Massachusetts Department of Environmental Protection
Stormwater Advisory Committee

Meeting 1: February 12, 2020
MassDEP Stormwater Advisory Committee
Meeting 1: Objectives and Agenda

Meeting Objectives
• Overview of regulatory context and key topics
• Overview/feedback on AC ground rules, schedule

Agenda
• Welcome and Introductions
  a. Introductions and review agenda, ground rules, and meeting line-up

• Overview of Regulatory Frameworks / Wetlands Context

• Topical Overviews and AC Discussion
  a. Updating Precipitation Projections
  b. Aligning DEP SW Handbook with EPA MS4 Permit
  c. DEP SW Handbook and EPA TS4 Permit – Appropriate Controls for MassDOT

• Comments from other Interested Stakeholders and the Public

• Wrap Up
<table>
<thead>
<tr>
<th>ORGANIZATION</th>
<th>AC Designee</th>
<th>TITLE</th>
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</thead>
<tbody>
<tr>
<td>Home Builders and Remodelers Association Central Massachusetts</td>
<td>Guy Webb</td>
<td>Executive Director</td>
</tr>
<tr>
<td>Home Builders and Remodelers Association of Massachusetts</td>
<td>Jeffrey Brem</td>
<td>HBRA Board VP/Treasurer</td>
</tr>
<tr>
<td>National Association of Industrial and Office Properties</td>
<td>Chip Nylen</td>
<td>Designee</td>
</tr>
<tr>
<td>MassDOT - Highway Division</td>
<td>Henry Barbaro</td>
<td>Environmental Analyst</td>
</tr>
<tr>
<td>Member At Large</td>
<td>Rich Claytor</td>
<td>AC Member At Large</td>
</tr>
<tr>
<td>Member At Large</td>
<td>Robert Roseen</td>
<td>AC Member At Large</td>
</tr>
<tr>
<td>Massachusetts Audubon Society</td>
<td>Heidi Ricci</td>
<td>Assistant Director of Advocacy</td>
</tr>
<tr>
<td>Massachusetts Rivers Alliance</td>
<td>Ian Cooke</td>
<td>MRA Board Member</td>
</tr>
<tr>
<td>Massachusetts Association of Conservation Commissioners</td>
<td>Sandra Brock</td>
<td>MACC Board Member</td>
</tr>
<tr>
<td>MA DEP Wetlands Program (AC Chair)</td>
<td>Stephanie Moura</td>
<td>Director, Wetlands and Waterways Division</td>
</tr>
<tr>
<td>MA DEP Wetlands Program</td>
<td>Lisa Rhodes</td>
<td>Wetlands Program Chief</td>
</tr>
<tr>
<td>U.S. Environmental Protection Agency</td>
<td>Newton Tedder</td>
<td>Project Manager</td>
</tr>
<tr>
<td>MA Executive Office of Energy and Environmental Affairs</td>
<td>Vandana Rao</td>
<td>Director of Water Policy</td>
</tr>
<tr>
<td>MA Department of Fish and Game</td>
<td>Michelle Craddock</td>
<td>Streamflow Restoration Program Manager</td>
</tr>
<tr>
<td>Massachusetts Municipal Association</td>
<td>Ariela Lovett</td>
<td>Legislative Analyst</td>
</tr>
<tr>
<td>Central Massachusetts Regional Stormwater Coalition</td>
<td>John Woodsmall, III</td>
<td>CMRSC Co-Chair</td>
</tr>
<tr>
<td>Pioneer Valley Planning Commission</td>
<td>Patty Gambarini</td>
<td>Co-Leader, Land Use/Environment Section</td>
</tr>
<tr>
<td>Association of Massachusetts Wetland Scientists</td>
<td>Stacy Minihane</td>
<td>AMWS Board - Vice President</td>
</tr>
<tr>
<td>Boston Society of Civil Engineers Section</td>
<td>Ronald Burns</td>
<td>Senior Vice President</td>
</tr>
</tbody>
</table>
MassDEP Stormwater Advisory Committee
Meeting Line-up and Schedule

