not in fact within the habitat of a state-listed species or, if it has determined that such resource area(s) is in fact within rare species habitat, rendered a written opinion as to whether the project will have an adverse effect on that habitat.

Notwithstanding any other provision of 310 CMR 10.37, should an Environmental Impact Report be required for a proposed project under the M.G.L. c. 60, §§ 6 through 62H, as determined by 301 CMR 11.00: MEPA Regulations the performance standard established under 310 CMR 10.37 shall only apply to proposed projects which would alter the habitat of a rare species for which an occurrence has been entered into the official data base of the Massachusetts Natural Heritage and Endangered Species Program prior to the time that the Secretary of the Executive Office of Energy and Environmental Affairs has determined, in accordance with the provisions of 301



CMR 11.09(4), that a final Environmental Impact Report for that project adequately and properly complies with the M.G.L. c. 30, §§ 6 through 62H (unless, subsequent to that determination, the Secretary requires supplemental information concerning state-listed species, in accordance with the provisions of 301 CMR 11.17: *Transition Rules*).

[NOTE TO REVIEWERS: MassDEP IS SETTING FORTH IN THIS DOCUMENT PROPOSED AMENDMENTS TO THE CURRENT REGULATION AT 310 CMR 10.00 IN REDLINE AND STRIKEOUT FORMAT. REDLINES SHOW ADDITIONS TO THE CURRENT REGULATORY TEXT AND STRIKEOUTS SHOW PROPOSED DELETIONS. SINCE THE REGULATION IS VERY LONG, MassDEP IS PUBLISHING ONLY THOSE PORTIONS OF THE REGULATION FOR WHICH THE AGENCY IS PROPOSING TO MAKE AMENDMENTS. MassDEP HAS INCLUDED TEXT JUST PRIOR TO (and in some cases text just after) NEW INSERTED TEXT TO MAKE IT CLEAR WHERE THE NEW TEXT IS PROPOSED TO BE INSERTED INTO THE CURRENT REGULATIONS. **THERE ARE CURRENTLY NO SECTIONS 10.38 THROUGH 10.50. THERE ARE NO EDITS TO SECTIONS 10.51 OR 10.52 AND THESE SECTIONS WILL REMAIN THE SAME AS EXISTING REGULATION.**]

...

### **10.53: General Provisions**

(1) If the Issuing Authority determines that a Resource Area is significant to an interest identified in M.G.L. c. 131, § 40 for which no presumption is stated in the Preamble to the applicable section, the Issuing Authority shall impose such conditions as are necessary to contribute to the protection of such interests. For work in the Buffer Zone subject to review under 310 CMR 10.02(2)(b)3., the Issuing Authority shall impose conditions to protect the interests of the Act identified for the adjacent Resource Area. The potential for adverse impacts to Resource Areas from work in the Buffer Zone may increase with the extent of the work and the proximity to the Resource Area. The Issuing Authority may consider the characteristics of the Buffer Zone, such as the presence of steep slopes, that may increase the potential for adverse impacts on Resource Areas. Conditions may include limitations on the scope and location of work in the Buffer Zone as necessary to avoid alteration of Resource Areas. The Issuing Authority may require erosion and sedimentation controls during construction, a clear limit of work, and the preservation of natural vegetation adjacent to the Resource Area and/or other measures commensurate with the scope and location of the work within the Buffer Zone to protect the interests of M.G.L. c. 131, § 40. Where a Buffer Zone has already been developed, the Issuing Authority may consider the extent of existing development in its review of subsequent proposed work and, where prior development is extensive, may consider measures such as the restoration of natural vegetation adjacent to a Resource Area to protect the interest of M.G.L. c. 131, § 40. The purpose of preconstruction review of work in the Buffer Zone is to ensure that adjacent Resource Areas are not adversely affected during or after completion of the work.



(2) When the site of a proposed project is subject to a Restriction Order which has been duly recorded under the provisions of M.G.L. c. 131, § 40A, such a project shall conform to both the provisions contained in that Order and 310 CMR 10.51 through 10.60.

(3) Notwithstanding the provisions of 310 CMR 10.54 through 10.58 and 10.60, the Issuing Authority may issue an Order of Conditions and impose such conditions as will contribute to the interests identified in M.G.L. c. 131, § 40 permitting the following limited projects (although no such project may be permitted which will have any adverse effect on specified habitat sites of Rare Species, as identified by procedures established under 310 CMR 10.59). In determining whether to exercise its discretion to approve the limited projects listed in 310 CMR 10.53(3), the Issuing Authority shall consider the following factors: the magnitude of the alteration and the significance of the project site to the interests identified in M.G.L. c. 131, § 40, the availability of reasonable alternatives to the proposed activity, the extent to which adverse impacts are minimized, and the extent to which mitigation measures, including replication or restoration, are provided to contribute to the protection of the interests identified in M.G.L. c. 131, § 40.

**[NOTE TO REVIEWERS: MassDEP IS SETTING FORTH IN THIS DOCUMENT PROPOSED AMENDMENTS TO THE CURRENT REGULATION AT 310 CMR 10.00 IN REDLINE AND STRIKEOUT FORMAT. REDLINES SHOW ADDITIONS TO THE CURRENT REGULATORY TEXT AND STRIKEOUTS SHOW PROPOSED DELETIONS. SINCE THE REGULATION IS VERY LONG, MassDEP IS PUBLISHING ONLY THOSE PORTIONS OF THE REGULATION FOR WHICH THE AGENCY IS PROPOSING TO MAKE AMENDMENTS. MassDEP HAS INCLUDED TEXT JUST PRIOR TO (and in some cases text just after) NEW INSERTED TEXT TO MAKE IT CLEAR WHERE THE NEW TEXT IS PROPOSED TO BE INSERTED INTO THE CURRENT REGULATIONS. THERE ARE NO EDITS TO SECTIONS 10.53(3)(a) through 10.53(3)(i) AND THESE SECTIONS WILL REMAIN THE SAME AS EXISTING REGULATION.]**

...

(u) The construction of a Public Shared Use Path on an abandoned rail bed of minimal practical width within the footprint of the rail bed, or the minor improvement, repair, and/or replacement of an existing Public Shared Use Path within the footprint of the rail bed; provided that it is carried out in accordance with the following conditions and any additional conditions deemed necessary by the Issuing Authority. The Issuing Authority may approve a proposed route outside the footprint of the rail bed if a different alignment within the right-of-way is advantageous to reduce Resource Area alterations. Public Shared Use Paths are accessible paved and unpaved paths restricted solely to pedestrian and non-motorized vehicle travel (with the exception of wheelchairs, other power-driven mobility devices by individuals with a mobility disability, electric bicycles and electric scooters, emergency vehicles, and vehicles performing periodic maintenance). Accessible means a surface that complies with the Americans with Disabilities Act regulations, 28 CFR Part 35 and Part 36. Public Shared Use Paths do not include sidewalks intended solely for pedestrian use and do not include parking areas for

motorized vehicles. Such projects shall be designed, constructed, implemented, operated, and maintained to meet all of the following standards:

1. No Public Shared Use Path, associated structure or activity shall restrict flow so as to cause an increase in flood stage or velocity.
2. Compensatory flood storage shall be implemented in accordance with the standards of 310 CMR 10.57(4)(a)1. for all flood storage volume that will be lost within the Special Flood Hazard Area.
3. Construction work in Resource Areas shall occur only during those periods when the ground is sufficiently frozen, dry, or otherwise stable to support the equipment being used.
4. During construction, slash, branches, and limbs resulting from cutting and removal operations shall not be placed within 25 feet of the bank or any body of water.
- 4.5. For any permanent alterations to Resource Areas, mitigation measures shall be implemented that contribute to the protection of the interests identified in M.G.L. c. 131 § 40, either in accordance with existing performance standards to the maximum extent practicable or to an equivalent level of environmental protection where square footage is not a relevant measure, such as restoration or preservation. Mitigation may be offsite, but must be considered in the following order: same Project Site, same Project Locus, adjacent site, same wetland Resource Area, same municipality, and the same stream reach within the Hydrologic Unit Map (HUC) 12 sub-watershed. All instances of Offsite Mitigation for Redevelopment shall be within the same HUC 12 sub-watershed.
- 2.6. All temporary alterations to Resource Areas and Buffer Zones shall be restored to preexisting hydrology and, topography, and- replanted with noninvasive native vegetation.
7. The Applicant must demonstrate to the satisfaction of the Issuing Authority that any stream crossings meet the general performance standards for Bank in 310 CMR 10.54(4)(a) and Land under Water Bodies and Waterways (LUWW) in 310 CMR 10.56(4)(a).
8. A separate NOI may be filed either concurrently to the filing of the NOI for the project, or after the OOC Order is issued, for vegetation management and other activities as defined in 310 CMR 10.02(2)(b)2.r.i.-v. in wetland Resource Areas. Orders of Conditions shall be valid for five years and may be extended by the issuing authority for one or more years up to five additional years, pursuant to 310 CMR 10.05(8).
- 3.9. After a Certificate of Compliance is obtained, minor activities as defined at 310 CMR 10.02(2)(b)2. may take place in the Buffer Zone and Riverfront Area to provide for vegetation management; provided that any such work is restricted to hand methods to the maximum extent practicable. No snow clearing beyond the shoulder shall occur, and the application of deicing and anti-icing agents and sanding is prohibited.
10. Stormwater shall be managed to the Maximum Extent Practicable in accordance with 310 CMR 10.05(6)(m) and (o). A long-term operations and

maintenance plan prepared in accordance with 310 CMR 10.05(6)(k)9. Shall also be provided.

11. Best Management Practices shall be used to minimize adverse impacts during construction, including prevention of erosion and siltation of adjacent water bodies and wetlands in accordance with the construction period erosion, sedimentation and pollution prevention plan (310 CMR 10.05(6)(k)8.).

(4) Ecological Restoration Limited Projects.

**[NOTE TO REVIEWERS: MassDEP IS SETTING FORTH IN THIS DOCUMENT PROPOSED AMENDMENTS TO THE CURRENT REGULATION AT 310 CMR 10.00 IN REDLINE AND STRIKEOUT FORMAT. REDLINES SHOW ADDITIONS TO THE CURRENT REGULATORY TEXT AND STRIKEOUTS SHOW PROPOSED DELETIONS. SINCE THE REGULATION IS VERY LONG, MassDEP IS PUBLISHING ONLY THOSE PORTIONS OF THE REGULATION FOR WHICH THE AGENCY IS PROPOSING TO MAKE AMENDMENTS. MassDEP HAS INCLUDED TEXT JUST PRIOR TO (and in some cases text just after) NEW INSERTED TEXT TO MAKE IT CLEAR WHERE THE NEW TEXT IS PROPOSED TO BE INSERTED INTO THE CURRENT REGULATIONS. THERE ARE NO EDITS TO SECTIONS 10.53(4)(a) through 10.53(4)(e)3. AND THESE SECTIONS WILL REMAIN THE SAME AS EXISTING REGULATION.]**

...

(e) Types of Ecological Restoration Limited Projects.

...

4. Tidal Restoration Projects. A project that will restore tidal flow and that does not meet all the eligibility criteria set forth in 310 CMR 10.13 may be permitted as an Ecological Restoration Limited Project provided that in addition to the eligibility criteria set forth in 310 CMR 10.53(4)(a) through (d), the project, including any proposed flood mitigation measures, will not significantly increase flooding or storm damage to the built environment, including without limitation, buildings, wells, septic systems, roads or other man-made structures or infrastructure,

5. Other Restoration Projects. An Ecological Restoration Project that is not listed in 310 CMR 10.53~~4~~(4)(e)2. through 4., that will improve the natural capacity of a Resource Area(s) to protect the interests identified in M.G.L. c. 131, s. 40, may be permitted as an Ecological Restoration Limited Project provided that the project meets the eligibility criteria set forth in 310 CMR 10.53~~4~~(4)(a) though (d). Such projects include, but are not limited to, the restoration, enhancement or management of Rare Species habitat, the restoration of hydrologic and habitat connectivity, the removal of aquatic nuisance vegetation to retard pond and lake eutrophication, the thinning or planting of vegetation to improve habitat value, riparian corridor re-naturalization, river floodplain reconnection, in-stream habitat

enhancement, fill removal and regrading, flow restoration, and the installation of fish passage structures.

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...

#### **10.57: Land Subject to Flooding (Bordering and Isolated Areas)**

...

##### **(2) Definitions, Critical Characteristics and Boundaries.**

###### **(a) Bordering Land Subject to Flooding.**

1. Bordering Land Subject to Flooding is an area with low, flat topography adjacent to and inundated by flood waters rising from creeks, rivers, streams, ponds or lakes. It extends from the banks of these waterways and water bodies; where a bordering vegetated wetland occurs, it extends from said wetland.
2. The topography and location of Bordering Land Subject to Flooding specified in the foregoing 310 CMR 10.57(2)(a)1. are critical to the protection of the interests specified in 310 CMR 10.57(1)(a). Where Bordering Land Subject to Flooding is significant to the protection of wildlife habitat, the physical characteristics as described in the foregoing 310 CMR 10.57(1)(a)(3) are critical to the protection of that interest.
3. The boundary of Bordering Land Subject to Flooding is the estimated maximum lateral extent of flood water which will theoretically result from the statistical 1% annual chance flood (formerly referred to as the 100-year flood-(the 1% annual chance flood). ~~frequency storm.~~ Said boundary shall be that determined by reference to the most recently available flood profile data prepared for the community within which the work is proposed under the National Flood Insurance Program (NFIP, currently administered by the Federal Emergency Management Agency, successor to the U.S. Department of

Housing and Urban Development). Said boundary, so determined, shall be presumed accurate. This presumption is rebuttable and may be overcome only by credible evidence from a registered professional engineer or other professional competent in such matters.

Where NFIP Profile data is unavailable, the boundary of Bordering Land Subject to Flooding shall be the maximum lateral extent of flood water which has been observed or recorded. In the event of a conflict, the issuing authority ~~shall~~<sup>may</sup> require the applicant to determine the boundary of Bordering Land Subject to Flooding by engineering calculations which shall be:

- a. based upon ~~a design storm of seven inches of precipitation in 24 hours~~ the upper confidence of the 100-year 24-hour storm precipitation frequencies listed in the National Oceanic and Atmospheric Administration (NOAA) Atlas 14 Volume 10 (Version 3.0 or later versions are permissible) multiplied by 0.9 at the geographic outlet of the river, stream, bordering vegetated wetland, lake, or pond, from which the Bordering Land Subject to Flooding arises. The NOAA Type C or D storm distribution (U.S. National Resources Conservation Service Engineering Field Handbook Chapter 2, National Engineering Handbook Part 650, Massachusetts Supplement for the Implementation of NOAA Atlas 14, Volume 10 Rainfall Data, dated June 17, 2016) or a customized storm distribution developed using the NOAA Atlas 14 upper confidence multiplied by 0.9 shall be utilized. (i.e., a ~~The Type III Rainfall, as defined by the U.S. Soil Conservation Service~~ Natural Resource Conservation Service) ~~shall not be utilized;~~
- b. the hydrologic computations shall be based upon the standard methodologies set forth in ~~the U.S. Natural Resources Conservation Service (NRCS) Technical Release WinTR20 Project Formulation Method (Version 3.20 or later versions are permissible) or WinTR55 Small Watershed Hydrology Method (Version 1.00.10 or later versions are permissible). U.S. Soil Conservation Service Technical Release No. 55, Urban Hydrology for Small Watersheds and~~ Section 4 of the U.S. Soil Conservation Service, National Engineering Hydrology Handbook. The hydraulic computations shall be conducted using the U.S. Army Corps of Engineers Hydrologic Engineering Center River Analysis System (HEC-RAS) 6.0 or later versions are permissible, using steady state flow; and
- c. prepared by a registered professional engineer or other professional competent in such matters.

4. The boundary of the ten-year floodplain is the estimated maximum lateral extent of the flood water which will theoretically result from the statistical ten-year frequency ~~storm~~<sup>flood</sup>. Said boundary shall be determined as specified under 310 CMR 10.57(2)(a)3., except that where NFIP Profile data is unavailable, the boundary shall be the maximum lateral extent of flood water which has been observed or recorded during a ten year frequency ~~flood~~<sup>storm</sup> and, in the event of



conflict, engineering calculations under 310 CMR 10.57(2)(a)3.a. shall be based ~~on on a design storm of 4 /10 8 (4.8) inches of precipitation in 24 hours. The upper confidence of the 10-year 24-hour storm precipitation frequencies listed in the National Oceanic and Atmospheric Administration (NOAA) Atlas 14 Volume 10 (Version 3.0 or later versions are permissible) multiplied by 0.9 at the geographic outlet of the river, stream, bordering vegetated wetland, lake, or pond, from which the Bordering Land Subject to Flooding arises, using the storm distribution, hydrologic methods, and hydraulic methods specified in 310 CMR 10.57(3)(a)-(c).~~

5. The only portions of this resource area which shall be presumed to be vernal pool habitat are those that have been certified as such by the Massachusetts Division of Fisheries and Wildlife, where said Division has forwarded maps and other information needed to identify the location of such habitat to the Conservation Commission and DEP prior to the filing of each Notice of Intent or Abbreviated Notice of Intent regarding that portion. Such presumption is rebuttable, and may be overcome upon a clear showing to the contrary. However, notwithstanding any other provision of 310 CMR 10.57, should an Environmental Impact Report be required for a proposed project as determined by 301 CMR 11.00: *MEPA Regulations* the performance standard established under this Section regarding vernal pool habitat shall only apply to proposed projects which would alter such habitats as have been identified prior to the time that the Secretary of the Executive Office of Energy and Environmental Affairs has determined, in accordance with the provisions of 301 CMR 11.09(4): *Eligible Projects*, that a final Environmental Impact Report for that project adequately and properly complies with the M.G.L. c. 30, § 6 through 62H (unless, subsequent to that determination, the Secretary requires supplemental information concerning vernal pool habitat, in accordance with the provisions of 301 CMR 11.17: *Transition Rules*).

6. The boundary of a vernal pool ~~habitat~~ is that certified by the Massachusetts Division of Fisheries and Wildlife. In the event of a conflict of opinion, or the lack of a clear boundary delineation certified by the Division of Fisheries and Wildlife, the applicant may submit ~~an opinion-certified evidence from a competent source, such as evidence that would be sufficient to certify a pool if submitted to the Division of Fisheries and Wildlife, by a registered professional engineer, supported by engineering calculations,~~ as to the ~~probable~~ extent of said ~~habitat boundary of the certified or uncertified vernal pool based on field observations. Competent sources include Conservation Commissions, Department staff, and persons meeting the criteria specified in 310 CMR 10.60(1)(b). Said calculations shall be prepared in accordance with the general requirements set forth in 310 CMR 10.57(2)(a)3.a. through c., except that the maximum extent of said water shall be based upon the total volume (rather than peak rate) of run-off from the drainage area contributing to the vernal pool and shall be further based upon a design storm of 2 /10 6 (2.6) inches (rather than seven inches) of precipitation in 24 hours.~~ Vernal pool habitat shall include the area within 100 feet of the boundary of the



vernal pool itself, insofar as such area is contained within the boundaries of this  
Resource Aarea.

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...

#### **10.58: Riverfront Area**

**[NOTE TO REVIEWERS: MassDEP IS SETTING FORTH IN THIS DOCUMENT PROPOSED AMENDMENTS TO THE CURRENT REGULATION AT 310 CMR 10.00 IN REDLINE AND STRIKEOUT FORMAT. REDLINES SHOW ADDITIONS TO THE CURRENT REGULATORY TEXT AND STRIKEOUTS SHOW PROPOSED DELETIONS. SINCE THE REGULATION IS VERY LONG, MassDEP IS PUBLISHING ONLY THOSE PORTIONS OF THE REGULATION FOR WHICH THE AGENCY IS PROPOSING TO MAKE AMENDMENTS. MassDEP HAS INCLUDED TEXT JUST PRIOR TO (and in some cases text just after) NEW INSERTED TEXT TO MAKE IT CLEAR WHERE THE NEW TEXT IS PROPOSED TO BE INSERTED INTO THE CURRENT REGULATIONS. THERE ARE NO EDITS TO SECTIONS 10.58(1) AND THIS SECTION WILL REMAIN THE SAME AS EXISTING REGULATION.]**

...

#### **(2) Definitions, Critical Characteristics and Boundaries.**

(a) A Riverfront Area is the area of land between a river's mean annual high-water line and a parallel line measured horizontally. The riverfront area may include or overlap other Resource Areas or their buffer zones. The riverfront area does not have a buffer zone.

1. A river is any natural flowing body of water that empties to any ocean, lake, pond, or other river and which flows throughout the year. Rivers include streams (see 310 CMR 10.04: Stream) that are perennial because surface water flows within them throughout the year. Intermittent streams are not rivers as defined herein because surface water does not flow within them throughout the year. When surface water is not flowing within an intermittent stream, it may remain in isolated pools or it may be

absent. When surface water is present in contiguous and connected pool/riffle systems, it shall be determined to be flowing. Rivers begin at the point an intermittent stream becomes perennial or at the point a perennial stream flows from a spring, pond, or lake. Downstream of the first point of perennial flow, a stream normally remains a river except where interrupted by a lake or pond. Upstream of the first point of perennial flow, a stream is normally intermittent.

- a. A river or stream shown as perennial on the current United States Geological Survey (USGS) or more recent map provided by the Department is perennial.
- b. A river or stream shown as intermittent or not shown on the current USGS map or more recent map provided by the Department, that has a watershed size greater than or equal to one square mile, is perennial.
- c. A stream shown as intermittent or not shown on the current USGS map or more recent map provided by the Department, that has a watershed size less than one square mile, is intermittent unless:
  - i. The stream has a watershed size of at least  $\frac{1}{2}$  (0.50) square mile and has a predicted flow rate greater than or equal to 0.01 cubic feet per second at the 99% flow duration using the USGS Stream Stats method. The issuing authority shall find such streams to be perennial; or
  - ii. When the USGS StreamStats method cannot be used because the stream does not have a mapped and digitized centerline (including but not limited to streams located in the following basins: North Coastal Basin, Taunton Basin, Buzzards Bay Basin, Cape Cod and Islands Basin, and that portion of the South Coastal Basin that is south of the Jones River sub-basin), and the stream has a watershed size of at least  $\frac{1}{2}$  (0.50) square mile, and the surficial geology of the contributing drainage area to the stream at the ~~P~~project ~~S~~site contains 75% or more stratified drift, the issuing authority shall find such streams to be perennial. Stratified drift shall mean sand and gravel deposits that have been layered and sorted by glacial meltwater streams. Areal percentages of stratified drift may be determined using USGS surficial geologic maps, USGS Hydrological Atlases, Massachusetts Geographical Information System (MassGIS) surficial geology data layer, or other published or electronic surficial geological information from a credible source.
- d. Notwithstanding 310 CMR 10.58(2)(a)1.a. through c., the issuing authority shall find that any stream is intermittent based upon a documented field observation that the stream is not flowing. A documented field observation shall be made by a competent source and shall be based upon an observation made at least once per day, over four days in any consecutive 12 month period, during a non-drought period on a stream not significantly affected by drawdown from withdrawals of water supply wells, direct withdrawals, impoundments, or other human-made flow reductions or diversions. Field observations made after December 20, 2002 shall be documented by field notes and by dated photographs or video. Field observations made prior to December 20, 2002 shall be documented by credible evidence. All field observations shall be submitted to the issuing authority with a statement signed under the penalties of perjury attesting

to the authenticity and veracity of the field notes, photographs or video and other credible evidence. Department staff, conservation commissioners, and conservation commission staff are competent sources; issuing authorities may consider evidence from other sources that are determined to be competent.

e. Rivers include the entire length and width to the mean annual high-water line of the major rivers (Assabet, Blackstone, Charles, Chicopee, Concord, Connecticut, Deerfield, Farmington, French, Hoosic, Housatonic, Ipswich, Merrimack, Millers, Nashua, Neponset, Parker (Essex County), Quinebaug, Shawsheen, Sudbury, Taunton, Ten Mile, and Westfield).

f. Rivers include perennial streams that cease to flow during periods of extended drought. Periods of extended drought for purposes of 310 CMR 10.00 shall be those periods, in those specifically identified geographic locations, determined to be at the "~~Advisory~~Level 1 – Mild Drought" or more severe drought level by the ~~Massachusetts Drought Management Task Force, as established by Secretary of the Executive Office of Energy and Environmental Affairs and the Massachusetts Emergency Management Agency in 2001~~, in accordance with the Massachusetts Drought Management Plan ~~(MDMP)~~, dated September 2019. Rivers and streams that are perennial under natural conditions but are significantly affected by drawdown from withdrawals of water supply wells, direct withdrawals, impoundments, or other human-made flow reductions or diversions shall be considered perennial.

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...

(4) General Performance Standard. Where the presumption set forth in 310 CMR 10.58(3) is not overcome, the applicant shall prove by a preponderance of the evidence that there are no practicable and substantially equivalent economic alternatives to the proposed project with less adverse effects on the interests identified in M.G.L. c.131 § 40 and that the work, including proposed mitigation, will have no significant adverse impact on the riverfront area to protect the interests identified in M.G.L. c. 131 § 40. In the event that the presumption is partially overcome, the issuing authority shall make a written determination setting forth its grounds in the Order of Conditions and the partial rebuttal shall be taken into account in the application of 310 CMR

10.58 (4)(d)1.a. and c.; the issuing authority shall impose conditions in the Order that contribute to the protection of interests for which the riverfront area is significant.

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...

(d) No Significant Adverse Impact. The work, including proposed mitigation measures, must have no significant adverse impact on the riverfront area to protect the interests identified in M.G.L. c. 131, § 40.

1. Within 200 foot riverfront areas, the issuing authority may allow the alteration of up to 5000 square feet or 10% of the riverfront area within the lot, whichever is greater, on a lot recorded on or before October 6, 1997 or lots recorded after October 6, 1997 subject to the restrictions of 310 CMR 10.58(4)(c)2.b.vi., or up to 10% of the riverfront area within a lot recorded after October 6, 1997, provided that:

a. At a minimum, a 100 foot wide area of undisturbed vegetation is provided. This area shall extend from mean annual high-water along the river unless another location would better protect the interests identified in M.G.L. c. 131 § 40. If there is not a 100 foot wide area of undisturbed vegetation within the riverfront area, existing vegetative cover shall be preserved or extended to the maximum extent feasible to approximate a 100 foot wide corridor of natural vegetation. Replication and compensatory storage required to meet other ~~R~~resource ~~A~~area performance standards are allowed within this area; structural stormwater management measures may be allowed only when there is no practicable alternative. Temporary impacts where necessary for installation of linear site-related utilities are allowed, provided the area is restored to its natural conditions. Proposed work which does not meet the requirement of 310 CMR 10.58(4)(d)1.a. may be allowed only if an applicant demonstrates by a preponderance of evidence from a competent source that an area of undisturbed vegetation with an overall average width of 100 feet will provide equivalent protection of the riverfront area, or that a partial rebuttal of the presumptions of significance is sufficient to justify a lesser area of undisturbed vegetation;

b. Stormwater is managed according to standards established by the Department ~~in~~ ~~its Stormwater Policy~~ ~~at 310 CMR 10.05(6)(k)~~ ~~through (q)~~ ;

- c. Proposed work does not impair the capacity of the riverfront area to provide important wildlife habitat functions. Work shall not result in an impairment of the capacity to provide vernal pool habitat identified by evidence from a competent source, but not yet certified. For work within an undeveloped riverfront area which exceeds 5,000 square feet, the issuing authority may require a wildlife habitat evaluation study under 310 CMR 10.60.
  - d. Proposed work shall not impair groundwater or surface water quality by incorporating erosion and sedimentation controls and other measures to attenuate nonpoint source pollution. The calculation of square footage of alteration shall exclude areas of replication or compensatory flood storage required to meet performance standards for other resource areas, or any area of restoration within the riverfront area. The calculation also shall exclude areas used for structural stormwater management measures, provided there is no practicable alternative to siting these structures within the riverfront area and provided a wildlife corridor is maintained (e.g. detention basins shall not be fenced).
2. Within 25 foot riverfront areas, any proposed work shall cause no significant adverse impact by:
- a. Limiting alteration to the maximum extent feasible, and at a minimum, preserving or establishing a corridor of undisturbed vegetation of a maximum feasible width. Replication and compensatory storage required to meet other ~~R~~resource ~~A~~area performance standards are allowed within this area; structural stormwater management measures shall be allowed only when there is no practicable alternative;
  - b. Providing stormwater management according to standards established by the Department ~~at 310 CMR 10.05(6)(k)1. through- 11.~~;
  - c. Preserving the capacity of the riverfront area to provide important wildlife habitat functions. Work shall not result in an impairment of the capacity to provide vernal pool habitat when identified by evidence from a competent source but not yet certified; and
  - d. Proposed work shall not impair groundwater or surface water quality by incorporating erosion and sedimentation controls and other measures to attenuate nonpoint source pollution.

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...

