



December 2, 2020

Lisa Rhodes
MA Stormwater Advisory Committee
Massachusetts Department of Environmental Protection
1 Winter Street
Boston, MA 02108

RE: DCR Comments on proposed stormwater design regulatory changes

Department of Conservation and Recreation (DCR) has the following comments on the changes proposed by MassDEP related to stormwater management design.

A. Precipitation Projections

DCR's Office and Dam Safety and Flood Control have been embracing National Oceanic Atmospheric Association Atlas 14-Precipitation-Frequency Atlas of the U.S. Volume 10, Version 3.0: Northeastern States (NOAA Atlas 14) precipitation projections for some time and we are in favor of the Massachusetts Stormwater Handbook including the use of the Atlas 14 for hydrologic and hydraulic analyses. Just like Atlas 14 has been peer reviewed, we strongly encourage MassDEP to have the NOAA 14+ approach peer reviewed to fully vet the approach, gain support from the climate change community and understand the impacts on other stormwater design criteria and permitting (e.g. Bordering Land Subject to Flooding (BLSF) and Isolated Land Subject to Flooding (ILSF) and vernal pools boundaries; culvert hydraulic design) before it is adopted.

MassDEP should have a peer review performed on the NOAA 14+ approach.

B. Alignment with MS4 Permit

It was DCR's understanding that the main goal of these proposed stormwater standards changes was for alignment with post-construction treatment requirements in the MS4 permit. Instead the changes in the presentations include more stringent requirements for some standards that will make the implementation of the two criteria difficult and confusing. We have the following overall comments.

- Maintenance or improvement of existing roadways: Based on the existing Massachusetts Stormwater Handbook projects that are purely maintenance or improvement of existing roadways (i.e., widening less than a single lane, adding shoulders, correcting substandard intersections, improving existing drainage systems, and repaving projects) are considered redevelopment and required to meet the structural requirements of Standard 4 to the maximum extent practical (MEP). Similarly, the MS4

COMMONWEALTH OF MASSACHUSETTS · EXECUTIVE OFFICE OF ENERGY & ENVIRONMENTAL AFFAIRS

Department of Conservation and Recreation
251 Causeway Street, Suite 600
Boston, MA 02114-2199

617-626-1250 617-626-1351 Fax

www.mass.gov/orgs/departments-of-conservation-recreation



Charles D. Baker
Governor

Karyn E. Polito
Lt. Governor

Kathleen A. Theoharides, Secretary, Executive
Office of Energy & Environmental Affairs

Jim Montgomery, Commissioner
Department of Conservation & Recreation

Permit requires that these projects need to improve existing conditions unless infeasible and are exempt from part 2.3.6.a.ii.4. which is focused on pollutant removal (and is similar in purpose to Standard 4). While MassDEP has not stated that they will change how these projects are handled in the revised regulations and handbook, DCR would like to confirm that these types of projects will be regulated in a consistent fashion with the MS4 Permit and that the following criteria will apply:

- considered redevelopment
- improve existing conditions to the maximum extent practicable
- meet Stormwater Standards 1, 2, and 3 and the pretreatment and structural BMP requirements of Standards 4, 5, 6, and 7 to the maximum extent practicable.

Accessways: MassDEP has not discussed any changes to requirements for new sidewalks, sidewalk improvements to improve accessibility, footpaths, bike travel lanes and multi-use paths, and similar access ways for pedestrian and/or nonmotorized vehicles but would like to verify that these type of project will continue to be required to follow the Stormwater Standards to the maximum extent practicable.

These types of maintenance and improvement projects are very important for DCR as on-going improvements to our parks and recreational facilities and we hope that we can improve water quality during these improvements but need the flexibility to have them fit in the character, budget and historic character of the upgrades and the facility.

- Schedule: DCR is preparing a DCR Stormwater Handbook to help guide stormwater design for DCR projects and to meet the by-laws and regulations requirements of the MS4 permit deadline of July 1, 2021. While we understand that MassDEP is trying to enact the regulation updates and Handbook revisions this spring, we are concerned that a delay in that schedule especially with the more stringent requirements than the MS4 permit will mean that DCR needs to update the Handbook to meet MS4 permit criteria now and then again when DEP changes are made leading to confusion and inefficiencies for our projects. Similarly, we are concerned about the impact on permitting of our projects and the stormwater design for projects where municipalities are going through similar by-law changes.

• **MassDEP should:**

- **follow the same treatment requirements as the MS4 permit so there is one set of standards that are applicable across the state.**
- **confirm that projects consisting purely of maintenance or improvement of existing roadways will be regulated in a consistent fashion with the MS4 Permit.**
- **continue the provision that new sidewalks, footpaths, bike paths, and similar access ways, etc. should follow the Stormwater Standards to the maximum extent practicable.**
- **align with the bylaw and regulation deadlines for permittees in the MS4 permit.**

C. Proposed Changes to Individual Standards Comments

Standard 3 - Recharge

DCR is concerned that MassDEP proposal to require 1-inch of recharge, significantly decreases flexibility for designers, may discourage low impact design, and is not in alignment with the MS4 permit.

- Recharge vs Retainment: The MS4 permit requires treatment to meet the post construction treatment requirements through retainment of the 1 inch of runoff volume. A recharge volume is not required. Furthermore, the MS4 permit allows designers to use the EPA Performance Curves to demonstrate pollutant reduction and to meet the treatment requirements in lieu of demonstrating retainment; thereby providing more flexibility to include the right type of treatment for the site and to maximize the areas which can provide treatment.
- Annual recharge goal: A requirement of 1-inch of recharge for all soil types except hydrologic soil groups (HSG) D appears excessive given the distribution of small storms over the course of a year. If the goal of Standard 3 is to promote recharge to groundwater on an annual basis, BMPs should be designed to provide a desired recharge volume on an annual basis and requirement should be based on achieving those goals and not a specific universal depth.