<table>
<thead>
<tr>
<th>Mtg</th>
<th>Main Topics</th>
<th>Date/Location</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Kick-off and Topical Overview</td>
<td>Wed 2/12/20 1:30-3:30pm Boston</td>
</tr>
<tr>
<td>2</td>
<td>Aligning DEP stormwater rules with EPA MS4 in wetland areas</td>
<td>Tues 3/24/20 1:00-4:00pm Worcester/CERO</td>
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<tr>
<td>3</td>
<td>Updating precipitation projections</td>
<td>Thurs 4/16/20 1:00-4:00pm Boston</td>
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<td></td>
<td>MS4 follow-up from Mtg 2</td>
<td></td>
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<tr>
<td>4</td>
<td>Precipitation follow-up from Mtg 3</td>
<td>Tues 4/28/20 1:00-4:00pm Boston</td>
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<td></td>
<td>Other Topics, including</td>
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<tr>
<td></td>
<td>• TS4 permit/Special Considerations for DOT</td>
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<tr>
<td></td>
<td>Advisory Committee Wrap-up and Next Steps</td>
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Updating the MassDEP Wetlands Regulations and Stormwater Handbook

Advisory Committee Overview
February 12, 2020
Regulatory Tools to be Discussed at Advisory Committee Meetings

EPA
- NPDES
  - 2016 MS4 General Permit
- TS4 Permit for MassDOT Highways

MassDEP
- Wetlands Protection Act (WPA) Regulations
- Water Quality Certification (WQC) Regulations
- MassDEP Stormwater Handbook
Regulations Requiring Compliance with MassDEP Stormwater Handbook

- NPDES
  - 2016 MS4 General Permit
  - TS4 Permit
- Wetlands Protection Act Regulations
- MassDEP Stormwater Handbook
- Water Quality Certification Regulations
Regulatory Tools Requiring Revisions

- **NPDES 2016 MS4 General Permit**
  - NO Revisions Proposed*
- **TS4 Permit**
- **Wetlands Protection Act Regulations**
  - Revisions Proposed
- **MassDEP Stormwater Handbook**
  - Revisions Proposed
- **Water Quality Certification Regulations**
  - Revisions Proposed

* EPA May Propose Revisions per the Settlement
Proposed Updates to WPA/WQC Regulations and MassDEP Stormwater Handbook

1. Precipitation Intensity and Frequency Data

2. Alignment of WPA/WQC Regulations with 2016 MS4 General Permit

3. Special Considerations for MassDOT projects (requires changes to Stormwater Handbook only)
Proposed Updates to WPA/WQC Regulations and MassDEP Stormwater Handbook

1. Precipitation Intensity and Frequency Data

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3. Special Considerations for MassDOT projects (requires changes to Stormwater Handbook only)
Updating Precipitation Data

• WPA/WQC Regulations & SW Handbook Rely on Precipitation Data to define Design Storms

• Design Storms Used to:
  • Design Stormwater Management Systems
  • Delineate Land Subject to Flooding
  • Design stream crossings
Updating Precipitation Data

• Precipitation Data developed in 1961
• MassDEP compared 1961 Data to more current precipitation atlases published recently
• 1961 Data Does not Reflect Current or Future Precipitation Patterns
• Bring WPA/WQC regulations and SW Handbook up to date and address future conditions
Proposed Updates to WPA/WQC Regulations and MassDEP Stormwater Handbook

1. Precipitation Intensity and Frequency Data

2. Alignment of WPA/WQC Regulations with 2016 MS4 General Permit

3. Special Considerations for MassDOT projects (requires changes to Stormwater Handbook only)
Alignment of WPA/WQC Regulations with 2016 MS4 General Permit

• WPA/WQC regulations & MS4 General Permit require compliance with MassDEP Stormwater Handbook

• Some Wetlands Standards are Different than 2016 MS4 General Permit Standards

• Difficult to Implement in Overlapping Areas!
Proposed Updates to WPA/WQC Regulations and MassDEP Stormwater Handbook

1. Precipitation Intensity and Frequency Data

2. Alignment of WPA/WQC Regulations with 2016 MS4 General Permit

3. Special Considerations for MassDOT projects (requires changes to Stormwater Handbook only)
Special Considerations Chapter for MassDOT Projects in MassDEP Stormwater Handbook
(Goal: align with MassDOT Highway TS4 Permit)

• MassDOT is a MS4 regulated entity

• MassDOT Requested TS4 Permit due to Long Linear Project constraints

• EPA expected to issue Draft TS4 permit in Spring 2020

• MassDEP Proposes New Chapter for MassDEP Stormwater Handbook – Special Considerations for MassDOT Highways