(6) Notwithstanding the Provisions of 310 CMR 10.58(1) through (5), Certain Activities or Areas Are ~~Grandfathered or~~ Exempted from Requirements for the Riverfront Area:

(a) Any excavation, structure, road, clearing, driveway, landscaping, utility line, rail line, airport owned by a political subdivision, marine cargo terminal owned by a political subdivision, bridge over two miles long, septic system, or parking lot within the riverfront area in existence on August 7, 1996. Maintenance of such structures or areas is allowed (including any activity which maintains a structure, roads (limited to repairs, resurfacing, repaving, but not enlargement), clearing, landscaping, etc. in its existing condition) without the filing of a Notice of Intent for work within the riverfront area, but not when such work is within other ~~R~~resource ~~A~~areas or their buffer zones except as provided in 310 CMR 10.58(6)(b). Changes in existing conditions which will remove, fill, dredge or alter the riverfront area are subject to 310 CMR 10.58, except that the replacement within the same footprint of structures destroyed by fire or other casualty is not subject to 310 CMR 10.58.

(b) Certain minor activities as identified in 310 CMR 10.02(2)(b)1.

...

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April 25, 2024

MassDEP  
BWR Wetlands Program  
100 Cambridge Street, Suite 900  
Boston, MA 02114

**Re: Comment Letter - Proposed Wetlands Resilience 1.0 Draft Regulations**

To whom it may concern,

The Worcester Conservation Commission is grateful for the opportunity to provide comments on the Proposed Wetlands Resilience 1.0 Draft Regulations. We sincerely appreciate the effort that MassDEP has put into creating these draft regulation changes and commend MassDEP for focusing on ways to make the Commonwealth and its wetland resources more resilient to climate change.

While we have not had the chance to review every proposed change in detail, we would like to highlight several proposed changes to the regulations that we are excited to see:

- Updated requirements for precipitation totals used in stormwater management designs.
- Greater support for the use of nature-based solutions.
- Development of Land Subject to Coastal Storm Flowage performance standards.

While supportive of the updates overall, the Commission has identified several concerns related to the proposed setback requirements outlined in 310 CMR 10.05(6)(q), specifically:

1. "Any component of a Stormwater Management System" should be more clearly defined. It is unclear whether this would include underground piping, outfalls, aprons, etc.
2. The 50' setback requirement to any surface waters (including BVW and LUW) for any component of a stormwater management system may be overly restrictive, particularly if outfalls, piping, and/or aprons are included in components that are required to meet the setback. Many projects in the city are located on tight sites for which meeting this setback would be challenging if not impossible.
3. The requirement for a 100' setback from any slope greater than 5% for infiltration basins, trenches, or bioretention areas may also be overly restrictive. The Commission is concerned that this requirement will preclude the use of these green-infrastructure BMPs on many sites and suggests that a steeper slope and/or shorter setback be considered for this requirement.
4. While the proposed changes to 310 CMR 10.05(6)(k)(7) note that redevelopment projects only need to meet the setback requirements to the maximum extent practicable, it is unclear whether this also applies to projects identified in 310 CMR 10.05(6)(l) or 310 CMR 10.05(6)(m),

Worcester Conservation Commission  
c/o Planning & Regulatory Services Division

Worcester City Hall, 455 Main Street, Room 404 (4<sup>th</sup> Floor), Worcester, MA 01608

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to which the stormwater standards do not apply or apply only to the maximum extent practicable. For example, if an applicant was willing to provide a rain garden to receive roof runoff from a proposed single-family home (i.e. a project that does not require compliance with the Stormwater Standards), but the only feasible location of the rain garden was within 50' of a BVW, could the Commission approve this, provided there is adequate separation to groundwater? The Commission has seen several examples of projects like this in recent months, where strict adherence to the setback requirements would simply result in no stormwater management improvements to a site.

Thank you for the opportunity to provide comments, we hope that our feedback is helpful to MassDEP in finalizing and implementing these important updates to the regulations.

Sincerely,

A handwritten signature in black ink, appearing to read "Eric Flint".

Eric Flint  
Conservation Planner/Agent

## Yarmouth Conservation Commission Comments on 2023 Proposed Revisions to DEP Wetlands Regulations

### Overall Comments

- We applaud DEP on the overall stance that the proposed regulations take to implement long needed performance standards for LSCSF, to improve the stormwater standards, and to encourage Nature Based Solutions.
- **BVW Delineation Handbook 2023** – Wetland Indicator categories- it was our understanding that the new regulations would abandon the use of modifiers and the 1988 National Plant List and instead require the use of the U.S. Army Corps of Engineers 2020, *National Wetland Plant List*, version 3.5. It doesn't look like the new regulations propose any changes to 310 CMR 10.55.
- **Limited Projects/ Ecological restoration limited projects**- We support the inclusion of the additional beneficial projects.
- **Climate Resilience**- The new Waterways regulations are proposing to use the new MC-FRM from Resilient MA (or best available data) to project future conditions, while the Wetlands Regulations and Rainfall models are still proposing to continue using the historical FEMA maps and NOAA 14+ rainfall models that do not account for projected conditions. It would be beneficial to have a consistent approach and require that projected conditions be used across the board to improve resilience to climate change.
- Many **vegetated wetlands** are important and do not border a water body. These can provide important habitat and values, while being too small for consideration as isolated land subject to flooding. Allowing these to continue to be non-jurisdictional can have significant impacts on these important small wetlands. Please consider removing 'bordering' from the vegetated wetland requirement and decreasing the minimum size for isolated land subject to flooding.
- We support the changes to **vernal pool definition** allowing Conservation commissions or other competent sources to gather evidence that would be sufficient to certify a depression where one is not currently certified.

### 10.24 General

- *'In planning shoreline protection projects, Applicants shall consult the resilientma.org website for the most current mapping and other available information related to shoreline change and sea level rise or similarly reliable local data acceptable'*. If resilient MA is required to be utilized for shoreline protection projects, it should be required for all coastal projects that may be impacted as well.

### 10.36 LSCSF

- Applying the LSCSF regulations when it is the only resource area present may have negative impacts on the areas of the A zone that are also in buffer zones. Please consider applying these regulations both independently and simultaneously with other coastal resource areas and buffer zones when they overlap.
- 7 (d) *'preserving soils and vegetation... to the maximum extent practicable'* is there a quantification for how much soil and vegetation must be preserved?

- 8 (c) *‘No reconstructed building may be larger than the building it replaces, so that the overall building footprint on the site is not increased’*- If this prohibits all lateral additions in the AE zone including any landward of the resource area, it can become very restrictive.
- 8 (e) *‘Additional elevation or an open foundation may be required when a building is proposed where wave action may occur within the Buffer Zone of another Resource Area.’* It may be difficult for Commissions to determine where wave action may occur without the use of models that project future conditions including sea level rise.
- 8-(f and g). *‘Where impervious surfaces have predominantly replaced the natural coastal floodplain’* The term *Predominate* is not currently defined and needs clarification for where to apply these provisions.

## Stormwater

- The commission feels that the stormwater standards should be applied in some way to **single family dwellings**. These predominate the landscape in many areas especially on Cape Cod, and not implementing any standards for stormwater can have negative impacts on water quality and wetland interests. Perhaps including abbreviated standards for single family dwellings would be a good way to begin implementing the most basic but impactful standards for these lots. Please consider executing abbreviated standards for single family dwellings.
- Definitions- 10.04-**Impracticable**- now based solely on physical constraints but only for stormwater. We support this change. Please consider applying it more broadly to both stormwater and **riverfront areas** alternatives analyses. Cost is often the cited reason a suboptimal alternative is chosen for projects on single-family lots. This definition has the potential to vastly improve the alternatives chosen when work occurs in the Riverfront area.
- We support the inclusion of non-tidal rivers and streams in the exemptions for waterways to encourage culvert replacement.

Respectfully submitted,  
Town of Yarmouth Conservation Commission

Ed Hoopes, Chairman  
Elinor Lawrence, Vice Chair  
David Bernstein  
Paul Huggins  
Rick Bishop  
Patricia Mulhearn  
John Frost

Staff: Brittany DiRienzo, Conservation Administrator

**From:** [Andrew Dominick](#)  
**To:** [DEP Wetlands \(DEP\)](#); [Waterways, DEP \(DEP\)](#)  
**Cc:** [Tobin Dominick](#)  
**Subject:** Comments  
**Date:** Tuesday, April 30, 2024 10:34:11 AM

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CAUTION: This email originated from a sender outside of the Commonwealth of Massachusetts mail system. Do not click on links or open attachments unless you recognize the sender and know the content is safe.

**Attn: Wetlands and Waterways Resilience Comments**

**Our family developed, operates, maintains one for the largest marina operations in the state, and has for 51 years. The marina consists of 275 boats slips, fuel dock and pump-out facilities, a 30 unit hotel on the water connected to a lobby, indoor pool, 200 seat waterfront restaurant and conference center. The boat yard consists of indoor boat repair shops, retail space, offices and sales areas. With over 11 acres of marina, buildings and boatyard, we are very concerned about the following changes in regulations and all of these points will have significant devastation to our private businesses. We support both commercial and recreational boating markets and considered an essential business to our economy. We host thousands of guests every year by car or by boat, and a major contributor to our local economy for destination travelers. In our last 51 year we have built, maintained, and operate on a mixture of filled tideland our docks, piers, seawalls, and all the upland buildings. Not one penny has been funded by the state, except for a pump-out grant to help keep our waterways clean. We have built and rebuilt our buildings, piers, docks and seawalls. We are stewards of our waterfront and have taken great pride in maintaining our property at very heavy expenses to do so. As they say, “Rome wasn’t built in a day.” Well either was our water dependent use businesses, and we need to be able to continue to change with the times, and maintain what has been established all while supporting the waterways economy, please read below further for topics related to our business.**

**It has been brought to my attention by the Massachusetts Marine Trades Association, that the Commonwealth of Massachusetts on December 22, 2023 proposed the most unprecedented regulatory**

**changes in 40 years.** If enacted, the regulations would:

- prohibit new buildings in high wind and wave areas, even if safely designed and elevated
- Prohibit coastal reconstruction or redevelopment, unless on the exact same footprint and elevated
- Leave decisions to discretion of local Conservation Commissions whether even existing buildings, piers and docks can be relocated or expanded or new ones installed.
- Make uncertain Chapter 91 relicensing for even existing buildings, docks and piers upon expiration of current term.

The proposed changes are supposed to be “nature-based planning” to accommodate sea level rise (called “managed retreat”) and prohibit adaptations based on technology and design. **This is not adaptive or resilient and clearly needs more thought and feedback.**

**Regulations are not ready and I believe major revisions are needed. Please strongly consider the following:**

- Failure to make changes to proposed regulations will cause the coastal economy which is our business to collapse fast. As a result we would not have access to financing, ordinary property transactions. This also includes no new money to invest in upgrading and adapting existing facilities. **We need all of these!**
- We need private sector money to invest in our coastal communities for real climate change adaptation.
- You must please be more inclusive of impacted communities.
- Hold many more public hearings, let property owners know and understand. Then listen to more comments. Not enough people know about such regulations and creative and concerned individuals especially need to know, we are all in this together and should have a collaborative solution.
- Do not leave it to each volunteer Conservation Commission’s discretion to refuse waterfront property use especially for water dependent uses which by definition need to be at the water’s edge.
- Water dependent uses need reliable, explicit right to continue and to be newly built at water’s edge and docks and piers in water, using technology and design safety, not “nature based” retreat unproven to succeed anywhere. Do not prohibit water dependent facilities based on geography of a high wind and wave zone – do require sound, safe engineering and design in any wind and wave zone.
- We know how to design and adapt to storms as well as engineering companies. Let us do so.

Thank you for your time in reading these comments and suggestions. We appreciate your consideration and thoughtfulness and look forward to further discussion for making future solutions viable.

In best regards,



Andrew A Dominick III

**From:** [BeBe](#)  
**To:** [DEP Wetlands \(DEP\)](#); [Waterways, DEP \(DEP\)](#)  
**Cc:** [Patrick.kearney@mahouse.gov](mailto:Patrick.kearney@mahouse.gov); [Patrick O'Connor](#)  
**Subject:** Wetlands and Waterways Resilience Comments  
**Date:** Monday, April 29, 2024 11:13:58 AM

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I just heard about the unprecedented regulatory changes proposed by MASS Department of Environmental Protection.

As a long time, coastal resident of Scituate, MA the proposed regulations would be catastrophic if implemented as I understand them.

If enacted, the regulations would:

- Prohibit new buildings in high wind and wave areas, even if safely designed and elevated
- Prohibit coastal reconstruction or redevelopment, unless on the exact same footprint and elevated
- Leave decisions to discretion of local Conservation Commissions whether even existing buildings, piers and docks can be relocated or expanded, or new ones installed.
- Make uncertain Chapter 91 relicensing for even existing buildings, docks, and piers upon expiration of current term

The proposed changes are supposed to be “nature-based planning” to accommodate sea level rise (called “managed retreat”) and prohibit adaptations based on technology and design. This is not adaptive or resilient.

Regulations are not ready, major revisions are needed including:

1. Be more inclusive of impacted communities. Hold many more public hearings and listen.
2. Do not leave it to each volunteer Conservation Commission’s discretion to refuse waterfront property use especially for water dependent uses which need to be at the water’s edge.
3. Water dependent uses need reliable, explicit right to continue and to be newly built at water’s edge and docks and piers in water, using technology and design safety, not “nature based” retreat unproven to succeed anywhere. Do not prohibit water dependent facilities based on geography of a high wind and wave zone – do require sound, safe engineering and design in any wind and wave zone.
4. **Failure to make changes to proposed regulations will cause the coastal economy to collapse fast. No financing, no ordinary property transactions, no new money to invest in upgrading and adapting existing facilities. We need all of these! We need private sector money to pay for real climate change adaptation.**
5. We know how to design and adapt to storms. Revisions are required using modern design engineering and technology to adapt, not just retreat.

Thank you for your consideration to this important issue.

Best regards,

Beatrice Luczkow

Mobile [REDACTED]

**From:** [Dave Luczkow](#)  
**To:** [DEP Wetlands \(DEP\)](#); [Waterways, DEP \(DEP\)](#)  
**Cc:** [Patrick.kearney@mahouse.gov](mailto:Patrick.kearney@mahouse.gov); [Patrick O'Connor](#)  
**Subject:** Wetlands and Waterways Resilience Comments  
**Date:** Monday, April 29, 2024 6:46:11 PM

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I just heard about the unprecedented regulatory changes proposed by MASS Department of Environmental Protection.

As a long time, coastal resident of Scituate, MA the proposed regulations would be catastrophic if implemented as I understand them.

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1. Be more inclusive of impacted communities. Hold many more public hearings and listen.
2. Do not leave it to each volunteer Conservation Commission’s discretion to refuse waterfront property use especially for water dependent uses which need to be at the water’s edge.
3. Water dependent uses need reliable, explicit right to continue and to be newly built at water’s edge and docks and piers in water, using technology and design safety, not “nature based” retreat unproven to succeed anywhere. Do not prohibit water dependent facilities based on geography of a high wind and wave zone – do require sound, safe engineering and design in any wind and wave zone.
4. **Failure to make changes to proposed regulations will cause the coastal economy to collapse fast. No financing, no ordinary property transactions, no new money to invest in**

upgrading and adapting existing facilities. We need all of these! We need private sector money to pay for real climate change adaptation.

5. We know how to design and adapt to storms. Revisions are required using modern design engineering and technology to adapt, not just retreat.

Thank you for your consideration to this important issue.

Best regards,

David Luczkow



**From:** [Barden's Boat Yard](#)  
**To:** [DEP Wetlands \(DEP\)](#); [Waterways, DEP \(DEP\)](#)  
**Subject:** Wetlands and Waterways Resilience Comments  
**Date:** Tuesday, April 30, 2024 5:40:18 PM

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*To Whom It May Concern:*

*Failure to make changes to proposed regulations will cause the coastal economy to collapse fast. No financing, no ordinary property transactions, no new money to invest in upgrading and adapting existing facilities. We need private sector money to invest in our coastal communities for real climate change adaptation.*

*There need to be more public hearings and consideration given for our future.*

*This should not be left to a volunteer Conservation Commission's discretion to refuse waterfront property use especially for water dependent uses which by definition need to be at the water's edge.*

*Water dependent uses need reliable, explicit right to continue and to be newly built at water's edge and docks and piers in water, using technology and design safety, not "nature based" retreat unproven to succeed anywhere. Do not prohibit water dependent facilities based on geography of a high wind and wave zone – do require sound, safe engineering and design in any wind and wave zone.*

*We know how to design and adapt to storms, please let us do so. Thank you for your consideration.*

Kind regards,

Frederick B. Coulson, President  
Cheryl Souza, Manager  
Barden's Boat Yard Inc.  
508-748-0250  
[bardensboatyard@comcast.net](mailto:bardensboatyard@comcast.net)



**From:** [Glen Giovanucci](#)  
**To:** [DEP Wetlands \(DEP\)](#); [Waterways, DEP \(DEP\)](#); [Patrick O'Connor](#); [Patrick.kearney@mahouse.gov](mailto:Patrick.kearney@mahouse.gov)  
**Subject:** UNPRECEDENTED REGULATORY CHANGES PROPOSED BY MASS DEPARTMENT OF ENVIRONMENTAL PROTECTION  
**Date:** Monday, April 29, 2024 1:32:32 PM

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I absolutely object to the proposed regulation changes regarding the Massachusetts coast. I just found out about this and these proposed regulations would be catastrophic if implemented the way I understand them. Major revisions of these regulations need to be enacted and must be reviewed/heard in more public hearings. They are too impactful to rush through and will have major, negative consequences. People with homes on the coast deserve more respect than this. The proposed regulations are outrageous and are not in the best interests of the entire coastal community.

Thanks in advance for shutting this down until it can be better examined.

Sincerely,

Glen Giovanucci

A black rectangular redaction box covering the signature area.

>

**From:** [Joe DiLorenzo](#)  
**To:** [Patrick O'Connor](#); [DEP Wetlands \(DEP\)](#); [Waterways, DEP \(DEP\)](#); [Patrick.kearney@mahouse.gov](mailto:Patrick.kearney@mahouse.gov); [marie@boatdoc.com](mailto:marie@boatdoc.com)  
**Subject:** Wetlands and Waterways Resilience Comments  
**Date:** Sunday, April 28, 2024 10:45:04 AM

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I have summered in Humarock Beach in Scituate for the first 25 years of my life and year round for over 40 years. The proposed regulations are absurd. Conservationists would prefer there are no houses anywhere.

- Prohibit new buildings in high wind and wave areas, ***even if safely designed and elevated***
- Prohibit coastal reconstruction or redevelopment, unless on the exact same footprint and elevated
- **Leave decisions to discretion of local Conservation Commissions whether even existing buildings, piers and docks can be relocated or expanded or new ones installed.**
- **Make uncertain Chapter 91 relicensing for even existing buildings, docks and piers upon expiration of current term**

The proposed changes are supposed to be “nature-based planning” to accommodate sea level rise (called “managed retreat”) and prohibit adaptations based on technology and design. This is not adaptive or resilient.

You must allow Town Administrators make these decisions, not Conservationists having the right to decide without due process.

--

The main point of your email to the state should be you just heard about this, you are a coastal resident, and the proposed regulations would be catastrophic if implemented as you understand them. ALSO: Please send copies of you comments to Senator Patrick O'Connor at: [Patrick.Oconnor@MASenate.gov](mailto:Patrick.Oconnor@MASenate.gov) Representative Patrick Kearney at: [Patrick.kearney@mahouse.gov](mailto:Patrick.kearney@mahouse.gov) Dave Ball From: Marie Hayward <[marie@boatdoc.com](mailto:marie@boatdoc.com)>

Date: April 26, 2024 at 6:46:18 PM EDT

To: Marie Hayward <[marie@boatdoc.com](mailto:marie@boatdoc.com)>

Subject: UNPRECEDENTED REGULATORY CHANGES PROPOSED BY MASS DEPARTMENT OF ENVIRONMENTAL PROTECTION

Let Mass Dep know that revisions are required using modern design engineering and technology to adapt, not just retreat!

Marie A. Hayward, President  
Massachusetts Marine Trades Association Inc. The Commonwealth of Massachusetts on December 22, 2023 proposed the most unprecedented regulatory changes in 40 years.

If enacted, the regulations would:

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- Prohibit coastal reconstruction or redevelopment, unless on the exact same footprint and elevated
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The proposed changes are supposed to be “nature-based planning” to accommodate sea level rise (called “managed retreat”) and prohibit adaptations based on technology and design. This is not adaptive or resilient.

Regulations are not ready, major revisions are needed including:

1. Be more inclusive of impacted communities. Hold many more public hearings and listen.
2. Do not leave it to each volunteer Conservation Commission’s discretion to refuse waterfront property use especially for water dependent uses which by definition need to be at the water’s edge.
3. Water dependent uses need reliable, explicit right to continue and to be newly built at water’s edge and docks and piers in water, using technology and design safety, not “nature based” retreat unproven to succeed anywhere. Do not prohibit water dependent facilities based on geography of a high wind and wave zone – do require sound, safe engineering and design in any wind and wave zone.
4. Failure to make changes to proposed regulations will cause the coastal economy to collapse fast. No financing, no ordinary property transactions, no new money to invest in upgrading and adapting existing facilities. We need all of these! We need private sector money to pay for real climate change adaptation.
5. We know how to design and adapt to storms. Let us do so.

April 30th is the last day to comment on the proposed Mass DEP regulations that have the potential to be very damaging to the recreational boating industry, some waterfront properties, some waterfront development. We hope you will consider filing a comment letter with Mass Dep. The quickest response route is to send one email to these two email addresses: [dep.wetlands@mass.gov](mailto:dep.wetlands@mass.gov); [dep.waterways@mass.gov](mailto:dep.waterways@mass.gov) and include in the subject line Wetlands and Waterways Resilience Comments

THE MAIN POINT OF YOUR EMAIL TO THE STATE SHOULD BE YOU JUST HEARD ABOUT THIS, YOU ARE A COASTAL RESIDENT, AND THE PROPOSED REGULATIONS WOULD BE CATASTROPHIC IF IMPLEMENTED AS YOU UNDERSTAND THEM.

**Joe DiLorenzo**



My LinkedIn Interest Group with over 7,500 followers:

[Diversity/Inclusion, Leadership and Personal Development](#)

**Boston Business Journal**

F. Gorham Brigham Jr. ([LINK](#))

**ANNUAL LIFETIME ACHIEVEMENT AWARD RECIPIENT**

**From:** [john.boujoulian](#)  
**To:** [DEP Wetlands \(DEP\)](#); [Waterways, DEP \(DEP\)](#); [Patrick O'Connor](#); [Patrick. Kearney@mahouse.gov](#)  
**Subject:** UNPRECEDENTED REGULATORY CHANGES PROPOSED BY MASS DEPARTMENT OF ENVIRONMENTAL PROTECTION  
**Date:** Monday, April 29, 2024 3:00:11 PM

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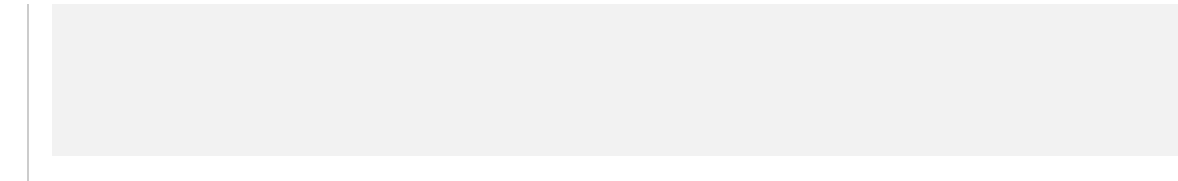
**CAUTION:** This email originated from a sender outside of the Commonwealth of Massachusetts mail system. Do not click on links or open attachments unless you recognize the sender and know the content is safe.

I absolutely object to the proposed regulation changes regarding the Massachusetts coast. I just found out about these proposed regulations that would be catastrophic if implemented, the way I understand them. Major revisions to these proposed regulations need to be enacted and must be reviewed/heard/understood with more public hearings. They are too impactful to rush through and will have major negative consequences. People with homes on the coast deserve more respect than this. The proposed regulations are outrageous and are not in the best interests of the entire coastal community.

Thanks in advance for shutting this down until it can be further examined.

**Regulations are not ready, major revisions are needed including:**

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- 5. We know how to design and adapt to storms. Let us do so.**



**John and Judy Boujoulian**

[REDACTED]

[REDACTED]

[REDACTED]

**From:** [Larry Russo Sr](#)  
**To:** [DEP Wetlands \(DEP\)](#)  
**Subject:** Wetlands and Waterways Resilience Comments  
**Date:** Wednesday, April 17, 2024 5:44:22 PM  
**Attachments:** [image001.png](#)

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**The Commonwealth of Massachusetts on December 22, 2023 proposed the most unprecedented regulatory changes in 40 years.**

If enacted, the regulations would:

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2. Be more inclusive of impacted communities. Hold many more public hearings and listen.
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- in any wind and wave zone.
5. Failure to make changes to proposed regulations will cause the coastal economy to collapse fast. No financing, no ordinary property transactions, no new money to invest in upgrading and adapting existing facilities. We need all of these! We need private sector money to pay for real climate change adaptation.

We know how to design and adapt to storms. Let us do so.

**Larry Russo, Sr.**  
Senior Vice President  
MarineMax Northeast  
Bay Pointe Marina  
Quincy, MA 02169  
Mobile: (781) 389-8793  
[www.marinemax.com](http://www.marinemax.com)



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**From:** [REDACTED]  
**To:** [Waterways, DEP \(DEP\); DEP Wetlands \(DEP\)](#)  
**Cc:** [patrick. Kearney@mahouse.gov](mailto:patrick. Kearney@mahouse.gov); [Patrick O'Connor](#)  
**Subject:** Wetland and Waterways Resilience Comments  
**Date:** Monday, April 29, 2024 6:09:34 PM

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I am a waterfront resident on Humarock and was horrified to hear about these proposed unprecedented regulatory changes,.

**Revisions are required using modern design-engineering and technology to adapt, NOT just retreat!**

**How could I possibly want to leave decisions in the hands of the ConComm when they are allowing DPW to fill the marsh between 268 Central and North with overwash sand and cobble. These tons of material are suffocating the marsh and I believe it is illegal to do so. For over 50 years the overwash was returned back at the opening North of 10 Cliff Road South, whose land is owned by the Air Force to renourish the beach as nature intended. Or the town had DPW truck the overwash Southerly down to the opening South of 178 Central Ave., Humarock which stole the overwash material from where it came from. These decisions are harmful to the beach and residents and show poor judgement.**

After the blizzare of 78 many waterfront residents wanted to take their homes off foundations and put them on pilings. They were told that they had to tear down their seawalls or would not receive a permit to elevate. We have learned that those seawalls were grandfathered and no one had the right to tell them they had to tear down their seawalls which is why there are many sections of Central Avenue that flood horribly because of being forced to tear down their seawall which was protecting the homeowner and the Village of Humarock.

**If enacted, the regulations would:**

- Prohibit new buildings in high wind and wave areas, even if safely designed and elevated
- Prohibit coastal reconstruction or redevelopment, unless on the exact same footprint and elevated
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**The proposed changes are supposed to be “nature-based planning” to accommodate sea level rise (called “managed retreat”) and prohibit adaptations based on technology and design. This is not adaptive or resilient.**

**Regulations are not ready, major revisions are needed including:**

1. Be more inclusive of impacted communities. Hold many more public hearings and

listen.

2. Do not leave it to each volunteer Conservation Commission's discretion to refuse waterfront property use especially for water dependent uses which by definition need to be at the water's edge.

3. Water dependent uses need reliable, explicit right to continue and to be newly built at water's edge and docks and piers in water, using technology and design safety, not "nature based" retreat unproven to succeed anywhere. Do not prohibit water dependent facilities based on geography of a high wind and wave zone – do require sound, safe engineering and design in any wind and wave zone.

4. Failure to make changes to proposed regulations will cause the coastal economy to collapse fast. No financing, no ordinary property transactions, no new money to invest in upgrading and adapting existing facilities. We need all of these! We need private sector money to pay for real climate change adaptation.

5. We know how to design and adapt to storms. Let us do so.

**From:** [Michael Graffeo](#)  
**To:** [DEP Wetlands \(DEP\)](#); [Waterways, DEP \(DEP\)](#); [Patrick O'Connor](#); [Patrick.kearney@mahouse.gov](mailto:Patrick.kearney@mahouse.gov)  
**Cc:** [Mary](#)  
**Subject:** UNPRECEDENTED REGULATORY CHANGES PROPOSED BY MASS DEPARTMENT OF ENVIRONMENTAL PROTECTION  
**Date:** Monday, April 29, 2024 3:00:13 PM

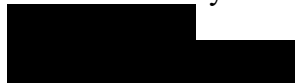
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We object to the proposed regulation changes regarding the Massachusetts coast. I just found out about this and these proposed regulations would be catastrophic if implemented the way I understand them. Major revisions of these regulations need to be enacted and must be reviewed/heard in more public hearings. They are too impactful to rush through and will have major, negative consequences. People with homes on the coast deserve more respect than this. The proposed regulations are outrageous and are not in the best interests of the entire coastal community.

