Massachusetts Department of
Conservation and Recreation

Stormwater Management Program

For Coverage Under The
National Pollutant Discharge Elimination System (NPDES)
General Permit for Stormwater Discharges from Small Municipal Separate Storm Sewer Systems (MS4) in Massachusetts

Department of Conservation and Recreation
10 Park Plaza
Boston, MA, 02116

EPA NPDES Permit Number MAR043001

November 4, 2019 (latest update May 20, 2025)

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Certification

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Brian Arrigo, Commissioner

Signature:  Date: 6/26/25

Background

The Department of Conservation and Recreation (DCR) is committed to maintaining the important recreational, historical, and natural resources available to the people of Massachusetts at DCR parks, reservations, forests, beaches, rinks, pools and parkways. DCR understands the importance of water quality and the impact of stormwater to all of these facilities including the threat of pollution from stormwater and erosion. DCR's Stormwater Management Program (SWMP) outlines our existing and planned measures to address these threats and to comply with the National Pollutant Discharge Elimination System (NPDES) Phase II General Permit for Stormwater Discharges from Municipal Separate Storm Sewer Systems (MS4s). The SWMP has been updated to reflect the changes in the modified permit issued in 2020.

Regulatory Context

Under the Clean Water Act, the Stormwater Phase II Final Rule was promulgated in 1999 and was the next step after the 1987 Phase I Rule in EPA's effort to preserve, protect, and improve the Nation's water resources from polluted stormwater runoff. The Phase II program expands the Phase I program by requiring additional operators of MS4s in urbanized areas and operators of small construction sites, through the use of NPDES permits, to implement programs and practices to control polluted stormwater runoff. Phase II is intended to further reduce adverse impacts to water quality and aquatic habitat by instituting the use of controls on the unregulated sources of stormwater discharges that have the greatest likelihood of causing continued environmental degradation. Under the Phase II rule all MS4s with stormwater discharges from Census designated Urbanized Area are required to seek NPDES permit coverage for those stormwater discharges. EPA proposed a rule in December 2022 to update the definition of the MS4 Permit to reflect that Census Bureau's discontinuation of the term "urbanized area" in the 2020 Census. The proposed rule instead uses the phrase "urban areas with a population of at least 50,000" which was the definition of urbanized area in the 2010 Census. In this SWMP document the terms urbanized area and urban areas with a population of at least 50,000 will be used interchangeably.

On May 1, 2003, EPA Region 1 issued its *Final General Permit for Stormwater Discharges from Small Municipal Separate Storm Sewer Systems* (2003 MS4 Permit) consistent with the Phase II rule. The 2003 MS4 Permit covered "traditional" (i.e. cities and towns) and "non-traditional" (i.e. federal and state agencies) MS4 operators located in the states of Massachusetts and New Hampshire. This general permit expired on May 1, 2008 but remained in effect until operators were authorized under the most recent permit. In 2016 EPA issued the General Permit for Stormwater Discharges from Small Municipal Separate Storm Sewer System in Massachusetts (2016 MS4 permit) and the permit became effective on July 1, 2018. The permit was then modified to address lawsuit negotiations and a modified permit was reissued in June 2020 but the expiration date of June 30, 2022 remained in place. EPA has administratively continued the permit until a new permit is reissued.

DCR has been implementing its Stormwater Management Plan since receiving Authorization to Discharge under the 2003 MS4 Permit. This updated SWMP reflects new requirements within the 2016 MS4 Permit and improvements that DCR has made to its program over the past several years.

DCR Organization

DCR manages over 480,000 acres of watershed, forests, parks, and open space. DCR is under the general management of the **Commissioner** of the DCR. The general administration divisions including the Financial Division, External Affairs & Partnerships and Communications **report directly to the Commissioner**. DCR organization structure includes the following divisions, bureaus, and offices.

> **The Division of State Parks and Recreation** maintains the state's forests, beaches, campgrounds, multi-use trails, and parks throughout the Commonwealth. The Division protects land and resources on privately and

municipally held land through conservation restrictions, and provides technical assistance, grant and planning programs, policy development, and other services.

The Division of Design and Engineering provides professional engineering, design and project management services, and natural and cultural resource protection in support of DCR's state parks and forests, urban parks and reservations, and water supply divisions. The Division of Design and Engineering cooperates with U.S. Army Corps of Engineers on federal projects throughout the Commonwealth. The Division of Design and Engineering provides comprehensive engineering services throughout the Commonwealth in support of the DCR's many facilities, programs and missions including transportation and construction, and includes **Offices of Dam Safety and Urban Flood Control.** Construction Access Permits are issued through Engineering to enable access to DCR property for new developments, municipal and utility construction and repair. **Stormwater Engineering** provides stormwater management, drainage maintenance and repair for DCR properties. Stormwater Engineering oversees street sweeping and waste management activities, construction site monitoring, illicit drainage connection investigations, and measures to address waste load allocations to impaired waters as identified by MA DEP.

The Bureau of Waterways provides civil engineering and construction management expertise for the protection, maintenance and improvement of coastal and inland waterways and shorelines. Waterways provides technical assistance to other state agencies and municipalities.

Under **Conservation and Resource Stewardship** is the **Bureau of Forest Fire Control and Forestry** that offers programs to promote, protect and enhance healthy and diverse wooded and urban forests throughout our Commonwealth including grant opportunities for urban forestry and volunteer fire assistance, staff assistance to municipalities for fire control, consulting forestry and forest stewardship for private lands, oversight of forest health issues including insect and disease control and storm related response, regulatory guidance on timber harvests as well as forest management and timber sales on state lands.

The **Offices of Natural Resources and Cultural Resources,** also under **Conservation and Resource Stewardship,** offer programs that promote, protect and enhance the Commonwealth's ecological resources and historic properties.

The Office of General Counsel provides legal counsel and services to all of the divisions, bureaus and offices of DCR. The Office coordinates all legal matters and responses of DCR and works closely with the Office of the Attorney General on litigation matters involving or of interest to DCR. Among many of its roles, the Office maintains DCR's regulations found in the Commonwealth's *Code of Massachusetts Regulations*. DCR regulations govern the use of DCR lands and facilities, provide the framework for DCR regulatory programs, and address violations of DCR rules. The Office coordinates the proposal and promulgation of any new, amended or revised DCR regulations, as well as the repeal of any DCR regulation.

The Division of Water Supply Protection manages and protects the drinking water supply watersheds for Greater Boston. The Division provides technical support to other state agencies, monitors lakes and ponds, water resources and rainfall throughout the state. The Division is made up of two sections - the **Office of Watershed Management** manages and protects the drinking water supply watersheds for approximately 2.2 million residents of Massachusetts, primarily in Greater Boston. The Quabbin Reservoir, Ware River, and Wachusett Reservoir watersheds are the sources of drinking water for distribution by the Massachusetts Water Resources Authority (MWRA). The Office also manages and protects the Sudbury Reservoir system, which is the reserve drinking water supply for Greater Boston. The **Office of Water Resources** promotes water quality and conservation through several functions, including the Lakes and Ponds program.

DCR Regulated Properties

DCR's properties are comprised of urban, suburban, and rural open space, forests, parks, reservations, recreational facilities, parkways, waterbodies, and coastlines that are managed and maintained on behalf of the public for the purposes of natural, historic, and cultural resource protection, sustainable recreation, and education. Not all of these properties are regulated under the MS4 Permit. The MS4 Permit regulates only those properties that are located within with urban areas with a population of at least 50,000 and that discharge stormwater. The Clean Water Act defines discharge as "any addition of any pollutant to navigable waters from any point source," so in practice, this means a property is MS4-regulated if it generates channelized flow of stormwater and if that stormwater is received by a navigable water. The Permit further clarifies that the term MS4 does not include separate storm sewers in very discrete areas, such as individual buildings.

The MS4 Regulated Area and Property Map is available online. Webmap location:
https://vhb.maps.arcgis.com/apps/webappviewer/index.html?id=1fffa8d7b9e144e793dcffb0445846e2

DCR's regulated properties are properties that are owned or maintained by DCR, located within urban areas with a population of at least 50,000, and discharge pollutants to navigable waters. To develop a list of regulated facilities, DCR first developed a GIS layer of properties owned or maintained by DCR. DCR then reviewed the layer to identify properties that were within areas that met the urban areas definition and finally reviewed MS4-regulated DCR storm sewer infrastructure, hydrology data and facility-specific information to determine if a point source discharge might occur. As DCR reviews properties in more detail during stormwater program implementation, the regulated status of properties may be revised. The MS4 Web Map Viewer contains the current regulated status for all properties. Changes to the regulated properties will be included in annual report submittals with an explanation of changes.

Receiving Waters

The receiving waters list is provided in Appendix A. The table lists waterbodies that receive stormwater discharge from DCR regulated properties, the number of outfalls to each waterbody segment, and water quality impairments, if applicable. This list has been updated to reflect the latest finalized Massachusetts Year Integrated List of Waters (2022) and is based on DCR's mapped stormwater infrastructure and MassGIS layers available for impaired streams and lakes. DCR has a watershed GIS layer that has been developed for use with DCR's Phosphorus Control Plans (PCPs), Nutrient Source Identification Reports (NSIRs), and catchment investigations. DCR uses this watershed layer to assign the receiving waterbody segment to mapped outfalls. DCR will continue to review the outfall receiving waters with updates to the infrastructure mapping and catchment delineations. The receiving water list will be updated annually based on mapping and release of newly finalized Integrated List of Waters.

Stormwater Management Program (SWMP)

The SWMP describes the activities and measures, or Best Management Practices (BMPs), that DCR will implement to meet the terms and conditions of the permit. The SWMP has been prepared to comply with the overall general permit and specifically with MS4 Permit Part 5 - Non-Traditional MS4s; and Part 6 - Requirements for MS4s Owned or Operated by Transportation Agencies. Part 5 is applicable to DCR parks, recreational facilities, and open space, while Part 6 is applicable to DCR parkways and roadways. DCR will update and/or modify the document during the permit term as DCR's activities are modified, changed, or updated to meet permit conditions. The main elements of the SWMP are organized by minimum control measures (MCMs), water supply protection measures, and additional BMPs for discharges to water quality limited waterbodies.

MCM 1: A public education program aiming to affect public behavior causing stormwater pollution,

MCM 2: An opportunity for the public to participate and provide comments on the stormwater program,

MCM 3: A program to effectively find and eliminate illicit discharges within the MS4,

MCM 4: A program to effectively control construction site stormwater discharges to the MS4,

MCM 5: A program to ensure that stormwater from development projects entering the MS4 is adequately controlled by the construction of stormwater controls,

MCM 6: A good housekeeping program to ensure that stormwater pollution sources on DCR properties and from DCR operations are minimized,

Water Supply Protection: Measures to protect surface public drinking water sources, and

TMDLs and Water Quality Impairments: Enhanced and additional BMPs to reduce pollutants of concern discharging to waterbodies with water quality impairments and Total Maximum Daily Loads (TMDLs) related to urban stormwater runoff.

Small MS4 Authorization

DCR submitted its Notice of Intent (NOI) on September 28, 2018. EPA granted Authorization to Discharge under the 2016 MS4 Permit on July 2, 2019. The NOI, SWMP, and Authorization Letter are posted at the following web address: DCR Stormwater Management | Mass.gov

Stormwater Management Program Team

Stormwater Management Program Manager

Robert Lowell
Deputy Chief Engineer
Design & Engineering
508-509-1757
Robert.Lowell@mass.gov

Stormwater Management Program Team

Thomas Valton
Director- Stormwater & Environmental Section
Design & Engineering
617-780-1112
Thomas.Valton@mass.gov

Debra Berger
Project Manager
Design & Engineering
857-338-5942
Debra.Berger@mass.gov

Charles Greene
GIS Specialist & Project Engineer
Design & Engineering
603-300-7585
Charles.Greene@mass.gov

Joseph McCrann
Construction Coordinator
Design & Engineering
781-375-5052
Joseph.Mccrann@mass.gov

Eligibility: Endangered Species and Historic Properties

Endangered Species Act (ESA) Eligibility Determination

DCR completed the ESA eligibility process outlined in the MS4 Permit Appendix B. According to the U.S. Fish & Wildlife Service (USFWS) Information for Planning and Consultation (IPaC) tool, DCR properties within the MS4 regulated area contain potential habitat for Northern Long-eared Bat, Piping Plover, Red Knot, Roseate Tern, Plymouth Redbelly Turtle, Dwarf Wedge mussel, Rusty Patched Bumble Bee, Small Whorled Pogonia, American Chaffseed, and Sandplain Gerardia.

All projects undertaken by DCR, including upgrades to stormwater management systems, are coordinated with the Massachusetts Natural Heritage and Endangered Species Program (NHESP) when they occur within known protected species habitat. Recommendations from the NHESP to avoid impact to a protected species are incorporated into the project. A fact sheet, provided in Appendix B, describes DCR's compliance with the Massachusetts Endangered Species Act during routine maintenance and management activities at DCR facilities. These efforts extend to the operation of DCR's MS4 system for compliance with the Endangered Species Act.

In a letter dated September 24, 2018, USFWS issued a determination that stormwater discharge activities associated with the 2016 MS4 Permit may affect, but are not likely to adversely affect, certain species listed under the ESA when specific conditions are met. A copy of the letter is provided in Appendix B.

In accordance with the above referenced USFWS letter, DCR confirms that the following conditions are true:

1. All stormwater discharges are pre-existing or previously permitted by EPA;
2. Any planned operations and maintenance work covered by this permit will only affect previously disturbed areas where stormwater controls are already installed. In these situations, the chance of encountering any of the subject species is discountable;
3. The project implements EPA MS4 Best Management Practices (BMPs) and meets Clean Water Act and Massachusetts Water Quality Standards. Although permitted discharges may reach the environment used by these species, BMPs reduce pollutants to the extent that discharges are not known to have measurable impacts on these species or their habitat;
4. No new construction or structural BMPs are proposed under this permit at this time; and
5. DCR agrees that if, during the course of the permit term, DCR plans to install a structural BMP not identified in the NOI, DCR will re-initiate consultation with the USFWS as necessary.

In accordance with the ESA eligibility process outlined in MS4 Permit Appendix C, DCR certifies permit eligibility with the ESA under **Criterion B**.

