



Stormwater Management Plan

City of Portland Maine

Department of Public Works
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RESPONSIBLE PARTIES

Title/ Position of Responsible Person	Role/Program Element(s)
Director of Public Works Supported by the Water Resource Manager, Compliance Section Coordinator, Stormwater Program Coordinators & Corporation Counsel	Overall Administration & Implementation of the SWMP, MS4 General Permit & Stormwater Ordinance
Stormwater Program Coordinators Supported by ISWG	MCM 1 (Public Education and Outreach) & MCM 2 (Public Participation)
Water Resource Manager Supported by the Compliance Section Coordinator, Stormwater Program Coordinators, Operations Manager, Asset Manager & Corporation Counsel	MCM 3 (IDDE Program, MS4 Maintenance & Planning, System Asset Mapping & Management)
Compliance Section Coordinator Supported by City Engineer, Development Review Manager, Development Review Coordinator, Stormwater Program Coordinators, Corporation Counsel & other City staff	MCM 4 (Stormwater Pollution Prevention for Development: Construction Phase)
Development Review Manager & City Engineer Supported by Compliance Section Coordinator, Stormwater Program Coordinators & Corporation Counsel	MCM 5 (Development Planning: Stormwater Management & Post-Construction Stormwater Management)
Compliance Section Coordinator Supported by the Stormwater Program Coordinator & multiple department heads and operations & facilities managers	MCM 6 (Pollution Prevention & Good Housekeeping for Municipal Operations & Facilities)
Director of Public Works Supported by the Water Resource Manager, Compliance Section Coordinator, Stormwater Program Coordinators & Engineering	Urban Impaired Stream Watershed Best Management Practices

In addition to the parties above, the City of Portland partners with the Cumberland County Soil and Water Conservation District on implementation of specific components of MCM 1 and MCM 2. The City cooperates with the Portland Water District on MCM 1 and MCM 3 implementation. As needed, the City communicates with Maine Department of Transportation and the Maine Turnpike Authority to coordinate on mapping measures and IDDE (MCM 3). City staff also periodically meet with and cooperate with the Interlocal Stormwater Working Group (Biddeford, Cape Elizabeth, Cumberland, Falmouth, Freeport, Gorham, Old Orchard Beach, Portland, Saco, Scarborough, South Portland, Southern Maine Community College, University of Southern Maine, Westbrook, Windham, and Yarmouth).

DEFINITIONS

Applicant - Means a municipality which files an NOI pursuant to Part III of the 2022 MS4 General Permit.

Best Management Practices (BMP) - Means schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of waters of the State. BMPs also include treatment requirements, operating procedures, and practices to control site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.

Catch basin evaluation - Means an inspection of a catch basin structure that includes documentation of water quality. Water quality evaluation includes, at a minimum, visual observations of sheen, discoloration, foaming, evidence of sanitary sewage, excessive algal growth, and similar visual indicators, as well as observations of odor and the depth of sediment in the sump. This evaluation may be conducted in conjunction with a routine cleaning event or separately, in order to determine which structure(s) require cleaning.

Commissioner - Means the Commissioner of the Maine Department of Environmental Protection.

Common Plan of Development or Sale - Means a subdivision under municipal law as determined by the municipality where the subdivision is located.

Compensation Fee Utilization Plan - Means a plan that specifies how funds received as a fee payment will be allocated to reduce the impact of stormwater pollution to an impaired waterbody.

Construction Activity - Means:

- Construction activity including one acre or more of disturbed area, or activity with less than one acre of total land area that is part of a common plan of development or sale, if the common plan of development or sale will ultimately disturb equal to or greater than one acre; or
- Any other construction activity designated by the Department based on the potential for contribution to a violation of a water quality standard or for significant contribution of pollutants to waters of the State.

Department (DEP) - Means the State of Maine Department of Environmental Protection.

Direct Discharge - The definition of “Direct Discharge” in the 2022 MS4 General Permit has been taken from Maine law 38 M.R.S. § 466 (“Definitions”) and is as follows: “any discernible, confined and discrete conveyance, including, but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation or vessel or other floating craft, from which pollutants are or may be discharged.”

Discharge - Means any spilling, leaking, pumping, pouring, emptying, dumping, disposing or other addition of pollutants to the Waters of the State (for the purpose of the 2022 MS4 General Permit, located within the permittee’s UA and not including groundwater.)

Discharge Point – For the purposes of the 2022 MS4 General Permit, the location where collected and concentrated stormwater flows are discharged from the facility such that the first receiving waterbody into which the discharge flows, either directly or through a separate storm sewer system, is a water of the State.