Thanks in advance for shutting this down until it can be better examined

Sincerely,  
Michael & Mary Graffeo



Sent from my iPhone

**From:** [Patti Parker](#)  
**To:** [DEP Wetlands \(DEP\)](#)  
**Subject:** Wetlands and Waterways Resilience Comments  
**Date:** Wednesday, April 24, 2024 1:57:24 PM

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To Whom It May Concern:

**The Commonwealth of Massachusetts on December 22, 2023 proposed the most unprecedented regulatory changes in 40 years.** If enacted, the regulations would:

- prohibit new buildings in high wind and wave areas, even if safely designed and elevated
- Prohibit coastal reconstruction or redevelopment, unless on the exact same footprint and elevated
- Leave decisions to the discretion of local Conservation Commissions whether even existing buildings, piers and docks can be relocated or expanded or new ones installed.
- Make uncertain Chapter 91 relicensing for even existing buildings, docks and piers upon expiration of current term

The proposed changes are supposed to be “nature-based planning” to accommodate sea level rise (called “managed retreat”) and prohibit adaptations based on technology and design. This is not adaptive or resilient.

As a waterfront business owner and property owner, I feel these revisions were designed without any input from the people and businesses they affect. Furthermore, the revisions will have a devastating negative impact on the economy of coastal communities, causing businesses to close down and homeowners to leave when they cannot meet these stringent unrealistic demands.

***Regulations not ready, major revisions are needed including:***

1. *Failure to make changes to proposed regulations will cause the coastal economy to collapse fast. No financing, no ordinary property transactions, no new money to invest in upgrading and adapting existing facilities. We need all of these! We need private sector money to invest in our coastal communities for real climate change adaptation.*

2. *Be more inclusive of impacted communities. Hold many more public hearings and listen.*
3. *Do not leave it to each volunteer Conservation Commission's discretion to refuse waterfront property use especially for water dependent uses which by definition need to be at the water's edge.*
4. *Water dependent uses need reliable, explicit right to continue and to be newly built at water's edge and docks and piers in water, using technology and design safety, not "nature based" retreat unproven to succeed anywhere. Do not prohibit water dependent facilities based on geography of a high wind and wave zone – do require sound, safe engineering and design in any wind and wave zone.*
5. *Failure to make changes to proposed regulations will cause the coastal economy to collapse fast. No financing, no ordinary property transactions, no new money to invest in upgrading and adapting existing facilities. We need all of these! We need private sector money to pay for real climate change adaptation.*
6. *We know how to design and adapt to storms. Let us do so.*

As a waterfront business owner and property owner, I feel these revisions were designed without any input from the people and businesses they affect. Furthermore, the revisions will have a devastating negative impact on the economy of coastal communities, causing businesses to close down and homeowners to leave when they cannot meet these stringent unrealistic demands. Please work with the businesses, homeowners and technicians who design waterfront structures to create reasonable regulatory changes.

Bruce and Patti Parker

--

Parker's Boat Yard, Inc.  
68 Red Brook Harbor Road  
P.O. Box 38  
Cataumet, MA 02534  
508.563.9366  
[www.parkersboatyard.com](http://www.parkersboatyard.com)



**From:** [Peter Wolczik](#)  
**To:** [DEP Wetlands \(DEP\)](#); [Patrick O'Connor](#); [Patrick.kearney@mahouse.gov](mailto:Patrick.kearney@mahouse.gov)  
**Subject:** Wetlands and Waterways Resilience Comments  
**Date:** Tuesday, April 30, 2024 3:59:17 PM

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Dear MassDEP; Senator O'Connor; & Representative Kearney:

The proposed regulatory changes made by the DEP in secret Dec 22, 2023 are outrageous and would be financially catastrophic to homeowners.

Preventing a family from rebuilding their waterfront property would wipe out multiple generations of wealth by rendering their property worthless. There is already a massive transfer of wealth from the poor and middle class to the rich. This would wipe away the wealth a poor/middle class family accumulated over multiple generations.

Regulations are not ready, major revisions are needed including:

1. Be more inclusive of impacted communities. Hold many more public hearings and listen.
2. Do not leave it to each volunteer Conservation Commission's discretion to refuse waterfront property use especially for water dependent uses which by definition need to be at the water's edge.
3. Water dependent uses need reliable, explicit right to continue and to be newly built at water's edge and docks and piers in water, using technology and design safety, not "nature based" retreat unproven to succeed anywhere. Do not prohibit water dependent facilities based on geography of a high wind and wave zone – do require sound, safe engineering and design in any wind and wave zone.
4. Failure to make changes to proposed regulations will cause the coastal economy to collapse fast. No financing, no ordinary property transactions, no new money to invest in upgrading and adapting existing facilities. We need all of these! We need private sector money to pay for real climate change adaptation.
5. We know how to design and adapt to storms. Let us do so.

Sincerely,  
Peter Wolczik  
Scituate, MA

--

Pete Wolczik

There is nothing noble in being superior to your fellow men. True nobility lies in being superior to your former self. ~ Ernest Hemingway

“Democracy cannot succeed unless those who express their choice are prepared to choose wisely. The real safeguard of democracy, therefore, is education.” ~ Franklin D. Roosevelt - 32nd President of the US

**From:** [R Boyle](#)  
**To:** [DEP Wetlands \(DEP\)](#)  
**Subject:** Wetlands-401 Resilience  
**Date:** Tuesday, April 30, 2024 3:01:55 PM

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I just heard about this, and I am a coastal resident. The proposed regulations would be catastrophic if implemented as I understand them.

Water dependent uses need reliable, explicit right to continue and to be newly built at water's edge and docks and piers in water, using technology and design safety, not "nature based" retreat unproven to succeed anywhere. Do not prohibit water dependent facilities based on geography of a high wind and wave zone – do require sound, safe engineering and design in any wind and wave zone.

Failure to make changes to proposed regulations will cause the coastal economy to collapse fast. No financing, no ordinary property transactions, no new money to invest in upgrading and adapting existing facilities. We need all of these! We need private sector money to pay for real climate change adaptation.

We know how to design and adapt to storms. Let us do so.

**From:** [Scott Zeien](#)  
**To:** [DEP Wetlands \(DEP\)](#)  
**Subject:** Wetlands and Waterways Resilience Comments  
**Date:** Wednesday, April 17, 2024 1:15:44 PM

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The Commonwealth of Massachusetts on December 22, 2023 proposed the most unprecedented regulatory changes in 40 years. If enacted, the regulations would:

- prohibit new buildings in high wind and wave areas, even if safely designed and elevated
- Prohibit coastal reconstruction or redevelopment, unless on the exact same footprint and elevated
- Leave decisions to discretion of local Conservation Commissions whether even existing buildings, piers and docks can be relocated or expanded or new ones installed.
- Make uncertain Chapter 91 relicensing for even existing buildings, docks and piers upon expiration of current term

The proposed changes are supposed to be “nature-based planning” to accommodate sea level rise (called “managed retreat”) and prohibit adaptations based on technology and design. This is not adaptive or resilient.

***Regulations are not ready as proposed! Major revisions are needed including:***

1. *Failure to make changes to proposed regulations will cause the coastal economy to collapse fast. No financing, no ordinary property transactions, no new money to invest in upgrading and adapting existing facilities. We need all of these! We need private sector money to invest in our coastal communities for real climate change adaptation.*
2. *Be more inclusive of impacted communities. Hold many more public hearings and listen.*
3. *Do not leave it to each volunteer Conservation Commission’s discretion to refuse waterfront property use especially for water dependent uses which by definition need to be at the water’s edge.*
4. *Water dependent uses need reliable, explicit right to continue and to be newly built at water’s edge and docks and piers in water, using technology and design safety, not “nature based” retreat unproven to succeed anywhere. Do not prohibit water dependent facilities based on geography of a high wind and wave zone – do require sound, safe engineering and design in any wind and wave zone.*
5. *Failure to make changes to proposed regulations will*

*cause the coastal economy to collapse fast. No financing, no ordinary property transactions, no new money to invest in upgrading and adapting existing facilities. We need all of these! We need private sector money to pay for real climate change adaptation.*

6. *We know how to design and adapt to storms. Let us do so.*

Thank you,

*Scott Zeien*

One Shipyard Lane  
P.O. Box 408  
Cataumet, MA 02534  
(508) 563-7136 X114



**From:** [Sharon Tripp](#)  
**To:** [DEP Wetlands \(DEP\)](#)  
**Subject:** Wetlands and Waterways Resilience Comments  
**Date:** Wednesday, April 17, 2024 1:28:32 PM

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Good Afternoon, I am opposed to the proposed changes for the following reasons:

Failure to make changes to proposed regulations will cause the coastal economy to collapse fast. No financing, no ordinary property transactions, no new money to invest in upgrading and adapting existing facilities. We need all of these! We need private sector money to invest in our coastal communities for real climate change adaptation.

Be more inclusive of impacted communities. Hold many more public hearings and listen.

Do not leave it to each volunteer Conservation Commission's discretion to refuse waterfront property use especially for water dependent uses which by definition need to be at the water's edge.

Water dependent uses need reliable, explicit right to continue and to be newly built at water's edge and docks and piers in water, using technology and design safety, not "nature based" retreat unproven to succeed anywhere. Do not prohibit water dependent facilities based on geography of a high wind and wave zone – do require sound, safe engineering and design in any wind and wave zone.

Failure to make changes to proposed regulations will cause the coastal economy to collapse fast. No financing, no ordinary property transactions, no new money to invest in upgrading and adapting existing facilities. We need all of these! We need private sector money to pay for real climate change adaptation.

We know how to design and adapt to storms. Let us do so.

Thank you,  
Sharon Tripp  
Dartmouth, MA

Sent from [Mail](#) for Windows



**From:** [Sheila Giancola](#)  
**To:** [DEP Wetlands \(DEP\)](#)  
**Subject:** Wetlands and Waterways Resilience Comments  
**Date:** Wednesday, April 17, 2024 1:39:51 PM

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Dear DEP Wetlands,

The proposed changes are supposed to be “nature-based planning” to accommodate sea level rise (called “managed retreat”) and prohibit adaptations based on technology and design. This is not adaptive or resilient.

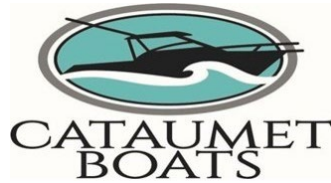
***Regulations not ready, major revisions are needed including:***

- 1. Failure to make changes to proposed regulations will cause the coastal economy to collapse fast. No financing, no ordinary property transactions, no new money to invest in upgrading and adapting existing facilities. We need all of these! We need private sector money to invest in our coastal communities for real climate change adaptation.*
- 2. Be more inclusive of impacted communities. Hold many more public hearings and listen.*
- 3. Do not leave it to each volunteer Conservation Commission's discretion to refuse waterfront property use especially for water dependent uses which by definition need to be at the water's edge.*
- 4. Water dependent uses need reliable, explicit right to continue and to be newly built at water's edge and docks and piers in water, using technology and design safety, not “nature based” retreat unproven to succeed anywhere. Do not prohibit water dependent facilities based on geography of a high wind and wave zone – do require sound, safe engineering and design in any wind and wave zone.*
- 5. Failure to make changes to proposed regulations will cause the coastal economy to collapse fast. No financing, no ordinary property transactions, no new money to invest in upgrading and adapting existing facilities. We need all of these! We need private sector money to pay for real climate change adaptation.*
- 6. We know how to design and adapt to storms. Let us do so.*

Thank you,

Sheila Giancola

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**Cataumet Boats Inc**  
**P.O. Box 147**  
**Cataumet, MA 02534**  
**T 508.563.7102**  
[www.cataumetboats.com](http://www.cataumetboats.com)

**From:** [Tamara Wolczik](#)  
**To:** [DEP Wetlands \(DEP\)](#); [depwaterways@mass.gov](mailto:depwaterways@mass.gov)  
**Subject:** Wetlands and Waterways Resilience Comments  
**Date:** Tuesday, April 30, 2024 7:01:09 PM

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Dear MASS DEP,

On April 27, 2024, it came to my attention that the Mass Department of Environmental Protection proposed regulatory changes on December 23, 2023. As a coastal resident, why was I not notified of catastrophic changes that will potentially have cataclysmal impact on my family, neighbors, and town. How can they justify RUINING the lives of so many nevermind without any notification?!

As coastal residents, we do our due diligence in research and outreach to support, maintain, and make future plans to ensure that we keep our homes AND environment protected. Suddenly these decisions may go to inexperienced unknowledgable volunteers of a Conservation Commision?

These regulations are far from ready and require significant revisions, including:

1. Inclusiveness of impacted communities. Hold public hearings and actually listen
2. Do not leave it to each volunteer Conservation Commission's discretion to refuse waerfront property use, especially for water dependent uses by which definition, need to be at the water's edge.
3. Water dependent uses need reliable, explicit right to continue and to be newly built at water's edge and docks and piers in water, using technology and design safely, not "nature based" retreat unproven to succeed anywhere. Do not prohibit water dependent facilities based on geography of a high wind and wave zone - do require sound safe engineering and design in any wind and wave zone.
4. Failure to make changes to propsed regulations will cause the coastal community to collapse fast. No financing, no ordinary property transactions, no new money to invest in upgrading and adapting existin facilities. We need all of these! We need private sector money to pay for real climate change adaptation.
5. We know how to design and adapt to storms. Let us do so!

Sincerely,  
Tammy Wheeler  
Scituate, MA

**From:** [Tobin Dominick](#)  
**To:** [DEP Wetlands \(DEP\)](#); [Waterways, DEP \(DEP\)](#)  
**Subject:** Attn: Wetlands and Waterways Resilience Comments  
**Date:** Tuesday, April 30, 2024 9:55:15 AM

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## **Attn: Wetlands and Waterways Resilience Comments**

**Our family developed, operates, maintains one for the largest marina operations in the state, and has for 51 years. The marina consists of 275 boats slips, fuel dock and pump-out facilities, a 30 unit hotel on the water connected to a lobby, indoor pool, 200 seat waterfront restaurant and conference center. The boat yard consists of indoor boat repair shops, retail space, offices and sales areas. With over 11 acres of marina, buildings and boatyard, we are very concerned about the following changes in regulations and all of these points will have significant devastation to our private businesses. We support both commercial and recreational boating markets and considered an essential business to our economy. We host thousands of guests every year by car or by boat, and a major contributor to our local economy for destination travelers. In our last 51 years we have built, maintained, and operate on a mixture of filled tideland our docks, piers, seawalls, and all the upland buildings. Not one penny has been funded by the state, except for a pump-out grant to help keep our waterways clean. We have built and rebuilt our buildings, piers, docks and seawalls. We are stewards of our waterfront and have taken great pride in maintaining our property at very heavy expenses to do so. As they say, "Rome wasn't built in a day." Well either was our water dependent use businesses, and we need to be able to continue to change with the times, and maintain what has been established all while supporting the waterways economy, please read below further for topics related to our business.**

**It has been brought to my attention by the Massachusetts Marine Trades Association, that the Commonwealth of Massachusetts on December 22, 2023 proposed the most unprecedented regulatory changes in 40 years. If enacted, the regulations would:**

- **prohibit new buildings in high wind and wave areas, even if safely**

- designed and elevated
- Prohibit coastal reconstruction or redevelopment, unless on the exact same footprint and elevated
- Leave decisions to discretion of local Conservation Commissions whether even existing buildings, piers and docks can be relocated or expanded or new ones installed.
- Make uncertain Chapter 91 relicensing for even existing buildings, docks and piers upon expiration of current term.

The proposed changes are supposed to be “nature-based planning” to accommodate sea level rise (called “managed retreat”) and prohibit adaptations based on technology and design. **This is not adaptive or resilient and clearly needs more thought and feedback.**

**Regulations are not ready and I believe major revisions are needed. Please strongly consider the following:**

- Failure to make changes to proposed regulations will cause the coastal economy which is our business to collapse fast. As a result we would not have access to financing, ordinary property transactions. This also includes no new money to invest in upgrading and adapting existing facilities. **We need all of these!**
- We need private sector money to invest in our coastal communities for real climate change adaptation.
- You must please be more inclusive of impacted communities.
- Hold many more public hearings, let property owners know and understand. Then listen to more comments. Not enough people know about such regulations and creative and concerned individuals especially need to know, we are all in this together and should have a collaborative solution.
- Do not leave it to each volunteer Conservation Commission’s discretion to refuse waterfront property use especially for water dependent uses which by definition need to be at the water’s edge.
- Water dependent uses need reliable, explicit right to continue and to be newly built at water’s edge and docks and piers in water, using technology and design safety, not “nature based” retreat unproven to succeed anywhere. Do not prohibit water dependent facilities based on geography of a high wind and wave zone – do require sound, safe engineering and design in any wind and wave zone.
- We know how to design and adapt to storms as well as engineering companies. Let us do so.

Thank you for your time in reading these comments and suggestions. We appreciate your consideration and thoughtfulness and look forward to further discussion for making future solutions viable.

In best regards,

Tobin Dominick

*Managing Partner*

**Cape Ann Marina**

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[www.CapeAnnMarina.com](http://www.CapeAnnMarina.com)

*75 Essex Avenue – Gloucester MA 01930*



April 30, 2024  
Massachusetts Department of Environmental Protection  
Bureau of Water Resources  
100 Cambridge Street, Suite 900  
Boston, MA 02114

*Submitted electronically to: [dep.wetlands@mass.gov](mailto:dep.wetlands@mass.gov)  
Re: Wetlands-401 Resilience Comments*

To whom it may concern:

These comments on the proposed revisions to the 310 CMR 10.00: Wetlands Protection Act Regulations are submitted on behalf of the Appalachian Mountain Club (AMC). The AMC has over 30,000 members and maintains 400 miles of trails that are accessible to the public in Massachusetts. We have firsthand experience engaging with the Wetlands Protection Act regulations in the trail building process and managing lands that are increasingly impacted by climate change. We are deeply supportive of MassDEP's work to improve the Commonwealth's resilience and are thankful for the opportunity to provide comments.

Greenville, ME

Russell, MA

Alexandria, NH

Bretton Woods, NH

Gorham, NH

Blairstown, NJ

Haverstraw, NY

Bethlehem, PA

We are grateful to MassDEP and the years of work that has been put into these draft regulations for "Wetlands Resilience 1.0" to help make Massachusetts' ecosystems resilient to the impacts of climate change. However, the draft regulations address the process for trails in wetland areas inadequately. We strongly encourage MassDEP to begin to engage trail construction interest holders (including conservation organizations, land trusts, trails groups, and wetland scientists) early in the planning process for the next phase of wetlands regulations updates for improved resilience---"Resilience 2.0" ---which we understand will be the next stage.

These regulatory changes provide an important opportunity to simplify and the permitting process for public shared use paths and woodland trails and to increase resilience for future trail projects and the lands they traverse. When trails near wetland resources are constructed with best trail management practices (BTMPs), they minimize surface impacts and help protect the land by creating stable trail surfaces that limit improper widening of the footbed and trampling of vegetation by hikers seeking to avoid wet areas. The following are specific Resilience 2.0 suggestions that relate to climate resilience work needed in the Commonwealth's open spaces.

A. All trails on public open space should be regulated consistently. Currently, unpaved pedestrian walkways (i.e., trails) located within buffer zone or Riverfront Area and less than 3' wide for public access on "Conservation Property", are defined as minor activities and therefore not subject to these regulations. However, many public trails traverse general municipal land, land trust properties, and conservation restrictions on private property.

a. We ask MassDEP to add a definition for "Conservation Property" that specifically includes all these types of lands onto which the public is invited.

B. Trail Maintenance. Boardwalks, puncheons, drainage features, and other basic trail infrastructure need to be routinely maintained and replaced, and occasionally expanded or created to protect a trail's impact on wetland resources areas. We ask

10 City Square  
Boston, MA 02129

P: 617.523.0655  
F: 617.523.0722



that MassDEP clarify or define trail maintenance projects as minor activities similar to the permitting approach for existing structures associated with other public services in 10.02(2)(a)(2).

C. Trail Construction. As organizations committed to sustainably conserving lands for wildlife habitat and outdoor recreation, we believe the regulations should provide a clear and consistent pathway for permitting for a wetland trail that recognizes the overall goal of wetland protection and resilience in natural surface trail building practices. Currently, the only permitting avenue subjects trails to the same standard as development projects that convert land to large, hardened surfaces and permanently impair or destroy the function and values of wetlands, such as buildings, roads, or commercial parking areas).

- a. We ask that MassDEP simplify trail construction project permitting by:
  - i. Expanding the limited project provision in 10.53(j) to allow: “The construction of public footpaths and associated boardwalks/puncheons, that are close to the ground provided, however, that such structures are constructed on pilings, sills, or posts so as to permit the reasonably unobstructed flowage of water”.
  - ii. Adding to the Bordering Vegetated Wetland (BVW) regulations a new section in 10:55(4)(c)(4) allowing Conservation Commissions to permit trail work in BVWs when: “Said work involves the creation of a trail for non-motorized use (e.g., hiking, skiing, and biking where appropriate) which will alter less than 500 square feet and will permit the reasonably unobstructed flowage of water”.

D. Habitat Restoration by means of Invasive Species Management. Non-native invasive plants pose a major threat to the health and survival of our native ecosystems and are on the rise with climate change. Currently, invasive plant control work requires the same time-consuming, costly, and complex wetland permitting devised for construction projects. Quick identification and removal of invasive plants can minimize the dramatic negative effects of these plants and allow for the recovery of native species diversity and native wildlife habitat, a recognized wetland value.

- a. We ask that MassDEP simplify the permitting process for certain habitat restoration projects involving invasive species management. This could be accomplished by the following changes in Resilience 2.0:
  - i. Create a new minor activity in 310 CMR 10.02(2)(b)(2) which allows for the removal of turf lawn and/or non-native invasive herbs, vines, and shrubs, provided erosion and sedimentation controls are implemented until the area is restabilized with native species.
  - ii. Add a limited project provision which specifically allows small-, medium-, and large-scale invasive species removal projects with distinct regulatory review standards.



Well used trails that are designed and maintained with best trail management practices help build a culture of appreciation for these vital wetland resources, which is more important than ever as the impacts of climate change intensify.

Thank you for the opportunity for our organizations with expertise in sustainable and resilient trail design and maintenance to provide comments on MassDEP's proposed revisions to the Wetlands Protection Act regulations. We look forward to working with you on simplifying the wetland permitting processes for these needed climate resilient strategies for managing open space in the Commonwealth. Please feel free to contact Rae Ettenger at [rettenger@outdoors.org](mailto:rettenger@outdoors.org), who would be happy to respond to questions or provide more information.

Sincerely,

Heather Clish, VP Conservation and Recreation Advocacy  
Appalachian Mountain Club



Dear MassDEP,

April 30, 2024

Our organization has worked with a few communities' conservation committees for various trail projects. My frustration that our work is like a square peg trying to fit in a round hole is costly and irritating. Our current project of establishing a connector trail involves crossing an intermittent brook in two spots. The NOI had this listed as a category 1 project with a fee of \$110. The state kicked it back stating it was a category 2 project that just increased the fee to \$500. Their reason was this went under "each crossing for a driveway to a single family house". What house? This is a trail project.

I truly believe that the regulations need to be changed to expand the categories to include trail work to make life easier for organizations like ours that have put over \$700,00 back into trails since 1989. We are all volunteers and raise funds for these projects with events and fundraising – not an easy task. But we persist because the trail improvements we do benefit all trail users, not just equestrian users.

We are grateful to MassDEP for the years of work you have put into these draft regulations and commend you for helping make Massachusetts ecosystems more resilient to climate change. It is critical we take such steps towards ecological restoration, public safety, and preparing our communities for the impacts of climate change. However, these draft regulations do not go far enough and we strongly encourage MassDEP to begin to engage stakeholders in the "Resilience 2.0" planning process. Regulatory changes would benefit from early and close coordination with local and regional land trusts, conservation staff, and trail organizations. Following are some specific 2.0 suggestions that relate to important climate resilient work needed in the Commonwealth's open spaces.

Trail Maintenance and Construction should not be discouraged by time-consuming, costly, or complex wetland permitting. Narrow unpaved pedestrian walkways in publicly accessible open space often traverse wetlands. When trails in wetlands are properly constructed with best trail management practices (BTMPs), they help protect wetland resources by creating stable trail surfaces that limit improper widening of the footbed and trampling of vegetation by hikers seeking to avoid wet areas. Well-used trails help build a culture of appreciation and stewardship for these vital wetland resources. Encouraging BTMPs is ever more important as climate change intensifies storms and flooding.

A. All trails on public open space should be regulated the same. Currently unpaved pedestrian walkways (i.e., trails) located within buffer zone or Riverfront Area and less than 3' wide for public access on "Conservation Property" are exempt from wetland permitting. However, many trails traverse general municipal land, land trust properties, and private property with conservation restrictions. We ask MassDEP to define "Conservation Property" to include all these types of natural land onto which the public is invited.

B. Trail Maintenance. Boardwalks/bridges, puncheons, waterbars, and other basic trail infrastructure need to be routinely replaced, expanded, and/or created. We ask that

MassDEP create an exemption for trail maintenance similar to the exemptions afforded to existing structures associated with many other public services in 10.02(2)(a)(2).

C. Trail Construction. Most boardwalks and puncheons are elevated only 4-12" above the ground for safety reasons. Unfortunately, the regulations currently consider these common wooden structures to impair the wetland because they shade out vegetation, resulting in a "loss" of wetlands. Therefore, such projects require wetland replication which requires wetland professionals, groundwater assessments, and detailed plans and execution. Wetland replication generally involves cutting down trees and shrubs and excavating soils in buffer zones. Most trail organizations don't have the necessary expertise or funding to undertake such a complex permitting or replication process. Furthermore, permitting a wetland trail should not be held to the same standard as development projects that clearly impair or destroy the functions and values of wetlands, such as building roads, houses, or commercial plazas. We ask that MassDEP simplify permitting of trail construction projects by:

i. Expanding the limited project provision in 10.53(j) to allow: "The construction of public footpaths and associated boardwalks/puncheons, that are close to the ground provided, however, that such structures are constructed on pilings, sills, or posts so as to permit the reasonably unobstructed flowage of water."

ii. Adding to the Bordering Vegetated Wetland regulations a new section in 10:55(4)(c)(4) allowing Conservation Commissions to permit trail work in BVWs when: "Said work involves the creation of a trail for non-motorized use (e.g., hiking and skiing) which will alter less than 500 s.f. and will permit the reasonably unobstructed flowage of water."

D. Add trail work under the listings of categories for boardwalk/bridges for simple installation projects. Obviously a 50' bridge would certainly require a higher level of oversight and project planning than a simple 12' bridge spanning a brook with a 6' bank to bank width. This could be tiered based on the size of the actual stream/river/brook bed width.

Sincerely yours,

*Becky Kalagher*

Bay State Trail Riders Association, Inc.  
24 Glen Street  
Douglas, MA 01516





**From:** [Brandon Parker](#)  
**To:** [DEP Wetlands \(DEP\)](#)  
**Subject:** Wetlands-401 Resilience Comments  
**Date:** Wednesday, April 10, 2024 9:16:37 AM

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**CAUTION: This email originated from a sender outside of the Commonwealth of Massachusetts mail system. Do not click on links or open attachments unless you recognize the sender and know the content is safe.**

I am grateful to MassDEP for the work you have put into regulations and commend you for helping make Massachusetts ecosystems more resilient to climate change. I encourage MassDEP to begin to engage stakeholders in the "Resilience 2.0" planning process. Following are some specific 2.0 suggestions that relate to important climate resilient work needed in the Commonwealth's open spaces.

1.

**Trail Maintenance and Construction** should not be discouraged by time-consuming, costly, or complex wetland permitting. Narrow unpaved pedestrian walkways in publicly accessible open space often traverse wetlands. When trails in wetlands are properly constructed with best trail management practices (BTMPs), they help protect wetland resources by creating stable trail surfaces that limit improper widening of the footbed and trampling of vegetation by hikers seeking to avoid wet areas. Well-used trails help build a culture of appreciation and stewardship for these vital wetland resources. Encouraging BTMPs is ever more important as climate change intensifies storms and flooding.