USFWS Criterion B: *In the course of formal or informal consultation with the Fish and Wildlife Service, under section 7 of the ESA, the consultation resulted in either a no jeopardy opinion (formal consultation) or a written concurrence by USFWS on a finding that the stormwater discharges and discharge related activities are "not likely to adversely affect" listed species or critical habitat (informal consultation).*

National Historic Preservation Act (NHPA) Eligibility Determination

As an existing facility authorized under the 2003 MS4 Permit, DCR certified eligibility with the NHPA as part of DCR's NOI in 2006. For parcels acquired by DCR since 2006, DCR assessed potential impacts on properties that are listed on, or eligible for listing on, the National Register of Historic Places. The following newly acquired DCR parcels within the MS4 area are listed on, or eligible for listing on, the National Register of Historic Places:

- Major Willard Moore Memorial Park (Moore State Park National Register Historic District)
- Norwottuck Rail Trail (Hadley Center National Register Historic District)
- Blackstone River and Canal Heritage State Park (Blackstone Canal National Register Historic District)

DCR determined that operation of its MS4 system does not have the potential to cause effects on historic properties. DCR does not plan to undertake any activity involving subsurface land disturbance less than an acre in the vicinity of historic properties. If, during the course of the permit term, DCR plans to undertake subsurface land disturbance less than an acre in the vicinity of a historic property, DCR will assess the potential for the activity to affect the historic property and will consult with the Massachusetts Historical Commission as appropriate.

In accordance with the NHPA eligibility process outlined in the MS4 Permit Appendix D, DCR certifies permit eligibility with the NHPA under **Criterion A**.

NHPA Criterion A: *The discharges do not have the potential to cause effects on historic properties.*

MCM 1 Public Education and Outreach

Permit Part 2.3.2

Objective

The objective of DCR's public education and outreach program is to increase knowledge and change behavior of the public so that stormwater pollutants are reduced.

Program Overview

DCR's public education program is structured in accordance with the MS4 Permit at Part 2.3.2 and with specific requirements for impaired waterbodies in MS4 Permit Appendix H. As a non-traditional MS4, DCR's target audiences differ slightly from those targeted by traditional (municipal) MS4s. DCR's target audiences include the people who are most likely to affect pollution on DCR properties, and those who are most likely to be reached through interaction with DCR: visitors, contractors, staff, and the general public. The messages focus on stormwater pollutants that are most likely to be generated by the public on DCR properties and/or to impact DCR's receiving waterbodies including:

- Trash,
- Sediment,
- Dog waste,
- Waterfowl waste,
- Fertilizer,
- Leaf litter, and
- Grass clippings.

The educational messages will be distributed through a range of forums, selected to best reach each target audience. Each public education BMP has a measurable goal, which DCR will assess annually to ensure that educational messages are reaching target audiences effectively.

The following table summarizes the educational messages, target audiences, and distribution schedule.

BMP	Target Audience	Schedule by Permit Year (Fiscal Year)				
		1 (FY19)	2 (FY20)	3 (FY21)	4 (FY22)	5-8 (FY23-FY26)
1-1: Social Media Public Service Messages	Visitors, General Public	x	x	x	x	x
1-2: Signs about Not Feeding Gulls	Visitors, General Public, Staff	x	x	x	x	x
1-3: Stormwater Posters and Brochures	Visitors, Staff	x	x	x	x	x
1-4: Dog Waste Management	Visitors	x	x	x	x	x
1-5: DCR Stormwater Management Website	Visitors, Staff, General Public, Designers/ Contractors	x	x	x	x	x
1-6: Project Kick-Off Meetings	Contractors		x	x	x	x
1-7: Project Manager Training	Staff					x

BMP 1-1: Social Media Public Service Messages

Description:
DCR will post educational messages on social media (Twitter and Instagram @MassDCR) and DCR's stormwater webpage at DCR Stormwater Management | Mass.gov. In the fall, DCR will post information about proper collection and disposal of leaf litter. In the spring, DCR will post information about managing grass clippings and fertilizers. In the summer, DCR will post information about dog waste management. (See Phosphorus, Nitrogen, and Bacteria/Pathogens sections of SWMP for impairment-specific educational messages.)

Targeted Audience(s):
- Visitors, General Public

Responsible Department/Parties:
- Division of Water Supply Protection, Office of Watershed Management

Measurable Goal(s):
- Retweets, likes, and followers

BMP 1-2: Signs about Feeding Gulls

Description:
DCR has an ongoing gull management program to prevent contamination of Wachusett Reservoir. As part of that program, DCR educates the public about not feeding seagulls. DCR posts signs in public areas around the Wachusett Reservoir, such as malls, restaurants, grocery stores, and landfills, reminding the public to not feed seagulls. DCR will continue to post and maintain those signs.

Targeted Audience(s):
- Visitors, General Public, Staff

Responsible Department/Parties:
- Division of Water Supply Protection, Office of Watershed Management

Measurable Goal(s):
- Listing of facilities with signs

BMP 1-3: Stormwater Posters and Brochures

Description:
DCR will develop and provide brochures and posters at publicly-accessible facilities about water quality and stormwater issues. Topics will include general stormwater awareness, facility-specific stormwater impacts (e.g., cyanobacteria, eutrophication), and desired behaviors to prevent stormwater pollution (e.g., cleaning up trash). A range of stormwater management brochures are available at: Brochures, Fact Sheets, Posters, and Reports | Mass.gov.

Targeted Audience(s):
- Visitors, Staff

Responsible Department/Parties:
- External Affairs

Measurable Goal(s):
- Number of facilities where brochures and posters are posted relating to stormwater and water quality

BMP 1-4: Dog Waste Management

Description:
DCR will post dog waste management signs, posters, and/or brochures (as appropriate to the facility) at DCR properties that are frequented by dog walkers and/or located within watersheds with phosphorus or bacteria/pathogens impairments. DCR will also distribute a dog waste management brochure as part of its commercial dog walking permit program. A permit is required for all commercial dog walkers with up to 8 dogs in their care while at a DCR park. More information about the commercial dog walking permit can be found at: Dogs in DCR Parks | Mass.gov.

Targeted Audience(s):
- Visitors

Responsible Department/Parties:
- Operations, External Affairs

Measurable Goal(s):
- Number of facilities where dog waste management signs are posted
- Number of brochures distributed with commercial dog walker licenses

BMP 1-5: DCR Stormwater Management Website

Description:
DCR maintains a stormwater web page on the DCR website. DCR will update and maintain the website, including posting the SWMP, annual reports, and educational messages. The web page will also be used to post information on stormwater related issues and programs developed during the SWMP implementation. The website is located at: DCR Stormwater Management | Mass.gov.

Targeted Audience(s):
- Staff, Visitors, General Public, Designers/Contractors

Responsible Department/Parties:
- Design and Engineering, External Affairs

Measurable Goal(s):
- Number of web page views

BMP 1-6: Project Kick-Off Meetings

Description:
DCR will discuss relevant stormwater and permitting requirements at project kick-off meetings with contractors to inform them about relevant stormwater issues. These meetings will highlight expectations related to Illicit Discharge Detection and Elimination (MCM 3), Construction Site Stormwater Runoff Control (MCM 4), and Post-Construction Stormwater Management (MCM 5).

Targeted Audience(s):
- Contractors

Responsible Department/Parties:
- Design and Engineering

Measurable Goal(s):
- Number of kick-offs held each year

BMP 1-7: Project Manager Training

Description:
Upon completion of DCR's updated Stormwater Handbook, DCR began training DCR project managers on the Handbook and its applicability to their projects. Project managers, in turn, convey that information to design consultants and contractors on their projects (see BMP 1-6). Trainings provide guidance on the development of cost-effective stormwater management strategies for proposed highway and facility projects to comply with the MS4 Permit, Massachusetts Stormwater Standards/Handbook, and NPDES Construction General Permit.

Targeted Audience:
- Staff

Responsible Department/Parties:
- Design and Engineering

Measurable Goal(s):
- Training event date(s) and number of participants

MCM 2 Public Involvement and Participation

Permit Part 2.3.3

Objective

DCR's objective for its Public Involvement and Participation program is to engage the public in review and implementation of the SWMP, and to promote environmental stewardship of the Commonwealth's natural resources.

Program Overview

The following table summarizes the public involvement and participation BMPs and schedule.

BMP	Schedule by Permit Year (Fiscal Year)				
	1 (FY19)	2 (FY20)	3 (FY21)	4 (FY22)	5-8 (FY23-FY26)
2-1: Public Review of SWMP	x	x	x	x	x
2-2: Park Serve Day	x	x	x	x	x
2-3: Wachusett Educational Programs	x	x	x	x	x

BMP 2-1: Public Review of Stormwater Management Program

Description:
DCR will post its SWMP online to allow for ongoing public review of its SWMP. When a new version of the SWMP becomes available, DCR will post on DCR's social media pages to notify the public that the SWMP is available for review. DCR will maintain a contact form on the website to allow the public to submit their feedback on the SWMP.

Location of Plan and/or Web Address: DCR Stormwater Management | Mass.gov

Responsible Department/Parties:
- Design and Engineering, External Affairs

Measurable Goal(s):
- Dates of website and social media posts
- Tracking of comments received and resolution

BMP 2-2: Park Serve Day

Description:
As it has done since 2006, DCR will continue to partner with organizations and volunteers to host Park Serve Day annual volunteer cleanup events at 10-15 parks statewide each April. Park Serve Day gives Massachusetts residents the chance to help clean and prepare state parks and beaches for the summer recreation season. Thousands of volunteers spruce up parks each spring by clearing trails, planting flowers, cleaning coastlines, and more. DCR will continue to post information about Park Serve Day on the event's web page, currently located at DCR Park Serve Day | Mass.gov.

Responsible Department/Parties:
- Operations

Measurable Goal(s):
- Event dates and number of locations

BMP 2-3: Wachusett Educational Programs

Description:
DCR will continue to provide watershed-related education programs on an annual basis. The Wachusett/ Sudbury Watershed Ranger Program, along with educators from DCR's Division of Mass Parks, offers classroom programs and field trips to schools and groups in or bordering the watershed areas, and to Metropolitan Water Resources Authority (MWRA) service communities. Topics range from water's behavior and physical properties to cultural and natural history of the watershed areas. The Wachusett Ranger staff also offer teacher workshops on watersheds, Project WET, water system history, and other topics.

Responsible Department/Parties:
- Office of Water Resources

Measurable Goal(s):
- Programs offered

MCM 3 Illicit Discharge Detection and Elimination (IDDE) Program

Permit Part 2.3.4

Objective

DCR's objective for the IDDE program is to systematically find and eliminate illicit sources of non-stormwater discharges to its MS4 and to prevent such discharges.

Program Overview

The following table summarizes the IDDE BMPs and schedule.

BMP	Schedule by Permit Year (Fiscal Year)				
	1 (FY19)	2 (FY20)	3 (FY21)	4 (FY22)	5-8 (FY23-FY26)
3-1: Written IDDE Program	Complete written document	*	*	*	*
3-2: Illicit Discharge Policy	x				
3-3 Illicit Discharge Policy Regulation		x	x	x	x
3-4: Sanitary Sewer Overflow Inventory	Initial inventory	x	x	x	x
3-5: Storm Sewer System Mapping	x	Complete Phase I map	x	x	x
3-6: Employee Training	x	x	x	x	x
3-7: Dry Weather Outfall Screening		x	x	*	*
3-8: Catchment Investigation			x	x	x
3-9: Wet Weather Screening			x	x	x
3-10: Ongoing Screening					(beyond permit term)

* Represents permit requirements updated on an as needed basis subsequent to initial permit deadline.

BMP 3-1: Written IDDE Program

Description:
DCR will develop a written IDDE program, building upon its existing IDDE procedures and policy. The plan will include:

- DCR's illicit discharge policy
- Roles and responsibilities
- SSO inventory
- Assessment and priority ranking of outfalls/interconnections
- Dry weather outfall screening and sampling procedures
- Catchment investigation procedures
- Wet weather sampling procedures
- Training

- Reporting

DCR will complete initial outfall assessment and ranking in Permit Year 1 (FY2019), using available data. As new data become available through GIS mapping, outfall inspections, and catchment investigations, DCR will annually update the outfall ranking. Outfalls will be categorized as Problem, High Priority, Low Priority, or Excluded, as defined in the MS4 Permit at Part 2.3.4.7. Outfalls discharging to waterbodies impaired for or with a TMDL for bacteria or pathogens, as described in the TMDL/Impairment section of the SWMP, will be categorized as Problem or High Priority. Similarly, outfalls discharging directly or indirectly to a surface public drinking water supply will be categorized as Problem or High Priority. Outfalls that have sampling results with IDDE screening exceedances will be recategorized as Highest Priority to ensure their investigations are prioritized.

DCR will update the IDDE Program annually and will post the Program online at DCR Stormwater Management | Mass.gov.

Responsible Department/Parties:
- Design and Engineering

Measurable Goal(s):
- Complete within 1 year of permit effective date (June 30, 2019) and update annually

BMP 3-2: Illicit Discharge Policy

Description:
DCR has developed an Illicit Discharge Procedure to finalize the draft Illicit Discharge Policy which had been in place since 2011. The procedure documents that illicit discharges are not permitted to the DCR stormwater system and establishes procedures for notifying the dischargers of the illicit connection. The Department will notify the discharger of the illicit connection and indicate a specified date for removing the illicit connection. DCR will also notify EPA and DEP of the violation. The Illicit Discharge Procedure is included in the written IDDE Program (BMP 3-1) document posted online.

Responsible Department/Parties:
- Design and Engineering, Office of General Counsel

Measurable Goal(s):
- Review and update as needed within 1 year of permit effective date (June 30, 2019)

BMP 3-3: Illicit Discharge Regulation

Description:
DCR will develop DCR regulations for a regulatory framework to detect, prohibit, and respond to illegal discharges and illicit connections to the DCR stormwater drainage system.

Responsible Department/Parties:
- Bureau of Engineering, Office of General Counsel

Measurable Goal(s):
- Develop DCR regulations to enforce Illicit Discharge Policy

BMP 3-4: Sanitary Sewer Overflow (SSO) Inventory

Description:
DCR will develop an inventory of sanitary sewer overflows (SSOs) that have occurred on DCR regulated properties over the past 5 years and will update that list annually. An SSO is a discharge of untreated sanitary wastewater from a municipal sanitary sewer. DCR will identify and report locations and maintain an inventory of SSOs that occurred on DCR properties, in coordination with those entities responsible for the sanitary sewer systems. The SSO inventory will be included in the written IDDE Program (BMP 3-1).