Disturbed Area - Means all land areas that are stripped, graded, grubbed, filled or excavated at any time during the site preparation or removing vegetation for, or construction of, a project. Cutting of trees, without grubbing, stump removal, disturbance or exposure of soil is not considered “disturbed area”. “Disturbed area” does not include routine maintenance but does include redevelopment and new impervious areas. “Routine maintenance” is maintenance performed to maintain the original line and grade, hydraulic capacity, and original purpose of the facility. Paving impervious gravel surfaces provided that an applicant or permittee can prove the original line and

grade and hydraulic capacity will be maintained and original purpose of the gravel surface remains the same is considered routine maintenance.

Dry Weather Flow - Means any observable flow from an outfall when there has not been measurable precipitation greater than 1/4 of an inch, or ice or snow melt within 72 hours prior to the outfall inspection.

Dry weather inspection - Means an inspection of an outfall that includes observations of sheen, discoloration, foaming, evidence of sanitary sewage, excessive algal growth, and similar visual indicators, as well as detection of odor. These inspections must be completed during a dry weather flow condition (when the storm sewer system is not impacted by current or recent precipitation) or when the outfall is not flowing even if it is within the 72 hours of precipitation greater than 1/4 of an inch, or ice or snow melt.

Education/outreach Campaign - Means a specific set of activities aimed at an identified target audience organized to achieve a particular goal. Campaigns are the totality of all the efforts and tools used to achieve the goal.

Education Outreach tool – A method used to deliver a message to a target audience. Messages may be printed materials such as brochures or newsletters; electronic materials such as websites or online ads; mass media such as newspaper articles or public service announcements (radio or television); or displays in public areas such as town/city hall.

Education Outreach to change behavior – Means to promote and reinforce desirable behaviors designed to reduce stormwater pollution.

Education/outreach Program - Means all the education and outreach campaigns and activities to meet minimum control measure 1 (MCM1) and may include activities in the other minimum control measures.

Illicit Discharge - Means any discharge to a regulated MS4 system that is not composed entirely of stormwater other than: discharges authorized pursuant to another permit issued pursuant to 38 M.R.S. §413; uncontaminated groundwater; water from a natural resource [such as a wetland]; or other Allowable Non-Stormwater Discharges identified in Part IV(C)(3)(h) of the 2022 MS4 General Permit.

Impaired Waterbody - Means a waterbody that is not attaining water quality criteria or standards, as determined by the Department.

Low impact development - “Low impact development” or “green infrastructure” means site planning and design strategies intended to replace or replicate predevelopment hydrology through the use of source control and relatively small-scale measures integrated throughout a site to disconnect impervious surfaces and enhance filtration, treatment, and management of stormwater runoff as close to its source as possible. Low impact development strategies may be either nonstructural or structural, except that low impact development strategies utilizing structural stormwater management techniques shall be limited to an impervious contributing drainage area equal to or less than 1 acre. Low impact development strategies include, but are not limited to: bioretention filters, grass swales and channels, vegetated filter strips, permeable pavements, rain gardens and vegetated rooftops.

Maintenance - “Maintenance” means an activity undertaken to maintain operating condition, original line and grade, hydraulic capacity, and original purpose of the project. Paving an impervious gravel surface at original line, grade and hydraulic capacity is considered maintenance. Replacement of a building is not considered maintenance of the building.

Message – Information distributed to a specific target audience.

Municipal Separate Storm Sewer Systems (MS4) - Means a conveyance or system of conveyances designed or used for collecting or conveying stormwater (other than a publicly owned treatment works (POTW), as defined at 40 CFR

122.2, or a combined sewer), including, but not limited to, roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, human-made channels or storm drains owned or operated by any municipality, sewer or sewage district, Maine Department of Transportation (MDOT), Maine Turnpike Authority (MTA), State agency or Federal agency or other public entity that discharges to waters of the State other than groundwater.

New development or construction - “New development or construction” means activity undertaken to develop property, including but not limited to: the construction of buildings, parking lots, roads and other new impervious surfaces; landscaping; and other activities that disturb land areas. New development or construction does not include redevelopment or maintenance. Permitted municipalities may define new development more stringently.

Notice of Intent (NOI) - Means a notification of intent to seek coverage under the 2022 MS4 General Permit and a permittee specific DEP Order as provided in Part III(A), made by the applicant to the Department on an NOI form(s) provided by the Department. This is also the mechanism used to request coverage under the 2022 MS4 General Permit and under a permittee specific DEP Order.

Outfall - Means the point source where the MS4 discharges from a pipe, ditch or other discrete conveyance to the waters of the state other than groundwater, or to another entity’s MS4, and does not include pipes, cross culverts, tunnels or other conveyances which connect segments of the same stream or other waters of the state and are used to convey waters of the state. For the purposes of the 2022 MS4 General Permit, a discharge to a location not defined as a water of the state is not considered an outfall.