A. All trails on public open space should be regulated the same. Currently unpaved pedestrian walkways (i.e., trails) located within buffer zone or Riverfront Area and less than 3' wide for public access on "Conservation Property" are exempt from wetland permitting. However, many trails traverse general municipal land, land trust properties, and private property with conservation restrictions. **We ask MassDEP to define "Conservation Property" to include all these types of natural land onto which the public is invited.**

B. Trail Maintenance. Boardwalks, puncheons, waterbars, and other basic trail infrastructure need to be routinely replaced, expanded, and/or created. **We ask that MassDEP create an exemption for trail maintenance similar to the exemptions afforded to existing structures associated with many other public services in 10.02(2)(a)(2).**

C. Trail Construction. Most boardwalks and puncheons are elevated only 4-12" above the ground for safety reasons. Unfortunately, the regulations currently consider these common wooden structures to impair the wetland because they shade out vegetation, resulting in a "loss" of wetlands. Therefore, such projects require wetland replication which requires wetland professionals, groundwater assessments, and detailed plans and execution. Wetland replication generally involves cutting down trees and shrubs and excavating soils in buffer zones. Most trail organizations don't have the necessary expertise or funding to undertake such a complex permitting or replication process. Furthermore, permitting a wetland trail should not be held to the same standard as

development projects that clearly impair or destroy the functions and values of wetlands, such as building roads, houses, or commercial plazas. **We ask that MassDEP simplify permitting of trail construction projects by:**

i. **Expanding the limited project provision in 10.53(j) to allow: “The construction of public footpaths and associated boardwalks/puncheons, that are close to the ground provided, however, that such structures are constructed on pilings, sills, or posts so as to permit the reasonably unobstructed flowage of water.”**

ii. **Adding to the Bordering Vegetated Wetland regulations a new section in 10:55(4)(c)(4) allowing Conservation Commissions to permit trail work in BVWs when: "Said work involves the creation of a trail for non-motorized use (e.g., hiking and skiing) which will alter less than 500 s.f. and will permit the reasonably unobstructed flowage of water."**

2. **Habitat Restoration by means of Invasive Species Management.** Non-native invasive plants pose a major threat to the health and survival of our native ecosystems, and are on the rise with climate change. Currently, invasive plant control work requires the same time-consuming, costly, and complex wetland permitting devised for construction projects. Quick identification and removal of invasive plants can minimize the dramatic negative effects of these plants and allow for the recovery of native species diversity and native wildlife habitat, a recognized wetland value. **We ask that MassDEP simplify the permitting process for certain habitat restoration projects involving invasive species management.** This could be accomplished by the following changes:

**A.**

**Create a new minor activity in 310 CMR 10.02(2)(b)(2) which allows for the removal of turf lawn and/or non-native invasive herbs, vines, and shrubs, provided erosion and sedimentation controls are implemented until the area is restabilized with native species.**

**B.**

**Add a limited project provision which specifically allows small-, medium-, and large-scale invasive species removal projects with distinct regulatory review standards.**

Thank you for your careful consideration of these recommended regulatory changes.

Sincerely,

Brandon Parker  
Hudson Conservation Commission  
Hudson Land Trust (member)

**From:** [Melinda Lindquist](#)  
**To:** [DEP Wetlands \(DEP\)](#)  
**Subject:** Wetlands-401 Resilience Comments  
**Date:** Tuesday, April 23, 2024 9:32:05 AM

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**CAUTION: This email originated from a sender outside of the Commonwealth of Massachusetts mail system. Do not click on links or open attachments unless you recognize the sender and know the content is safe.**

Dear Mass DEP Wetlands Administration Team,

The Carlisle Conservation Foundation is a private organization in Carlisle Massachusetts founded in 1960 with a mission to preserve the natural beauty and the rural character of Carlisle. We work with the town, individual landowners and other organizations to protect open space for wildlife habitat, passive recreation, and scenic vistas; to provide education on local species; and to promote responsible development practices.

We are grateful to MassDEP for the years of work you have put into the draft wetlands regulations and commend you for helping make Massachusetts ecosystems more resilient to climate change. It is critical we take such steps towards ecological restoration, public safety, and preparing our communities for the impacts of climate change. However, these draft regulations do not go far enough, and we strongly encourage MassDEP to begin to engage stakeholders in the “Resilience 2.0” planning process. Regulatory changes would benefit from early and close coordination with local and regional land trusts, conservation staff, and trail organizations. Following are some specific 2.0 suggestions that relate to important climate resilient work needed in the Commonwealth’s open spaces.

We urge you to recognize that **Trail Maintenance and Construction should not be discouraged** by time-consuming, costly, or complex wetland permitting. Narrow unpaved pedestrian walkways in publicly accessible open space often traverse wetlands. When trails in wetlands are properly constructed with best trail management practices (BTMPs), they help protect wetland resources by creating stable trail surfaces that limit improper widening of the footbed and trampling of vegetation by hikers seeking to avoid wet areas. Well-used trails help build a culture of appreciation and stewardship for these vital wetland resources. Encouraging BTMPs is ever more important as climate change intensifies storms and flooding.

We also request that you recognize the importance of **Habitat Restoration by means of Invasive Species Management**. Non-native invasive plants pose a serious and growing threat to the health and survival of our native ecosystems, especially in the context of environmental changes associated with climate change. Currently, invasive plant control work requires the same time-consuming, costly, and complex wetland permitting devised for construction projects. Quick identification and removal of invasive plants can minimize the dramatic negative effects of these plants and allow for the recovery of native species diversity and

native wildlife habitat, a recognized wetland value. **We ask that MassDEP simplify the permitting process for certain habitat restoration projects involving invasive species management.** Specifically, we request that you consider implementing the following changes:

- **Create a new minor activity in 310 CMR 10.02(2)(b)(2) which allows for the removal of turf lawn and/or non-native invasive herbs, vines, and shrubs, provided erosion and sedimentation controls are implemented until the area is restabilized with native species.**
- **Add a limited project provision which specifically allows small-, medium-, and large-scale invasive species removal projects with distinct regulatory review standards.**

Thank you for your careful consideration of these recommended regulatory changes. We look forward to working with you on simplifying the wetland permitting processes for these needed climate resilient strategies for managing our open space.

Sincerely,

Melinda Lindquist, President  
Carlisle Conservation Foundation  
PO Box 300, Carlisle, MA 01741

**From:** [Carlisle Trails Committee](#)  
**To:** [DEP Wetlands \(DEP\)](#)  
**Subject:** Wetlands-401 Resilience Comments  
**Date:** Monday, April 22, 2024 8:38:13 AM

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**CAUTION: This email originated from a sender outside of the Commonwealth of Massachusetts mail system. Do not click on links or open attachments unless you recognize the sender and know the content is safe.**

We are grateful to MassDEP for the years of work you have put into these draft regulations and commend you for helping make Massachusetts ecosystems more resilient to climate change. It is critical we take such steps towards ecological restoration, public safety, and preparing our communities for the impacts of climate change. However, these draft regulations do not go far enough and we strongly encourage MassDEP to begin to engage stakeholders in the “Resilience 2.0” planning process. Regulatory changes would benefit from early and close coordination with local and regional land trusts, conservation staff, and trail organizations. Following are some specific 2.0 suggestions that relate to important climate resilient work needed in the Commonwealth’s open spaces.

1. **Trail Maintenance and Construction** should not be discouraged by time-consuming, costly, or complex wetland permitting. Narrow unpaved pedestrian walkways in publicly accessible open space often traverse wetlands. When trails in wetlands are properly constructed with best trail management practices (BTMPs), they help protect wetland resources by creating stable trail surfaces that limit improper widening of the footbed and trampling of vegetation by hikers seeking to avoid wet areas. Well-used trails help build a culture of appreciation and stewardship for these vital wetland resources. Encouraging BTMPs is ever more important as climate change intensifies storms and flooding.
  - A. All trails on public open space should be regulated the same. Currently unpaved pedestrian walkways (i.e., trails) located within buffer zone or Riverfront Area and less than 3’ wide for public access on “Conservation Property” are exempt from wetland permitting. However, many trails traverse general municipal land, land trust properties, and private property with conservation restrictions. **We ask MassDEP to define “Conservation Property” to include all these types of natural land onto which the public is invited.**
  - B. Trail Maintenance. Boardwalks, puncheons, waterbars, and other basic trail infrastructure need to be routinely replaced, expanded, and/or created. **We ask that MassDEP create an exemption for trail maintenance similar to the exemptions afforded to existing structures associated with many other public services in 10.02(2)(a)(2).**
  - C. Trail Construction. Most boardwalks and puncheons are elevated only 4-12” above the ground for safety reasons. Unfortunately, the regulations currently consider these common wooden structures to impair the wetland because they shade out vegetation, resulting in a “loss” of wetlands. Therefore, such projects require wetland replication which requires wetland professionals, groundwater assessments, and detailed plans and execution. Wetland replication generally involves cutting down trees and shrubs and excavating soils in buffer zones. Most trail organizations don’t have the necessary expertise or funding to undertake such a complex permitting or replication process. Furthermore, permitting a wetland trail should not be held to the same standard as development projects that clearly impair or destroy the functions and values of wetlands, such as building roads, houses, or commercial plazas. **We ask that MassDEP simplify permitting of trail construction projects**

by:

- i. **Expanding the limited project provision in 10.53(j) to allow: “The construction of public footpaths and associated boardwalks/puncheons, that are close to the ground provided, however, that such structures are constructed on pilings, sills, or posts so as to permit the reasonably unobstructed flowage of water.”**
- ii. **Adding to the Bordering Vegetated Wetland regulations a new section in 10:55(4)(c)(4) allowing Conservation Commissions to permit trail work in BVWs when: "Said work involves the creation of a trail for non-motorized use (e.g., hiking and skiing) which will alter less than 500 s.f. and will permit the reasonably unobstructed flowage of water.”**

Our group, the Carlisle Trails Committee, is a volunteer committee of the Town of Carlisle charged with building, maintaining, and promoting the use of unpaved trails on publicly accessible conservation lands. Our town is blessed with abundant wetlands and a large trail system that interacts with them. The Carlisle Trails Committee has always worked closely with the Carlisle Conservation Commission to protect wetland resource areas as we provide public access to our public lands. Our work has gotten significantly more difficult in recent years with storm damage and flooding from severe weather events combined with increase trail use during and after Covid. We have a large backlog of projects to make our trails more resilient to severe weather. One of the main impediments we face is the time and expense of wetland filings. We find that simple projects that might take 4 hours to accomplish can take 40 hours of effort for wetland filings and hearings. We are an all-volunteer group of people who love to work outdoors. It is difficult to find people willing to spend their free time doing paperwork. DEP's recent crackdown on boardwalk projects, requiring wetland replication areas, has made our lives much more difficult. We ask that more consideration be given to the public benefits that trails provide.

Thank you for your careful consideration of these recommended regulatory changes. We look forward to working with you on simplifying the wetland permitting processes for these needed climate resilient strategies for managing our open space.

Sincerely,

Alan Ankers  
Chair, Carlisle Trails Committee



TO: MassDEP

FROM: Carol Lloyd  
Essex County Trail Association  
978-500-4945

DATE: April 29, 2024

RE: Wetlands-401 Resilience Comments

\*\*\*\*\*

Essex County Trail Association is dedicated to the maintenance and protection of trails on the North Shore of Massachusetts. The work that we do is often delayed due to the current permitting process. We are encouraged that there is a discussion now of ways to make permitting for routine maintenance less cumbersome. Thank you! The following are some specific suggestions that relate to important climate resilient work needed in the Commonwealth's open spaces. Their acceptance will greatly facilitate the work we do to keep our trails open to everyone.

**Trail Maintenance and Construction** should not be discouraged by time-consuming, costly, or complex wetland permitting. Narrow unpaved pedestrian walkways in publicly accessible open space often traverse wetlands. When trails in wetlands are properly constructed with best trail management practices (BTMPs), they help protect wetland resources by creating stable trail surfaces that limit improper widening of the footbed and trampling of vegetation by hikers seeking to avoid wet areas. Well-used trails help build a culture of appreciation and stewardship for these vital wetland resources. Encouraging BTMPs is ever more important as climate change intensifies storms and flooding.

1. All trails on public open space should be regulated the same. Currently unpaved pedestrian walkways (i.e., trails) located within buffer zone or Riverfront Area and less than 3' wide for public access on "Conservation Property" are exempt from wetland permitting. However, many trails traverse general municipal land, land trust properties, and private property with conservation restrictions. **We ask MassDEP to define "Conservation Property" to include all these types of natural land onto which the public is invited.**

2. **Trail Maintenance.** Boardwalks, puncheons, waterbars, and other basic trail infrastructure need to be routinely replaced, expanded, and/or created. **We ask that MassDEP create an exemption for trail maintenance similar to the exemptions afforded to existing structures associated with many other public services in 10.02(2)(a)(2).**

**3. Trail Construction.** Most boardwalks and puncheons are elevated only 4-12" above the ground for safety reasons. Unfortunately, the regulations currently consider these common wooden structures to impair the wetland because they shade out vegetation, resulting in a "loss" of wetlands. Therefore, such projects require wetland replication which requires wetland professionals, groundwater assessments, and detailed plans and execution. Wetland replication generally involves cutting down trees and shrubs and excavating soils in buffer zones. Most trail organizations don't have the necessary expertise or funding to undertake such a complex permitting or replication process. Furthermore, permitting a wetland trail should not be held to the same standard as development projects that clearly impair or destroy the functions and values of wetlands, such as building roads, houses, or commercial plazas. **We ask that MassDEP simplify permitting of trail construction projects by:**

**A. Expanding the limited project provision in 10.53(j) to allow: "The construction of public footpaths and associated boardwalks/puncheons, that are close to the ground provided, however, that such structures are constructed on pilings, sills, or posts so as to permit the reasonably unobstructed flowage of water."**

**B. Adding to the Bordering Vegetated Wetland regulations a new section in 10:55(4)(c)(4) allowing Conservation Commissions to permit trail work in BVWs when: "Said work involves the creation of a trail for non-motorized use (e.g., hiking and skiing) which will alter less than 500 s.f. and will permit the reasonably unobstructed flowage of water."**

Thank you for your careful consideration of these recommended changes. We look forward to working with you on simplifying the wetland permitting processes for this important work on our trails.

April 22, 2024

Massachusetts DEP  
Boston, MA

Subject: Wetlands-401 Resilience Comments

Dear MADEP,



I am writing on behalf of the Essex County Greenbelt Association (Greenbelt), a land trust that owns and manages over 8000 acres in Essex County. Greenbelt owns over 50 properties in Essex County that offer public trail access, free of charge, 365 days a year. Our staff works hard to maintain these trails and simplifying/streamlining the permitting process would significantly enhance our ability to construct and maintain safe, well-designed trails without compromising natural resource values.

We are grateful to MassDEP for the years of work you have put into these draft regulations and commend you for helping make Massachusetts ecosystems more resilient to climate change. It is critical we take such steps towards ecological restoration, public safety, and preparing our communities for the impacts of climate change. However, these draft regulations do not go far enough, and we strongly encourage MassDEP to begin to engage stakeholders in the “Resilience 2.0” planning process. Regulatory changes would benefit from early and close coordination with local and regional land trusts, conservation staff, and trail organizations. The following are some specific 2.0 suggestions that relate to important climate resilient work needed in the Commonwealth’s open spaces.

1. **Trail Maintenance and Construction** should not be discouraged by time-consuming, costly, or complex wetland permitting. Narrow unpaved pedestrian walkways in publicly accessible open space often traverse wetlands. When trails in wetlands are properly constructed with best trail management practices (BTMPs), they help protect wetland resources by creating stable trail surfaces that limit improper widening of the footbed and trampling of vegetation by hikers seeking to avoid wet areas. Well-used trails help build a culture of appreciation and stewardship for these vital wetland resources. Encouraging BTMPs is ever more important as climate change intensifies storms and flooding.
  - A. All trails on public open space should be regulated the same. Currently unpaved pedestrian walkways (i.e., trails) located within buffer zone or Riverfront Area and less than 3’ wide for public access on “Conservation Property” are exempt from wetland permitting. However, many trails traverse general municipal land, land trust properties, and private property with conservation restrictions. **We ask MassDEP to define “Conservation Property” to include all these types of natural land onto which the public is invited.**
  - B. Trail Maintenance. Boardwalks, puncheons, waterbars, and other basic trail infrastructure need to be routinely replaced, expanded, and/or created. **We ask that MassDEP create an exemption for trail maintenance similar to the exemptions afforded to existing structures associated with many other public services in 10.02(2)(a)(2).**

Conserving local farmland, wildlife habitat, and scenic landscapes since 1961.



C. **Trail Construction.** Most boardwalks and puncheons are elevated only 4-12" above the ground for safety reasons. Unfortunately, the regulations currently consider these common wooden structures to impair the wetland because they shade out vegetation, resulting in a "loss" of wetlands. Therefore, such projects require wetland replication which requires wetland professionals, groundwater assessments, and detailed plans and execution. Wetland replication generally involves cutting down trees and shrubs and excavating soils in buffer zones. Most trail organizations don't have the necessary expertise or funding to undertake such a complex permitting or replication process. Furthermore, permitting a wetland trail should not be held to the same standard as development projects that clearly impair or destroy the functions and values of wetlands, such as building roads, houses, or commercial plazas. **We ask that MassDEP simplify permitting of trail construction projects by:**

- i. **Expanding the limited project provision in 10.53(j) to allow: "The construction of public footpaths and associated boardwalks/puncheons, that are close to the ground provided, however, that such structures are constructed on pilings, sills, or posts so as to permit the reasonably unobstructed flowage of water."**
- ii. **Adding to the Bordering Vegetated Wetland regulations a new section in 10:55(4)(c)(4) allowing Conservation Commissions to permit trail work in BVWs when: "Said work involves the creation of a trail for non-motorized use (e.g., hiking and skiing) which will alter less than 500 s.f. and will permit the reasonably unobstructed flowage of water."**

2. **Habitat Restoration by means of Invasive Species Management.** Non-native invasive plants pose a major threat to the health and survival of our native ecosystems, and are on the rise with climate change. Currently, invasive plant control work requires the same time-consuming, costly, and complex wetland permitting devised for construction projects. Quick identification and removal of invasive plants can minimize the dramatic negative effects of these plants and allow for the recovery of native species diversity and native wildlife habitat, a recognized wetland value. **We ask that MassDEP simplify the permitting process for certain habitat restoration projects involving invasive species management.** This could be accomplished by the following changes:

A. **Create a new minor activity in 310 CMR 10.02(2)(b)(2) which allows for the removal of turf lawn and/or non-native invasive herbs, vines, and shrubs, provided erosion and sedimentation controls are implemented until the area is restabilized with native species.**

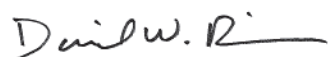
B. **Add a limited project provision which specifically allows small-, medium-, and large-scale invasive species removal projects with distinct regulatory review standards.**

Conserving local farmland, wildlife habitat, and scenic landscapes since 1961.



Thank you for your careful consideration of these recommended regulatory changes. Greenbelt looks forward to working with you on simplifying the wetland permitting processes for these needed climate resilient strategies for managing our open space.

Sincerely,



David W. Rimmer  
Director of Stewardship

Conserving local farmland, wildlife habitat, and scenic landscapes since 1961.



**From:** [John Lepore](#)  
**To:** [DEP Wetlands \(DEP\)](#)  
**Cc:** [Kinsella, Patricia](#)  
**Subject:** Wetlands-401 Resilience Comments  
**Date:** Sunday, March 31, 2024 2:36:10 PM

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To: [dep.wetlands@mass.gov](mailto:dep.wetlands@mass.gov)  
Re: Wetlands-401 Resilience Comments  
From: John C Lepore, CERP with SER

Thank you for the opportunity to provide input on specific ways DEP can simplify wetland permitting for trail work and habitat restoration on public open spaces. I have been providing professional services to our local school district, Pioneer Valley Regional School District, for over forty-five years as an environmental educator, land manager, planner, and restoration ecologist. The district serves the towns of Northfield, Leyden, and Bernardston and is the largest public school landowner in Massachusetts.

I am grateful to MassDEP for the years of work you have put into these draft regulations and commend you for helping make Massachusetts ecosystems more resilient to climate change. Steps must be taken towards ecological restoration, public safety, and preparing our communities for the impacts of climate change. However, these draft regulations need to go further. I firmly believe that MassDEP's engagement with stakeholders in the "Resilience 2.0" planning process is crucial. Early and close coordination with local and regional land trusts, conservation staff, trail organizations, and public schools would greatly benefit regulatory changes. Some specific 2.0 suggestions relate to important climate-resilient work needed in the Commonwealth's open spaces.

**1. Trail Maintenance and Construction** should not be discouraged by time-consuming, costly, or complex wetland permitting. Narrow, unpaved pedestrian walkways in publicly accessible open spaces often traverse wetlands. When wetland trails are adequately constructed with best trail management practices (BTMPs), they help protect wetland resources by creating stable trail surfaces that limit improper footbed widening and trampling vegetation by hikers seeking to avoid wet areas. Well-used trails help build a culture of appreciation and stewardship for these vital wetland resources. Encouraging BTMPs is ever more critical as climate change intensifies storms and flooding. **I ask MassDEP defines "Conservation Property" to include all these types of natural land to which the public is invited.**

- A. **All trails on public open space should be regulated the same.** Unpaved pedestrian walkways (i.e., trails) located within a buffer zone or Riverfront Area and less than 3' wide for public access on "Conservation Property" are exempt from wetland permitting. However, many trails traverse general municipal land, land trust properties, and private property with conservation restrictions.
- B. **Trail Maintenance.** Boardwalks, puncheons, water bars, and other basic trail infrastructure must be routinely replaced, expanded, and created. I'd like to ask MassDEP to create an exemption for trail maintenance similar to the exemptions given to existing structures associated with many other public services in 10.02(2)(a)(2).
- C. **Trail Construction.** Most boardwalks and puncheons are elevated only 4-12" above the ground for safety reasons. Unfortunately, the regulations consider these common wooden structures to impair the wetland because they shade out vegetation, resulting in a "loss" of wetlands. Therefore, such projects require wetland replication, which involves wetland professionals, groundwater assessments, and detailed plans and execution. Wetland replication generally involves cutting down trees and shrubs and excavating soils in buffer zones. Most trail organizations need more expertise or funding to undertake such a complex permitting or replication process. Furthermore, permitting a wetland trail should be held to a different standard than development projects that impair or destroy the functions and values of wetlands, such as building roads, houses, or commercial plazas. **I ask that MassDEP simplify the permitting of trail**



construction projects by:

- I. **Expanding the limited project provision in 10.53(j) to allow:** "The construction of public footpaths and associated boardwalks/puncheons, that are close to the ground provided, however, that such structures are constructed on pilings, sills, or posts to permit the reasonably unobstructed flowage of water."
- II. **Adding to the Bordering Vegetated Wetland regulations, a new section in 10:55(4)(c)(4) allowing Conservation Commissions to permit trail work in BVWs when:** "Said work involves the creation of a trail for non-motorized use (e.g., hiking and skiing) which will alter less than 500 s.f. and will permit the reasonably unobstructed flowage of water."

**2. Habitat Restoration using Invasive Species Management.** Non-native invasive plants pose a significant threat to the health and survival of our native ecosystems and are on the rise with climate change. Invasive plant control work currently requires the exact time-consuming, costly, and complex wetland permitting devised for construction projects. Quick identification and removal of invasive plants can minimize the dramatic adverse effects of these plants and allow for the recovery of native species diversity and native wildlife habitat, a recognized wetland value. I ask that MassDEP simplify the permitting process for specific habitat restoration projects involving invasive species management. The following changes could accomplish this:

- A. Create a new minor activity in 310 CMR 10.02(2)(b)(2), which allows for the removal of turf lawn and non-native invasive herbs, vines, and shrubs, provided erosion and sedimentation controls are implemented until the area is restabilized with native species.
- B. Add a limited project provision allowing small, medium, and large-scale invasive species removal projects with distinct regulatory review standards.

I sincerely appreciate your careful consideration of these recommended regulatory changes. I value your expertise and look forward to working with you on simplifying the wetland permitting processes for these needed climate-resilient strategies for managing our open space.

Sincerely,  
John Lepore

**John' Giaco' Lepore, BS Botany, MALD, CERP**

Cell: 413.512.0644

**[Future Lands Designs, LLC](#)**

P.O. Box 608  
Bernardston, MA 01337



<https://www.ser.org>

The Holy Land is everywhere.

Black Elk, the medicine man of the Oglala Lakota people

To: MA Department of Environmental Protection  
Fr: Kestrel Land Trust  
Re: Wetlands-401 Resilience Comments  
Da: April 26, 2024

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Kestrel Land Trust's support of trails in the Connecticut River Valley stretches back to the 1980s, when KLT put volunteer time and modest funding toward the creation of the Robert Frost Trail by then-Town of Amherst Conservation Director Pete Westover.

Today, KLT actively creates and sustains trails on conserved lands throughout our region, both on our own Nature Retreats, and on municipal and state public lands. Our commitment to this effort is demonstrated by our recent Promise to the Valley campaign, which garnered over \$5 million in community support for land conservation and trail maintenance. KLT has dedicated a significant portion of this funding to trails, and over the past few years we have actively collaborated to leverage these resources in support of the New England National Scenic Trail, the Robert Frost Trail, and numerous local trails on municipal lands. Our partners include DCR, AMC, UMass Amherst, and the towns of Amherst, Belchertown, Easthampton, Hadley, Holyoke, Leverett, Pelham, Shutesbury, Sunderland, Westhampton, and Whately.

During the course of our recent trail work, two themes have emerged. First, maintaining trails, a task that is rarely easy and often underfunded, has become even more challenging with the effects of climate change, particularly heavy rain and wind events. Water management has become a major focus of most of our trail management activities, as we strive to properly construct and repair pathways with best trail management practices that help protect wetland resources, creating stable trail surfaces that limit improper widening of the footbed and trampling of vegetation by hikers seeking to avoid wet areas.

Second, wetland permitting for trails is time-consuming, complex, and costly, to the point of being onerous. It increases project budgets, lengthens project timelines, and frustrates trail practitioners, who find themselves asking why such a comparatively low-impact activity, with such obvious benefits to communities, is subjected to a level of regulatory rigor that one might expect for development projects (e.g., roads, structures) that clearly impair or destroy the functions and values of wetlands on a large scale.

KLT considers Massachusetts to be a model for wetland protection, in both its laws and its support for land conservation. We are grateful to MassDEP for the years of work it has put into these draft regulations and commend it for helping make Massachusetts ecosystems more resilient to climate change. It is critical we take such steps towards ecological restoration, public safety, and preparing our communities for the impacts of climate change. We feel that MassDEP is taking a very positive step by accepting suggestions for your forthcoming "Resilience 2.0" regulatory changes. These changes would benefit from early and close coordination with local and regional land trusts, conservation staff, and trail organizations.

We urge MassDEP to consider the specific 2.0 suggestions prepared by the Board Members of the MA Society of Municipal Conservation Professionals:

1. **Trail Maintenance and Construction** should not be discouraged by time-consuming, costly, or complex wetland permitting. Narrow unpaved pedestrian walkways in publicly accessible open space often traverse wetlands. When trails in wetlands are properly constructed with best trail management

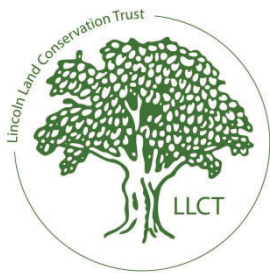
practices (BTMPs), they help protect wetland resources by creating stable trail surfaces that limit improper widening of the footbed and trampling of vegetation by hikers seeking to avoid wet areas. Well-used trails help build a culture of appreciation and stewardship for these vital wetland resources. Encouraging BTMPs is ever more important as climate change intensifies storms and flooding.

- A. All trails on public open space should be regulated the same. Currently unpaved pedestrian walkways (i.e., trails) located within buffer zone or Riverfront Area and less than 3' wide for public access on "Conservation Property" are exempt from wetland permitting. However, many trails traverse general municipal land, land trust properties, and private property with conservation restrictions. **We ask MassDEP to define "Conservation Property" to include all these types of natural land onto which the public is invited.**
- B. Trail Maintenance. Boardwalks, puncheons, waterbars, and other basic trail infrastructure need to be routinely replaced, expanded, and/or created. **We ask that MassDEP create an exemption for trail maintenance similar to the exemptions afforded to existing structures associated with many other public services in 10.02(2)(a)(2).**
- C. Trail Construction. Most boardwalks and puncheons are elevated only 4-12" above the ground for safety reasons. Unfortunately, the regulations currently consider these common wooden structures to impair the wetland because they shade out vegetation, resulting in a "loss" of wetlands. Therefore, such projects require wetland replication which requires wetland professionals, groundwater assessments, and detailed plans and execution. Wetland replication generally involves cutting down trees and shrubs and excavating soils in buffer zones. Most trail organizations don't have the necessary expertise or funding to undertake such a complex permitting or replication process. Furthermore, permitting a wetland trail should not be held to the same standard as development projects that clearly impair or destroy the functions and values of wetlands, such as building roads, houses, or commercial plazas. **We ask that MassDEP simplify permitting of trail construction projects by:**
  - i. **Expanding the limited project provision in 10.53(j) to allow: "The construction of public footpaths and associated boardwalks/puncheons, that are close to the ground provided, however, that such structures are constructed on pilings, sills, or posts so as to permit the reasonably unobstructed flowage of water."**
  - ii. **Adding to the Bordering Vegetated Wetland regulations a new section in 10:55(4)(c)(4) allowing Conservation Commissions to permit trail work in BVWs when: "Said work involves the creation of a trail for non-motorized use (e.g., hiking and skiing) which will alter less than 500 s.f. and will permit the reasonably unobstructed flowage of water."**

Thank you for your consideration.