MassDEP stated that the recharge needed to approximate pre-development equals 70% of the annual precipitation. Without a detailed review of supporting data and analysis, it is unclear how this statement was determined. For example:

- a. No research has been done on identifying trends in streamflow or increase in wetland areas.
- b. No evidence has been provided that shows an increase in precipitation equates to an increased ability for soils to increase its absorption capacity or hydraulic conductivity.

The supporting analysis that was presented appears to be based on climate change and increased precipitation rates, not on attempting to achieve alignment with the MS4. The research and assumptions made to support the proposed revisions to Standard 3 should be peer reviewed.

- Infiltration rates: The recharge volumes required should be dependent on-site soil conditions. As currently proposed, certain site conditions, such as HSG C soils, may require structural BMPs with very large footprints to provide enough surface area for stormwater to infiltrate within 72 hours, the opposite of both DCR and MassDEP's goal to promote low impact development distributed solutions.

The research and assumptions made to support the proposed revisions to Standard 3 should be peer reviewed. The approach of requiring recharge depth based on different soil types should be maintained, instead of requiring 1-inch of recharge across the board and the quantities should be based on achieving annual recharge volume goals.

Standard 4 – Water Quality Treatment

DCR is concerned that the misalignment of Standard 4 with the MS4 requirements may led to confusion and inefficiencies. Our concerns are different depending on new or redevelopment projects.

- New Development: The 1-inch recharge requirement as proposed for Standard 3 essentially negates the Standard 4 water quality requirement and does not provide any situations to use the Performance curves encouraged in the MS4 permit for new development since by providing 1-inch of recharge you

have also met the Standard 4 water quality criteria. There are few situations where Standard 4 would be part of the design criteria - when a site has HSG D soils, bedrock at or near the surface, or is a hazardous and solid waste site -since the Standard 3 recharge requirement is to the MEP, although almost all of these situations require 1-inch of treatment under the proposed Standard 4. DCR is concerned about the impact of not using the Performance Curves, which represent the latest science, to optimize BMP sizing and calculate pollutant reduction.

- Redevelopment: The definition for redevelopment laid out in Standard 7 allows Standard 3 recharge to the MEP, therefore the 1-inch recharge requirement may not be met fully for every project. For Standard 4 compliance, MassDEP allows:
 1. providing 1 inch of recharge,
 2. using the EPA curves to demonstrate pollutant reductions, or
 3. treating 1-inch using MassDEP-approved BMPs

The MS4 permit presents two options to meet post-construction treatment requirements:

1. provide 1 inch of retention
2. use the EPA curves to demonstrate pollutant reductions.

If designers need to meet both the requirements of the MassDEP Stormwater Standards and the MS4 permit due to being within both jurisdictional areas, the inconsistent (retention vs. recharge) and additional options with different accounting system (water quality volume vs. pollutant removal performance) will create confusion and incongruence.

MassDEP should provide the options to meet Standard 4 that align with the MS4 permit.

Standard 7 - Redevelopment

The inconsistencies between what is considered redevelopment vs. new development between the MassDEP regulations and the MS4 permit will be very confusing and will likely lead to designers needing to evaluate a system using two different criteria. DCR feels that is very important the Standard 7 be aligned with the MS4 criteria.

- Redevelopment/ New development definition: MassDEP is not proposing any changes to the definitions of new development and redevelopment from those in the state regulations now. EPA provided different definitions in the MS4 permit. As shown in MassDEP's slides this will create two different scenarios for projects which need to meet both the requirements of the Stormwater Standards and the MS4 Permit. DCR recommends rectifying the definitions to align with the MS4 permit.
- Off-site mitigation: MassDEP's proposed revisions do not allow off-site mitigation to meet Standards 3 and 4 for discharges to Critical Areas or to receiving waters with TMDLs. Whereas the MS4 permit allows offsite mitigation to meet post-construction treatment requirements and requires that TMDL requirements be met on a watershed scale (not project scale). The MS4 permit promotes treatment at

the watershed scale and allowing offsite mitigation within the same USGS hydraulic unit code (HUC 12) watershed boundary that is the exact reason for this requirement. Discharges to receiving waters with TMDLs should be allowed to implement offsite mitigation.

MassDEP should rectify the definitions of new development and redevelopment to align with the MS4 Permit. MassDEP should allow offsite mitigation to provide treatment for projects that discharge to receiving waters with TMDLs.

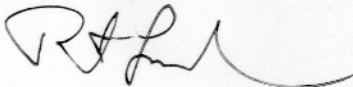
Standard 11 – Supporting TMDLs

Since MassDEP has not determined the specifics of Standard 11 which would be a new standard to address TMDLs, DCR does not have detailed comments but would recommend that MassDEP follow the same TMDL and impaired water requirements as the MS4 permit (Appendices F and H of the MS4 Permit) and mirror the watershed scale TMDL compliance approach.

MassDEP should use the same TMDL and impaired water requirements as Appendices F and H of the MS4 Permit to be consistent during development of the details of Standard 11.

DCR appreciates the opportunity to comment on the proposed changes and for being part of the working committee. We look forward to continuing to work together as MassDEP works on the updates to the regulations and the Massachusetts Stormwater Handbook.

Sincerely,



Robert Lowell

Deputy Chief, Design & Engineering

Cc: Patrice Kish, Chief, Design and Engineering
Thomas Valton, Director, Stormwater Engineering