• MassDEP to collaborating with EPA for consistency
Thank You

Lisa Rhodes
Wetlands Program Chief
Lisa.Rhodes@mass.gov
Increasing Precipitation:
Updating MassDEP Wetlands Regulations & Stormwater Handbook
Wetland Regulations Require Use of Precipitation Data for Design
<table>
<thead>
<tr>
<th>Resource</th>
<th>Design Storm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vernal Pool boundary</td>
<td>2.6 in. storm in 24-hours (310 CMR 10.57(2)(a)6.). Approximates TP40 Statewide 1-year 24-hour storm.</td>
</tr>
<tr>
<td>BLSF area likely significant to wildlife habitat</td>
<td>4.8 in. storm in 24-hours in absence of FEMA profile data (310 CMR 10.57(2)(a)4.). Approximates the TP40 Statewide 10-year 24-hour storm.</td>
</tr>
<tr>
<td>BLSF Boundary</td>
<td>7.0 in. storm in 24-hours in absence of FEMA profile data (310 CMR 10.57(2)(a)3.a.) Approximates the TP40 Statewide 100-year 24-hour storm.</td>
</tr>
<tr>
<td>ILSF Volume</td>
<td>1-year 24-hour design storm</td>
</tr>
<tr>
<td>ILSF Boundary</td>
<td>7.0 in. storm in 24-hours in absence of FEMA profile data (310 CMR 10.57(2)(b)3.). Approximates the TP40 Statewide 100-year 24-hour storm.</td>
</tr>
<tr>
<td>Stormwater water quality volume</td>
<td>First ½-inch and 1-inch of runoff, depending if the stormwater discharge is directed to or near a critical area, soil with rapid infiltration rate, or land use with higher potential pollutants.</td>
</tr>
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Present Day Conditions: Change in Precipitation Values TP40 to NOAA 14

2015/2019 NOAA 14 Compared to 1961 Technical Paper 40
Percentages indicate the change in rainfall amount from TP40 to NOAA14 data
Comparison between TP40 and NOAA14 (percent differences in rainfall data) for 100-year 24-hour storm
What Are We Addressing by Adopting NOAA14?
 Catching Up to Present Day Conditions!

For Example

- Existing stormwater and other infrastructure not large enough to treat current or future precipitation

- Floodplain boundaries don’t reflect current conditions – properties flooded
Prior Regulated Floodplain

Regulated Floodplain (after 2010 FEMA Study)

Building constructed between 2005 and 2008, now in regulated floodplain after June 2010 FEMA re-study

Effects Caused By Greater Precipitation: More Flood Prone Areas
Executive Order 569: Establishing an Integrated Climate Change Strategy for the Commonwealth
September 16, 2016

...WHEREAS, extreme weather events associated with climate change present a serious threat to public safety, and the lives and property of our residents...

...within two years of this Order, publish a Climate Adaptation Plan that includes a statewide adaptation strategy incorporating: (i) observed and projected climate trends based on the best available data, including but not limited to, extreme weather events, drought, coastal and inland flooding...
State Hazard Mitigation and Climate Adaptation Plan (SHMCAP) September 17, 2018

- EEA Resilient Massachusetts Action Team (RMAT) – Advance Priority Actions from SHMCAP

- Action Item – SHMCAP Chapter 7: DEP Update precipitation data used by wetlands program
Precipitation Trend Increasing in Many Locations in MA

More Rain and More Floods
Near-Term Action

• Adopt NOAA 14 Precipitation Atlas to replace TP40

• Add Factor of Safety (FOS)

• Advisory Committee Consider FOS options:
  • NOAA14 Precipitation Atlas plus Multiplier (NOAA14+)
  • RMAT Variation of NOAA14+
  • Other Options

Long-Term Actions: Downscape Global Circulation Model (Beyond Scope of this Committee)
THANK YOU

Lisa Rhodes
Wetlands Program Chief
Lisa.Rhodes@mass.gov
Regulatory Tools Requiring Revisions to Align the Wetlands Regulations and MS4

- NPDES 2016 MS4 General Permit
  - No Revisions Proposed*
- MassDEP Stormwater Handbook
  - Revisions Proposed
- Wetlands Protection Act Regulations
  - Revisions Proposed
- Water Quality Certification Regulations
  - Revisions Proposed

* EPA May Propose Revisions per the Settlement
Aligning MA Stormwater Handbook with EPA MS4 Stormwater Requirements
Stormwater

• Largest source of pollution to our rivers, streams, ponds, lakes, and wetlands.