Responsible Department/Parties:
- Design and Engineering

Measurable Goal(s):
- Complete within 1 year of permit effective date (June 30, 2019), and update annually thereafter

BMP 3-5: Storm Sewer System Map

Description:
DCR will incrementally build upon GIS mapping of its stormwater system developed during the previous permit term. Figures showing the storm sewer system map will be included in the written IDDE Program (BMP 3-1). During Permit Year 1, DCR will reorganize its drainage system database to prepare for additional mapping and analyses. In future years, DCR will incrementally add drainage structures and treatment facilities, with associated data, to its GIS map. As the map is further developed, DCR will evaluate whether facilities and outfalls meet the MS4 Permit definitions for regulated outfalls. A regulated outfall is defined by 40 CFR § 122.2 as the point where the MS4 discharges to waters of the United States.

The Phase I map, scheduled to be completed by June 30, 2020, will include:
- Outfalls
- Open channel conveyances (swales, ditches, etc.)
- Interconnections with other MS4s and other storm sewer systems
- DCR-owned stormwater treatment structures (e.g., detention and retention basins, infiltration systems, bioretention areas, water quality swales, gross particle separators, oil/water separators, or other proprietary systems)
- Waterbodies identified by name and indication of all use impairments as identified on the most recent EPA approved Massachusetts Integrated List of Waters report
- Surface public drinking water supplies, watersheds, and protection zones
- Initial catchment delineations. A catchment is the area that drains to an individual outfall or interconnection.

The map is available on a public web map viewer here
http://vhb.maps.arcgis.com/apps/webappviewer/index.html?id=1fffa8d7b9e144e793dcffb0445846e2

The Phase II map, scheduled to be completed by June 30, 2028, will include:
- Outfall spatial location (latitude and longitude with a minimum accuracy of +/-30 feet)
- Pipes
- Manholes
- Catch basins
- Refined catchment delineations. Catchment delineations will be updated to reflect information collected during catchment investigations
- Septic systems, where applicable

DCR does not own sanitary sewer systems (beyond private connections to municipal systems) or combined sewer systems, so does not anticipate including those in the storm sewer system map.

Responsible Department/Parties:

- Design and Engineering

Measurable Goal(s):

- Complete the Phase I map by the end of Permit Year 2 (June 30, 2020)

Update of Phase II map within 10 years of permit effective date (June 30, 2028)

BMP 3-6: Employee Training

Description:

DCR will train operations crews annually in the spring on the IDDE Program, including how to recognize and respond to illicit discharges and SSOs.

Responsible Department/Parties:

- Design and Engineering

Measurable Goal(s):

- Date, type, and attendees for annual training

BMP 3-7: Dry Weather Outfall Screening

Description:

DCR will conduct dry weather screening in accordance with outfall screening procedures and permit conditions to identify illicit contributions to the system. Procedures for and findings from dry weather outfall screening will be documented in the written IDDE Program (BMP 3-1).

Responsible Department/Parties:

- Bureau of Engineering

Measurable Goal(s):

- Complete within 3 years of permit effective date (June 30, 2021)
- Continue dry weather screening if new outfalls or interconnections are identified after Permit Year 3

BMP 3-8: Catchment Investigation

Description:

DCR will implement catchment investigations according to program and permit conditions. Procedures for and findings from catchment investigations will be documented in the written IDDE Program (BMP 3-1).

Responsible Department/Parties:

- Design and Engineering

Measurable Goal(s):

- Complete problem catchment investigations within 7 years of permit effective date (June 30, 2025)
- Complete all catchment investigations within 10 years of permit effective date (June 30, 2028)

BMP 3-9: Wet Weather Screening

Description:

DCR will conduct wet weather screening in accordance with outfall screening procedures to identify illicit discharges to its MS4. Procedures for and findings from wet weather screening will be documented in the written IDDE Program (BMP 3-1).

Responsible Department/Parties:

- Design and Engineering

Measurable Goal(s):

- Complete within 10 years of permit effective date (June 30, 2028)

BMP 3-10: Ongoing Screening

Description:

After completion of BMPs 3-7, 3-8, and 3-9, DCR will continue dry weather and wet weather screening as necessary to identify and eliminate illicit discharges. Each outfall and interconnection will be re-prioritized for screening and scheduled for ongoing screening once every five (5) years upon completion of all catchment investigations and illicit discharge removal and confirmation (if necessary).

Responsible Department/Parties:

- Design and Engineering

Measurable Goal(s):

- Continue ongoing outfall screening upon completion of IDDE Program

MCM 4 Construction Site Stormwater Runoff Control

Permit Part 2.3.5

Objective

DCR's objective for its construction stormwater runoff control program is to minimize or eliminate erosion and maintain sediment on site so that it is not transported in stormwater and allowed to discharge to a water of the U.S. through DCR's MS4.

Program Overview

The following table summarizes Construction Site Stormwater Runoff Control BMPs and schedule.

BMP	Schedule by Permit Year (Fiscal Year)				
	1 (FY19)	2 (FY20)	3 (FY21)	4 (FY22)	5 – 8 (FY23- FY26)
4-1: Erosion and Sediment Control/ Construction Waste Management	x	x	x	x	x
4-2: Project Design and SWPPP Review	x	x	x	x	x
4-3: Site Inspections	x	x	x	x	x

BMP 4-1: Erosion and Sediment Control/ Construction Waste Management

Description:

As a non-traditional MS4, DCR does not have the authority to enact an ordinance, bylaw, or other regulatory mechanism regarding construction site stormwater management on private properties. The MS4 Permit at Part 5.1.2 stipulates that MS4s without the authority to enact an ordinance should instead have written policies or procedures in place to ensure erosion and sediment control, and control of construction wastes on projects that disturb one or more acres of land.

DCR ensures construction site stormwater management through implementation of DCR's stormwater management policy and through compliance with the NPDES Construction General Permit. DCR includes a bid item and special provisions on construction contracts to be advertised for bid which exceed the one-acre land disturbance threshold. The bid item and special provisions require preparation of a Stormwater Pollution Prevention Plan (SWPPP) in accordance with the Construction General Permit.

DCR will continue to include contract bid items and special provisions for construction site stormwater management for projects that disturb one or more acres of land.

Responsible Department/Parties:

- Design and Engineering

Measurable Goal(s):

- Continue to include bid item and special provisions in applicable projects

BMP 4-2: Project Design and SWPPP Review

Description:
DCR will continue to perform internal reviews of DCR designs to ensure projects include appropriate erosion and sediment control practices. DCR will also continue to review construction general permit SWPPPs.

Responsible Department/Parties:
- Design and Engineering

Measurable Goal(s):
- Number of projects that meet Construction General Permit coverage requirements where construction started and verification of review

BMP 4-3: Site Inspections

Description:
DCR will continue to staff each construction project with either a Resident Engineer or Inspector.

DCR will also continue to require contractors to perform site inspections in line with the requirements in the Construction General Permit. SWPPP violations will be reported to the onsite DCR staff and Chief Engineer.

DCR staff will also review stormwater treatment BMPs during construction and after completion to review that they are constructed in line with the plans.

Responsible Department/Parties:
- Design and Engineering

Measurable Goal(s):
- Track SWPPP inspections and violations
- Track BMP construction site reviews by DCR staff

MCM 5 Post-Construction Stormwater Management in New Development and Redevelopment

Permit Part 2.3.6

Objective

DCR's objective for its post-construction stormwater management program is to reduce the discharge of stormwater pollutants to its MS4 and receiving waterbodies. This is accomplished by retaining or treating stormwater runoff after construction on new or redeveloped sites, and by ensuring proper maintenance of installed stormwater controls.

Program Overview

The following table summarizes Post-Construction Stormwater Management BMPs and schedule.

BMP	Schedule by Permit Year (Fiscal Year)				
	1 (FY19)	2 (FY20)	3 (FY21)	4 (FY22)	5-8 (FY23-FY26)
5-1: DCR Stormwater Handbook	x	x	x	x	
5-2: Target Properties for Retrofits				x	x
5-3: Street and Parking Lot Design				x	x

BMP 5-1: DCR Stormwater Handbook

Description:
DCR's Stormwater Handbook, in use since 2011, provides guidance for construction-phase and post-construction stormwater management on proposed DCR roadway and facility projects. DCR will update its Stormwater Handbook to reflect new requirements in the MS4 Permit for stormwater retention and treatment on new development and redevelopment projects. The Stormwater Handbook will be available on DCR's webpage: DCR Stormwater Management | Mass.gov

In Permit Year 1 and 2, DCR will review its Stormwater Handbook to identify revisions needed to ensure compliance with the MS4 Permit and to address specific water quality impairments and TMDLs. During Permit Year 3 and 4, DCR will complete the Stormwater Handbook revisions. The revised DCR Stormwater Handbook will include:

- Post-construction runoff retention and treatment requirements for new and redevelopment projects
- Pretreatment and system isolation requirements for DCR facilities with potentially high pollutant loading rates, such as labor yards, that discharge to waterbodies impaired for solids, oil and grease, or metals.
- Guidance on optimizing treatment systems for phosphorus or nitrogen removal at DCR facilities that discharge to waterbodies impaired for phosphorus or nitrogen, respectively.
- Guidelines for pretreatment, spill prevention, and notification at DCR facilities that discharge within surface public drinking water supply watersheds.
- Guidance to avoid or remove direct discharges to Class A public water supplies to the extent feasible.
- Procedures to ensure adequate long-term operation and maintenance of stormwater management practices.
- Procedures for submission of as-built drawings no later than three (3) years (according to the modified permit) after completion of applicable DCR construction projects. The as-built drawings will depict all on-site controls, both structural and non-structural, designed to manage stormwater associated with the completed site.
- GIS mapping of new drainage infrastructure to DCR stormwater database.

Responsible Department/Parties:

- Design and Engineering

Measurable Goal(s):

- Complete within 3 years of permit effective date (June 30, 2021)

BMP 5-2: Target Properties for Retrofits

Description:
DCR will identify at least five (5) DCR-owned properties that could be modified or retrofitted with stormwater BMPs to reduce the frequency, volume, and pollutant loads of stormwater discharges to and from its MS4 through the reduction of impervious area. DCR will prioritize properties with significant impervious cover that fall within areas discharging to waterbodies with phosphorus or nitrogen impairments and will optimize selected retrofits to remove phosphorus or nitrogen, as applicable. In determining the potential for modifying or retrofitting particular properties, DCR will consider factors such as maintenance access; subsurface conditions; proximity to water supply, swimming beaches, and shellfish growing areas; and opportunities for public education.

DCR will compile the list of potential retrofits, with five (5) prioritized sites, by the end of Permit Year 4. Beginning with the fifth annual report and in each subsequent annual report, DCR will identify additional sites that could be retrofitted, to maintain a minimum of five (5) sites in the inventory. DCR will report on all properties that have been modified or retrofitted with BMPs in each annual report.

Responsible Department/Parties:
- Design and Engineering

Measurable Goal(s):
- Complete within 4 years of permit effective date (June 30, 2022) and report annually on retrofitted properties

BMP 5-3: Parkway Design and Parking Lot Guidelines

Description:
DCR will assess and develop standards to reduce impervious cover in parkway and parking lot designs. Requirements can be made to support low impact design options, such as permeable paving and minimizing impervious surface. If the assessment indicates that changes can be made, the report will include recommendations and proposed schedules to incorporate policies and standards into relevant documents and procedures to minimize impervious cover attributable to parking areas and parkway designs. DCR will implement recommendations, in accordance with the schedules contained in the assessment. The assessment is included as Appendix C of the SWMP.

Responsible Department/Parties:
- Design and Engineering

Measurable Goal(s):
- Complete within 4 years of permit effective date (June 30, 2022) and implement recommendations of report.
- Review success of promoting LID measures in projects through implementation of the Handbook each year in the annual report.

MCM 6 Good Housekeeping and Pollution Prevention for Permittee Owned Operations

Permit Part 2.3.7

Objective

The objective of DCR's Good Housekeeping program is to prevent or reduce pollutant runoff from DCR facilities and operations.

Program Overview

The following table summarizes Good Housekeeping BMPs and schedule.

BMP	Schedule by Permit Year (Fiscal Year)				
	1 (FY19)	2 (FY20)	3 (FY21)	4 (FY22)	5-8 (FY23-FY26)
6-1: Facilities Inventory		x	*	*	*
6-2: Written O&M Procedures		x			
6-3: Facility SWPPPs		x	*	*	*
6-4: Written MS4 O&M Program		x	*	*	*
6-5: Catch Basin Inspection and Cleaning	x	x	x	x	x
6-6: Street and Parking Lot Sweeping	x	x	x	x	x
6-7: Winter Road Maintenance	x	x	x	x	x
6-8: Stormwater Treatment Facility Inspections	x	x	x	x	x

* Represents permit requirements updated on an as needed basis subsequent to initial permit deadline.

BMP 6-1: Facilities Inventory

Description:
DCR will develop a GIS-based inventory of all DCR parks and open spaces, buildings and facilities, vehicle /equipment storage and maintenance areas. The inventory will allow DCR to conduct asset management to assist in preventing pollution from its facilities.

Responsible Department/Parties:

- Design and Engineering

Measurable Goal(s):

- Complete within 2 years of permit effective date (June 30, 2020) and update annually

BMP 6-2: Written Operation and Maintenance Procedures

Description:
DCR will develop written operation and maintenance (O&M) procedures for DCR parks and open spaces, buildings and facilities, and vehicle and equipment storage and maintenance areas. The O&M Procedures will include pollution prevention practices specific to each category, as listed below. For all facility categories, the O&M procedures will include measures for spill prevention, source control, and notification for facilities and infrastructure within surface public drinking water supply watersheds. The O&M Procedures will also detail measures to address water quality impairments, including landscape maintenance, dog waste management, and septic system maintenance practices to reduce phosphorus, nitrogen, and bacterial/pathogen loading to impaired waterbodies, as applicable.