Kestrel Land Trust

P.O. Box 1016, Amherst, MA 01004  
phone (413) 549-1097 • fax (413) 549-2700 • [kestreltrust.org](http://kestreltrust.org)



# Lincoln Land Conservation Trust

145 Lincoln Road, Suite 102A  
P.O. Box 10  
Lincoln, MA 01773  
Telephone: (781) 259-9250  
e-mail: LLCT@LincolnConservation.org

## TRUSTEES:

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Andy Falender

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James Henderson

Weston Howland, III

Diana Jong

Gwyneth Loud

Robert Mason

Ellen Meadors,  
Treasurer

Paul Shorb

Nancy Soulette,  
Secretary

Andrew Stevenson

Susan Welsh

## STAFF:

Geoff McGean,  
Executive Director

Bryn Gingrich,  
Outreach Director

Sara Lupkas  
Stewardship Director

April 27, 2024

Massachusetts DEP Boston, MA

Subject: Wetlands-401 Resilience Comments

Dear MADEP,

I am writing on behalf of the Lincoln Land Conservation Trust (LLCT), a land trust that, along with the Lincoln Conservation Commission, owns and manages over 2500 acres of conservation land in Lincoln. The conservation land has over 80 miles of interconnecting trails that serve as a valuable recreational resource for those living in the greater Boston area.

Our staff works hard to maintain these trails and simplifying/streamlining the permitting process would significantly enhance our ability to construct and maintain safe, well- designed trails without compromising natural resource values.

We are grateful to MassDEP for the years of work you have put into these draft regulations and commend you for helping make Massachusetts ecosystems more resilient to climate change. It is critical we take such steps towards ecological restoration, public safety, and preparing our communities for the impacts of climate change. However, these draft regulations do not go far enough, and we **strongly** encourage MassDEP to begin to engage stakeholders in the "Resilience 2.0" planning process. Regulatory changes would benefit from early and close coordination with local and regional land trusts, conservation staff, and trail organizations. The following are some specific 2.0 suggestions that relate to important climate resilient work needed in the Commonwealth's open spaces.

1. **Trail Maintenance and Construction** should not be discouraged by time-consuming, costly, or complex wetland permitting. Narrow unpaved pedestrian walkways in publicly accessible open space often traverse wetlands. When trails in wetlands are properly constructed with best trail management practices (BTMPs), they help protect wetland resources by creating stable trail surfaces that limit improper widening of the footbed and trampling of vegetation by hikers seeking to avoid wet areas. Well-used trails help build a culture of appreciation and stewardship for these vital wetland resources. Encouraging BTMPs is ever more important as climate change intensifies storms and flooding.
- A. **All trails on public open space should be regulated the same.** Currently unpaved pedestrian walkways (i.e., trails) located within buffer zone or Riverfront Area and less than 3' wide for public access on "Conservation Property" are exempt from wetland permitting. However, many trails traverse general municipal land, land trust

properties, and private property with conservation restrictions. **We ask MassDEP to define “Conservation Property” to include all these types of natural land onto which the public is invited.**

- B. Trail Maintenance. Boardwalks, puncheons, waterbars, and other basic trail infrastructure need to be routinely replaced, expanded, and/or created. **We ask that MassDEP create an exemption for trail maintenance similar to the exemptions afforded to existing structures associated with many other public services in 10.02(2)(a)(2).**
- C. Trail Construction. Most boardwalks and puncheons are elevated only 4-12” above the ground for safety reasons. Unfortunately, the regulations currently consider these common wooden structures to impair the wetland because they shade out vegetation, resulting in a “loss” of wetlands. Therefore, such projects require wetland replication which requires wetland professionals, groundwater assessments, and detailed plans and execution. Wetland replication generally involves cutting down trees and shrubs and excavating soils in buffer zones. Most trail organizations don’t have the necessary expertise or funding to undertake such a complex permitting or replication process. Furthermore, permitting a wetland trail should not be held to the same standard as development projects that clearly impair or destroy the functions and values of wetlands, such as building roads, houses, or commercial plazas. **We ask that MassDEP simplify permitting of trail construction projects by:**
  - i. **Expanding the limited project provision in 10.53(j) to allow: “The construction of public footpaths and associated boardwalks/puncheons, that are close to the ground provided, however, that such structures are constructed on pilings, sills, or posts so as to permit the reasonably unobstructed flowage of water.”**
  - ii. **Adding to the Bordering Vegetated Wetland regulations a new section in 10:55(4)(c)(4) allowing Conservation Commissions to permit trail work in BVWs when: “Said work involves the creation of a trail for non-motorized use (e.g., hiking and skiing) which will alter less than 500 s.f. and will permit the reasonably unobstructed flowage of water.”**
- 2. Habitat Restoration by means of Invasive Species Management. Non-native invasive plants pose a major threat to the health and survival of our native ecosystems, and are on the rise with climate change. Currently, invasive plant control work requires the same time-consuming, costly, and complex wetland permitting devised for construction projects. Quick identification and removal of invasive plants can minimize the dramatic negative effects of these plants and allow for the recovery of native species diversity and native wildlife habitat, a recognized wetland value. **We ask that MassDEP simplify the permitting process for certain habitat restoration projects involving invasive species management.** This could be accomplished by the following changes:
  - A. **Create a new minor activity in 310 CMR 10.02(2)(b)(2) which allows for the removal of turf lawn and/or non-native invasive herbs, vines, and shrubs, provided erosion and sedimentation controls are implemented until the area is restabilized with native species.**
  - B. **Add a limited project provision which specifically allows small-, medium-, and large-scale invasive species removal projects with distinct regulatory review standards.**

Thank you for your careful consideration of these recommended regulatory changes. LLCT looks forward to working with you on simplifying the wetland permitting processes for these needed



climate resilient strategies for managing our open space.

Sincerely,

A handwritten signature in black ink, appearing to read "Geoff McGean". The signature is fluid and cursive, with the first name "Geoff" and last name "McGean" clearly distinguishable.

Geoff McGean

Executive Director

**From:** [Kathy Stevens](#)  
**To:** [DEP Wetlands \(DEP\)](#)  
**Subject:** Wetlands-401 Resilience Comments  
**Date:** Friday, April 12, 2024 5:30:14 PM

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**CAUTION: This email originated from a sender outside of the Commonwealth of Massachusetts mail system. Do not click on links or open attachments unless you recognize the sender and know the content is safe.**

As a small, all-volunteer land trust, we are grateful to MassDEP for the years of work you have put into these draft regulations and commend you for helping make Massachusetts ecosystems more resilient to climate change. It is critical we take such steps towards ecological restoration, public safety, and preparing our communities for the impacts of climate change. However, these draft regulations do not go far enough and we strongly encourage MassDEP to begin to engage stakeholders in the “Resilience 2.0” planning process. Regulatory changes would benefit from early and close coordination with local and regional land trusts, conservation staff, and trail organizations. It would be very advantageous for small land trusts like ours to have fewer 'hoops' to jump through and more adaptive regulations to plan and complete important conservation projects that benefit us all. For instance, in Littleton we currently have numerous projects that we want to put into action that involve putting in or replacing boardwalks, so the ideas laid out below would benefit us (and the environment) greatly.

**1. Trail Maintenance and Construction** should not be discouraged by time-consuming, costly, or complex wetland permitting. Narrow unpaved pedestrian walkways in publicly accessible open space often traverse wetlands. When trails in wetlands are properly constructed with best trail management practices (BTMPs), they help protect wetland resources by creating stable trail surfaces that limit improper widening of the footbed and trampling of vegetation by hikers seeking to avoid wet areas. Well-used trails help build a culture of appreciation and stewardship for these vital wetland resources. Encouraging BTMPs is ever more important as climate change intensifies storms and flooding.

A. All trails on public open space should be regulated the same. Currently unpaved pedestrian walkways (i.e., trails) located within buffer zone or Riverfront Area and less than 3’ wide for public access on “Conservation Property” are exempt from wetland permitting. However, many trails traverse general municipal land, land trust properties, and private property with conservation restrictions. **We ask MassDEP to define “Conservation Property” to include all these types of natural land onto which the public is invited.** B. Trail Maintenance. Boardwalks, puncheons, waterbars, and other basic trail infrastructure need to be routinely replaced, expanded, and/or created. **We ask that MassDEP create an exemption for trail maintenance similar to the exemptions afforded to existing structures associated with many other public services in 10.02(2)(a)(2).** C. Trail Construction. Most boardwalks and puncheons are elevated only 4-12” above the ground for safety reasons. Unfortunately, the regulations currently consider these common wooden structures to impair the wetland because they shade out vegetation, resulting in a “loss” of wetlands. Therefore, such projects require wetland replication which requires wetland professionals, groundwater assessments, and detailed plans and execution. Wetland replication generally involves cutting down trees and shrubs and excavating soils in buffer zones. Most trail organizations like ours don’t have the necessary expertise or funding to undertake such a complex

permitting or replication process. Furthermore, permitting a wetland trail should not be held to the same standard as development projects that clearly impair or destroy the functions and values of wetlands, such as building roads, houses, or commercial plazas. **We ask that MassDEP simplify permitting of trail construction projects by:**

- i. Expanding the limited project provision in 10.53(j) to allow: "The construction of public footpaths and associated boardwalks/puncheons, that are close to the ground provided, however, that such structures are constructed on pilings, sills, or posts so as to permit the reasonably unobstructed flowage of water."**
- ii. Adding to the Bordering Vegetated Wetland regulations a new section in 10:55(4)(c)(4) allowing Conservation Commissions to permit trail work in BVWs when: "Said work involves the creation of a trail for non-motorized use (e.g., hiking and skiing) which will alter less than 500 s.f. and will permit the reasonably unobstructed flowage of water."**

**2.1 Habitat Restoration by means of Invasive Species Management.** Non-native invasive plants pose a major threat to the health and survival of our native ecosystems, and are on the rise with climate change. Currently, invasive plant control work requires the same time-consuming, costly, and complex wetland permitting devised for construction projects. Quick identification and removal of invasive plants can minimize the dramatic negative effects of these plants and allow for the recovery of native species diversity and native wildlife habitat, a recognized wetland value. **We ask that MassDEP simplify the permitting process for certain habitat restoration projects involving invasive species management.** This could be accomplished by the following changes:

**Create a new minor activity in 310 CMR 10.02(2)(b)(2) which allows for the removal of turf lawn and/or non-native invasive herbs, vines, and shrubs, provided erosion and sedimentation controls are implemented until the area is restabilized with native species.**

**A.**

**Add a limited project provision which specifically allows small-, medium-, and large-scale invasive species removal projects with distinct regulatory review standards.**

B. Add a limited project provision which specifically allows small-, medium-, and large-scale invasive species removal projects with distinct regulatory review standards.

Thank you for your careful consideration of these recommended regulatory changes. We look forward to working with you on simplifying the wetland permitting processes for these needed climate resilient strategies for managing our open space.

Sincerely,  
Kathy Stevens --  
Kathy Stevens  
President  
Littleton Conservation Trust  
PO Box 594  
Littleton, MA 01460

*Littletonconservationtrust.org*



MANCHESTER ESSEX  
CONSERVATION TRUST

PERMANENTLY PRESERVING NATURAL BEAUTY, WILDLIFE HABITAT AND RESOURCES

To: MassDEP

Re: Comment on Wetland Permitting for Trail Work and Habitat Restoration on Public Open Spaces

We at the Manchester Essex Conservation Trust are aware of the wetland regulatory updates called “Resilience 1.0”, which are intended to make wetland and coastal permitting more climate-friendly. We applaud MassDEP for working on the draft regulations which were released for comment at the end of 2023, and agree with you that we must make Massachusetts ecosystems more resilient to climate change. However, we would hope that you would take suggestions from local and regional land trust organizations, as we are stakeholders in such efforts.

Trail construction and maintenance should not be discouraged by costly, complex and time-consuming permitting. When trails in wetlands are properly constructed with best trail management practices, they help protect wetland resources by creating stable trail surfaces that limit improper widening of the footbed and trampling of vegetation by hikers seeing to avoid wet areas.

We would like to comment specifically on trail maintenance for boardwalks, for example. We have a long boardwalk that is key for the public to access our many trails in the forested upland, that crosses a large white cedar swamp which needs protection. This swamp is a vital feature which is habitat for some rare flora and fauna, protects the drinking water source downstream and greatly contributes to water quality as well as preventing both flooding events and the effects of periods of drought. This boardwalk was built several decades ago and is in need of partial replacement and maintenance. **We ask that Mass DEP create an exemption for trail maintenance similar to the exemptions afforded to existing structures associated with many other public services in 10.02(2)(a)(2). We also ask that MassDEP simplify permitting of trail construction projects by:**

1. **Expanding the limited project provision in 10.53(j) to allow: “the construction of public footpaths and associated boardwalks that are close to the ground provided, however, that such structures are constructed on piling, sills, or posts so as to permit the reasonable unobstructed flow of water.”**
2. **Adding to the Bordering Vegetated Wetland regulations a new section in 10.55(4)(c)(4) allowing Conservation Commissions to permit trail work in BVWs when: “said work involves the creation of a trail for non-motorized use (e.g., hiking and skiing) which will alter less than 500 sq.ft and will permit the reasonably unobstructed flow of water.”**

Thank you for your consideration of these recommended regulatory changes. We look forward to working with you on simplifying the wetland permitting processes for these needed climate resilient strategies for managing our open space.



**MANCHESTER ESSEX  
CONSERVATION TRUST**

PERMANENTLY PRESERVING NATURAL BEAUTY, WILDLIFE HABITAT AND RESOURCES

Yours sincerely,

Frances R. Caudill

Trustee since 2006

Manchester Essex Conservation Trust  
65 Eastern Avenue  
Essex, MA



April 29, 2024

Massachusetts Department of Environmental Protection  
100 Cambridge Street, Suite 900  
Boston, MA 02114

**Re: Simplify wetland Permitting for Trail Work and Habitat Restoration on Public Open Space**

To Whom it May Concern,

I'm writing on behalf of the Mystic River Watershed Association (MyRWA), whose mission is to protect and restore the Mystic River and its tributaries. Our vision is a healthy, vibrant, and resilient Mystic River Watershed for the benefit of all our community members. MyRWA works with residents to protect water quality, restore important habitats, build climate resilience, transform parks and paths, inspire youth and grow community. Our [Mystic Greenways](#) vision is bringing to reality a 25-mile, high-quality network of greenways for active transportation and recreation, enhanced climate resiliency, and improved physical and mental health outcomes for residents of our watershed and Commonwealth.

We are delighted that the Massachusetts Department of Environmental Protection (MassDEP) has taken the time to release its suite of "Resilience 1.0" wetland regulatory updates, as they will greatly improve the climate resiliency of our natural resources here in the Commonwealth. That being said, we feel that these updates do not address many of the permitting challenges small nonprofits and community-based organizations like MyRWA face when conducting trail, path and habitat work on public lands. As you prepare for your forthcoming "Resilience 2.0", we urge you to consider the following:

- 1) **Trail Maintenance and Construction** should not be discouraged by time-consuming, costly, or complex wetland permitting. Narrow unpaved pedestrian walkways in publicly accessible open space often traverse wetlands. When trails in wetlands are properly constructed with best trail management practices (BTMPs), they help protect wetland resources by creating stable trail surfaces that limit improper widening of the footbed and trampling of vegetation by hikers seeking to avoid wet areas. Well-used trails help build a culture of appreciation and stewardship for these vital wetland resources. Encouraging BTMPs is ever more important as climate change intensifies storms and flooding.



- a) All trails on public open space should be regulated the same. Currently unpaved pedestrian walkways (i.e. trails) located within buffer zone or Riverfront Area and less than 3' wide for public access on "Conservation Property" are exempt from wetland permitting. However, many trails traverse general municipal land, land trust properties, and private property with conservation restrictions. **We ask MassDEP to define "Conservation Property" to include all these types of natural land onto which the public is invited.**
  - b) Trail Maintenance. Boardwalks, puncheons, waterbars, and other basic trail infrastructure need to be routinely replaced, expanded, and/or created. **We ask that MassDEP create an exemption for trail maintenance similar to the exemptions afforded to existing structures associated with many other public services in 10.02(2)(a)(2).**
  - c) Trail Construction. Most boardwalks and puncheons are elevated only 4-12" above the ground for safety reasons. Unfortunately, the regulations currently consider these common wooden structures to impair the wetland because they shade out vegetation, resulting in a "loss" of wetlands. Therefore, such projects require wetland replication which requires wetland professionals, groundwater assessments, and detailed plans and execution. Wetland replication generally involves cutting down trees and shrubs and excavating soils in buffer zones. Most trail organizations don't have the necessary expertise or funding to undertake such a complex permitting or replication process. Furthermore, permitting a wetland trail should not be held to the same standard as development projects that clearly impair or destroy the functions and values of wetlands, such as building roads, houses, or commercial plazas. **We ask that MassDEP simplify permitting of trail construction projects by:**
    - i) **Expanding the limited project provision in 10.53(j) to allow: "The construction of public footpaths and associated boardwalks/puncheons, that are close to the ground provided, however, that such structures are constructed on pilings, sills, or posts so as to permit the reasonably unobstructed flowage of water."**
    - ii) **Adding to the Bordering Vegetated Wetland regulations a new section in 10:55(4)(c)(4) allowing Conservation Commissions to permit trail work in BVWs when: "Said work involves the creation of a trail for non-motorized use (e.g., hiking and skiing) which will alter less than 500 s.f. and will permit the reasonably unobstructed flowage of water."**
- 2) Habitat Restoration by means of Invasive Species Management. Non-native invasive plants pose a major threat to the health and survival of our native ecosystems, and are on the rise with climate

change. Currently, invasive plant control work requires the same time-consuming, costly, and complex wetland permitting devised for construction projects. Quick identification and removal of invasive plants can minimize the dramatic negative effects of these plants and allow for the recovery of native species diversity and native wildlife habitat, a recognized wetland value. **We ask that MassDEP simplify the permitting process for certain habitat restoration projects involving invasive species management.** This could be accomplished by the following changes:

- a) **Create a new minor activity in 310 CMR 10.02(2)(b)(2) which allows for the removal of turf lawn and/or non-native invasive herbs, vines, and shrubs, provided erosion and sedimentation controls are implemented until the area is restabilized with native species.**
- b) **Add a limited project provision which specifically allows small-, medium-, and large-scale invasive species removal projects with distinct regulatory review standards.**

Thank you for your careful consideration of these recommended regulatory changes. We look forward to working with you on simplifying the wetland permitting processes for these needed climate resilient strategies for managing our open space.

A handwritten signature in black ink, appearing to read "Patrick Herron".

Patrick Herron  
Executive Director



## ROCHESTER LAND TRUST, INC.

April 30, 2024

MassDEP - BWR Wetlands Program  
*Attn: Wetlands-401 Resilience Comments*  
100 Cambridge Street, Suite 900  
Boston, MA 02114  
[dep.wetlands@mass.gov](mailto:dep.wetlands@mass.gov)

To Whom It May Concern,

On behalf of the Rochester Land Trust, this letter is being submitted in support of the Municipal Society of Municipal Conservation Professionals (MSMCP)'s suggested changes for MassDEP's "Resilience 2.0" regulatory updates. Like many other land trusts, Rochester Land Trust has ongoing trail creation and maintenance needs, and holding these projects up to the same permitting standards as other construction projects is unnecessary and overly complex for the types of projects that simply aim to connect people with their natural open spaces. Also, the need for invasive plant removal is becoming more urgent than ever as native species are being decimated at an exponential rate. The current permitting process makes it nearly impossible for some land trusts to make these projects materialize, and regulations should never be so excessively cumbersome as to deter native habitat restoration and enhancement. Please refer to MSMCP's regulatory suggestions below, fully supported by the Rochester Land Trust:

1. **Trail Maintenance and Construction** should not be discouraged by time-consuming, costly, or complex wetland permitting. Narrow unpaved pedestrian walkways in publicly accessible open space often traverse wetlands. When trails in wetlands are properly constructed with best trail management practices (BTMPs), they help protect wetland resources by creating stable trail surfaces that limit improper widening of the footbed and trampling of vegetation by hikers seeking to avoid wet areas. Well-used trails help build a culture of appreciation and stewardship for these vital wetland resources. Encouraging BTMPs is ever more important as climate change intensifies storms and flooding.
  - A. All trails on public open space should be regulated the same. Currently, unpaved pedestrian walkways (i.e., trails) located within a buffer zone or Riverfront Area and less than 3' wide for public access on "Conservation Property" are exempt from wetland permitting. However, many trails traverse general municipal land, land trust properties, and private property with



## ROCHESTER LAND TRUST, INC.

- conservation restrictions. **We ask MassDEP to define “Conservation Property” to include all these types of natural land onto which the public is invited.**
- B. Trail Maintenance. Boardwalks, puncheons, waterbars, and other basic trail infrastructure need to be routinely replaced, expanded, and/or created. **We ask that MassDEP create an exemption for trail maintenance similar to the exemptions afforded to existing structures associated with many other public services in 10.02(2)(a)(2).**
- C. Trail Construction. Most boardwalks and puncheons are elevated only 4-12” above the ground for safety reasons. Unfortunately, the regulations currently consider these common wooden structures to impair the wetland because they shade out vegetation, resulting in a “loss” of wetlands. Therefore, such projects require wetland replication which requires wetland professionals, groundwater assessments, and detailed plans and execution. Wetland replication generally involves cutting down trees and shrubs and excavating soils in buffer zones. Most trail organizations don’t have the necessary expertise or funding to undertake such a complex permitting or replication process. Furthermore, permitting a wetland trail should not be held to the same standard as development projects that clearly impair or destroy the functions and values of wetlands, such as building roads, houses, or commercial plazas. **We ask that MassDEP simplify the permitting of trail construction projects by:**
- i. **Expanding the limited project provision in 10.53(j) to allow: “The construction of public footpaths and associated boardwalks/puncheons, that are close to the ground provided, however, that such structures are constructed on pilings, sills, or posts so as to permit the reasonably unobstructed flowage of water.”**
  - ii. **Adding to the Bordering Vegetated Wetland regulations a new section in 10:55(4)(c)(4) allowing Conservation Commissions to permit trail work in BVWs when: "Said work involves the creation of a trail for non-motorized use (e.g., hiking and skiing) which will alter less than 500 s.f. and will permit the reasonably unobstructed flowage of water.”**
2. Habitat Restoration by means of Invasive Species Management. Non-native invasive plants pose a major threat to the health and survival of our native ecosystems and are on the rise with climate change. Currently, invasive plant control work requires the same time-consuming, costly, and complex wetland permitting devised for construction projects. Quick identification and removal of invasive plants can minimize the dramatic negative effects of these plants and allow for the recovery of native species diversity and native wildlife habitat, a recognized wetland value. **We ask that**



## ROCHESTER LAND TRUST, INC.

**MassDEP simplify the permitting process for certain habitat restoration projects involving invasive species management.** This could be accomplished by the following changes:

- A. Create a new minor activity in 310 CMR 10.02(2)(b)(2) which allows for the removal of turf lawn and/or non-native invasive herbs, vines, and shrubs, provided erosion and sedimentation controls are implemented until the area is restabilized with native species.**
- B. Add a limited project provision that specifically allows small-, medium-, and large-scale invasive species removal projects with distinct regulatory review standards.**

We hope that you will consider these suggestions and fully engage stakeholders in the “Resilience 2.0” planning process. Thank you for your time and consideration.

Sincerely,

*Matt Monteiro*

Matt Monteiro

President, signing on behalf of the Rochester Land Trust Board of Directors

Jennifer Dubois, Vice President   Russ Keeler, Treasurer   Wendy Keeler, Clerk  
Joe Duggan   Norene Hartley   Bob Lawrence  
Matt Sanders   Brian Vasa

The Rochester Land Trust is a tax-exempt organization described in Section (c) (3) of the Internal Revenue Code. No goods or services have been or will be provided to you in exchange for this contribution so it is fully tax deductible. Please retain this letter for your tax records.

**From:** [S. Anders](#)  
**To:** [DEP Wetlands \(DEP\)](#)  
**Subject:** Wetlands-401 Resilience Comments  
**Date:** Tuesday, April 30, 2024 8:09:11 AM

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To Whom It May Concern,

Thank you for the opportunity to provide input for the Resilience 2.0 regulatory updates. As Chair of our Greenway Committee for the past four years, which helps to organize trail work and invasive species removal projects, I can personally attest to the ways in which current regulatory requirements have undermined critical work needed to address safe, public access to conservation lands and imminent needs for invasive plant removal. The regulatory process is expensive and cumbersome for residents and town volunteers, serving as a tremendous disincentive. Costs associated with filing, including publishing a public hearing notice in the local newspaper and notifying abutters, can easily run upwards of \$600 dollars, as was the case for a recent invasives management project. This is a heavy burden on volunteers who are trying to make much-needed ecological improvements. Residents often try to bypass this process altogether, hoping no one will notice the work they are doing privately. As a result, the Conservation Commission is prevented from being able to provide information about best practices, resulting in unwitting ecological harm. The most impactful methods of invasive plant removal are also time-sensitive, and a drawn out permitting process can lead to another season of aggressive seed dispersal and intensified growth. Recently, our trail volunteers abandoned a trail maintenance project because of the permitting effort needed to create small (6 ft.) stream crossings.

It is critical we take such steps towards ecological restoration, public safety, and preparing our communities for the impacts of climate change. However, these draft regulations do not go far enough and we strongly encourage MassDEP to begin to engage stakeholders in the "Resilience 2.0" planning process. Regulatory changes would benefit from early and close coordination with local and regional land trusts, conservation staff, and trail organizations. Following are some specific 2.0 suggestions that relate to important climate resilient work needed in the Commonwealth's open spaces.

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B. Trail Maintenance. Boardwalks, puncheons, waterbars, and other basic trail infrastructure need to be routinely replaced, expanded, and/or created. We ask that MassDEP create an exemption for trail maintenance similar to the exemptions afforded to existing structures associated with many other



public services in 10.02(2)(a)(2).

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A. Create a new minor activity in 310 CMR 10.02(2)(b)(2) which allows for the removal of turf lawn and/or non-native invasive herbs, vines, and shrubs, provided erosion and sedimentation controls are implemented until the area is restabilized with native species.

B. Add a limited project provision which specifically allows small-, medium-, and large-scale invasive species removal projects with distinct regulatory review standards. Thank you for your careful consideration of these recommended regulatory changes.

We look forward to working with you on simplifying the wetland permitting processes for these needed climate resilient strategies for managing our open space.

Sincerely,

Sherry Anders, *Chair*

Shirley Greenway Committee



*Southborough Open Land Foundation*  
*Post Office Box 345*  
*Southborough, Massachusetts 01772*  
*www.solf.org*

**Trustees**

Destin Heilman  
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Eileen Samberg  
*Clerk*  
Deborah Costine  
Rick Ellis  
Brett Peters  
Sally Watters

Comments to DEP in regards to Wetlands-401 Resilience:

The Southborough Open Land Foundation would like to speak to the forthcoming “Resilience 2.0” wetlands regulatory update. We are a small organization, with a small board and very limited finances. Most of our properties have wetland challenges, and we need climate resilient permitting and improved regulations in order to proceed with our trail work, invasive plant management, and habitat restoration. I am attaching a letter that offers suggestions by professionals who have significant knowledge of the rules and the challenges. We hope you will incorporate these suggestions into your regulations.

Thank you,  
Eileen Samberg  
Clerk  
Southborough Open Land Foundation

We are grateful to MassDEP for the years of work you have put into these draft regulations and commend you for helping make Massachusetts ecosystems more resilient to climate change. It is critical we take such steps towards ecological restoration, public safety, and preparing our communities for the impacts of climate change. However, these draft regulations do not go far enough and we strongly encourage MassDEP to begin to engage stakeholders in the “Resilience 2.0” planning process. Regulatory changes would benefit from early and close coordination with local and regional land trusts, conservation staff, and trail organizations. Following are some specific 2.0 suggestions that relate to important climate resilient work needed in the Commonwealth’s open spaces.

1. **Trail Maintenance and Construction** should not be discouraged by time-consuming, costly, or complex wetland permitting. Narrow unpaved pedestrian walkways in publicly accessible open space often traverse wetlands. When trails in wetlands are properly constructed with best trail management practices (BTMPs), they help protect wetland resources by creating stable trail surfaces that limit improper widening of the footbed and trampling of vegetation by hikers seeking to avoid wet areas. Well-used trails help build a culture of appreciation and stewardship for these vital wetland resources. Encouraging BTMPs is ever more important as climate change intensifies storms and flooding.
  - A. All trails on public open space should be regulated the same. Currently unpaved pedestrian walkways (i.e., trails) located within buffer zone or Riverfront Area and less than 3’ wide for public access on “Conservation Property” are exempt from wetland permitting. However, many trails traverse general municipal land, land trust properties, and private property with conservation restrictions. **We ask MassDEP to define “Conservation Property” to include all these types of natural land onto which the public is invited.**

Visit us at [solf.org](http://solf.org) and on Facebook

SOLF is a private, non-profit 501 (c)(3) Land Trust that serves the citizens of Southborough. We receive no tax-based support from the town or from the Commonwealth of Massachusetts.