• Quintessential “urban” problem: hard surfaces don’t allow for natural water (in)filtration.

• Infiltration removes pollutants, including Total Suspended Solids and Phosphorus.

• Low Impact Development planning provides opportunity for infiltration.

How do we keep these resources fishable and swimmable (clean)?

https://www.townofmaynard-ma.gov/dpw/stormwater-management/
Regulatory Tools Addressing Stormwater in MA

- **Towns:** bylaws and ordinances
- **MassDEP:** Wetlands Regulations
- **US EPA:** 2016 MS4 Permit
No State or Federal Stormwater Standards apply. Wetlands jurisdictional areas and MS4 urbanized areas may overlap.

Multiple layers of regulations can lead to confusion. What applies where?

Currently, two sets of dissimilar and, in some cases, conflicting rules. Example: TSS removal rates.

MA towns and Stormwater Coalitions requested an alignment between MA Wetlands Regulations and EPA MS4 Requirements.
Layers of Stormwater Regulations in Urban Areas

- **Commonwealth of MA** – Wetlands Regulations and Stormwater Handbook

- **Federal EPA** – Municipal Separate Sewer System (MS4) General Permit in 260 municipalities
  - MS4 references and requires compliance with the MA Stormwater Handbook

[Image: http://www.planportsmouth.com/wetlandbuffer.html]
Layers of Stormwater Regulations in Urban Areas

WPA Jurisdictional Area will not change


- *Federal EPA* – Municipal Separate Sewer System (MS4) General Permit in 260 municipalities
  - MS4 references and requires compliance with the MA Stormwater Handbook

Required knowledge of which regulations are stricter in overlap areas.
Which MA Stormwater Standards are being modified?

1. No new stormwater conveyances may discharge untreated stormwater.
2. Post-development peak discharge rates shall not exceed pre-development peak discharge rates.
3. Loss of annual recharge to groundwater shall be eliminated or minimized.
4. Remove 80% of the average annual post-construction load of Total Suspended Solids.
5. Higher potential pollutant load land uses shall implement source control and pollution prevention.
6. Within Zone II or Interim Wellhead Protection Area of a public water supply and near Critical Areas stormwater discharges require specific source control and pollution prevention measures.
7. Redevelopments are to comply with Standards 2, 3, 4, 5, and 6 to the MEP and improve existing conditions.
8. Control of erosion, sedimentation and other pollutant sources during construction and land disturbance.
9. Long-term operation and maintenance plan shall be developed and implemented.
10. All illicit discharges to the stormwater management system are prohibited.
Which MA Stormwater Standards are being modified?

1. No new stormwater conveyances may discharge untreated stormwater.
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Updating the 2008 MassDEP Stormwater Handbook

- Simplify the stormwater permitting process while providing benefits of resilience and drainage infrastructure

- Help communities achieve higher protection of water and wetland resources
Revising MassDEP Stormwater Handbook

Appropriate Controls for Massachusetts Department Of Transportation (MDOT) Linear Highway Projects
Background Information on MassDOT

- MassDOT is an MS4 entity that requires a federal permit to discharge stormwater to Waters of the United States within the Commonwealth

- MassDOT Highway has applied to EPA for a Transportation Separate Storm Sewer System (TS4) Permit

- MassDOT Highway Division is unique and warrants special consideration because:
  - limited land area within some Rights Of Ways (ROWs) constrain standard Source Control Measures (SCM)
  - MDOT owns the largest drainage system in the state maintaining over:
    - 120,000 catch basins
    - 36,000 miles of roadway
    - 18,489 outfalls
Appropriate Controls for MassDOT Linear Highway Projects

- State Stormwater requirements for MDOT will be incorporated into a chapter of the Stormwater Handbook
- Revised Stormwater Handbook will have Public Comment Period
- Equally or more protective of wetland resources
- Alignment of State’s Stormwater Standards with TS4
  - O&M Requirements
  - Comprehensive Plan and Schedule of MDOT O&M Activities
  - Piloting and Adaptive Management of MDOT Actions
  - Data Management and Submittal
Appropriate Controls for MassDOT Linear Highway Projects

- Consistent mechanism for granting pollution reduction credits for Total Suspended Solids and Total Phosphorus
- Inclusion of LID practices along highways to meet WPA and MS4 requirements
- TS4 Permit still in development – updates will follow
Thank you

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