The procedures will include the following measures for each category:

1) Parks and Open Space:
    - Use, storage, and disposal of pesticides, herbicides, and fertilizers
    - Lawn maintenance and landscaping
    - Pet waste collection and disposal location and signage
    - Waterfowl management
    - Trash container placement and cleanings
    - Erosion control and vegetative cover
2) Buildings and facilities where pollutants are exposed to stormwater runoff:
    - Use, storage, and disposal of petroleum products and other potential stormwater pollutants
    - Employee training
    - Spill prevention plans, if applicable
    - Management of dumpsters and other waste management equipment
    - Sweeping and cleaning around facilities
    - Septic system maintenance, where applicable
3) Vehicles and equipment
    - Vehicle storage
    - Management of vehicles with fluid leaks
    - Fueling areas
    - Vehicle wash waters

Responsible Department/Parties:
- Design and Engineering

Measurable Goal(s):
- Complete and implement within 2 years of permit effective date (June 30, 2020)

BMP 6-3: Facility Stormwater Pollution Prevention Plans

Description:
DCR will evaluate regulated facilities to determine whether any facilities (e.g. labor yards and maintenance facilities) have materials and waste storage or handling that may be exposed to stormwater. For those that meet the criteria, DCR will develop and fully implement facility Stormwater Pollution Prevention Plans (SWPPPs). The SWPPP will include the following elements:

- Pollution prevention team
- Description of the facility and identification of potential pollutant sources
- Identification of stormwater controls
- Management practices to minimize or prevent exposure and clean exposed areas
- Preventative maintenance
- Spill prevention and response
- Erosion and sediment control
- Management of runoff
- Enclosure of salt storage piles or piles containing salt
- Employee training
- Maintenance of control measures
- Site inspections schedule and documentation

DCR will develop the SWPPPs by the end of Permit Year 2 and will thereafter conduct site inspections at least once each calendar quarter. DCR will maintain all records associated with the SWPPPs and will report site inspection findings in the annual report. DCR tracks inspection progress each year using an online dashboard that is connected to its GIS database.

Responsible Department/Parties:

- Design and Engineering

Measurable Goal(s):

- Complete and implement within 2 years of permit effective date (June 30, 2020)
- Complete quarterly site inspections and follow up on maintenance needs

BMP 6-4: Written MS4 Operation and Maintenance Program

Description:
DCR will develop a written program detailing the activities and procedures DCR will implement so that the MS4 infrastructure is maintained in a timely manner to reduce the discharge of pollutant from the MS4. The written O&M program will include the catch basin cleaning program (BMP 6-5), street and parking lot sweeping program (BMP 6-6), winter road maintenance program (BMP 6-7), and stormwater treatment system inspection program (BMP 6-8).

The Operation and Maintenance Plan is available on DCR's website: DCR Stormwater Management | Mass.gov

Responsible Department/Parties:

- Design and Engineering

Measurable Goal(s):

- Complete within 2 years of permit effective date (June 30, 2020) and updated annually

BMP 6-5: Catch Basin Cleaning

Description:
DCR has a catch basin cleaning program, building on DCR's Catch Basin Cleaning Policy from its previous SWMP which documented catch basin cleaning and prioritized areas to be cleaned based on the sensitivity of the area and receiving waters. These procedures will be included in the written MS4 O&M Program (BMP 6-4).

During Permit Year 1, DCR will update its mobile data collection system to enable tracking of basin sediment accumulation. Using a customized ArcGIS online collector app, inspectors will record sediment accumulation within catch basins as sump less than half full, sump half full, sump full, or structure completely full during routine cleaning. This information will be automatically associated with catch basin points within DCR's stormwater system map. Catch basins found to have sediment depth greater than half full will be prioritized for cleaning during Permit Year 2. Following two years of data collection, DCR will complete an optimization analysis to schedule routine inspections, cleaning, and maintenance of catch basins such that the following conditions are met:

- Prioritize inspection and maintenance for catch basins located near construction activities. Clean catch basins in such areas more frequently if inspection and maintenance activities indicate excessive sediment or debris loadings.
- Establish a schedule with a goal that the frequency of routine cleaning will ensure that no catch basin at any time will be more than 50 percent full.
- If a catch basin sump is more than 50 percent full during two consecutive routine inspections/cleaning events, document that finding, investigate the contributing drainage area for sources of excessive sediment loading, and to the extent practicable, abate contributing sources. Describe any actions taken in annual report.

DCR will report in each annual report the total number of catch basins, number inspected, number cleaned, and the total volume or mass of material removed from all catch basins.

Responsible Department/Parties:
- Design and Engineering

Measurable Goal(s):
- Clean catch basins on established schedule and report the number of catch basins inspected and cleaned, and the volume or mass of material removed annually

BMP 6-6: Street and Parking Lot Sweeping

Description:
As part of DCR's previous SWMP, DCR developed a written policy for sweeping frequency, including guidelines for prioritizing the sweeping of roads, parkways, and facility parking lots. DCR will review and update its sweeping program to ensure compliance with MS4 Permit requirements. These procedures will be included in the written MS4 O&M Program (BMP 6-4).

DCR will sweep DCR paved roads and parking lots a minimum of once per year (in the spring), with the exception of rural uncurbed roads with no catch basins. For streets and parking lots within catchments to waterbodies impaired for nitrogen, phosphorus, or solids, DCR will sweep a minimum of twice per year (fall and spring). DCR will also sweep more frequently in areas with land uses that generate higher sediment loading and/or where catch basin inspections indicate higher loading rates.

For rural uncurbed roadways with no catch basins, DCR will develop and implement an inspection, documentation, and targeted sweeping plan within two years of the permit effective date.

Responsible Department/Parties:
- Operations, Design and Engineering

Measurable Goal(s):

- Report on compliance with street sweeping schedule annually
- Develop and implement an inspection, documentation and targeted sweeping plan for rural uncurbed roadways within two years of permit effective date (June 30, 2020)

BMP 6-7: Winter Road Maintenance

Description:
DCR will establish and implement written procedures for winter road maintenance, including the use and storage of salt and sand. These procedures will be included in the written MS4 O&M Program (BMP 6-4). DCR will minimize the use of sodium chloride and other salts where park or parkway drainage discharges to certain impaired receiving waters and will evaluate opportunities for use of alternative materials. DCR will also ensure that snow disposal activities do not result in disposal of snow into waters of the United States.

For DCR facilities and roads discharging to chloride-impaired waterbodies, DCR will develop a salt reduction plan (see BMP 7-3).

Responsible Department/Parties:

- Operations

Measurable Goal(s):

- Report on compliance with winter road maintenance procedures annually

BMP 6-8: Stormwater Treatment Facility Inspections

Description:
DCR will establish and implement inspection and maintenance procedures and frequencies of stormwater treatment units such as water quality swales, detention basins, infiltration structures, and proprietary treatment devices. These procedures will be included in the written MS4 O&M Program (BMP 6-4). DCR will inspect all DCR-owned stormwater treatment units (excluding catch basins) annually at a minimum.

During Permit Year 1, DCR will begin to update its GIS database to enable inspections to be associated with stormwater treatment structure points within GIS. DCR will then start to use a customized ArcGIS collector app to record inspection findings and add those inspections to DCR's stormwater system map. DCR will track inspection progress each year using an online dashboard that is connected to its GIS database.

Responsible Department/Parties:

- Design and Engineering

Measurable Goal(s):

- Report on compliance with inspection and maintenance of treatment structures per established schedule

Surface Public Drinking Water Supply Protection

Permit Part 3.0

The MS4 Permit at Part 3.0 requires permittees to implement additional measures for discharges to surface drinking water supplies and their tributaries. Consistent with its water supply protection mandate, DCR will prioritize discharges to public surface drinking water supply sources (Class A and Class B surface waters used for drinking water) or their tributaries in implementation of this SWMP.

DCR's Division of Water Supply Protection manages and protects the drinking water supply for residents of Massachusetts, primarily in Greater Boston. The Division's programs promote water quality and conservation through water resources policy and planning efforts. Within the Division of Water Supply Protection, the Office of Watershed Protection is charged with protecting metro Boston's watershed and reservoirs. The Office of Water Resources manages programs that serve to protect water resources across the Commonwealth. More information can be found at DCR Division of Water Supply Protection | Mass.gov.

Applicable Waterbodies

Regulated DCR facilities are within the following surface public drinking water supply watersheds and have regulated outfall discharges within the watersheds:

- Emerson Brook Reservoir - Middleton
- Farm River - Braintree
- North Reservoir – Winchester
- Wachusett Reservoir – West Boylston
- Wading River (Blakes Pond) – Attleboro
- Spot Pond – Stoneham

Enhanced BMPs

In addition to the water supply protection services provided through DCR's Division of Water Supply Protection, DCR will implement the following measures to avoid or minimize impacts to surface public drinking water supply sources. These measures are integrated into the BMPs described above for MCMs 1 through 6.

Enhanced BMP for Surface Water Supply Protection	Description
BMP 1-1 Social Media Public Service Messages	DCR will post educational messages on social media and DCR's stormwater webpage at DCR Stormwater Management | Mass.gov. In the fall, DCR will include information about proper collection and disposal of leaf litter. In the spring, DCR will include information about managing grass clippings, fertilizers, and dog waste. In the summer, DCR will include information about dog waste management. (See Phosphorus, Nitrogen, and Bacteria/Pathogens sections of SWMP for impairment-specific educational messages.)
BMP 1-2 Signs about Feeding Gulls	DCR has an ongoing gull management program to prevent contamination of Wachusett Reservoir. As part of that program, DCR educates the public about not feeding seagulls. DCR posts signs in public areas around the Wachusett Reservoir, such as malls, restaurants, grocery stores, and landfills, reminding the public to not feed seagulls.
BMP 3-1 Written IDDE Program	Outfalls discharging directly or indirectly to a surface public drinking water supply will be categorized as Problem or High Priority.

Enhanced BMP for Surface Water Supply Protection	Description
BMP 3-3 Storm Sewer System Map	As part of the stormwater system Phase 1 map, DCR will include Class A and Class B surface drinking water supply sources and surface water supply watersheds. The GIS database will include attribute fields for DCR facilities and MS4 infrastructure indicating whether the property and/or drainage structures discharge to a drinking water source or its tributaries. Those fields will enable DCR to quickly determine whether they need to notify DEP Drinking Water Program in the event of a spill.
BMP 5-1 DCR Stormwater Handbook	The revised DCR Stormwater Handbook will include guidelines for pretreatment, spill prevention, and notification at DCR facilities that discharge within surface public drinking water supply watersheds. The handbook will also include guidance to avoid or remove direct discharges to Class A public drinking water supplies to the extent feasible.
BMP 6-2 Facility O&M Procedures	Facility O&M procedures will include measures for spill prevention, source control, and notification for facilities and infrastructure within surface public drinking water supply watersheds.

TMDLs and Water Quality Limited Waters

The MS4 Permit at Part 2.2 describes additional requirements for MS4s that discharge to waters that are subject to Total Maximum Daily Loads (TMDLs) and/or that discharge to certain water quality limited waters. Specific requirements are detailed in the MS4 Permit Appendix F (for TMDLs) and Appendix H (for impaired waters).

This section identifies DCR's receiving waterbodies that are impaired or are subject to TMDLs. This section also describes the BMPs that DCR will implement to meet the MS4 Permit requirements at Part 2.2 and Appendices F and H.

DCR facilities discharge to waterbodies with the following water quality impairments:

- Bacteria/Pathogens
- Chloride
- Nitrogen
- Solids/oil/grease (hydrocarbons)/metals
- Phosphorus

DCR facilities fall within watersheds covered by TMDLs developed for the following stormwater-related impairments.

In State:

- Bacteria/Pathogens
- Charles River Phosphorus
- Lake and Pond Phosphorus

Out of State:

- Nitrogen

According to DCR's current regulated facility list and outfall mapping, there are no DCR-owned regulated outfalls within the Cape Cod Nitrogen TMDL watershed, the Assabet River Phosphorus TMDL watershed, or the out-of-state Bacteria/ Pathogen and Phosphorus TMDL watersheds. DCR will review the facility list and outfall mapping annually to confirm that DCR does not have regulated outfalls within the above-mentioned TMDL watersheds. If outfalls are identified, DCR will add the applicable provisions of MS4 Permit Appendix F to this SWMP.

Additional BMPs to Address Water Quality Impairments and TMDLs

The following table summarizes the additional BMPs that DCR will implement to meet MS4 Permit Appendix F and Appendix H requirements.

BMP	**Schedule by Permit Year (Fiscal Year)**				
	1 (FY19)	**2 (FY20)**	**3 (FY21)**	**4 (FY22)**	**5-8 (FY23-FY26)**
7-1: Charles River Phosphorus Control Plan		x	x	x	x
7-2: Lake Phosphorus Control Plans		x	x	x	x
7-3: Phosphorus Source Identification Report				x	
7-4: Structural BMPs for Phosphorus					x
7-5: Nitrogen Source Identification Report				x	
7-6: Structural BMPs for Nitrogen					x
7-7: Salt Reduction Plan			x	x	x

Charles River Watershed Phosphorus TMDL

On October 17, 2007, EPA approved the *Final TMDL for Nutrients in the Lower Charles River Basin* (Lower Charles TMDL) and on June 10, 2011, EPA approved the *Total Maximum Daily Load for Nutrients in the Upper/Middle Charles River* (Upper/Middle Charles TMDL). The MS4 Permit Appendix F at Part A.I details the requirements that permittees must meet for MS4s that discharge to the Charles River or its tributaries. DCR will meet these requirements as described below.

Applicable Waterbodies

There are many discharges from DCR regulated facilities to various waterbody segments that fall within the Charles River Watershed and are covered by one of the two phosphorus TMDLs for the Charles River. Discharges to these waterbodies are subject to the provisions of MS4 Permit Appendix F at Part A.I. DCR has developed a Phosphorus Control Plan (PCP) for the Charles River in compliance with the MS4 Permit Appendix F. Since all DCR facilities within the Charles River Watershed are included in the PCP and are being evaluated to meet the PCP requirements, individual receiving waterbody segment IDs are no longer listed in the SWMP. Specific receiving waterbody segments for each outfall are documented in the DCR database and can be viewed in the DCR webmap: MassDCR MS4 Web Viewer (arcgis.com) or in the list of receiving waters in Appendix A.

Additional BMPs

In addition to the BMPs included in the SWMP and summarized in the previous sections, DCR will implement the following BMPs to address phosphorus impairments in the Charles River watershed.

BMP 7-1 Charles River Phosphorus Control Plan

Description:

DCR has developed a Phosphorus Control Plan (PCP) for DCR regulated facilities discharging within the Charles River Watershed. A PCP is a plan to reduce the amount of phosphorus in stormwater discharges from the MS4 to the Charles River and its tributaries. DCR will complete the plan according to the phases and schedule outlined in the MS4 Permit Appendix F at Part A.I. Key milestones through Permit Year 6 are summarized below:

Phase 1 of the PCP Component and Milestones	Completion Date After Permit Effective Date
Legal analysis	2 years
Funding source assessment	3 years
Define scope of PCP (PCP area), baseline phosphorus load, phosphorus reduction requirement, and allowable phosphorus load	4 years
Description of Phase 1 planned nonstructural controls	5 years
Description of Phase 1 planned structural controls	5 years
Description of operation and maintenance program for structural controls	5 years
Phase 1 implementation schedule	5 years
Estimated cost for implementing Phase 1 of the PCP	5 years
Complete written Phase 1 PCP	5 years
Full implementation of nonstructural controls	6 years

Responsible Department/Parties:

- Design and Engineering

Measurable Goal(s):

- Fully implement plan within 20 years of permit effective date, with interim deadlines as detailed in MS4 Permit Appendix F Part A.I.