- B. Trail Maintenance. Boardwalks, puncheons, waterbars, and other basic trail infrastructure need to be routinely replaced, expanded, and/or created. **We ask that MassDEP create an exemption for trail maintenance similar to the exemptions afforded to existing structures associated with many other public services in 10.02(2)(a)(2).**
  - C. Trail Construction. Most boardwalks and puncheons are elevated only 4-12" above the ground for safety reasons. Unfortunately, the regulations currently consider these common wooden structures to impair the wetland because they shade out vegetation, resulting in a "loss" of wetlands. Therefore, such projects require wetland replication which requires wetland professionals, groundwater assessments, and detailed plans and execution. Wetland replication generally involves cutting down trees and shrubs and excavating soils in buffer zones. Most trail organizations don't have the necessary expertise or funding to undertake such a complex permitting or replication process. Furthermore, permitting a wetland trail should not be held to the same standard as development projects that clearly impair or destroy the functions and values of wetlands, such as building roads, houses, or commercial plazas. **We ask that MassDEP simplify permitting of trail construction projects by:**
    - i. **Expanding the limited project provision in 10.53(j) to allow: "The construction of public footpaths and associated boardwalks/puncheons, that are close to the ground provided, however, that such structures are constructed on pilings, sills, or posts so as to permit the reasonably unobstructed flowage of water."**
    - ii. **Adding to the Bordering Vegetated Wetland regulations a new section in 10:55(4)(c)(4) allowing Conservation Commissions to permit trail work in BVWs when: "Said work involves the creation of a trail for non-motorized use (e.g., hiking and skiing) which will alter less than 500 s.f. and will permit the reasonably unobstructed flowage of water."**
2. Habitat Restoration by means of Invasive Species Management. Non-native invasive plants pose a major threat to the health and survival of our native ecosystems, and are on the rise with climate change. Currently, invasive plant control work requires the same time-consuming, costly, and complex wetland permitting devised for construction projects. Quick identification and removal of invasive plants can minimize the dramatic negative effects of these plants and allow for the recovery of native species diversity and native wildlife habitat, a recognized wetland value. **We ask that MassDEP simplify the permitting process for certain habitat restoration projects involving invasive species management.** This could be accomplished by the following changes:
- A. **Create a new minor activity in 310 CMR 10.02(2)(b)(2) which allows for the removal of turf lawn and/or non-native invasive herbs, vines, and shrubs, provided erosion and sedimentation controls are implemented until the area is restabilized with native species.**
  - B. **Add a limited project provision which specifically allows small-, medium-, and large-scale invasive species removal projects with distinct regulatory review standards.**

Thank you for your careful consideration of these recommended regulatory changes. We look forward to working with you on simplifying the wetland permitting processes for these needed climate resilient strategies for managing our open space.

Visit us at [solf.org](http://solf.org) and on Facebook

SOLF is a private, non-profit 501 (c)(3) Land Trust that serves the citizens of Southborough. We receive no tax-based support from the town or from the Commonwealth of Massachusetts.

**From:** [Laura Mattei](#)  
**To:** [DEP Wetlands \(DEP\)](#)  
**Subject:** Wetlands-401 Resilience Comments  
**Date:** Tuesday, April 23, 2024 7:52:15 PM

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MassDEP - BWR Wetlands Program  
Attn: Wetlands-401 Resilience Comments  
100 Cambridge Street, Suite 900  
Boston, MA 02114

To Whom it Concerns,

We at Sudbury Valley Trustees (SVT) are grateful to MassDEP for the years of work you have put into these draft regulations and commend you for helping make Massachusetts ecosystems more resilient to climate change. As a non-profit land trust and members of the SuAsCo CISMA much of our work is trail management or creation and invasive plant management. It is critical we take such steps towards ecological restoration, public safety, and preparing our communities for the impacts of climate change. However, these draft regulations do not go far enough and we strongly encourage MassDEP to begin to engage stakeholders in the "Resilience 2.0" planning process. Regulatory changes would benefit from early and close coordination with local and regional land trusts, conservation staff, and trail organizations. Following are some specific 2.0 suggestions that relate to important climate resilient work needed in the Commonwealth's open spaces.

Nearly all of SVT's trails are within greater networks of conservation areas, managed by a host of collaborating organizations. We have seen many inconsistencies in trail construction and maintenance permitting requirements in these areas throughout different towns over the years. In the most frustrating cases, we have seen projects put on indefinite hold because the permitting requirements were beyond the capability or resources of the managing groups. We have also seen compromises in design that have led to unnecessary challenges and outcomes that don't seem to have any environmental benefit. We hope this can be addressed.

1. **Trail Maintenance and Construction** should not be discouraged by time-consuming, costly, or complex wetland permitting. Narrow unpaved pedestrian walkways in publicly accessible open space often traverse wetlands. When trails in wetlands are properly constructed with best trail management practices (BTMPs), they help protect wetland resources by creating stable trail surfaces that limit improper widening of the footbed and trampling of vegetation by hikers seeking to avoid wet areas. Well-used trails help build a culture of appreciation and stewardship for these vital wetland resources. Encouraging BTMPs is ever more important as climate change intensifies storms and flooding.

A. All trails on public open space should be regulated the same. Currently unpaved pedestrian walkways (i.e., trails) located within buffer zone or Riverfront Area and less than 3' wide for public access on "Conservation Property" are exempt from wetland permitting. However, many trails traverse general municipal land, land trust properties, and private property with conservation restrictions. **We ask MassDEP to define "Conservation Property" to include all these types of natural land onto which the public is invited.**

B. Trail Maintenance. Boardwalks, puncheons, waterbars, and other basic trail infrastructure need to be routinely replaced, expanded, and/or created. **We ask that**

**MassDEP create an exemption for trail maintenance similar to the exemptions afforded to existing structures associated with many other public services in 10.02(2)(a)(2).**

C. Trail Construction. Most boardwalks and puncheons are elevated only 4-12" above the ground for safety reasons. Unfortunately, the regulations currently consider these common wooden structures to impair the wetland because they shade out vegetation, resulting in a "loss" of wetlands. Therefore, such projects require wetland replication which requires wetland professionals, groundwater assessments, and detailed plans and execution. Wetland replication generally involves cutting down trees and shrubs and excavating soils in buffer zones. Most trail organizations don't have the necessary expertise or funding to undertake such a complex permitting or replication process. Furthermore, permitting a wetland trail should not be held to the same standard as development projects that clearly impair or destroy the functions and values of wetlands, such as building roads, houses, or commercial plazas. **We ask that MassDEP simplify permitting of trail construction projects by:**

i. **Expanding the limited project provision in 10.53(j) to allow: "The construction of public footpaths and associated boardwalks/puncheons, that are close to the ground provided, however, that such structures are constructed on pilings, sills, or posts so as to permit the reasonably unobstructed flowage of water."**

ii. **Adding to the Bordering Vegetated Wetland regulations a new section in 10:55(4)(c)(4) allowing Conservation Commissions to permit trail work in BVWs when: "Said work involves the creation of a trail for non-motorized use (e.g., hiking and skiing) which will alter less than 500 s.f. and will permit the reasonably unobstructed flowage of water."**

SVT has been involved with the SuAsCo Cisma (Cooperative Invasive Species Management Area) since its inception, including participating on the Steering Committee and various subcommittees host the Cisma Coordinator position. This work to support our partners in managing their lands has been an important aspect of our Strategic Plan. Permitting work in/near wetlands has been a constant discussion. Many groups want to manually control invasive plants by hand pulling or using a weed wrench, but the permitting process is expensive and daunting so efforts have been focused elsewhere. We have also developed the Weed Warrior Program which promotes partners hosting volunteer events. Partner organizations are committed to regularly leading volunteers to manually remove invasive plants from priority locations. Due to the complexity and cost of permitting, many of them aren't even attempting to work in wetland areas even when they have a small population of invasive plants. Early management of these species can eradicate them from the wetlands but when this doesn't occur these isolated patches will continue to grow. Presence of invasive species can change soil chemistry, impede water flow, change bank edges, and replace native plants that have evolved to support a healthy wetland ecosystem. Additionally, invasive plant abundance is expected to increase due to climate change and we can expect to be a hot spot for new introductions. Every way we can make it easier for people to manage invasive plants, especially manually, will allow us to get more work done and therefore improve the quality of our wetlands.

2. **Habitat Restoration by means of Invasive Species Management.** Non-native invasive plants pose a major threat to the health and survival of our native ecosystems, and are on the rise with climate change. Currently, invasive plant control work requires the same time-consuming, costly, and complex wetland permitting devised for construction projects. Quick identification and removal of invasive plants can minimize the dramatic negative effects of these plants and allow for the recovery of native species diversity and native wildlife habitat, a

recognized wetland value. **We ask that MassDEP simplify the permitting process for certain habitat restoration projects involving invasive species management.** This could be accomplished by the following changes:

- A. Create a new minor activity in 310 CMR 10.02(2)(b)(2) which allows for the removal of turf lawn and/or non-native invasive herbs, vines, and shrubs, provided erosion and sedimentation controls are implemented until the area is restabilized with native species.**
- B. Add a limited project provision which specifically allows small-, medium-, and large-scale invasive species removal projects with distinct regulatory review standards.**

Thank you for your careful consideration of these recommended regulatory changes. We look forward to working with you on simplifying the wetland permitting processes for these needed climate resilient strategies for managing our open space.

Sincerely,  
Laura Mattei

--

**Laura Mattei, Director of Conservation**  
978-443-5588, ext. 134



18 Wolbach Rd. Sudbury, MA 01776



**From:** [Brandon Comstock](#)  
**To:** [DEP Wetlands \(DEP\)](#)  
**Cc:** [Karen O'Neill](#)  
**Subject:** Wetlands-401 Resilience Comments  
**Date:** Monday, April 29, 2024 10:49:44 AM

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29 April 2024

Massachusetts Department of Environmental Protection (MassDEP)

To Whom it May Concern -

I'm writing on behalf of the Town of Acton Open Space Committee. <[We appreciate MassDEP's efforts in formulating these draft regulations and applaud your commitment to enhancing the resilience of Massachusetts' ecosystems against climate change. This initiative is crucial for ecological restoration, public safety, and preparing our communities for climate impacts. Nevertheless, we believe that the proposed regulations require further enhancement.](https://urldefense.com/v3/_https://www.acton-ma.gov/459/Open-Space-Committee_!!CPANwP4y!XUNeLtRTuvbNgeELE8EPgEJLuWEISpmnyS0HFI9Ys5JkAv7LrzWtkbIk6FNxfHGoMX0Gkd-0yrYR9KI5QIVkt_ZfiY6AFSy3zOOS_></a>></p></div><div data-bbox=)

We urge MassDEP to initiate stakeholder engagement in the "Resilience 2.0" planning process. Regulatory modifications would greatly benefit from early and extensive coordination with local and regional land trusts, conservation personnel, and trail organizations.

Below are specific Resilience 2.0 recommendations pertinent to essential climate resilience activities in the Commonwealth's open spaces.

1. Trail Maintenance and Construction should be facilitated by streamlining wetland permitting processes that are currently time-consuming, costly, and complex. Many unpaved pedestrian trails in publicly accessible open spaces cross wetlands. Properly constructed trails, adhering to Best Trail Management Practices (BTMPs), safeguard wetland resources by maintaining stable trail surfaces, preventing footpath widening, and reducing vegetation damage from hikers. Promoting BTMPs becomes increasingly critical as climate change exacerbates storm intensity and flooding.
2. Habitat Restoration via Invasive Species Management is essential as non-native invasive plants significantly threaten our native ecosystems' health and survival, exacerbated by climate change. Current requirements for invasive plant control are as stringent as those for construction projects, involving cumbersome permitting processes. Streamlining these permits for habitat restoration projects that focus on invasive species management could reduce the severe impacts of these plants and foster recovery of native species diversity and wildlife habitats, thereby enhancing recognized wetland values.

We thank you for considering these vital enhancements to the draft regulations. We are eager to collaborate further on simplifying wetland permitting to bolster climate-resilient strategies for managing our open spaces.

Sincerely,

Brandon Comstock


Member  
Open Space Committee

Town of Acton

472 Main Street  
Acton, MA 01720  
?

---

Brandon Comstock



**From:** [McCarron, Jordan](#)  
**To:** [DEP Wetlands \(DEP\)](#)  
**Subject:** Wetlands-401 Resilience Comments  
**Date:** Tuesday, April 30, 2024 7:53:59 AM

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**April 30, 2024**

MassDEP - BWR Wetlands Program  
Attn: *Wetlands-401 Resilience Comments*  
100 Cambridge Street, Suite 900  
Boston, MA 02114

We are grateful to MassDEP for the years of work you have put into these draft regulations and commend you for helping make Massachusetts ecosystems more resilient to climate change. It is critical we take such steps towards ecological restoration, public safety, and preparing our communities for the impacts of climate change. However, these draft regulations do not go far enough and we strongly encourage MassDEP to begin to engage stakeholders in the “Resilience 2.0” planning process. Regulatory changes would benefit from early and close coordination with local and regional land trusts, conservation staff, and trail organizations. Following are some specific 2.0 suggestions that relate to important climate resilient work needed in the Commonwealth’s open spaces.

1. Trail Maintenance and Construction should not be discouraged by time-consuming, costly, or complex wetland permitting. Narrow unpaved pedestrian walkways in publicly accessible open space often traverse wetlands. When trails in wetlands are properly constructed with best trail management practices (BTMPs), they help protect wetland resources by creating stable trail surfaces that limit improper widening of the footbed and trampling of vegetation by hikers seeking to avoid wet areas. Well-used trails help build a culture of appreciation and stewardship for these vital wetland resources. Encouraging BTMPs is ever more important as climate change intensifies storms and flooding.
  - A. All trails on public open space should be regulated the same. Currently unpaved pedestrian walkways (i.e., trails) located within buffer zone or Riverfront Area and less than 3’ wide for public access on “Conservation Property” are exempt from wetland permitting. However, many trails traverse general municipal land, land trust properties, and private property with conservation restrictions. We ask MassDEP to define “Conservation Property” to include all these types of natural land onto which the public is invited.
  - B. Trail Maintenance. Boardwalks, puncheons, waterbars, and other basic trail

infrastructure need to be routinely replaced, expanded, and/or created. We ask that MassDEP create an exemption for trail maintenance similar to the exemptions afforded to existing structures associated with many other public services in 10.02(2)(a)(2).

C. Trail Construction. Most boardwalks and puncheons are elevated only 4-12” above the ground for safety reasons. Unfortunately, the regulations currently consider these common wooden structures to impair the wetland because they shade out vegetation, resulting in a “loss” of wetlands. Therefore, such projects require wetland replication which requires wetland professionals, groundwater assessments, and detailed plans and execution. Wetland replication generally involves cutting down trees and shrubs and excavating soils in buffer zones. Most trail organizations don’t have the necessary expertise or funding to undertake such a complex permitting or replication process. Furthermore, permitting a wetland trail should not be held to the same standard as development projects that clearly impair or destroy the functions and values of wetlands, such as building roads, houses, or commercial plazas. We ask that MassDEP simplify permitting of trail construction projects by:

- i. Expanding the limited project provision in 10.53(j) to allow: “The construction of public footpaths and associated boardwalks/puncheons, that are close to the ground provided, however, that such structures are constructed on pilings, sills, or posts so as to permit the reasonably unobstructed flowage of water.”

- ii. Adding to the Bordering Vegetated Wetland regulations a new section in 10:55(4)(c)(4) allowing Conservation Commissions to permit trail work in BVWs when: “Said work involves the creation of a trail for non-motorized use (e.g., hiking and skiing) which will alter less than 500 s.f. and will permit the reasonably unobstructed flowage of water.”

2. Habitat Restoration by means of Invasive Species Management. Non-native invasive plants pose a major threat to the health and survival of our native ecosystems, and are on the rise with climate change. Currently, invasive plant control work requires the same time-consuming, costly, and complex wetland permitting devised for construction projects. Quick identification and removal of invasive plants can minimize the dramatic negative effects of these plants and allow for the recovery of native species diversity and native wildlife habitat, a recognized wetland value. We ask that MassDEP simplify the permitting process for certain habitat restoration projects involving invasive species management.

This could be accomplished by the following changes:

1. Create a new minor activity in 310 CMR 10.02(2)(b)(2) which allows for the removal of turf lawn and/or non-native invasive herbs, vines, and shrubs, provided erosion and sedimentation controls are implemented until the area is restabilized with native species.
2. Add a limited project provision which specifically allows small-, medium-, and large-scale invasive species removal projects with distinct regulatory review standards.

Thank you for your careful consideration of these recommended regulatory changes. We look forward to working with you on simplifying the wetland permitting processes for these needed climate resilient strategies for managing our open space.

***Jordan McCarron***

*Conservation Administrator*

*Town of Weston*

*11 Town House Road*

*Weston, MA 02493*

*781-786-5068 (O)*

*781-960-5001 (C)*

[www.westonma.gov/conservation](http://www.westonma.gov/conservation)

Dear DEP,

We are grateful to MassDEP for the hours of work you have put into these draft regulations and commend you for helping make Massachusetts ecosystems more resilient to climate change. It is critical we take such steps towards ecological restoration, public safety, and preparing our communities for the impacts of climate change. However, we are proposing that DEP consider the following 2.0 suggestions that relate to important climate resilient work needed in the Commonwealth's open spaces.

1. **Trail Maintenance and Construction** permits have often times been unobtainable due to the costly, time consuming and difficult wetlands permitting process. Narrow unpaved pedestrian walkways in publicly accessible open space often traverse wetlands. When trails in wetlands are properly constructed with best trail management practices (BTMPs), they help protect wetland resources by creating stable trail surfaces that limit improper widening of the footbed and trampling of vegetation by hikers seeking to avoid wet areas. Well-used trails help build a culture of appreciation and stewardship for these vital wetland resources. Encouraging BTMPs is ever more important as climate change intensifies storms and flooding.
  - A. All trails on public open space should be regulated the same. Currently unpaved pedestrian walkways (i.e., trails) located within buffer zone or Riverfront Area and less than 3' wide for public access on "Conservation Property" are exempt from wetland permitting. However, many trails traverse general municipal land, land trust properties, and private property with conservation restrictions. **We ask MassDEP to define "Conservation Property" to include all these types of natural land onto which the public is invited.**
  - B. Trail Maintenance. Boardwalks, puncheons, waterbars, and other basic trail infrastructure need to be routinely replaced, expanded, and/or created. **We ask that MassDEP create an exemption for trail maintenance similar to the exemptions afforded to existing structures associated with many other public services in 10.02(2)(a)(2).**
  - C. Trail Construction. Most boardwalks and puncheons are elevated only 4-12" above the ground for safety reasons. Unfortunately, the regulations currently consider these common wooden structures to impair the wetland because they shade out vegetation, resulting in a "loss" of wetlands. Therefore, such projects require wetland replication which requires wetland professionals, groundwater assessments, and detailed plans and execution. Wetland replication generally involves cutting down trees and shrubs and excavating soils in buffer zones. Most trail organizations don't have the necessary expertise or funding to undertake such a complex permitting or replication process. Furthermore, permitting a wetland trail should not be held to the same standard as development projects that clearly impair or destroy the functions and values of wetlands, such as building roads, houses, or commercial plazas. **We ask that MassDEP simplify permitting of trail construction projects by:**
    - i. **Expanding the limited project provision in 10.53(j) to allow: "The construction of public footpaths and associated boardwalks/puncheons, that are close to the ground provided, however, that such structures are constructed on pilings, sills, or posts so as to permit the reasonably unobstructed flowage of water."**
    - ii. **Adding to the Bordering Vegetated Wetland regulations a new section in 10:55(4)(c)(4) allowing Conservation Commissions to permit trail work in BVWs when: "Said work involves the creation of a trail for non-motorized use (e.g., hiking and skiing) which will alter less than 500 s.f. and will permit the reasonably unobstructed flowage of water."**

2. **Habitat Restoration by means of Invasive Species Management.** Non-native invasive plants pose a major threat to the health and survival of our native ecosystems, and are on the rise with climate change. Currently, invasive plant control work requires the same time-consuming, costly, and complex wetland permitting devised for construction projects. Quick identification and removal of invasive plants can minimize the dramatic negative effects of these plants and allow for the recovery of native species diversity and native wildlife habitat, a recognized wetland value. **We ask that MassDEP simplify the permitting process for certain habitat restoration projects involving invasive species management.** This could be accomplished by the following changes:

**A. Create a new minor activity in 310 CMR 10.02(2)(b)(2) which allows for the removal of turf lawn and/or non-native invasive herbs, vines, and shrubs, provided erosion and sedimentation controls are implemented until the area is restabilized with native species.**

**B. Add a limited project provision which specifically allows small-, medium-, and large-scale invasive species removal projects with distinct regulatory review standards.**

Thank you for your careful consideration of these recommended regulatory changes. We look forward to working with you on simplifying the wetland permitting processes for these needed climate resilient strategies for managing our open space.

Kind regards,

Townsend Conservation Commission





# TOWN OF UPTON, MASSACHUSETTS

## Conservation Commission

April 28, 2024

Massachusetts DEP  
Boston, MA  
Subject: Wetlands-401 Resilience Comments

Dear MADEP,

The Upton Conservation Commission is grateful to MassDEP (DEP) for the work you have put into these draft regulations and commend you for helping make Massachusetts ecosystems more resilient to climate change. We are writing, however, to ask the DEP to consider other changes to DEP wetland regulations as described below. Upton would especially like the DEP to simplify permitting associated with construction and maintenance of unpaved public use trails on open space owned or managed by town conservation commissions, town forests, land trusts, schools, arboretums, and similar organizations. The next paragraph documents our recent experience while permitting trail improvements at a Conservation Restriction (CR) protected property.

The Commission was the applicant and proposed a 120 ft. long, 2 ft. wide boardwalk composed of pressure treated wood supported by cinder block or wooden sleepers, resulting in a 240 sf. alteration of forested BVW. The DEP considered cinder blocks to be "fill" and asked to either provide replication or construct the boardwalk on piles. On-site replication was not practical. The area was remote from road and equipment access and the CR did not explicitly permit construction of a replication area within a 25 ft. wide granted trail easement. Installation of piles by hand was not practicable because the substrate was extremely stony. Even if piles were used, vegetation would be altered (shaded) unless the boardwalk was raised high above the soil surface. Some of the suggestions listed below would have made it easier for this minor project and others like it to move forward without significant effects on wetland functions and values.

Along with other organizations, we strongly encourage MassDEP to begin to engage stakeholders in the "Resilience 2.0" planning process. Regulatory changes would benefit from early and close coordination with local and regional land trusts, conservation staff, and trail organizations. Following are some specific trail related 2.0 suggestions that relate to important climate resilient work needed in the Commonwealth's open spaces.

Trail Maintenance and Construction should not be discouraged by time-consuming, costly, or complex wetland permitting. Narrow unpaved pedestrian walkways in publicly accessible open space often traverse wetlands. When trails in wetlands are properly constructed with best trail management practices (BTMPs), they help protect wetland resources by creating stable trail surfaces that limit improper widening of the footbed and trampling of vegetation by hikers seeking to avoid wet areas. Well-used trails help build a culture of appreciation and stewardship for these vital wetland resources. Encouraging BTMPs is ever more important as climate change intensifies storms and flooding.



Specific regulatory recommendations are as follows:

- A. All trails on public open space should be regulated the same. Currently unpaved pedestrian walkways (i.e., trails) located within buffer zone or Riverfront Area and less than 3' wide for public access on "Conservation Property" are exempt from wetland permitting. However, many trails traverse general municipal land, land trust properties, and private property with conservation restrictions. **We ask MassDEP to define "Conservation Property" to include all these types of natural land onto which the public is invited.**
- B. Trail Maintenance. Boardwalks, puncheons, water bars, and other basic trail infrastructure need to be routinely replaced, expanded, and/or created. **We ask that MassDEP create an exemption for trail maintenance similar to the exemptions afforded to existing structures associated with many other public services in 10.02(2)(a)(2).**
- C. Trail Construction. Most boardwalks and puncheons are elevated only 4-12" above the ground for safety reasons. Unfortunately, the regulations currently consider these common wooden structures to impair the wetland because they shade out vegetation, resulting in a "loss" of wetlands. Therefore, such projects require wetland replication which requires wetland professionals, groundwater assessments, and detailed plans and execution. Wetland replication generally involves cutting down trees and shrubs and excavating soils in buffer zones. Most trail organizations don't have the necessary expertise or funding to undertake such a complex permitting or replication process. Furthermore, permitting a wetland trail should not be held to the same standard as development projects that clearly impair or destroy the functions and values of wetlands, such as building roads, houses, or commercial plazas. **We ask that MassDEP simplify permitting of trail construction projects by:**
  - i. **Expanding the limited project provision in 10.53(j) to allow: "The construction of public footpaths and associated boardwalks/puncheons, that are close to the ground provided, however, that such structures are constructed on pilings, cinder blocks, wooden sleepers, sills, or posts so as to permit the reasonably unobstructed flowage of water."**
  - ii. **Adding to the Bordering Vegetated Wetland regulations a new section in 10:55(4)(c)(4) allowing Conservation Commissions to permit trail work in BVWs when: "Said work involves the creation of a trail for non-motorized use (e.g., hiking and skiing) which will alter less than 500 s.f. and will permit the reasonably unobstructed flowage of water."**

Thank you for considering these recommended regulatory changes. We look forward to a simplified wetland permitting processes for public trails and managing our conservation areas for enhanced climate resiliency.

Sincerely,



Marcella Stasa  
Chair

Upton Land Stewardship Committee



Christine Scott  
Chair

Upton Conservation Commission

**From:** [janet.anderson](#)  
**To:** [DEP Wetlands \(DEP\)](#)  
**Subject:** Wetlands-401 Resilience Comments  
**Date:** Friday, April 26, 2024 10:52:28 AM

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**I am sending the following letter on behalf of the Westborough Community Land Trust,  
P.O. Box 838, Westborough, Massachusetts.**

**Urge DEP to Simplify Wetland Permitting for  
Trail Work and Habitat Restoration on Public Open Spaces!**

*Prepared by the Board Members of the MA Society of Municipal Conservation Professionals  
(March 2024)*

**Summary Request**

Over the years, MSMCP has heard from numerous land managers, land stewards, and trail groups about their challenges with permitting trail work and habitat restoration in or near wetlands. As you may know, on 12/22/23, MA Department of Environmental Protection (MassDEP) released a suite of wetland regulatory updates called "Resilience 1.0." These updates have the potential to make our wetland and coastal permitting much more climate-smart. Unfortunately, the draft regulations did not address the onerous permitting challenges many small non-profits and trail groups face. Fortunately, MassDEP has said they will accept suggestions for their forthcoming "Resilience 2.0" regulatory changes! This means that we have a great opportunity to help MassDEP consider opportunities to better protect our wetland ecosystems through improved permitting of trail work and habitat restoration. Therefore, we are writing to ask you to provide comments to MassDEP by April 30th!

Below, we have outlined two common types of land stewardship projects (trail work and invasive plant management), wetland permitting challenges many of you have faced, and some ways in which wetland permitting could be simplified. When preparing your letter to MassDEP, consider using some of the comments below, along with your wetland permitting stories. Please also include why your organization or community needs climate resilient permitting and improved regulations associated with trail work and habitat restoration. Even a short letter would be very helpful! Email comments to: [dep.wetlands@mass.gov](mailto:dep.wetlands@mass.gov) by April 30. Your email's subject line **must** be "Wetlands-401 Resilience Comments".

**Suggested Language for Your Comment Letter**

We are grateful to MassDEP for the years of work you have put into these draft regulations and commend you for helping make Massachusetts ecosystems more resilient to climate change. It is critical we take such steps towards ecological restoration, public safety, and preparing our communities for the impacts of climate change. However, these draft regulations do not go far enough and we strongly encourage MassDEP to begin to engage stakeholders in the “Resilience 2.0” planning process. Regulatory changes would benefit from early and close coordination with local and regional land trusts, conservation staff, and trail organizations. Following are some specific 2.0 suggestions that relate to important climate resilient work needed in the Commonwealth’s open spaces.

1.

**Trail Maintenance and Construction** should not be discouraged by time-consuming, costly, or complex wetland permitting. Narrow unpaved pedestrian walkways in publicly accessible open space often traverse wetlands. When trails in wetlands are properly constructed with best trail management practices (BTMPs), they help protect wetland resources by creating stable trail surfaces that limit improper widening of the footbed and trampling of vegetation by hikers seeking to avoid wet areas. Well-used trails help build a culture of appreciation and stewardship for these vital wetland resources. Encouraging BTMPs is ever more important as climate change intensifies storms and flooding.

- A. All trails on public open space should be regulated the same. Currently unpaved pedestrian walkways (i.e., trails) located within buffer zone or Riverfront Area and less than 3’ wide for public access on “Conservation Property” are exempt from wetland permitting. However, many trails traverse general municipal land, land trust properties, and private property with conservation restrictions. **We ask MassDEP to define “Conservation Property” to include all these types of natural land onto which the public is invited.**
- B. Trail Maintenance. Boardwalks, puncheons, waterbars, and other basic trail infrastructure need to be routinely replaced, expanded, and/or created. **We ask that MassDEP create an exemption for trail maintenance similar to the exemptions afforded to existing structures associated with many other public services in 10.02(2)(a)(2).**
- C. Trail Construction. Most boardwalks and puncheons are elevated only 4-12” above the ground for safety reasons. Unfortunately, the regulations currently consider these common wooden structures to impair the wetland because they shade out vegetation, resulting in a “loss” of wetlands. Therefore, such projects require wetland replication which requires wetland professionals, groundwater assessments, and detailed plans and execution. Wetland replication generally involves cutting down trees and shrubs and excavating soils in buffer zones. Most trail organizations don’t have the necessary expertise or funding to undertake such a complex permitting or replication process. Furthermore, permitting a

wetland trail should not be held to the same standard as development projects that clearly impair or destroy the functions and values of wetlands, such as building roads, houses, or commercial plazas. **We ask that MassDEP simplify permitting of trail construction projects by:**

- i. **Expanding the limited project provision in 10.53(j) to allow: “The construction of public footpaths and associated boardwalks/puncheons, that are close to the ground provided, however, that such structures are constructed on pilings, sills, or posts so as to permit the reasonably unobstructed flowage of water.”**
- ii. **Adding to the Bordering Vegetated Wetland regulations a new section in 10:55(4)(c)(4) allowing Conservation Commissions to permit trail work in BVWs when: "Said work involves the creation of a trail for non-motorized use (e.g., hiking and skiing) which will alter less than 500 s.f. and will permit the reasonably unobstructed flowage of water.”**

2. **Habitat Restoration by means of Invasive Species Management.** Non-native invasive plants pose a major threat to the health and survival of our native ecosystems, and are on the rise with climate change. Currently, invasive plant control work requires the same time-consuming, costly, and complex wetland permitting devised for construction projects. Quick identification and removal of invasive plants can minimize the dramatic negative effects of these plants and allow for the recovery of native species diversity and native wildlife habitat, a recognized wetland value. **We ask that MassDEP simplify the permitting process for certain habitat restoration projects involving invasive species management.** This could be accomplished by the following changes:

**A.**

**Create a new minor activity in 310 CMR 10.02(2)(b)(2) which allows for the removal of turf lawn and/or non-native invasive herbs, vines, and shrubs, provided erosion and sedimentation controls are implemented until the area is restabilized with native species.**

**B.**

**Add a limited project provision which specifically allows small-, medium-, and large-scale invasive species removal projects with distinct regulatory review standards.**

Thank you for your careful consideration of these recommended regulatory changes. We look forward to working with you on simplifying the wetland permitting processes for these needed climate resilient strategies for managing our open space.

**From:** [Rich Strazdas](#)  
**To:** [DEP Wetlands \(DEP\)](#)  
**Subject:** Wetlands-401 Resilience Comments to MA DEP  
**Date:** Monday, April 22, 2024 12:16:18 PM

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Westford Conservation Trust  
PO Box 255  
Westford, MA 01886  
April 22, 2024

The Westford Conservation Trust joins other land stewards and trail groups in seeking improvement of the permitting of trail work and invasive species management. Trail amenities, such as boardwalks over Bordering Vegetated Wetlands or short bridges over tiny streams, currently impose a permitting burden on volunteer-led organizations. One recent project in Westford, a boardwalk spanning 90 feet of vernal wetland, required many hours of paperwork and over \$600 of notices and filings. This project was enthusiastically supported by the landowners and by the Westford Conservation Commission. But the bureaucratic workload delayed construction for a year. The project had no comments from any abutters, and the Conservation Commission fully vetted the design and location.

**We ask that MassDEP create an exemption for trail maintenance similar to the exemptions afforded to existing structures associated with many other public services in 10.02(2)(a)(2).**

**We ask that MassDEP simplify permitting of trail construction projects by:**

- i. Expanding the limited project provision in 10.53(j) to allow: “The construction of public footpaths and associated boardwalks/puncheons, that are close to the ground provided, however, that such structures are constructed on pilings, sills, or posts so as to permit the reasonably unobstructed flowage of water.”**
- ii. Adding to the Bordering Vegetated Wetland regulations a new section in 10:55(4)(c)(4) allowing Conservation Commissions to permit trail work in BVWs when: "Said work involves the creation of a trail for non-motorized use (e.g., hiking and skiing) which will alter less than 500 s.f. and will permit the reasonably unobstructed flowage of water.”**

Thank you for your careful consideration of these recommended regulatory changes. We look forward to working with you on simplifying the wetland permitting processes for these needed climate resilient strategies for managing our open space.



Richard Strazdas  
WCT president

**From:** [Kezia Bacon](#)  
**To:** [DEP Wetlands \(DEP\)](#)  
**Subject:** Wetlands-401 Resilience Comments  
**Date:** Saturday, April 27, 2024 10:18:27 AM

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CAUTION: This email originated from a sender outside of the Commonwealth of Massachusetts mail system. Do not click on links or open attachments unless you recognize the sender and know the content is safe.

Dear Ms. Rhodes and the MassDEP Wetlands Program:

Thank you for the opportunity to comment on the draft Wetlands Protection Act regulations as part of MassDEP's "Climate Resilience 1.0" package.

As a citizen of the Commonwealth, I am very concerned about the impacts of climate change on our natural and built environments. I would like to express support for DEP's efforts to safeguard our coasts and waterways from flooding and stormwater pollution. I think it's vitally important!

I agree that restricting development in the highest-risk part of the coastal floodplain is common sense. But I believe the maps for where restrictions apply must consider the most up-to-date data on sea level rise.

I would also like to see the regulations make it easier and faster to get permits to restore wetlands so they can be more resilient in the face of rising sea level and climate change.

I look forward to the next iteration of updates to these regulations.

Sincerely,

Kezia Bacon

**From:** [Kim Frye](#)  
**To:** [DEP Wetlands \(DEP\)](#)  
**Subject:** Wetlands-401 Resilience Comments  
**Date:** Saturday, April 27, 2024 2:59:10 PM

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Dear Ms. Rhodes ,

Regarding the MassDEP Wetlands Program, I appreciate your willingness to review this note.

Specifically I'd like to comment on the Wetlands Protection Act regulations as part of MassDEP's "Climate Resilience 1.0" package.

As a citizen of the Commonwealth, and a homeowner in Scituate and Marshfield, I am very concerned about the impacts of climate change on our natural and built environments.

I would like to express support for DEP's efforts to safeguard our coasts and waterways from flooding and stormwater pollution.

I agree that restricting development in the highest-risk part of the coastal floodplain is common sense, but I believe the maps for where restrictions apply must consider the most up-to-date data on sea level rise.

I would also like to see the regulations make it easier and faster to get permits to restore wetlands so they can be more resilient in the face of rising sea level and climate change.

I look forward to the next iteration of updates to these regulations.

Thank you for your consideration,

Kim Horton (Frye)

**From:** [Lisa Rubini](#)  
**To:** [DEP Wetlands \(DEP\)](#)  
**Subject:** Wetlands-401 Resilience Comments  
**Date:** Monday, April 29, 2024 10:06:50 AM

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## **Wetlands-401 Resilience Comments**

Dear Ms. Rhodes and the MassDEP Wetlands Program:

Thank you for the opportunity to comment on the draft Wetlands Protection Act regulations as part of MassDEP's "Climate Resilience 1.0" package.

As a citizen of the Commonwealth I am very concerned about the impacts of climate change on our natural and built environments.

I would like to express support for DEP's efforts to safeguard our coasts and waterways from flooding and stormwater pollution.

I agree that restricting development in the highest-risk part of the coastal floodplain is common sense, but I believe the maps for where restrictions apply must consider the most up-to-date data on sea level rise.

I would also like to see the regulations make it easier and faster to get permits to restore wetlands so they can be more resilient in the face of rising sea level and climate change.

I look forward to the next iteration of updates to these regulations.

Sincerely,  
Lisa Rubini

Sent from my iPhone

**From:** [Meg Swetish](#)  
**To:** [DEP Wetlands \(DEP\)](#)  
**Subject:** Wetlands-401 Resilience Comments  
**Date:** Tuesday, April 30, 2024 6:49:30 PM

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Thank you for the opportunity to comment on the draft Wetlands Protection Act regulations as part of MassDEPs "Climate Resilience 1.0" package.

As a citizen of the Commonwealth, I am very concerned about the impacts of climate change on our natural and built environments.

I would like to express support for DEP's efforts to safeguard our coasts and waterways from flooding and stormwater pollution. I agree that restricting development of the highest-risk part of the coastal floodplain is common sense, but I believe the maps for where restrictions apply must consider the most up-to-date data on sea level rise.

I would also like to see the regulations make it easier and faster to get permits to restore wetlands so they can be more resilient in the face of rising sea level and climate change.

Sincerely,  
Meaghan Swetish

**From:** [Nancy](#)  
**To:** [DEP Wetlands \(DEP\)](#)  
**Subject:** Subject header must include: Wetlands-401 Resilience Comments  
**Date:** Monday, April 29, 2024 7:38:05 AM

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Dear Ms. Rhodes and the MassDEP Wetlands Program:

Thank you for the opportunity to comment on the draft Wetlands Protection Act regulations as part of MassDEP's "Climate Resilience 1.0" package.

As a citizen of the Commonwealth I am very concerned about the impacts of climate change on our natural and built environments.

I would like to express support for DEP's efforts to safeguard our coasts and waterways from flooding and stormwater pollution.

I agree that restricting development in the highest-risk part of the coastal floodplain is common sense, but I believe the maps for where restrictions apply must consider the most up-to-date data on sea level rise.

I would also like to see the regulations make it easier and faster to get permits to restore wetlands so they can be more resilient in the face of rising sea level and climate change.

I look forward to the next iteration of updates to these regulations.

Sincerely,  
Nancy Flynn

Sent from my iPad



**From:** [Sally Herrmann](#)  
**To:** [DEP Wetlands \(DEP\)](#)  
**Subject:** Wetlands-401 Resilience Comments  
**Date:** Sunday, April 28, 2024 8:41:15 AM

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Dear Ms. Rhodes,

I am writing to comment on the draft Wetlands Protection Act regulations as part of MassDEP's "Climate Resilience 1.0" package.

As a citizen of Hull, I am very concerned about the impacts of climate change and sea level rise on my property and neighborhood.

Thanks for your efforts to safeguard our coasts and waterways from flooding and stormwater pollution.

I agree that restricting development in the highest-risk part of the coastal floodplain is common sense, but I believe the maps for where restrictions apply must consider the most up-to-date data on sea level rise.

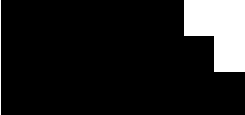
I would also like to see the regulations make it easier and faster to get permits to restore wetlands so they can be more resilient in the face of rising sea level and climate change.

Thank you for the opportunity to comment.

Sincerely,

--

Sally W. Herrmann



**The following email was sent from Mass Audubon on behalf of the persons listed below.**

**From:** Mass Audubon on behalf of [NAME]  
**To:** DEP Wetlands (DEP)  
**Subject:** Wetlands-401 Resilience Comments  
**Date:** [DATE]

---

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[DATE]

Commissioner Bonnie Heiple

Dear Commissioner Heiple,

I am writing to share my comments on Mass DEP's revisions to the Wetlands regulations. I want to thank you and the entire DEP team for revising these regulations to increase Massachusetts' resilience to flooding, water pollution, and drought. Please finalize these rules and take further steps to increase the pace of wetlands restoration.

I commend DEP for prohibiting new development in the highest risk coastal flood zone and requiring other development to be more resilient and protective of nature. I support the plan to include sea level rise in the revisions to the Massachusetts Waterfront Regulations.

However, DEP must apply the most up-to-date projections on future sea level rise in the Wetlands Protection regulations as well. We must build with the lifetime of a structure in mind, not just current conditions.

I'm also happy to see that DEP will be updating stormwater regulations to replace outdated precipitation data and support greater use of trees and other plants.

To reverse historic damage to our wetlands, DEP must streamline permitting for wetlands restoration projects.

Flooding and sea level rise are major threats to Massachusetts. DEP has taken a positive step with these revisions, but it must do more to ensure that nature can thrive and protect our communities from flooding and water pollution.

Sincerely,

Abby Stern	Amy Hunter Maguire	Barbara Abraham
Adam Ploetz	Amy Walsh	Barbara Forsythe
Adele Gladstone-Gilbert	Anca Vlasopolos	Barbara Fruehwirth
Adele Sullivan	andi gibson	Barbara Panora
Afsheen Bahrehmand	Andre Alguero	Barbara Peskin
Aileen Grant	Andrew Falender	Barbara Raab
AJ Khan	Andrew Hanneman	Barry De Jasu
Al Mcniff	Andrew Laine	Beth Cooper
Alan Papskun	Andrew Thompson	Beth Overmoyer
Alex Edmunds	Andy Miller	Bethanie Petitpas
Alexander Chanler	Angela Potts	Betsy Lewenberg
Alexandra Corwin	Ann Dix	Betsy Taylor-Kennedy
Alexis Khalil	Ann Neumeyer	Bettie Paradis
Alexis Teixeira	Ann Parke	Bettina Abe
Alice Johnson	Ann Ribbens	Beverley von Kries
Alice Marullo	Anne Casey	Bobby Robinson
Alison Sanders-Fleming	Anne Cutler-Russo	Bonnie Miskolczy
Alison Varrell	Anne Haley	Bonnie Nguyen
Alyssa Foos	Anne Richards	Brad Aham
Alyssa Reynolds	Anne Sargent	Brenda Ladderbush
Amanda DeBurro	Anne Starr	Brian DiVasta
Amanda LeBarron	Anne True	Brian Gingras
Amanda Peters	Anne Wheelock	Brian Hicks
Amber Lenehan	Annelise Matias	Brian Lever
Amir Said	Annette Anderson	Brittany Gravely
Amy Burt	Annie McCollum	Brock Cordeiro
Amy Ellsworth	AnnMarie DiLorenzo	Brooke Barton
Amy Gibbons	Ariane St Claire	Brooke Monroe

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Cherry Bennett	Cornelia Hoskin	Deborah Miller
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Dustin Gardner	Elizabeth Thomason	GARY SANBORN
Edward Brendel	Elizabeth Zahniser	Gary Thaler
Edward Cronin	Ellen Ridge	Gary Thaler
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Elaine Giurleo	Emily Lubanko	Gerald Levinson
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Eleanor Denault	Emily Scaife1	Gilbert "GIB" Chase
Eleanor Thomas	Erica Metzger	Gill Cohan
Elena Tillman	Erin Connor	Grayson Cohen
Elinor Brown	Eve perkins	Greg Moschetti
Elizabeth Aghajanian	Eve Waterman	Gregory Gibson
Elizabeth Barceleau	Evelyn Zepf	Gretchen Robinson
Elizabeth Blaeser	Felicia DiSalvatore	Gwen Shipley
Elizabeth Carter	Fran Witham	H Long
Elizabeth Dierze	Francie Garanin	Hannah Pizzella
Elizabeth Gifford	Francine Traniello	Harriet Forman
Elizabeth Goddard	Frederica Gillespie	Heather Hill
Elizabeth Harkness	Gabbie DiNardi	Heather Hogan
Elizabeth Lamoureux	Gabi Loeffler	Heather Malakian
Elizabeth Lehman	Gabrielle Watling	Heather Packard
Elizabeth McCollum	Gail Boyajian	Heather Stern
Elizabeth Montgomery	Gail DeGrenier	Heather Waterman
Elizabeth Newton	Gail Fleischaker	Heidi Horton
Elizabeth Olson	gail okeefe edson	Heidi Kinney

Helen Davis	Jason Clement	Joe Wisboro
HELEN FITTS	Jason McPhail	John Bator
Helen Lozoraitis	Jean Dorcus	John Berg
Hillary Truslow	Jean Fisher	John Christie
Home Olsen	Jean Rothman	John Cox
Hope Rideout	Jeanne DiBenedetto	John Goodchild
Igor Zlokarnik	Jeanne Hobbie	John Hueber
Irene Sedlacko	Jeff Brand	John Koteles
J. David Tholl	Jeffrey Bryant	John Lepore
Jackie Fouse	Jeffrey Noonan	John Moreland
Jackson Wild	Jenne Sindoni	John Rielly
Jacob Hesterman	Jennifer Bergen	John Templeton Sr
James Abels	Jennifer Colby	Jonas Jonas
James Boyd	Jennifer Gitschier	Jonathan Clapp
James Chase	Jennifer Jackman	Jordan Longever
James Giurleo	Jennifer Sawyer	Joseph LaFond
James Long	Jennifer Stein	Joseph McCabe
James Mavor	Jenny Murphy	Josepha Conway
Jamie Demas	Jeremy Marin	Josh Rosen
Jane Moosbruker	Jessica Becker	Josiah Reed
Jane Morrisson	Jessica Boss	Jovana Schoofs
Jane O'Rourke	Jill James-Slowik	Joyce Bailey
Jane Shanny	Jim Henle	Joyce Galkiewicz
Janet Bowdan	Jim McGuane	Joyce Samet
Janet Curtis	Joan Angelosanto	Judith Barr
Janet Evans	Joan Canterbury	Judith Carlough
Janet McDonnell	Jo-Anne Fiorentino	JUDITH COLTMAN
Janet Strimaitis	Joe Benatti	Judith Frampton



Judith Gertler	Katherine Darcy Fuguet	Kristen Benjamin
Judith Glixon	Katherine Slocum	Kristen Ellis
Judith Werner	Katherine Waddell	Kristen Ervick
Judy Belaval	Kathleen Graham	Kristin Masefield
Judy Embry	Kathleen McHendry	Kristine Ashton
Julia Maynard	Kathleen Miller	Kyle Johnson
Julianna Denum	Kathleen Mireault	l g
Julianne Powers	Kathleen Mortenson	L Vince
Julie Baars Kaczynski	Kathryn MacWhinney	Lakshmi Srinivas
Julie D'Addieco	KATHRYN MAHONEY	Larissa Bernat
Julie Fouhy	Kathy Bosler	Laura B Driemeyer
Julie Webster	Kayleen Santiago	Laura Becker
June Babcock	Kayley Soldevilla	Laura Clawson
June Davenport	Keelin Miller	Laura Glynn
K Robert Kramer	Kelly Brewer	Laura Hallowell
Kara Buckley	Kelly Corsi	Laura Koenigs
Karen M Bump	Kelly Dissing-Olesen	Laura Leeson
Karen Nelson	Kelly Fields	Laurel Facey
Karen Ocain	Kelly Thomson	Laurene Gerrior
Karen Vayda	Ken Downey	Laurie Gates
Karl Fryzel	Ken Follette	Laurie Markoff
Karl Spigulis	Kenneth Dobbins	Laurie Marsden-ellis
Karyl Stoia	Kenneth Piva	Laurie Ray
Karyn Krystock	Kenneth Scott	Laurie Slik
Kate Cholakis	Kerry Benatti	Laurie Wadsworth
Katharine Feeley	Kevin Batt	Laurie Zastrow
Katherine Ahern	Kiara Burak	Leah Cameron
Katherine Bagley	Kimberly Ellis	Leeallen Meyer

Leigh Hurley	Lynn Small	Mary Ann Clawson
Leslie Kriebel	Lynne Simon	Mary Ann Perry
Liam Sullivan	Maddie Kinker	Mary Beth Beatrice
Linda Moodie	Madisyn DeCaire	Mary Delger
Linda Sachs	Maggie Agurkis	Mary Kay Landon
Linda Spicer	Maite Díez	Mary Lambert
Linda Veiga	Marcella Regal	Mary Lou Splain
Lindi Higgins	Marcia Chapman	Mary Patterson
Lindsay Knowlton	Marcia Rao	mary Peterson
Lisa Conti	Margaret Cain	Mary Robinson
Lisa Cronin	Margaret Frank	Mary Ryan
Lisa Fleischman	Margaret Johnson	Mary Slayter
Lisa Perrotta	Margaret Rydant	Mary Stehle
Lisey Good	Marge Heckman	Mary Vitro
Lisette Victoriano	Margot Dillon	MaryAnna Foscett
Liz Field	Maria Falcon	Matt Sanda
LIZ STEIN	Maria Nolen	Matthew Cammack
Loki Simmons	Marianne O'Boyle	Matthew Pierog
Lorene Sweeney	Marie de cenival	Max Arai
Lori Baker	Marina Sagardua	Maxwell Plaut
Lori Parkinson	Marissa Cashman	McNamara Buck
Lorna Gibson	Mark Tracy	Meg Shamon
Lorraine Gray	Mark Wooding	Meghan Haslam
Louis Weisz	Marlene Clapp	Meghan O'Reilly
Luis Quintanilla	Marnie Frankian	Melanie Dandrilli
Luke Salsich	Marta Geletkanycz	Melanie Kollet-Smith
Lynette Benton	Martha Wales	Melissa "Lis" DiNunno
Lynn Deming	Mary Alice Howard	Melissa Ahlgren

Melissa Alexander	Ms. carla horn	Patricia Wolongevicz
Melissa Grondin	nanci buccianeri	Patrick Tally
Melissa Progin	Nanci Worthington	Paul and Cynthia Phillips
Meredith DiMola	Nancy Braun	Paul Barringer
Meredith Olsen	Nancy Krieger	Paul Chilton
Merry Peix-Sherman	Nancy Moscato	Paul Glickman
Michael Are	Nancy Prendergast	Paul Ward
Michael Herman	Nancy Vitek	Peg Merzbacher
Michael McCarthy	Nanette Bisher	Peggy O'Grady
Michael Sheridan	Naticia Hutchins	Peter Flannery
Michael Stone	Ned Lynch	Peter Johnson
Michael Vivaldi	Neil Rasmussen	Peter Sadlier
Michael Waddell	Ngaio Schiff	Peter Townsend
Michaela Harkins	Nicholas Scirico	Petra Reitz
Michele Martin	Nick Garcia-Belong	Philip Koch
Michelle Durocher	Nick Teague	Philip Tatro
Michelle Kofler	Nicole Hart	Phoebe Moore
Michelle O'Hanley	Nicole Marcotte	R tippens
Michelle Todd	Nina Foley	Rachel Cilley
Mihail Bancu	Nora Sullivan	Rachel Kramer Theodorou
Millicent Rothman	Ocean Silver	Rajesh Velagapudi
mindy Maxwell	Pam Hagberg	Ramon Tourgeman
Miriam Clifton	Pamela Figueroa Silva	Randy Hammer
Mitch Crosskill	Pamela Maxfield	Ray Bartlett
Molly Johnson	Patricia Cantor Petrucelly	Raymond Fattorini
Monica Raymond	Patricia Donahue	Raymond Gasper
Monique Kobasa	Patricia McNally-Curtis	Raymond Hawkins
Monique Pelletier	Patricia Tholl	Rebecca Duke

Rebecca Kasdon	Ryan Hart	Seeta Badrinath
Rebecca Rottapel	Sally Green	Serena Brown
Rebekah Rollston	Sally Leinicke	Serena Crosina
Reg Rose	Sally Matthews	Shannon Astolfi
Rene Richard	Sally McMurry	Shannon Griffin
Renee Carl	Samantha Brewster	Sharon Caulway
Renelle Hebert	Samantha Giffen	Sharon Hirsch
Resa Blatman	Sandra Diener	Sharon Lindsay
Richard And Kim Rendigs	Sandra Donahue	Shannon Molloy
Richard Curtis	Sandy Marschner	Sharon Rozines
Richard Gardner	sarah duncklee	Sheila Anderson
Richard Gilson	Sarah Ferguson	sheila barry
Richard Legault	Sarah Fuhro	Sheila Kojm
Richard Rogers	Sarah Giannetta-DiCecca	Shelagh Brady
Richard Warren	Sarah Gulla	Shelley Hartz
Robert Catlin	Sarah Hill	Sherri Carlson
Robert Cuddy	Sarah Hill	Sherri Schon
Robert Kitchen	Sarah Kacevich	Sherrie Burson
Robert Pontbriand	Sarah LaPointe	Simone Dancier
Robin Frede	Sarah Manteiga	Socheath Toda
Robin Thompson	Sarah Merin	Sofia Montemayor-Thomas
Ronald huntley	Sarah Murray	Sonia Dettmann
Ronald Parker	Sarah Robbins	Stan Deutsch
Rosemary Hewett	Sarah Staley	Stanley Schantz
Ruth Flaherty	Sarah Stewart	Stefanie Covino
Ruth Gilbert-Whitner	Sarah Tappan	Stephanie Ellis
Ryan Duggan	sargon Donabed	Stephanie Olbrych
RYAN HALE	Sean Sannicandro	Stephanie Roy

Stephen Ferguson

Stephen Vogel

Steven Bellin

Steven Gilbert

Steven Kleiman

Steven Ponte

Stuart Lynn

sue Wilson

Susan Amirault

Susan Baeslack

Susan Boudreau

Susan Caron

Susan Caruso

Susan Dalelio

susan deane

Susan Grimwood

Susan Levine

Susan Lewis

Susan Mandeville

Susan Maranhao

Susan Oder

Susan Racette

Susan Roe

Susan Wilson

Susanna Kelman

Susi Westwood

T Stephen Jones

Tammy Luppino

Theodore Wicks

Theresa Blackman

Theresa DeLuca

Theresa Roach

Thomas Wolslegel

Tiffany Fitzgerald

Tim Kinsman

Timothy Bailey

Timothy Brown

Timothy Havel

Tom Noble

Tomra Vecere

Toni Borge

Tonia St Germain

Tracey St John

tracy taylor

Trevor Pendleton

Tricia Patterson

Triscia Hennessy

Trudi Van Slyck

Ulla Hansen

Valerie Caro

Veronique Bailly

Vicky Sohn

Victoria Mills

Victoria Milne

Virginia Jastromb

Virginie Esain

Wendi Quest

wendy drumm

Wendy Hayward

Wendy Scofield

William Allan

WillIAM Rhatigan

William Zinn

Wrenn Reed

Zachary Coleman

**Additional comments and variations added to the above Mass Audubon letter have been excerpted and listed below, as submitted:**

... As a resident of coastal Massachusetts, living in a cottage overlooking a tidal estuary, I see on a daily basis the impact of ever higher tides on the salt marshes in front of me, and the many birds struggling to make a living in these areas!... -Eva Das, Hull

...I support the plan to include sea level rise in the revisions to the Massachusetts Waterfront Regulations. It makes sense to incorporate projected sea level rise as well, to update stormwater regulations, and to streamline permitting for wetlands restoration. Thank you for your efforts, and please make these regulations as tough as you possibly can. -Katherine Howard

...I support the plan to include sea level rise in the revisions to the Massachusetts Waterfront Regulations, as long as it's specific and precise, not reliant upon federal flood maps. Flooding and sea level rise are major threats to certain parts Massachusetts... -Julia Simonds

...I support the plan to include sea level rise in the revisions to the Massachusetts Waterfront Regulations. -Margaret Mulligan, Beverly

... I support your plan to include sea level rise in the revisions to the Massachusetts Waterfront Regulations. Things change quickly, frequently not for the better, and a broad-spectrum future plan is important. DEP, under has taken a positive step with these revisions, but it must do more to ensure that nature can thrive and protect our communities from flooding and water pollution. Thank you for your leadership of this vital organization. Great things have since you took over, and I look forward to even more great things you and your organization will do to save our wildlife. - Susan MacCallum, Holden

...Thank you for prohibiting new development in the highest risk coastal flood zone and requiring other development to be more resilient and protective of nature. I support the plan to include sea level rise in the revisions to the Massachusetts Waterfront Regulations. I'm also happy to see that DEP will be updating stormwater regulations with updated precipitation data and to support greater use of trees and other plants. To reverse historic damage to our wetlands, DEP should streamline permitting for wetlands restoration projects. DEP has taken a positive step with these revisions, but please do more to ensure that they can thrive and protect our communities from flooding and water pollution. -Jamie Demas

... As a frequent visitor to Massachusetts beaches, I strongly support the DEP in prohibiting new development in the highest risk coastal flood zone and requiring other development to be more resilient and protective of nature. I support the plan to include sea level rise in the revisions to the Massachusetts Waterfront Regulations. -Charlo Maurer

...I support the plan to include sea level rise in the revisions to the Massachusetts Waterfront Regulations. Nonetheless, it is imperative DEP apply the most up-to-date projections on future sea level rise in the Wetlands Protection regulations. We must build with the lifetime of a structure in mind, not just current conditions. It is encouraging DEP will be updating stormwater



regulations to replace outdated precipitation data and support greater use of trees and other plants. However, Doing so enables these critical ecosystems to function as they should, protecting communities from erosion and flooding...DEP has taken a positive step with these revisions, but further steps are necessary to ensure that nature can thrive and protect our communities from flooding and water pollution. -Amy Todd

... It only makes sense! This will have the added benefit of fixing more carbon as well as supporting local wildlife and providing additional cover adding to cooling... -Leonard Rabinow

... James K. Hadcroft here. You are part of the solution... -James Hadcroft

... Flooding is not entirely preventable, but some of these simple measures can help mitigate the damage. Mass Audubon have many experts involved in analyzing data impacting our environment. Please hear what they have to say. Thank you.-Lori Gallant, Tewksbury