Lake and Pond Phosphorus TMDLs

Between 1999 and 2010 EPA has approved 13 Lake TMDLs completed by MassDEP covering 78 lakes and ponds within the Commonwealth of Massachusetts[1]. Any permittee that discharges to a waterbody segment covered by the Lake TMDLs is subject to the requirements of MS4 Permit Appendix F at Part A.II. DCR will meet these requirements as described below.

Applicable Waterbodies

DCR discharges directly or indirectly to five of the lakes listed in the MS4 Appendix F Section A.II which are listed below:

- Auburn Pond/ Leesville Pond[2]
- Bents Pond/ Ramsdall Pond[3]
- Flint Pond & Lake Quinsigamond[4]

There are multiple discharges from DCR regulated facilities that fall within watersheds covered by Lake and Pond TMDLs. Discharges to these waterbodies and their tributaries are subject to the provisions of MS4 Permit Appendix F at Part A.II. Since all DCR facilities within the Lake and Ponds TMDL watersheds listed below are included in the PCP and are being evaluated to meet the PCP requirements, individual receiving waterbody segment IDs are no longer listed in the SWMP. Specific receiving waterbody segments for each outfall are documented in the DCR database and can be viewed in the DCR webmap: MassDCR MS4 Web Viewer (arcgis.com) or in the list of receiving waters in Appendix A.

Receiving Waterbody	**Segment ID**
Bents Pond	MA35007
Ramsdall Pond	MA35062
Auburn Pond	N/A (formerly MA51004, within current segment Dark Brook MA51-16)
Leesville Pond	MA51087
Flint Pond	MA51188
Lake Quinsigamond	MA51125

[1] Final TMDLs for lakes and ponds in the Northern Blackstone River Watershed, Chicopee Basin, Connecticut Basin, French Basin, Millers Basin and Bare Hill Pond, Lake Quinsigamond, Flint Pond, Indian Lake, Lake Boon, Leesville Pond, Salisbury Pond, White Island Pond, Quaboag Pond and Quacumquasit Pond can be found here: http://www.mass.gov/eea/agencies/massdep/water/watersheds/total-maximum-daily-loads-tmdls.html

2 The DCR MS4-regulated area within the Leesville Pond Watershed is the same as the DCR MS4-regulated area within the Auburn Pond Watershed (the Leesville Pond Watershed includes the Auburn Pond Watershed).

3 The DCR regulated MS4 area within the Ramsdall Pond Watershed is the same as the DCR MS4-regulated area within the Bents Pond Watershed (the Ramsdall Pond Watershed includes the Bents Pond Watershed).

[4] The MS4 Permit treats Flint Pond and Lake Quinsigamond as one waterbody. It is listed in the MS4 Permit's Table F-6 as "Flint Pond/ Lake Quinsigamond."

Additional BMPs

In addition to the BMPs included in the SWMP and summarized in the previous sections, DCR will implement the following BMPs to address phosphorus impairments in the Lakes and Ponds watersheds.

BMP 7-2 Lake Phosphorus Control Plans

Description:
DCR has developed a Lake Phosphorus Control Plans (LPCP) for the watersheds listed above. A LPCP is a plan to reduce the amount of phosphorus in stormwater discharges from the MS4 to impaired waters and their tributaries covered under those TMDLs. DCR will complete the plans according to the phases and schedule outlined in the MS4 Permit Appendix F at Part A.II. Key milestones through Permit Year 6 are summarized below:

Phase 1 of the PCP Component and Milestones	Completion Date
Legal analysis	2 years after permit effective date
Funding source assessment	3 years after permit effective date
Define LPCP scope (LPCP area)	4 years after permit effective date
Calculate baseline phosphorus, allowable phosphorus load, and phosphorus reduction requirement	4 years after permit effective date
Description of planned nonstructural and structural controls	5 years after permit effective date
Description of operation and maintenance program	5 years after permit effective date
Implementation schedule	5 years after permit effective date
Cost and funding source assessment	5 years after permit effective date
Complete written LPCP	5 years after permit effective date
Full implementation of nonstructural controls	6 years after permit effective date

Responsible Department/Parties:

- Design and Engineering

Measurable Goal(s):

- Fully implement plans within 15 years of permit effective date, with interim deadlines as detailed in MS4 Permit Appendix F Part A.II.

Phosphorus Impaired Waterbodies

Applicable Waterbodies

The following waterbodies, defined by Massachusetts Department of Environmental Protection (MassDEP), are water quality limited for phosphorus based on the MassDEP's Final 2022 Integrated List of Waters and do not have an approved Total Maximum Daily Load (TMDL).[5] Under Appendix H of the MS4 Permit, DCR is required to develop a Phosphorus Source Identification Report (PSIR) to address phosphorus load in stormwater discharges from DCR's MS4 to these waterbody segments and the segments' tributaries. DCR discharges stormwater to several nutrient limited waterbodies without TMDLs that are also subject to PSIRs and which are located upstream and are tributary to these segments. These tributaries are included in the PSIRs for the downstream waterbody listed in the table below.

[5] MassDEP. Final Massachusetts Integrated List of Waters for the Clean Water Act 2022 Reporting Cycle. May 2023. https://www.mass.gov/doc/final-massachusetts-integrated-list-of-waters-for-the-clean-water-act-2022-reporting-cycle/download

PSIR Receiving Waterbody	Segment ID	Upstream Segment IDs included in PSIR		
Blackstone River	MA51-06	MA51-03 MA51-04 MA51-05		
Merrimack River	MA84A-04	MA81-05 MA81-07* MA81-09* MA82015 MA82055 MA82056	MA82112 MA82120 MA82A-05 MA82A-06 MA82A-15 MA82A-16	MA82A-17 MA83010 MA84A-02 MA84A-03 MA84A-04
Mother Brook	MA73-28	N/A		
Mystic River	MA71-02	MA71-01 MA71014 MA71019	MA71-04 MA71040 MA71045	MA71-05 MA71-02
Ten Mile River	MA52-03	N/A		
Proctor Brook	MA93-39	MA93-05		
Mount Hope Bay/ Taunton River	MA62-02	N/A		

*These waterbody segments were delisted for phosphorus impairments in the 2018/2020 303(d) list.

Enhanced BMPs

The following table summarizes the Enhanced BMPs, as described in the SWMP above, that DCR will implement to meet MS4 Permit Appendix H requirements for discharge to phosphorus-impaired waterbodies and their tributaries.

Requirements	Enhanced BMPs
Distribute an annual message in the spring (April/May) that encourages the proper use and disposal of grass clippings and encourages the proper use of slow-release and phosphorus-free fertilizers	BMP 1-1 Social Media Public Service Messages • Spring message about grass clippings and fertilizer
Distribute an annual message in the summer (June/July) encouraging the proper management of pet waste	BMP 1-1 Social Media Public Service Messages • Summer message about dog waste management BMP 1-4 Dog Waste Management • Dog waste management messages at DCR properties that are frequented by dog walkers
Distribute an annual message in the fall (August/September/October) encouraging the proper disposal of leaf litter	BMP 1-1 Social Media Public Service Messages • Fall message about leaf litter
For post-development stormwater management, include a requirement that new development and redevelopment stormwater management BMPs be optimized for phosphorus removal	BMP 5-1 DCR Stormwater Handbook • Revised DCR Stormwater Handbook will include guidance on optimizing treatment systems for phosphorus or nitrogen removal at DCR facilities that discharge to waterbodies impaired for phosphorus or nitrogen, respectively
For retrofit inventory and priority ranking, include consideration of BMPs to reduce phosphorus discharges	BMP 5-2 Target Properties to Retrofit • DCR will prioritize properties with significant impervious cover that fall within areas discharging to waterbodies with phosphorus or nitrogen impairments and will optimize selected retrofits to remove phosphorus or nitrogen, as applicable.

Requirements	Enhanced BMPs
Establish procedures to properly manage grass cuttings and leaf litter on permittee property, including prohibiting blowing organic waste materials onto adjacent impervious surfaces	BMP 6-2 Written O&M Procedures • O&M Procedures will detail measures to address water quality impairments, including landscape maintenance to reduce nitrogen loading to impaired waterbodies
Increase street sweeping frequency of all DCR owned roads and parking lots subject to Permit part 2.3.7.a.iii.(c) to a minimum of two times per year (spring and fall)	BMP 6-6 Street and Parking Lot Sweeping • For paved roads and parking lots within catchments to waterbodies impaired for nitrogen, phosphorus, or solids, DCR will sweep a minimum of twice per year (fall and spring).

Additional BMPs

BMP 7-3 Phosphorus Source Identification Reports

Description:
For catchments discharging to phosphorus-impaired waterbodies and their tributaries, or within a watershed with an approved out-of-state phosphorus TMDL, DCR has developed phosphorus source identification reports. DCR developed the reports within four years of the permit effective date (by June 30, 2022), and submitted the Reports as part of DCR's Year 4 Annual Report. DCR will update the reports annually.

The phosphorus source identification report will include the following elements:

1. Calculation of total MS4 area draining to the water quality limited water segments or their tributaries, incorporating updated mapping of the MS4 and catchment delineations produced pursuant to part 2.3.4.6,
2. All screening and monitoring results pursuant to part 2.3.4.7.d., targeting the receiving water segment(s)
3. Impervious area and directly connected impervious area (DCIA) for the target catchment
4. Identification, delineation, and prioritization of potential catchments with high phosphorus loading
5. Identification of potential retrofit opportunities or opportunities for the installation of structural BMPs during redevelopment

Responsible Department/Parties:

- Design and Engineering

Measurable Goal(s):

- Complete within four years of permit effective date

BMP 7-4 Structural BMPs for Phosphorus

Description:
Within five years of the permit effective date, DCR will evaluate DCR properties identified in BMP 5-2 (Target Properties for Retrofit) or identified in the Phosphorus Source Identification Report (BMP 7-1) that drain to a phosphorus-impaired water or its tributaries. The evaluation will include:

1. The next planned infrastructure, resurfacing, or redevelopment activity planned for the property (if applicable) OR planned retrofit date;
2. The estimated cost of redevelopment or retrofit BMPs; and
3. The engineering and regulatory feasibility of redevelopment or retrofit BMPs.

DCR will provide a listing of planned structural BMPs and a plan and schedule for implementation in the Year 5 Annual Report.

DCR will plan and install a minimum of one structural BMP as a demonstration project within the drainage area of the water quality limited water or its tributaries within six years of the permit effective date. The demonstration project will

be installed targeting a catchment with high phosphorus load potential. DCR will install the remainder of the structural BMPs in accordance with the plan and schedule provided in the Year 5 Annual Report.

DCR will track and estimate the phosphorus removal for structural BMPs, consistent with MS4 Permit Attachment 3 to Appendix F. DCR will document in each Annual Report the BMP type, total area treated by the BMP, the design storage volume of the BMP, and the estimated phosphorus removed in mass per year by the BMP.

Responsible Department/Parties:

- Design and Engineering

Measurable Goal(s):

- Complete list of planned structural BMPs and implementation schedule within five years of permit effective date (by June 30, 2023)
- Plan and install at least one structural BMP within six years of the permit effective date (by June 30, 2024)

Nitrogen Impaired Waterbodies/ Out-of-State TMDL

Applicable Waterbodies

The following waterbodies, defined by MassDEP, are water quality limited due to nitrogen (as of the most recent 303d list) and/or are tributaries to the out-of-state Long Island Sound, which has an approved TMDL for nitrogen[6]. Discharges to these waterbodies and their tributaries are subject to the provisions of MS4 Permit Appendix H Part I and Appendix F at Part B.I. Under Appendix H of the MS4 Permit, DCR is required to develop a Nitrogen Source Identification Report (NSIR) to address nitrogen load in stormwater discharges from DCR's MS4 to these waterbody segments and the segments' tributaries. DCR discharges stormwater to several nutrient limited water bodies without TMDLs that are also subject to PSIRs and which are located upstream and tributary to these segments. These tributaries are included in the PSIRs for the downstream waterbody listed in the table below.

NSIR Receiving Waterbody	Segment ID	Upstream Segment IDs included in NSIR
Long Island Sound	N/A	
Mount Hope Bay/ Taunton River	MA61-06	MA62-06 MA62119 MA62134 MA62182 MA62205 MA62-32 MA61-06
	MA62-04	MA62-02 MA62-03
Outer New Bedford Harbor	MA95-63	MA95-33 MA95-42 MA95110 MA95-63
Proctor Brook	MA93-39	MA93-39 MA93-05

Enhanced BMPs

The following table summarizes the enhanced BMPs, as described in the SWMP above, that DCR will implement to meet MS4 Permit Appendix F and Appendix H requirements for discharge to nitrogen impaired waterbodies and their tributaries.

Requirements	Enhanced BMPs
Distribute an annual message in the spring (April/May) that encourages the proper use and disposal of grass clippings and encourages the proper use of slow-release fertilizers	BMP 1-1 Social Media Public Service Messages • Spring message about grass clippings and fertilizer
Distribute an annual message in the summer (June/July) encouraging the proper management of pet waste	BMP 1-1 Social Media Public Service Messages • Summer message about dog waste management BMP 1-4 Dog Waste Management • Dog waste management messages at DCR properties that are frequented by dog walkers

[6] Connecticut Department of Environmental Protection. 2000. *A Total Maximum Daily Load Analysis to Achieve Water Quality Standards for Dissolved Oxygen in Long Island Sound*

Requirements	Enhanced BMPs
Distribute an annual message in the fall (August/September/October) encouraging the proper disposal of leaf litter	BMP 1-1 Social Media Public Service Messages • Fall message about leaf litter
For post-development stormwater management, include a requirement that new development and redevelopment stormwater management BMPs be optimized for nitrogen removal	BMP 5-1 DCR Stormwater Handbook • Revised DCR Stormwater Handbook will include guidance on optimizing treatment systems for phosphorus or nitrogen removal at DCR facilities that discharge to waterbodies impaired for phosphorus or nitrogen, respectively
For retrofit inventory and priority ranking, include consideration of BMPs to reduce nitrogen discharges	BMP 5-2 Target Properties to Retrofit • DCR will prioritize properties with significant impervious cover that fall within areas discharging to waterbodies with phosphorus or nitrogen impairments and will optimize selected retrofits to remove phosphorus or nitrogen, as applicable.
Establish requirements for the use of slow release fertilizers on permittee owned property currently using fertilizer, in addition to reducing and managing fertilizer use as provided in Part 2.3.7.1	BMP 6-2 Written O&M Procedures • O&M Procedures will detail measures to address water quality impairments, including landscape maintenance to reduce nitrogen loading to impaired waterbodies
Establish procedures to properly manage grass cuttings and leaf litter on permittee property, including prohibiting blowing organic waste materials onto adjacent impervious surfaces	BMP 6-2 Written O&M Procedures • O&M Procedures will detail measures to address water quality impairments, including landscape maintenance to reduce nitrogen loading to impaired waterbodies
Increase street sweeping frequency of all roads and parking lots subject to Permit Part 2.3.7.a.iii.(c) to a minimum of two times per year (spring and fall)	BMP 6-6 Street and Parking Lot Sweeping • For paved roads and parking lots within catchments to waterbodies impaired for nitrogen, phosphorus, or solids, DCR will sweep a minimum of twice per year (fall and spring).

Additional BMPs

In addition to the BMPs included in the SWMP and summarized above, DCR will implement the following BMPs to address nitrogen impairments.

BMP 7-5 Nitrogen Source Identification Report

Description:

For catchments discharging to nitrogen-impaired waterbodies and their tributaries or within the Long Island Sound watershed, DCR has developed a nitrogen source identification report. DCR developed the report and submitted the Reports as part of DCR's Year 4 Annual Report. The nitrogen source identification report includes the following elements:

1. Calculation of total MS4 area draining to the water quality limited water segments or their tributaries, incorporating updated mapping of the MS4 and catchment delineations produced pursuant to part 2.3.4.6,
2. All screening and monitoring results pursuant to part 2.3.4.7.d., targeting the receiving water segment(s)
3. Impervious area and DCIA for the target catchment
4. Identification, delineation and prioritization of potential catchments with high nitrogen loading
5. Identification of existing BMPs which provide nitrogen removal
6. Identification of potential retrofit opportunities or opportunities for the installation of structural BMPs during redevelopment

The nitrogen source identification reports will be updated annually.

Responsible Department/Parties:

- Design and Engineering

Measurable Goal(s):

- Complete within four years of permit effective date (June 30, 2022)

BMP 7-6 Structural BMPs for Nitrogen

Description:

Within five years of the permit effective date, DCR will evaluate DCR properties identified in BMP 5-2 (Target Properties for Retrofit) or identified in the Nitrogen Source Identification Report (BMP 7-1) that drain to a nitrogen-impaired water or its tributaries or lies within the Long Island Sound watershed. The evaluation will include:

1. The next planned infrastructure, resurfacing or redevelopment activity planned for the property (if applicable) OR planned retrofit date;
2. The estimated cost of redevelopment or retrofit BMPs; and
3. The engineering and regulatory feasibility of redevelopment or retrofit BMPs.

DCR will provide a listing of planned structural BMPs and a plan and schedule for implementation in the Year 5 Annual Report.

DCR will plan and install a minimum of one structural BMP as a demonstration project within the drainage area of the water quality limited water or its tributaries. The demonstration project will be installed targeting a catchment with high nitrogen load potential. DCR will install the remainder of the structural BMPs in accordance with the plan and schedule provided in the Year 5 Annual Report.

DCR will track and estimate the nitrogen removal for structural BMPs listed in MS4 Permit Table 3 of Attachment 1 to Appendix H that are already existing or installed in the regulated area. DCR will document in each Annual Report the BMP type, total area treated by the BMP, the design storage volume of the BMP, and the estimated nitrogen removed in mass per year by the BMP.

Responsible Department/Parties:

- Design and Engineering

Measurable Goal(s):

- Document in each Annual Report the BMP type, total area treated by the BMP, the design storage volume of the BMP, and the estimated nitrogen removed in mass per year for existing or installed BMPs.
- Complete list of planned structural BMPs and implementation schedule within five years of permit effective date (by June 30, 2023)
- Plan and install at least one structural BMP within six years of the permit effective date (by June 30, 2024)

Bacteria/Pathogens Impaired Waterbodies/ TMDLs

Applicable Waterbodies

The following waterbodies receive discharges from DCR regulated facilities and are water quality limited due to bacteria or pathogens (as of the most recent 303d list) and/or have a TMDL for bacteria/pathogens[7] that was approved prior to the issuance of the 2016 MS4 Permit. There were 16 approved bacteria (fecal coliform bacteria) or mixed pathogen (fecal coliform, E. coli, and/or enterococcus bacteria) TMDLs for certain waterbodies in Massachusetts when the 2016 MS4 Permit was issued. Discharges to these waterbodies are subject to the provisions of MS4 Permit Appendix F at Part A.III for those with approved TMDLs at the time of permit issuance, and Appendix H Part III for waterbodies that are water quality limited but for which a TMDL has not been developed at the time of permit issuance. DCR has a watershed GIS layer that has been developed to determine if a receiving waterbody falls within a TMDL watershed.

Receiving Waterbody	Segment ID	Receiving Waterbody	Segment ID
Aberjona River	MA71-01	Lake Cochituate	MA82125
Alewife Brook	MA71-20	Lake Quinsigamond	MA51125
Beaver Brook	MA72-28	Lower Pond	MA93044
Beaver Brook	MA62-09	Lynn Harbor	MA93-52
Bennetts Pond Brook	MA93-48	Lynn Harbor	MA93-53
Blackstone River	MA51-05	Malden River	MA71-05
Boston Inner Harbor	MA70-02	Merrimack River	MA84A-01
Cape Cod Canal	MA95-14	Merrimack River	MA84A-03
Charles River	MA72-07	Merrimack River	MA84A-06
Charles River	MA72-31	Middle River	MA51-02
Charles River	MA72-33	Mill Brook	MA71-07
Charles River	MA72-36	Mill River	MA93-31
Charles River	MA72-38	Miller Brook	MA32-27
Connecticut River	MA34-04	Mine Brook	MA72-14
Dorchester Bay	MA70-03	Mother Brook	MA73-28
Ell Pond	MA71014	Muddy River	MA72-11
Furnace Brook	MA74-10	Mystic River	MA71-02
Gloucester Harbor	MA93-18	Mystic River	MA71-03
Hammond Pond	MA72044	Nahant Bay	MA93-24
Hull Bay	MA70-09	Neponset River	MA73-02

[7] Final bacteria or pathogen TMDLs can be found here: http://www.mass.gov/eea/agencies/massdep/water/watersheds/total-maximum-daily-loads-tmdls.html

Receiving Waterbody	Segment ID	Receiving Waterbody	Segment ID
Jamaica Pond	MA72052	Neponset River	MA73-03
Neponset River	MA73-04	Shawsheen River	MA83-19
Outer New Bedford Harbor	MA95-63	Spicket River	MA84A-10
Pine Tree Brook	MA73-29	Stony Brook	MA72-37
Pleasure Bay	MA70-11	Taunton River	MA62-04
Plymouth Harbor	MA94-16	Unnamed Tributary	MA71-13
Ponkapoag Pond	MA73043	Unnamed Tributary	MA72-32
Ponkapoag Brook	MA73-27	Upper Mystic Lake	MA71043
Quincy Bay	MA70-04	Weir River	MA74-11
Quincy Bay	MA70-05	West Meadow Pond	MA62208
Russell Mill Pond	MA73003	Weymouth Back River	MA74-13
Saugus River	MA93-35	Weymouth Fore River	MA74-14
Saugus River	MA93-44	White Brook	MA32-28
Sawmill Brook	MA72-23		

Enhanced BMPs

The following table summarizes the Enhanced BMPs, as described in the SWMP above, that DCR will implement to meet MS4 Permit Appendix F and Appendix H requirements for discharge to bacteria/pathogen impaired waterbodies.

Requirements	Enhanced BMPs
Supplement public education program with an annual message encouraging the proper management of pet waste	BMP 1-1 Social Media Public Service Messages • Summer message about dog waste management BMP 1-4 Dog Waste Management • Dog waste management messages at DCR properties that are frequented by dog walkers
Disseminate educational materials to dog owners at the time of issuance or renewal of a dog license, or other appropriate time	BMP 1-4 Dog Waste Management • Dog waste management brochure with dog walker licenses
Provide information to owners of septic systems about proper maintenance in any catchment that discharges to a water body impaired for bacteria or pathogens	BMP 6-2 Written Operation and Maintenance Procedures • Develop and implement O&M procedures for DCR-owned septic systems
Designate catchments draining to any waterbody impaired for bacteria/pathogens as either Problem Catchments or High Priority in implementation of the IDDE Program.	BMP 3-1 Written IDDE Program • Outfalls discharging to waterbodies impaired for or with a TMDL for bacteria or pathogens will be categorized as Problem or High Priority.

Chloride Impaired Waterbodies

Applicable Waterbodies

The following waterbodies receive discharge from DCR's MS4 regulated facilities and are water quality limited due to chloride (as of the most recent 303d list). DCR discharges to these waterbodies are subject to the provisions of MS4 Permit Appendix H Part IV. Additionally, DCR has a watershed GIS layer that has been developed to determine if a receiving waterbody falls within a TMDL watershed.

Receiving Waterbodies	Segment ID
Aberjona River	MA71-01
Alewife Brook	MA71-20
Beaver Brook	MA72-28
Dark Brook	MA51-16
Little River	MA71-21
Sawmill Brook	MA72-23

Enhanced BMPs

The following table summarizes the Enhanced BMPs, as described in the SWMP above, that DCR will implement to meet Appendix H requirements for discharge to chloride impaired waterbodies.

Requirements	Enhanced BMPs
Include an annual message in November/December to private road salt applicators and commercial industrial site owners on the proper storage and application rates of winter deicing material, along with the steps that can be taken to minimize salt use and protect local waterbodies	Since DCR is responsible for their own road salt application, this enhanced BMP is not applicable.

Additional BMPs

DCR will implement the following BMPs to address chloride impairments.

BMP 7-7 Salt Reduction Plan

Description:

DCR developed a Salt Reduction Plan that includes specific actions designed to achieve salt reduction on DCR roads and facilities that discharge to the chloride-impaired waterbodies listed above. DCR completed the salt reduction plan within three years of the permit effective date (June 30, 2021) and fully implemented the Salt Reduction Plan within five years of the permit effective date (June 30, 2023).

The Salt Reduction Plan includes planned activities for salt reduction on DCR owned and maintained surfaces, including but not limited to:

- Operational changes such as pre-wetting, pre-treating the salt stockpile, increasing plowing prior to de-icing, monitoring of road surface temperature, etc.;
- Implementation of new or modified equipment providing pre-wetting capability, better calibration rates, or

other capability for minimizing salt use;
- Training for DCR staff and/or contractors engaged in winter maintenance activities;
- Adoption of guidelines for application rates for road and parking lots;
- Regular calibration of spreading equipment;
- Designation of no-salt and/or low salt zones;
- Measures to prevent exposure of salt stockpiles (if any) to precipitation and runoff; and
- Estimate of the total tonnage of salt reduction expected by each activity.

DCR submitted the Salt Reduction Plan to EPA along with the annual report following completion of the Plan. Each subsequent annual report will include an update on Plan implementation progress and any updates to the Salt Reduction Plan. DCR will also track types and amount of salt applied to DCR owned and maintained surfaces which discharge to these chloride impaired waterbodies and will report salt use beginning in the year of the completion of the Salt Reduction Plan in DCR's annual reports. DCR will continue to review if new Salt Reduction Plans are needed for new waterbody segments when the 303(d) list is updated.

Responsible Department/Parties:

- Operations

Measurable Goal(s):

- Complete the Salt Reduction Plan within three years of the permit effective date (by June 30, 2021).
- Fully implement the Salt Reduction Plan within five years of the permit effective date (by June 30, 2023).
- Track and report on types and amounts of salt applied in annual reports.
- Created new Salt Reduction Plans based on 2018/2020 and 2022 303(d) lists by February 7, 2025 and February 7, 2026, respectively.

Solids, Oil and Grease (Hydrocarbons), or Metals Impaired Waterbodies

Applicable Waterbodies

The following waterbodies receive discharges from DCR regulated facilities and are water quality limited due to solids, oil and grease (hydrocarbons), or metals (as of the most recent 303d list). Discharges to these waterbodies are subject to the provisions of MS4 Permit Appendix H Part V. Additionally, DCR has a watershed GIS layer that has been developed to determine if a receiving waterbody falls within a TMDL watershed.

Receiving Waterbody	Segment ID
Middle River	MA51-02
Blackstone River	MA51-05
Ell Pond	MA71014
Mystic River	MA71-03
Malden River	MA71-05
Alewife Brook	MA71-20
Muddy River	MA72-11
Charles River	MA72-36
Charles River	MA72-38

Receiving Waterbody	Segment ID
Neponset River	MA73-02
Neponset River	MA73-03
Neponset River	MA73-04
Pine Tree Brook	MA73-29
Spicket River	MA84A-10
Saugus River	MA93-44
Outer New Bedford Harbor	MA95-63
Unnamed Tributary	MA72-31
North Nashua River	MA81-02

Enhanced BMPs

The following table summarizes the enhanced BMPs, as described in this SWMP, that DCR will implement to meet MS4 Permit Appendix F and H requirements for discharge to waterbodies impaired for solids, oil and grease, and metals.

Requirements	Enhanced BMPs
Stormwater management systems designed on commercial and industrial land use area draining to the water quality limited water body shall incorporate designs that allow for shutdown and containment where appropriate to isolate the system in the event of an emergency spill or other unexpected event	BMP 5-1 DCR Stormwater Handbook • The revised DCR Stormwater Handbook will include requirements for pretreatment and system isolation for stormwater systems at DCR facilities with potentially high pollutant loading rates, such as labor yards, that discharge to waterbodies impaired for solids, oil and grease, or metals.
Increase paved road and parking lot sweeping frequency to a schedule determined by the permittee to target areas with potential for high pollutant loads. Include street sweeping schedule in annual report.	BMP 6-6 Street and Parking Lot Sweeping • For paved roads and parking lots within catchments to waterbodies impaired for solids, DCR will sweep a minimum of twice per year (fall and spring). • DCR will also sweep more frequently in areas with land uses that generate higher sediment loading and/or where catch basin inspections indicate higher loading rates.
Prioritize inspection and maintenance for catch basins to ensure that no sump shall be more than 50 percent full. Clean catch basins more frequently if inspection and maintenance activities indicate excessive sediment or debris loadings	BMP 6-5 Catch Basin Cleaning • DCR will optimize catch basin cleaning to prioritize catch basins located near construction activities and ensure that no catch basin will be more than 50 percent full. If a catch basin sump is more than 50 percent full during two consecutive routine inspections/cleaning events, DCR will document that finding, investigate the contributing drainage area for sources of excessive sediment loading, and to the extent practicable, abate contributing sources.