**... I am writing to share my comments on Mass DEP's revisions to the Wetlands regulations. I want to thank you and the entire DEP team for revising these regulations to increase Massachusetts' resilience to flooding and water pollution. Please finalize these rules and take further steps to increase the pace of wetlands restoration... I have been a resident of Massachusetts since 1967. I remember many key events in our environmental history, including the heavy draping of trees throughout Cape Ann with the egg masses of the Gypsy moth in the years of heavy infestation in their periodic appearances. We meet these emergencies, and we deal with them. That's us, here in Massachusetts. I commend DEP for prohibiting new development in the highest risk coastal flood zone and requiring other development to be more resilient and protective of nature. I support the plan to include sea level rise in the revisions to the Massachusetts Waterfront Regulations. - Heather Cole**

**...I have been a resident of Massachusetts since 1967. I remember many key events in our environmental history, including the heavy draping of trees throughout Cape Ann with the egg masses of the Gypsy moth in the years of heavy infestation in their periodic appearances. We meet these emergencies, and we deal with them. That's us, here in Massachusetts. Thank you for your attention... -Heather Cole**

... I ask that DEP apply the most up-to-date projections on future sea level rise in the Wetlands Protection regulations as well, with the lifetime of a structure in mind. I am also happy to see that DEP will be updating stormwater regulations to replace outdated precipitation data and support greater use of trees and other plants. Streamlining permitting for wetlands restoration projects will further help to reverse historic damage to our wetlands...DEP has taken a positive step with these revisions, and I look forward to continued progress to ensure that nature can thrive and protect our communities from flooding and water pollution... -Zita Schneider

...It makes sense to incorporate projected sea level rise as well, to update stormwater regulations, and to streamline permitting for wetlands restoration. Thank you for your efforts, and please make these regulations as tough as you possibly can... -Katherine Howard

...Restoring and protecting wetlands is ultimately good for the environment and money saving over time... -Harold Robertson

...I highly commend DEP for prohibiting new development in the highest risk coastal flood zone and requiring other development to be more resilient and protective of nature. I strongly support the plan to include sea level rise in the revisions to the Massachusetts Waterfront Regulations. However, DEP must look to the future and apply the most up-to-date projections on future sea level rise in the Wetlands Protection regulations as well. We must build with the lifetime of a structure in mind, not just current conditions... Susan Bisailon, Hyde Park

Dear DEP leaders,...I am so pleased to see you are prohibiting building in the V zones, although much has already occurred and little land unbuilt....I am pleased you are giving room for salt marshes to move inland. I am pleased you are including rules on raising houses up especially in the V zone in coastal areas. I am so pleased that you are recognizing that flooding is not just a coastal matter; we have two major rivers in my town, (Merrimack and Shawsheen) that consistently flood, even on sunny windless days. DEP must seek natural solutions not doom the coastal land to will-fail breakwater jetties and unnatural solutions. In my family's town near the shore, we have witnessed floods marooning homeowners who have to be rescued by boat on south wind days. Please investigate the grandfathered allowed building in the historic mill buildings abutting rivers that flood. Please enact these regulations right away and look into making them even tighter with much land set aside for restoration. .... Thank you, Alix Driscoll

...DEP must also begin to take seriously the thousands of tons of plastic waste littering our road sides, hanging from trees, and clogging drainage. Massachusetts has become a garbage heap due to the willful ignorance of enough residents to make this possible...It is long past time to wake up to this reality. Kareem Roustom, Sharon

... Those of us that live along the shoreline have seen additional degradation to stands of cord grass due to the lack of enforcement of shellfish regulations. Clammers routinely dig within the 3 foot protected boundary for cord grass destroying peat, root offshoots and seedlings that then accelerate die off. Additional officers are needed to enforce all new and existing regulations. I'm pleased to see that DEP will be updating stormwater regulations to replace outdated precipitation data and support greater use of trees and other plants to help mitigate water run-off. To reverse historic damage to our wetlands, DEP must streamline permitting for wetlands restoration projects and increase enforcement to prevent violations... DEP has taken a positive step with these revisions, but it must do more to ensure that nature can thrive and protect our communities from flooding, water pollution, and the impact of careless human behavior...Priscilla Sloane, Swansea

...using the latest data and projections. . . . -Will Phippen

Dear DEP and other State Officials, I am writing in support of increased protection and fostering of wetlands in Massachusetts. Wetlands provide a buffer for storm surges due to sea rise, filter polluted surface water, increase habitat for a variety of land and sea animals and are exquisite landscape features. Please take all steps possible to restore and protect our wetlands; doing so is

not only an environmental but a clear financial benefit to the Commonwealth. With best wishes,  
Martha Podren, Somerville

... I totally agree with the sentiment posed in this message. It is said much better than I . Thank you. – David Bjorkman

...However, how is it in marshfield are they are trying to destroy marshland to build a parking lot? And other wetlands in marshfield, developers are fighting to build huge complexes and threaten water reserves. In Scituate this happened too. Wetlands should not be seen as "undeveloped" land to be turned into money-making housing. DEP must apply the most up-to-date projections on future sea level rise in the Wetlands Protection regulations as well. We must build with the lifetime of a structure in mind, not just current conditions...Thank you for your consideration, -Kristen Parlon

As a park ranger and lover of nature...Anna spencer

...Good scientific research and studies have already indicated why these projections are needed... Candace Sidner

Thank you for taking the time to consider my comment. As a birder, biologist, and Massachusetts resident I love our local avian communities and feel that they are natural treasures that should be protected for future generations to enjoy the way we have...Andrew Single

We are already losing significant numbers of shore birds whose lives and reproduction are dependent on nesting areas that support their habits...It is only by making permitting possible much more quickly that the kind of essential restoration can occur in a timely manner... Crystal Gips

...Thank you for what you have done so far to help save our coastal wetlands but we need to do much more... Like streamline permitting for wetland restoration projects and making it easier and faster to go through; Look forward to the future and put in place regulations that restore and keep safe our wetlands for generations to come. So much of our wildlife is dependent upon your actions. Please help us save what we currently have!... Linda Young, South Hadley

Our wetlands are vital, fragile, increasingly threatened, and rapidly disappearing... Joshua Hassol

...Wetlands wildlife such as the saltmarsh sparrow will disappear without more aggressive protection of coastal wetlands, which also sequester carbon at several times the rate of upland forests on a per acre basis...Paul Lauenstein

...Yes, the majority of this message was written by Mass Audubon. But I have read it and agree with all that they communicate. I was born in MA and choose to live here as an adult because I love it. I am not naïve. I know we need to allow further development as our population numbers continue to grow. But I believe we can be smart in the way/locations where we build out. Please continue to consider the ramifications of wetland loss... Thanks for your time. -ALYNNE MACLEAN

...DEP must apply the most up-to-date projections on future sea level rise in the Wetlands Protection regulations as well. We must build with the lifetime of a structure in mind, not just current conditions. I'm glad to see that DEP will be updating stormwater regulations to replace outdated precipitation data and support greater use of trees and other plants...Don Ogden

...I don't know if there is anything substantive that can be done to hold back coastal flooding. The Massachusetts coast faces threats like those in New Orleans... -Allan Johannesen, Rochdale

...We commend DEP for prohibiting new development in the highest risk coastal flood zone and requiring other development to be more resilient and protective of nature. I support the plan to include sea level rise in the revisions to the Massachusetts Waterfront Regulations... -Ellen H. Anderson

...I am a concerned citizen and long-time member of Mass Audubon...However, DEP needs to step up and apply the most up-to-date projections on future sea level rise in the Wetlands Protection regulations as well. We must build with the lifetime of a structure in mind, not just current conditions. I'm also happy to see that DEP will be updating storm water regulations to replace outdated precipitation data and support greater use of trees and other plants... -Carolyn Gombosi

...I also support the DEP's updating of stormwater regulations to replace outdated precipitation data and promote greater use of trees and other plants... -Andrea Doukas

...As someone who lives in a coastal community and am seeing more erosion yearly (and monthly)... DEP must also apply the most up-to-date projections on future sea level rise in the Wetlands Protection regulations as well. We must build with the lifetime of a structure in mind, not just current conditions. -Georgia Neill

... I worked as a Conservation Agent for over fifteen years and spent many of those years hoping that the regulations would be updated to reflect our changing precipitation conditions and that regulations on development in coastal areas and flood plains would be strengthened. I live in a vulnerable coastal community and am aware of how important it is to prepare adequately for rising seas, increased precipitation and storms with increased intensity. Given that these new regulations are not likely to be amended again for a decade or more, it is critical that these regulations take into account anticipated future conditions... -Mary Ellen Schloss

... I do commend DEP for prohibiting new development in the highest risk coastal flood zone and requiring other development to be more resilient and protective of nature. However, DEP should take into consideration structures build near other wet lands and increase protections on these water bodies as well. I support the plan to include sea level rise in the revisions to the Massachusetts Waterfront Regulations but the most up-to-date projections on future sea level rise should be in the Wetlands Protection regulations as well. Nature based solutions are the best solutions there are as they are usually easy to initiate and they are usually less costly to acheive. To reverse historic damage to our wetlands, DEP must streamline permitting for wetlands restoration projects and also for salt marsh restorations. We must also continue to protect these

vital ecosystems from encroaching development... DEP has taken a positive step with these revisions, but it must do more to ensure that nature can thrive and protect our communities from flooding, water pollution, and protect from biodiversity loss. -Rene Schweickhardt

...The part of my property that I love the most is a beautiful marsh. My home is built on a hill overlooking it and the living quarters are above flood level. Not so sure about the downstairs. Protecting my marsh and all of the wetlands in our surrounding area of many local ponds will keep the properties like mine and those owned by the state (and Fed Government such as the Oxbow National Wildlife Preserve) alive for birds, animals, the air we breathe, and importantly as repositories in the battle against climate change... -Janet Fox

... Including sea level rise is essential given that it is a future we are certain to live with. But let's be sure we're using the latest science on sea level rise, and apply the most up-to-date projections on future sea level rise in the Wetlands Protection regulations as well. We must build with the lifetime of a structure in mind, not just current conditions. The rainfall patterns of today are not what they used to be - let's reflect that in the regulations... -Christopher Dalton

...This is very important to me, especially regarding the worsening climate change and the importance of our community spaces and our wildlife. thank you for all you do for Massachusetts...-Myke Farricker

...I volunteer as a field guide at the Cape Cod Museum of Natural History in Brewster, MA. Explaining to families that salt marshes are just as important to our eco system as rain forests are, is my passion...Karen Casey

...The erosion near our house is more evident every day; as the marshes break down and the mud flows outward, the bays fill from the bottom and the water rises higher and tides move faster... -Charlotte Hamlin

...Wetlands in Massachusetts continue to be degraded and destroyed due to relentless development and alteration, climate change, storm impacts, and neglect. While I am grateful that Massachusetts has among the best protective laws and regulations in the country, we still need to do more. Wetlands protect us from storm damage, help filter our water, provide critical wildlife habitat, clean the air, and offer rapidly disappearing open space and recreation. Every effort should be made to strengthen our wetlands laws and regulations - to prohibit alteration of isolated as well as connected wetlands and their critical buffer zones, and to allow speedy restoration of degraded areas. Overall, wetlands delineations should take into account rising sea levels and changing flood zones. Once a wetland is developed or destroyed, it is gone forever, and we cannot afford to squander this natural heritage. Please be bold and be a strong advocate for the resource! Thank you. -Joanne Michaud

As this below text from Mass Audubon states, with your support, Massachusetts has in its power to restore our wetlands, as well as to protect wildlife and humankind's interests in living in harmony with the evolving environmental phenomena (i.e., climate change) ... -Katharine Townsend

...My understanding is these regulations have been based on data from the 1960s and the new regulations would be based on much more recent data, which sounds like a long-overdue modernization. I am encouraged to hear that DEP will be emphasizing the use of trees and other natural solutions to help manage our stormwater. If changes in the climate put us at higher risk of flooding, I urge you to do everything in your power to protect our wetlands that help us be more resilient to flood risks. I also appreciate the emphasis on wetlands restoration projects. Thank you on behalf of your work for current and future Massachusetts residents.... -Michael Keefe-Feldman

...I personally live near the coast and see firsthand what stronger storms do to the coastline. The sand from the beaches get washed away and houses now have the ocean closer to their doorstep. Dump trucks go up and down my street as they make their way to the Duxbury beach area to restore the dunes and sand that constantly gets washed away. How long will this go on for? Erosion is real and let's work to address this realistically!... -Justine Buick

...Having grown up at the edge of a salt marsh in Ipswich, I have learned first-hand the importance and value of wetland ecosystems to all species of Massachusetts, and the potential role these ecosystems play in our ability to remain resilient in the face of climate change.... -Alison Hamlin

... To make these regulations durable, however, DEP should apply the most up-to-date projections on future sea level rise in the Wetlands Protection regulations as well - we must build with the lifetime of a structure in mind, not just current conditions. At the same time, DEP should streamline permitting for wetlands restoration projects so that we can try to restore historic damage. Finally, I'm also pleased to see that DEP will be updating stormwater regulations to replace outdated precipitation data and support greater use of trees and other plants...DEP has taken a positive step with these revisions, but it must do more to both ensure that nature can thrive and to protect our communities from flooding and water pollution. -Alisa Plazonja

...Will DEP apply the most up-to-date projections on future sea level rise in the Wetlands Protection regulations? We must build with the lifetime of a structure in mind, not just current conditions. Many residents find it hard to think in the long-term so I hope DEP will lead the way in showing us that decisions need to be made for future generations... -Rosanna Bird

... \*\* I strongly support immediate action toward climate repair and biodiversity recovery. Regenerating our wetlands, along with other ecosystems, is a key component of a sustainable, resilient, and just future. I also support rethinking our models of economic growth, to measure resilience and wellness in addition to mere output and more development. We must move toward a slow growth model of economic wellbeing, including protection of ecosystems, reduced consumption (especially of fossil based products, including plastics), and regeneration of our soils, forests, and waters. Thank you. -\*\*Thomas King

...It is critical that we restore degraded wetlands, responsibly manage stormwater runoff, and restrict development in flood zones as soon as possible... Janet Morehouse

...Please update wetlands regulations... -Donald Wilhelm



...I am contacting you about Mass DEP's revisions to Wetlands Regulations. I appreciate that you and the DEP team are revising these regulations to increase resilience to flooding and water pollutions. I believe that DEP should prohibit new development in the highest risk coastal flood zone and require other development to be more resilient and protective of nature. I support the plan to include sea level rise in the revisions to the Massachusetts Waterfront Regulations. I hope that DEP will apply the most up-to-date projections on future sea level rise in the Wetlands Protection regulations as well. We must build with the lifetime of a structure in mind, not just current conditions... I feel that DEP has taken a positive step with these revisions, but expect that you will do more to ensure that nature can thrive and protect our communities from flooding and water pollution... -Mary Dowling

...My personal experience with coastal flooding is in Boston where I work in the Seaport district. When there are major storms during severe high tides, I can't believe the amount of water that floods this area. I've worked in Boston for over 30 years, and water never came onto the streets until well after 2000...DEP must apply the most up-to-date projections on future sea level rise in the Wetlands Protection regulations as well. We must build with the lifetime of a structure in mind, not just current conditions. I also believe that DEP must streamline permitting for wetlands restoration projects to allow past damage to our wetlands to be reversed. Thank you for your time... -Judy Hughes

...I greatly appreciate the introduction of these new protections by the DEP. Prohibiting new development in the highest risk coastal flood zone, emphasizing resiliency and protection of nature in other projects, and updated stormwater regulations, are all changes that will play a critical role in restoring our wetlands before the damage done is irreparable. Additionally, to reverse historic damage to our wetlands, it is paramount that DEP also streamline permitting for wetlands restoration projects... -Seamus O'Neil

...I applaud DEP for prohibiting new development in the highest risk coastal flood zone and requiring other development to be more resilient and protective of nature. I strongly support the plan to include sea level rise in the revisions to the Massachusetts Waterfront Regulations. I urge DEP to apply the most up-to-date projections on future sea level rise in the Wetlands Protection regulations as well. I believe that we should build with the lifetime of a structure in mind, not just current conditions. I'm also very pleased to see that DEP will be updating stormwater regulations to replace outdated precipitation data and support greater use of trees and other plants. I believe that, in order to reverse historic damage to our wetlands, DEP should streamline permitting for wetlands restoration projects...DEP has taken a very positive step with these revisions, but I think it should do even more to ensure that nature can thrive and protect our communities from flooding and water pollution... -Mark Smith

...DEP has taken a positive step with these revisions, but it must do more to protect our communities from flooding and water pollution and to ensure that nature can thrive. In short, DEP must streamline permitting for wetlands restoration projects. In order to protect what we have today, we need to apply the most up-to-date projections on future sea level rise in the

Wetlands Protection regulations. Furthermore, we must build, or prohibit building, with the lifetime of a structure in mind under the projectile of predicted changes in climate conditions. Thank you for the work you have done updating stormwater regulations to replace outdated precipitation, prohibiting new development in the highest risk coastal flood zones, and requiring other development to be more physically and resilient and environmentally sound. Our climate will continue to change and become more severe each year for the foreseeable future. I thank you for your work, and I ask that you constantly update your data and adapt your standards to meet not only present needs, but also those of science's most up-to-date projections... -Andrea Bugbee

...However, to adequately protect our state from future weather extremes the regulations must recognize that the most damaging events are not single large storms characterized by 24 hour precipitation, but multiple storms occurring one after another, as happened in March of 2010 and February/March of 2015. The former led to record flooding and the latter to record snow levels... -Thomas Sciacca

...Having lived by the coast for a number of years, I know how important it is to have a place for excess water to flow... -Anne G. Cann

...I believe that the (re)establishment of native coastal vegetation is a key measure to prevent erosion. To reverse historic damage to our wetlands, DEP must streamline and facilitate permitting for wetlands restoration projects. It is essential to get these projects underway quickly and efficiently... -Michaela Nielsen

...I am a volunteer conservation commissioner in my town. We need these wetland protections strengthened to protect our environment and our future... -Carol Hayes

...Please let's save these dear sparrows AND make good decisions about the shoreline at the same time!... -Thomas Andrews

...Rising seas and stronger storms are already impacting Massachusetts. As the climate changes, extreme weather is causing flooding in coastal and inland areas. This pattern threatens habitat for vulnerable birds like the Saltmarsh Sparrow, in addition to human life. To keep our communities and wildlife habitat safe, we must restore degraded wetlands, responsibly manage stormwater runoff, and restrict development in flood zones. Right now, the Massachusetts Department of Environmental Protection (DEP) is proposing changes to our wetlands and stormwater regulations to improve their resilience to flooding and a changing climate. We need your support to ensure these changes make it across the finish line in the face of pressure from the development industry. And DEP needs to do more... Emme Carroll

... Thank you for your efforts so far in prohibiting new development in the highest risk coastal flood zone and requiring other development to be more resilient and protective of nature. I support the plan to include sea level rise in the revisions to the Massachusetts Waterfront Regulations. It is my hope that DEP will apply the most up-to-date projections on future sea level rise in the Wetlands Protection regulations as well -- every year shows us how much our environment is changing with sea level. We must build with the lifetime of a structure in mind,

not just current conditions... DEP has taken a positive step with these revisions, but please do more to ensure that nature can thrive and protect our communities from flooding and water pollution... -Allison Meierding

...I appreciate the efforts DEP is already making and support DEP for prohibiting new development in the highest risk coastal flood zone and requiring other development to be more resilient and protective of nature. I also support the plan to include sea level rise in the revisions to the Massachusetts Waterfront Regulations. However, it is important that DEP verify and apply the most up-to-date projections on future sea level rise in the Wetlands Protection regulations as well. I welcome studies that investigate this so we can build with the lifetime of a structure in mind, not just current conditions... Please continue on this strong course of action. You have my and my family's full support...Sarah Peix

...Catastrophic flooding threatens communities across Massachusetts. As the planet overheats, sea levels will continue to rise, and extreme precipitation will cause more rivers to overflow their banks. We must make our communities more resilient to flooding. Wetlands absorb water from rising seas and extreme storms and protect communities from the worst impacts of flooding... Sarah Arsenault

...**Shannon Molloy, Harvard**

**Shannon Molloy . To reverse historic damage to our wetlands, DEP must streamline permitting for wetlands restoration projects.**

Christina Wiseman, Melrose

...Birds and all the creatures of the wetlands are depending on our careful stewardship of this precious resource. Thank you for your time and attention to this matter of great importance. - Sally Lincoln Vogel

...Our children and our children's children deserve to inherit an environment that is rich with wildlife. --Justin Anderson

...As a biologist, I am keenly aware of the importance of preserving wetlands for the long term health of native species and our local environment. Without a strategic plan, we cannot hope to preserve our crucial wetland environments for future generations. -Isabel Hanekamp

...Thank you for caring about the nature of Massachusetts! -Mary Sughrue-Yacino

...Thank you for your attention to these important issues! -Irena Sinclair

...Remember the lessons of Spring -Janis Townsend

...With two children growing up in Massachusetts, I ask you to be aware of a future generations that your efforts will be serving. Thank you so much. -Paul Trunnell

...Flooding and sea level rise are major threats to Massachusetts. I see this get worse every year in Newburyport. DEP has taken a positive step with these revisions. -Marianne Vesey

...I thank the DEP for prohibiting new development in the highest risk coastal flood zone and requiring other development to be more resilient and protective of nature. Theresa Pratt

...Please help us restore vital wetlands. - Sarah Matthews

...It is vital that changes be made quickly as sea level rise will continue to diminish wetland areas as land use prevents continued movement to higher areas. Thank you for taking action, - Judith Pederson

...Also developments won't end up being profitable in the near future so this is even within the interests of developers. -Garrett Anderson

...I can recommend an excellent book on this important matter: Erica Gies, Water Always Wins. -Irene R Fairley

...I commend DEP for prohibiting new development in the highest risk coastal flood zone and requiring other development to be more resilient. I support the plan to include sea level rise in the revisions to the Massachusetts Waterfront Regulations but believe DEP should employ projections of future sea level rise into those regulations -Peter Richards

...I appreciate these changes and support the plan to include sea level rise in the revisions to the Massachusetts Waterfront Regulations. -Lesley Peebles

...This is hugely important to the survival of the flora and fauna of our precious ecosystems. - Kelly Moore

...I applaud DEP for prohibiting new development in the highest risk coastal flood zone and requiring other development to be more resilient and protective of nature...In addition, however, DEP also needs to apply the most up-to-date projections on future sea level rise in the Wetlands Protection regulations. This means building with the lifetime of a structure in mind, not just current conditions. I also support the efforts underway by DEP to update stormwater regulations to replace outdated precipitation data and support greater use of trees and other plants... DEP has taken a positive step with these revisions, but please do more to ensure that nature can thrive and protect our communities from flooding and water pollution. Thank you very much for your consideration. -Peter Kalil

...Living 897 feet from the Atlantic Ocean and being a lifelong resident of the same home I ABSOLUTELY see the decline and the change in bird habitat and the birds themselves. This season, for the first time I can ever remember there were Red Winged Blackbirds which wintered over. There are 14 acres of privately owned land which are deemed unbuildable due to wetlands that are ESSENTIAL. There are streams (some underground) which flow right to the ocean and provide a haven for resting and migrating birds. It's essential this small piece of land be saved or bought. The tides are so much higher, the phragmites has also clogged and taken away valuable bird areas. There is nothing to be done with this aspect due to very strict EPA rules but we all know this plant is out-of-control everywhere. Please help. Birds and animals can not speak to you but, I can. Please help!! -Nancy Fay

...Every time I see housing built on the edge of a marsh, I shudder and wonder why it is allowed. Scituate, Mass. is a good example of that situation. -Susan Ludlow

...I am grateful that DEP has been active in stopping new development in high risk flood areas. . I am in favor of revisions to the Massachusetts Waterfront Regulations including sea level rise. That said, it is of utmost importance for the DEP to recognize that the climate change projections being used aren't good enough. It's necessary to use the most up to date and accurate projections on future sea level rise in the Wetlands Protection regulations as well. -Jovielle Gers

...I am worried for the future of our state. -Martha Goldsmith

...I urge DEP to apply the most up-to-date projections on future sea level rise in the Wetlands Protection regulations as well. -Elizabeth Spencer

...Protection for all living beings on this beautiful cape. -Jan Bettencourt

...When I came to Cape Cod, I didn't know, what I didn't know. I've learned a lot...I'm a believer. -Marcia Tyler

...Thank you for prohibiting new development in the highest risk coastal flood zone and requiring resiliency and proactive protection of nature in future development. I support the plan to include sea level rise in the revisions to the Massachusetts Waterfront Regulations using the most recently updated projections on future sea level rise in the Wetlands Protection regulations. Thank you for updating stormwater regulations with fresh precipitation data and greater use of trees and other plants. And I truly hope DEP will streamline permitting for wetlands restoration projects. With appreciation, -Marilyn Nucci

...Please take action to understand and protect wetlands and land adjacent to wetlands. -  
STEPHEN WHELAN

...Thank you for your time and consideration. Let's do the right thing for Massachusetts! -  
Matthew Heck

...I've been working to protect our earth from the impact of climate change for three decades at multiple scales. This scale, coastal wetlands, is one of the most important and most vulnerable. So please do all you can to take a modern approach to protecting this very important ecosystem. -  
Gary Graham

...I really hope DEP will prohibiting new development in all high risk zones, not just the highest risk zone, and including prohibitions on swimming pools, pool houses, "cabanas," bathrooms, and basements - and, of course, requiring any permitted development to be more resilient and protective of nature. I support the plan to include existing and predicted sea level rise in the revisions to the Massachusetts Wetlands Regulations...I hope the DEP model impervious surface zoning bylaw will also be updated. I believe it needs a limit on the percentage of a lot that can be covered with impervious surfaces even if the lot has a system of stormwater management and artificial recharge of precipitation.. There needs o be room for trees and other plants. -Julia Livingston

...Wetlands will help save us from coastal flooding and help all creatures thrive. Maureen Quinn-Dupont

...I write today for three reasons. First, to commend the DEP for prohibiting new development in the highest risk coastal flood zone and for requiring other development to be more resilient and protective of nature. As a Massachusetts resident and career environmental scientist, I support the plan to include sea level rise. I am also happy to see that the DEP plans to update the state's stormwater regulations to replace antiquated precipitation data and to support a greater use of natural vegetation as mitigation strategies. But second, I strongly encourage the DEP to apply the most recent projections on future sea level rise in the Wetlands Protection regulations, and to structure the regulations so that they are adaptive, able to use newer projections as they become available. The principles of adaptive management are based in part on the need for flexible responses as new information arises. Third, the DEP should streamline the permitting process for wetlands restoration projects. Without clear pathways to encourage restoration, environmental project will always remain an exercise in merely slowing down but never reversing degradation. Restoration must play a more prominent role in environmental and conservation plans. It is clear that in the coming several decades, flooding and sea level rise will pose major threats to both the natural and cultural environments of Massachusetts. The DEP has taken positive steps with these revisions, but it can, and must, do more to ensure that nature can thrive and protect our communities from flooding and water pollution. -Stephen Trombulak

...I was a member of the Needham Conservation Commission for approximately 20 years, and it was gratifying to be able to apply some of the highest wetland standards in the United States to protect wetlands in Massachusetts. Although I haven't been a Commissioner for more than 10 years, I can't help but look at landscape, wetlands, and development in the light of protecting the environment. It's been clear over the past 10 years, that climate change calls for more stringent and more proactive regulations for today's world and the future of wetlands, both inland and coastal, in the state. -Marsha Salett

...My family and I live by Mill Pond salt marsh in Gloucester, which is a tributary off of the Annisquam River. We have lived here for 22 years. For a few years now we have noticed that the saltmarsh floods higher and more frequently than it used to. First it developed more salt pans, but those are now connecting to make more permanently covered sections of saltmarsh. We value this incredible backyard resource, not only for its sponge ability to protect our home and yard, but also for the diversity of flora and fauna it nurtures. Please help make it easier to protect and restore all such coastal habitats! -Lois Bairstow

...As a birder and nature lover, I know how important wetlands are for our avian biodiversity. For example, Saltmarsh Sparrows are beautiful birds that are at great risk because of wetland and habitat degradation. I want these birds to exist in the future for the next generation to appreciate them. - Julie Krzanowski

...Last summer was filled with flood warnings. We must take our changing climate into consideration as the rules are revised. -Emily Castner

...Thank you for accepting my comments. -Cheryl Rigby



...I look forward to working together on protecting and providing the environment for future generations -Thomas Duva

...The health of our wetlands is directly connected to the health of human communities. We must do our best to stay ahead of the game when it comes to climate change, and be proactive rather than reactive. --Zaiga Alksnitis

...Growing up I lived and played by the marshes and bay. I spent countless hours watching horseshoe crabs, skipping rocks and playing in the small tide pool areas and finding millions of periwinkles. Now my children are lucky enough to see where I grew up and played, my hope and wish is that their children and many other future generations will also be able to see it too. -Sarah Levangie

...Thank you in advance for supporting this important issue! -Gretchen Hollworth