Annual Evaluation

This section will be updated annually as annual reports are completed.

Link to DCR Stormwater Management Website
DCR Stormwater Management | Mass.gov

Year 1 Annual Report
https://www3.epa.gov/region1/npdes/stormwater/ma/reports/2019/dcr-ma-ar19.pdf

Year 2 Annual Report
https://www3.epa.gov/region1/npdes/stormwater/ma/reports/2020/dcr-ma-ar20.pdf

Year 3 Annual Report
Year 3 Annual Report: Massachusetts Small MS4 General Permit - DCR, MA (epa.gov)

Year 4 Annual Report
https://www.mass.gov/doc/dcr-stormwater-management-annual-report-py4/download

Year 5 Annual Report
https://www.mass.gov/doc/dcr-stormwater-management-annual-report-py5/download

Appendix A: List of Receiving Waters

List of Receiving Waters for Regulated Outfalls and Interconnections

Receiving Water	Waterbody IDs	Number of Regulated Outfalls and Interconnections	Impaired For:
Aberjona River	MA71-01	19	Ammonia, Un-ionized; Arsenic In Sediment; Benthic Macroinvertebrates; Chloride; Dissolved Oxygen; Fish Bioassessments; Phosphorus, Total; Physical Substrate Habitat Alterations; Sediment Bioassay [Chronic Toxicity Freshwater]; Escherichia Coli (E. Coli)
Alewife Brook	MA71-20	22	Debris; Flocculant Masses; Odor; Oil And Grease; Scum/foam; Transparency / Clarity; Trash; Pcbs In Fish Tissue; Chloride; Copper In Sediment; Dissolved Oxygen; Lead In Sediment; Phosphorus, Total; Sediment Bioassay [Chronic Toxicity Freshwater]; Water Chestnut; Enterococcus; Escherichia Coli (E. Coli)
Ashland Reservoir	MA82003	12	Mercury In Fish Tissue; Non-native Aquatic Plants
Beaver Brook	MA62-09	8	Escherichia Coli (E. Coli); Fecal Coliform
Beaver Brook	MA72-28	11	Algae; Chloride; Dissolved Oxygen; Flow Regime Modification; Organic Enrichment (Sewage) Biological Indicators; Other Anthropogenic Substrate Alterations; Phosphorus, Total; Sedimentation/siltation; Water Chestnut; Escherichia Coli (E. Coli)
Bennetts Pond Brook	MA93-48	37	Escherichia Coli (E. Coli); Fecal Coliform
Blackstone River	MA51-05	5	Algae; Aquatic Plants (Macrophytes); Non-native Aquatic Plants; Nutrient/eutrophication Biological Indicators; Odor; Phosphorus, Total; Turbidity; Benthic Macroinvertebrates; Cadmium; Copper; Flow Regime Modification; Lead; Polychlorinated Biphenyls (Pcbs); Total Suspended Solids (Tss); Escherichia Coli (E. Coli)
Blackstone River	MA51-06	1	Flow Regime Modification; Cadmium; Copper; DDT in Fish Tissue; Escherichia Coli (E. Coli); Fish Bioassessments; Lead; PCBs in Fish Tissue; Phosphorus, Total; Total Suspended Solids (TSS)
Blue Hill River	MA74-25	5	Outfall Discharges to an unnamed tributary that nas not been assessed for impairments
Boston Inner Harbor	MA70-02	8	Cause Unknown [Contaminants In Fish And/or Shellfish]; Pcbs In Fish Tissue; Dissolved Oxygen; Enterococcus; Fecal Coliform
Cape Cod Canal	MA95-14	1	Fecal Coliform
Charles River	MA72-07	50	Curly-leaf Pondweed; Eurasian Water Milfoil, Myriophyllum Spicatum; Harmful Algal Blooms; Water Chestnut; Ddt In Fish Tissue; Pcbs In Fish Tissue; Benthic Macroinvertebrates; Fish Bioassessments; Fish Passage Barrier; Flow Regime Modification; Nutrient/eutrophication Biological Indicators; Phosphorus, Total; Temperature; Escherichia Coli (E. Coli)
Charles River	MA72-33	4	Nutrient/eutrophication Biological Indicators; Physical Substrate Habitat Alterations; Escherichia Coli (E. Coli)

Charles River	MA72-36	230	Harmful Algal Blooms; Oil And Grease; Transparency / Clarity; Ddt In Fish Tissue; Pcbs In Fish Tissue; Chlorophyll-a; Dissolved Oxygen; Fish Bioassessments; Fish Passage Barrier; Flow Regime Modification; Non-native Fish/shellfish/zooplankton; Nutrient/eutrophication Biological Indicators; Ph, High; Phosphorus, Total; Sediment Bioassay [Acute Toxicity Freshwater]; Unspecified Metals In Sediment; Water Chestnut; Escherichia Coli (E. Coli)
Charles River	MA72-38	94	Harmful Algal Blooms; Odor; Oil And Grease; Transparency / Clarity; Ddt In Fish Tissue; Pcbs In Fish Tissue; Cause Unknown [Sediment Screening Value (Exceedance)]; Chlorophyll-a; Combined Biota/habitat Bioassessments; Dissolved Oxygen; Dissolved Oxygen Supersaturation; Fish Passage Barrier; Flow Regime Modification; Nutrient/eutrophication Biological Indicators; Phosphorus, Total; Salinity; Temperature; Escherichia Coli (E. Coli)
Chicopee Reservoir	MA36033	3	Non-native Aquatic Plants
Coachlace Pond	MA81019	1	Curly-leaf Pondweed; Hydrilla; Non-native Aquatic Plants
Connecticut River	MA34-04	2	Pcbs In Fish Tissue; Water Chestnut; Escherichia Coli (E. Coli)
Dark Brook	MA51-16	3	Benthic Macroinvertebrates; Chloride; Fanwort; Escherichia Coli (E. Coli)
Dorchester Bay	MA70-03	34	Cause Unknown [Contaminants In Fish And/or Shellfish]; Pcbs In Fish Tissue; Enterococcus; Fecal Coliform
Dunn Pond	MA35021	4	Outfall Discharges to an unnamed tributary that nas not been assessed for impairments
Ell Pond	MA71014	4	Harmful Algal Blooms; Phosphorus, Total; Total Suspended Solids (Tss); Transparency / Clarity; Chlorophyll-a; Fecal Coliform
Fellsmere Pond	MA71016	8	Harmful Algal Blooms
Flint Pond	MA51188	3	Aquatic Plants (Macrophytes); Nutrient/eutrophication Biological Indicators; Eurasian Water Milfoil, Myriophyllum Spicatum; Fanwort; Non-native Aquatic Plants
Furnace Brook	MA74-10	55	Benthic Macroinvertebrates; Dissolved Oxygen; Escherichia Coli (E. Coli)
Gloucester Harbor	MA93-18	2	Combined Biota/habitat Bioassessments; Dissolved Oxygen; Enterococcus; Fecal Coliform
Hammond Pond	MA72044	5	Outfall Discharges to an unnamed tributary that nas not been assessed for impairments
Hoosicwhisick Pond	MA74015	18	Outfall Discharges to an unnamed tributary that nas not been assessed for impairments
Hull Bay	MA70-09	1	Cause Unknown [Contaminants In Fish And/or Shellfish]; Pcbs In Fish Tissue; Estuarine Bioassessments; Fecal Coliform
Jamaica Pond	MA72052	16	Dissolved Oxygen; Eurasian Water Milfoil, Myriophyllum Spicatum; Phosphorus, Total
Lake Cochituate	MA82020	1	Pcbs In Fish Tissue; Dissolved Oxygen; Eurasian Water Milfoil, Myriophyllum Spicatum

Lake Cochituate	MA82125	5	Pcbs In Fish Tissue; Asian Clam; Curly-leaf Pondweed; Dissolved Oxygen; Eurasian Water Milfoil, Myriophyllum Spicatum; Non-native Aquatic Plants
Lake Quinsigamond	MA51125	22	Algae; Curly-leaf Pondweed; Dissolved Oxygen; Eurasian Water Milfoil, Myriophyllum Spicatum; Fanwort; Non-native Aquatic Plants; Water Chestnut; Enterococcus
Lower Mystic Lake	MA71027	18	Ddt In Fish Tissue; Pcbs In Fish Tissue; Dissolved Oxygen; Hydrogen Sulfide; Salinity; Sediment Bioassay [Chronic Toxicity Freshwater]
Lower Pond	MA93044	7	Outfall Discharges to an unnamed tributary that nas not been assessed for impairments
Lynn Harbor	MA93-52	30	Enterococcus; Fecal Coliform
Lynn Harbor	MA93-53	89	Fecal Coliform
Malden River	MA71-05	21	Debris; Flocculant Masses; Odor; Oil And Grease; Scum/foam; Transparency / Clarity; Trash; Chlordane In Fish Tissue; Ddt In Fish Tissue; Pcbs In Fish Tissue; Dissolved Oxygen; Dissolved Oxygen Supersaturation; Ph, High; Phosphorus, Total; Sediment Bioassay [Chronic Toxicity Freshwater]; Temperature; Total Suspended Solids (Tss); Water Chestnut; Enterococcus; Escherichia Coli (E. Coli); Fecal Coliform
Merrimack River	MA84A-01	39	Mercury In Fish Tissue; Fish Passage Barrier; Escherichia Coli (E. Coli); Fecal Coliform
Merrimack River	MA84A-03	4	Mercury In Fish Tissue; Fish Passage Barrier; Pcbs In Fish Tissue; Phosphorus, Total; Escherichia Coli (E. Coli)
Merrimack River	MA84A-06	2	Pcbs In Fish Tissue; Enterococcus; Fecal Coliform
Middle River	MA51-02	2	Debris; Trash; Turbidity; Benthic Macroinvertebrates; Non-native Aquatic Plants; Nutrient/eutrophication Biological Indicators; Physical Substrate Habitat Alterations; Escherichia Coli (E. Coli)
Mill Brook	MA71-07	1	Benthic Macroinvertebrates; Fish Bioassessments; Physical Substrate Habitat Alterations; Escherichia Coli (E. Coli)
Mill River	MA93-31	2	Turbidity; Dissolved Oxygen; Escherichia Coli (E. Coli); Fecal Coliform
Miller Brook	MA32-27	4	Escherichia Coli (E. Coli)
Mine Brook	MA72-14	2	Habitat Assessment; Temperature; Escherichia Coli (E. Coli)
Mother Brook	MA73-28	20	Color; Debris; Odor; Trash; Ddt In Fish Tissue; Mercury In Fish Tissue; Pcbs In Fish Tissue; Dissolved Oxygen; Flow Regime Modification; Phosphorus, Total; Escherichia Coli (E. Coli); Fecal Coliform
Muddy River	MA72-11	96	Odor; Oil And Grease; Turbidity; Ddt In Fish Tissue; Pcbs In Fish Tissue; Bottom Deposits; Dissolved Oxygen; Flow Regime Modification; Non-native Aquatic Plants; Phosphorus, Total; Physical Substrate Habitat Alterations; Unspecified Metals In Sediment; Escherichia Coli (E. Coli)

Mystic River	MA71-02	140	Harmful Algal Blooms; Transparency / Clarity; Water Chestnut; Chlordane In Fish Tissue; Ddt In Fish Tissue; Pcbs In Fish Tissue; Arsenic; Chlorophyll-a; Dissolved Oxygen; Dissolved Oxygen Supersaturation; Eurasian Water Milfoil, Myriophyllum Spicatum; Ph, High; Phosphorus, Total; Sediment Bioassay [Chronic Toxicity Freshwater]; Enterococcus; Escherichia Coli (E. Coli)
Mystic River	MA71-03	8	Flocculant Masses; Odor; Oil And Grease; Scum/foam; Cause Unknown [Contaminants In Fish And/or Shellfish; Sediment Screening Value (Exceedance)]; Pcbs In Fish Tissue; Ammonia, Un-ionized; Dissolved Oxygen; Nutrient/eutrophication Biological Indicators; Petroleum Hydrocarbons; Enterococcus; Fecal Coliform
Nahant Bay	MA93-24	15	Enterococcus; Fecal Coliform
Neponset River	MA73-02	47	Debris; Flocculant Masses; Oil And Grease; Scum/foam; Trash; Turbidity; Ddt In Fish Tissue; Pcbs In Fish Tissue; Dissolved Oxygen; Fish Passage Barrier; Metals; Unspecified Metals In Sediment; Escherichia Coli (E. Coli); Fecal Coliform
Neponset River	MA73-03	42	Debris; Flocculant Masses; Oil And Grease; Scum/foam; Trash; Ddt In Fish Tissue; Pcbs In Fish Tissue; Curly-leaf Pondweed; Fish Passage Barrier; Metals; Pcbs In Sediment; Polychlorinated Biphenyls (Pcbs); Unspecified Metals In Sediment; Enterococcus; Escherichia Coli (E. Coli); Fecal Coliform
Neponset River	MA73-04	29	Debris; Trash; Turbidity; Cause Unknown [Contaminants In Fish And/or Shellfish]; Pcbs In Fish Tissue; Enterococcus; Fecal Coliform
Old Quincy Reservoir	MA74017	4	Outfall Discharges to an unnamed tributary that nas not been assessed for impairments
Outer New Bedford H	MA95-63	3	Pcbs In Fish Tissue; Dissolved Oxygen; Nitrogen, Total; Enterococcus; Fecal Coliform
Pequot Pond	MA32055	1	Chlorophyll-a; Curly-leaf Pondweed; Dissolved Oxygen; Eurasian Water Milfoil, Myriophyllum Spicatum; Non-native Aquatic Plants; Phosphorus, Total; Water Chestnut; Enterococcus
Pine Tree Brook	MA73-29	22	Aquatic Plants (Macrophytes); Turbidity; Dissolved Oxygen; Physical Substrate Habitat Alterations; Escherichia Coli (E. Coli); Fecal Coliform
Pleasure Bay	MA70-11	1	Cause Unknown [Contaminants In Fish And/or Shellfish]; Pcbs In Fish Tissue; Fecal Coliform
Plymouth Harbor	MA94-16	6	Estuarine Bioassessments; Fecal Coliform
Ponkapoag Pond	MA73043	3	Mercury In Fish Tissue; Eurasian Water Milfoil, Myriophyllum Spicatum; Fanwort; Non-native Aquatic Plants
Ponkapog Brook	MA73-27	5	Escherichia Coli (E. Coli); Fecal Coliform
Quincy Bay	MA70-04	29	Cause Unknown [Contaminants In Fish And/or Shellfish]; Pcbs In Fish Tissue; Enterococcus; Fecal Coliform
Quincy Bay	MA70-05	9	Cause Unknown [Contaminants In Fish And/or Shellfish]; Pcbs In Fish Tissue; Enterococcus; Fecal Coliform
Russell Millpond	MA94132	3	Algae; Dissolved Oxygen

Sales Creek	MA71-12	9	Outfall Discharges to an unnamed tributary that nas not been assessed for impairments
Saugus River	MA93-35	5	Alteration In Stream-side Or Littoral Vegetative Covers; Benthic Macroinvertebrates; Dewatering; Fish Passage Barrier; Escherichia Coli (E. Coli); Fecal Coliform
Saugus River	MA93-44	1	Oil And Grease; Flow Regime Modification; Temperature; Enterococcus; Fecal Coliform
Sawmill Brook	MA72-23	24	Organic Enrichment (Sewage) Biological Indicators; Chloride; Dissolved Oxygen; Phosphorus, Total; Escherichia Coli (E. Coli)
Shawsheen River	MA83-19	1	Benthic Macroinvertebrates; Curly-leaf Pondweed; Fish Passage Barrier; Escherichia Coli (E. Coli); Fecal Coliform
Spicket River	MA84A-10	1	Debris; Trash; Ddt In Fish Tissue; Mercury In Fish Tissue; Benthic Macroinvertebrates; Copper; Fish Passage Barrier; Nutrients; Physical Substrate Habitat Alterations; Escherichia Coli (E. Coli)
Spot Pond	MA71039	33	Outfall Discharges to an unnamed tributary that nas not been assessed for impairments
Spot Pond Brook	MA71-17	14	Outfall Discharges to an unnamed tributary that nas not been assessed for impairments
Stearns Pond	MA92061	3	Outfall Discharges to an unnamed tributary that nas not been assessed for impairments
Stony Brook	MA72-37	40	Outfall Discharges to an unnamed tributary that nas not been assessed for impairments
Taunton River	MA62-02	1	Chlorophyll-a; Nitrogen, Total; Phosphorus, Total; Enterococcus; Fecal Coliform
Taunton River	MA62-04	7	Dissolved Oxygen; Fish Bioassessments; Nitrogen, Total; Enterococcus; Fecal Coliform
Town River Bay	MA74-15	1	Cause Unknown [Contaminants In Fish And/or Shellfish]; Pcbs In Fish Tissue; Dissolved Oxygen; Enterococcus; Fecal Coliform
Unnamed Tributary	MA71-13	3	Escherichia Coli (E. Coli)
Unnamed Tributary	MA72-31	1	Bottom Deposits; Debris; Flocculant Masses; Odor; Oil And Grease; Scum/foam; Trash; Turbidity; Habitat Assessment; Petroleum Hydrocarbons; Polychlorinated Biphenyls (Pcbs); Polycyclic Aromatic Hydrocarbons (Pahs) (Aquatic Ecosystems); Sedimentation/siltation; Unspecified Metals In Sediment
Unnamed Tributary	MA72-32	5	Escherichia Coli (E. Coli)
Upper Mystic Lake	MA71043	10	Curly-leaf Pondweed; Dissolved Oxygen; Dissolved Oxygen Supersaturation; Enterococcus
Wachusett Reservoir	MA81147	5	Mercury In Fish Tissue; Brittle Naiad, Najas Minor; Eurasian Water Milfoil, Myriophyllum Spicatum; Fanwort; Non-native Aquatic Plants
Weir River	MA74-11	5	Cause Unknown [Contaminants In Fish And/or Shellfish]; Pcbs In Fish Tissue; Fecal Coliform
West Meadow Pond	MA62208	1	Non-native Aquatic Plants
Westfield River	MA32-07	14	Outfall Discharges to an unnamed tributary that nas not been assessed for impairments
Weymouth Back Rive	MA74-13	11	Cause Unknown [Contaminants In Fish And/or Shellfish]; Pcbs In Fish Tissue; Fecal Coliform

Weymouth Fore Rive	MA74-14	4	Cause Unknown [Contaminants In Fish And/or Shellfish]; Pcbs In Fish Tissue; Enterococcus; Fecal Coliform
White Brook	MA32-28	2	Escherichia Coli (E. Coli)
Winthrop Bay	MA70-10	4	Cause Unknown [Contaminants In Fish And/or Shellfish]; Pcbs In Fish Tissue; Enterococcus; Fecal Coliform
<Null>	Ocean	29	Outfall Discharges to an unnamed tributary that nas not been assessed for impairments
<Null>	ULT_MA34-27	2	Outfall Discharges to an unnamed tributary that nas not been assessed for impairments
<Null>	ULT_MA52-03	1	Outfall Discharges to an unnamed tributary that nas not been assessed for impairments
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<Null>	ULT_MA73-02	1	Outfall Discharges to an unnamed tributary that nas not been assessed for impairments

Appendix B: Endangered Species Act Eligibility Documentation

dcr
Massachusetts

May 15, 2019

Newton Tedder
U.S. EPA Region 1
5 Post Office Square
Boston, MA 02109-3912

Re: Massachusetts Department of Conservation and Recreation
Addendum to MS4 Notice of Intent: Endangered Species Act and National Historic Preservation Act Eligibility Determination

Dear Mr. Tedder:

The Massachusetts Department of Conservation and Recreation (DCR) submitted its Notice of Intent (NOI) for coverage under the Massachusetts MS4 General Permit on September 28, 2018. At that time, DCR had not yet completed its review and determination of eligibility with the Endangered Species Act (ESA) and the National Historic Preservation Act (NHPA). DCR has since completed its review and has determined that it is eligible for MS4 Permit coverage under ESA Criterion B and NHPA Criterion A. The following sections summarize the review and determinations.

Endangered Species Act (ESA) Eligibility Determination

DCR completed the ESA eligibility process outlined in the MS4 Permit Appendix C. According to the U.S. Fish & Wildlife Service (USFWS) Information for Planning and Consultation (IPaC) tool, DCR properties within the MS4 regulated area contain potential habitat for Northern Long-eared Bat, Piping Plover, Red Knot, Roseate Tern, Plymouth Redbelly Turtle, Dwarf Wedgemussel, Rusty Patched Bumble Bee, Small Whorled Pogonia, American Chaffseed, and Sandplain Gerardia.

All projects undertaken by DCR, including upgrades to stormwater management systems, are coordinated with the Massachusetts Natural Heritage and Endangered Species Program (NHESP) when they occur within known protected species habitat. Recommendations from the NHESP to avoid impact to a protected species are incorporated into the project. These efforts extend to the operation of DCR's MS4 system for compliance with the ESA.

In a letter dated September 24, 2018, USFWS issued a determination that stormwater discharge activities associated with the 2016 MS4 Permit may affect, but are not likely to adversely affect, certain species listed under the ESA when specific conditions are met. A copy of the USFWS letter is enclosed.

As stipulated in the above referenced USFWS letter, DCR confirms that the following conditions are true:

1. All stormwater discharges are pre-existing or previously permitted by EPA;
2. Any planned operations and maintenance work covered by this permit will only affect previously disturbed areas where stormwater controls are already installed. In these situations, the chance of encountering any of the subject species is discountable;
3. The project implements EPA MS4 Best Management Practices (BMPs) and meets Clean Water Act and Massachusetts Water Quality Standards. Although permitted discharges may reach the environment used by these species, BMPs reduce pollutants to the extent that discharges are not known to have measurable impacts on these species or their habitat;
4. No new construction or structural BMPs are proposed under this permit at this time; and
5. DCR agrees that if, during the course of the permit term, DCR plans to install a structural BMP not identified in the NOI, DCR will re-initiate consultation with the USFWS, as necessary.

In accordance with the ESA eligibility process outlined in the MS4 Permit Appendix C, DCR certifies permit eligibility with the ESA under **Criterion B**. The enclosed letter from USFWS documents written concurrence by USFWS in place of a concurrence letter for informal consultation.

USFWS Criterion B: *In the course of formal or informal consultation with the Fish and Wildlife Service, under section 7 of the ESA, the consultation resulted in either a no jeopardy opinion (formal consultation) or a written concurrence by USFWS on a finding that the stormwater discharges and discharge related activities are "not likely to adversely affect" listed species or critical habitat (informal consultation).*

National Historic Preservation Act (NHPA) Eligibility Determination

As an existing facility authorized under the 2003 MS4 Permit, DCR certified eligibility with the NHPA as part of DCR's NOI in 2006. For parcels acquired by DCR since 2006, DCR assessed potential impacts on properties that are listed on, or eligible for listing on, the National Register of Historic Places. The following newly acquired DCR parcels within the urbanized area are listed on, or eligible for listing on, the National Register of Historic Places.

- Major Willard Moore Memorial Park (Moore State Park National Register Historic District)
- Norwottuck Rail Trail (Hadley Center National Register Historic District)
- Blackstone River and Canal Heritage State Park (Blackstone Canal National Register Historic District)

DCR determined that operation of its MS4 system does not have the potential to cause effects on historic properties. DCR does not plan to undertake any activity involving subsurface land disturbance less than an acre in the vicinity of historic properties. If, during the course of the permit term, DCR plans to undertake subsurface land disturbance less than an acre in the vicinity

of a historic property, DCR will assess the potential for the activity to affect the historic property and will consult with the Massachusetts Historical Commission as appropriate.

In accordance with the NHPA eligibility process outlined in the MS4 Permit Appendix D, DCR certifies permit eligibility with the NHPA under **Criterion A.**

NHPA Criterion A: *The discharges do not have the potential to cause effects on historic properties.*

Sincerely,

Robert Lowell

Deputy Chief Planning and Engineering

Acting Chief Engineer

CC: Caroline Hampton (VHB)

Encl: US Fish & Wildlife Service letter re ESA eligibility determination, September 24, 2018

Appendix C: Street Design/Parking Lot Guideline and LID Assessment

Memorandum

To: Robert Lowell, DCR
Division of Engineering
251 Causeway Street
Boston, MA 02114

Date: June 17, 2022
Updated June 12, 2023
Project #: 15722.00

From: Caroline Hampton

Re: PY4 Street Design/ Parking Lot Guideline and LID Assessment

The NPDES MA MS4 general permit requires that municipalities, including non-traditional permittees like DCR, review street design and parking lot guidelines to ensure they are supporting Low Impact Design (LID) options during development. If the assessment identifies recommendations for improvements a schedule must be set for implementing the recommendations. This memo provides an assessment of DCR's policies to meet the Permit Year 4 requirement.

Requirement

Section 2.3.6.b of the permit requires "*Within four (4) years of the effective date of this permit, the permittee shall develop a report assessing current street design and parking lot guidelines and other local requirements that affect the creation of impervious cover. This assessment shall be used to provide information to allow the permittee to determine if changes to design standards for streets and parking lots can be made to support low impact design options. If the assessment indicates that changes can be made, the assessment shall include recommendations and proposed schedules to incorporate policies and standards into relevant documents and procedures to minimize impervious cover attributable to parking areas and street designs. The permittee shall implement all recommendations, in accordance with the schedules, contained in the assessment. The local planning board and local transportation board should be involved in this assessment. This assessment shall be part of the SWMP. The permittee shall report in each annual report on the status of this assessment including any planned or completed changes to local regulations and guidelines*."

Since DCR is considered a non-traditional permittee, they are not subject to Section 2.3.6.c which requires "*Within four (4) years from the effective date of the permit, the permittee shall develop a report assessing existing local regulations to determine the feasibility of making, at a minimum, the following practices allowable when appropriate site conditions exist: i. Green roofs; ii. Infiltration practices such as rain gardens, curb extensions, planter gardens, porous and pervious pavements, and other designs to manage stormwater using landscaping and structured or augmented soils; and iii. Water harvesting devices such as rain barrels and cisterns, and the use of stormwater for non-potable uses. The assessment should indicate if the practices are allowed in the MS4 jurisdiction and under what circumstances are they allowed. If the practices are not allowed, the permittee shall determine what hinders the use of these practices, what changes in local regulations may be made to make them allowable, and provide a schedule for implementation of recommendations. The permittee shall implement all recommendations, in accordance with the schedules, contained in the assessment. The permittee shall report in each annual report on its findings and progress towards making the practices allowable.*" Nevertheless, the encouragement of these LID practices is important to DCR and so we included the review in this analysis.

DCR Assessment

As a public agency versus a municipality, DCR does not develop ordinances or regulations in a similar fashion as municipalities. DCR instead relies on master planning documents and professional standard practices, along with agency and public input during design, to guide the project development. Currently, consultants rely on standard

guidance documents such as MassDOT's Project Design and Development Guide (PDDG) for setting standards for streets and parking lot layout and design, with some specific design revisions for specific items (e.g. guardrail) to fit within the facility context and provide landscape consistency. This flexibility allows DCR to promote LID measures in the design.

DCR's Green Docket review, which is currently implemented for all projects which require filing under the Massachusetts Wetlands Protection Act (WPA), provides a thorough review of projects by a variety of DCR Departments at the permitting stage. The DCR Stormwater Group uses this review as an opportunity to make sure the projects are maximizing the use of LID measures.

DCR finalized a Stormwater Handbook in June 2022 which expands upon the requirements in the MassDEP Stormwater Handbook, encourages LID measures as a first step in stormwater design, and implements MS4 post-construction water quality requirements. The Stormwater Handbook is posted on DCR's website DCR Stormwater Handbook. Training was provided in 2023 to DCR project managers and staff including promoting LID measures. Inclusion of LID measures has been included in some of the project scope of works and also included as part of design reviews.

Recommendations

1. Annually, as needed, provide training to consultants and DCR staff on the DCR Stormwater Handbook to promote LID measures
2. Include promotion of LID measures in appropriate Request for Proposals scopes of work.
3. Discuss measures to include promoting LID measures in project design reviews for all capital projects.

Schedule

The table below provides a schedule for implementing this memo's recommendations.

Fiscal Year	Action
21-22	Finalize DCR Stormwater Handbook
22-23	Post Handbook on website, Provide training to consultants and staff, review success annually
23-24	Review success of promoting LID measures in projects as part of annual reporting
24-25	Review success of promoting LID measures in projects as part of annual reporting