Outreach to raise awareness – Means to introduce information that may be new to or not well understood by a target audience.

Permittee – Means a municipality that owns or operates the storm sewer system authorized under the 2022 MS4 General Permit.

Permittee Specific DEP Order – Means a document issued by the Department, following a formal public comment period, that establishes a list of required actions and corresponding schedules of compliance for a limited number of BMPs associated with the implementation of the GP.

Person - Means an individual, firm, corporation, municipality, quasi-municipal corporation, state agency, federal agency or other legal entity which creates, initiates, originates or maintains a discharge authorized by the 2022 MS4 General Permit.

Point source - See “**Direct Discharge**”. For the purposes of the 2022 MS4 General Permit, the definitions of “Point source” and “Direct Discharge” are identical.

Redevelopment - “Redevelopment” means an activity, not including maintenance, undertaken to redevelop or otherwise improve property in which the newly developed area is located within the same footprint as the existing developed area.

Regulated Small MS4 - Means any Small MS4 authorized by this General Permit or the general permits for the discharge of stormwater from MDOT and MTA small MS4s or state or federally owned or operated small MS4s including all those located partially or entirely within an UA. A list of these regulated small MS4s owned or operated by municipalities is included in Appendix A of the 2022 MS4 General Permit.

Small MS4 - Means any MS4 that is not already covered by the Phase I MS4 stormwater program including municipally owned or operated storm sewer systems, state or federally-owned systems, such as colleges, universities, prisons, military bases and facilities, and transportation entities such as MDOT and MTA road systems and facilities. See also 40 CFR 122.26(b)(16).

Stormwater - Means the part of precipitation including runoff from rain or melting ice and snow that flows across the surface as sheet flow, shallow concentrated flow, or in drainage ways.

Stormwater Issue of Significance (SIS) – Means any local, regional or statewide issue that must be addressed in order to improve water quality in receiving water bodies. SIS can include single pollutants or multiple pollutants as well as certain actions (increased impervious cover, lack of community awareness, construction, agricultural impacts, etc.) conditions (lack of infiltration, treatment at the source, etc.) or phenomena (development pressure, urban sprawl, flooding, urbanization, pH/acidification, etc.).

Stormwater Management Plan (SWMP) - Means a written plan developed, implemented, and enforced by a permittee. The SWMP defines the specific BMPs that will be implemented by the permittee under each of the six MCMs set forth in Part IV of the GP, which are designed to reduce the discharge of pollutants from the MS4 to the maximum extent practicable (MEP). The SWMP defines: the measurable goal(s) by which each BMP will be evaluated; the person(s) responsible for implementing each BMP, and; the date by which each BMP will be implemented.

Stormwater Pollution Prevention Plan (SWPPP) - Means a written plan developed and implemented for select municipal operations to reduce or eliminate pollutants as described in the 2022 MS4 General Permit.

Total Maximum Daily Load (TMDL) – Means the sum of the individual waste load allocations (WLAs) for point sources and load allocations (LAs) for non-point sources, natural background and a margin of safety. If a receiving water has only one point source discharger, the TMDL is the sum of that point source WLA plus the LAs for any nonpoint sources of pollution and natural background sources, tributaries, or adjacent segments. TMDLs can be expressed in terms of either mass per time, toxicity, or other appropriate measure. If BMPs or other nonpoint source pollution controls make more stringent load allocations practicable, then waste load allocations can be made less stringent. Thus, the TMDL process provides for nonpoint source control tradeoffs.

Urban Impaired Stream - Means a stream that fails to meet water quality standards because of effects of stormwater runoff from developed land. Urban Impaired Streams are those streams identified in Appendix B of the 2022 MS4 General Permit.

Urban Runoff - Means stormwater runoff from an Urbanized Area, that may contain elevated levels of pollutants such as hydrocarbons, chlorides, heavy metals and nutrients which may cause or contribute to a waterbody's impairment. In many instances flow such as frequent elevated storm flows, low base flows, and high temperatures will also be significant contributors to a waterbody's impairment.

Urbanized Area (UA) - Means the area of the State of Maine so defined by the inclusive sum of the 2000 decennial census and latest decennial census (2010) by the U.S. Bureau of the Census.

Waste Load Allocation (WLA) – Means the portion of a receiving waters loading capacity that is allocated to one of its existing or future point sources of pollution. WLAs constitutes a type of water quality based effluent limitation.

Waters of the State - Means any and all surface waters and subsurface waters that are contained within, flow through, or under or border upon this state or any portion of the state, including the marginal and high seas, except such waters as are confined and retained completely upon the property of one person and do not drain into or connect with any other waters of the state, but not excluding waters susceptible to use in interstate or foreign commerce, or whose use, degradation or destruction would affect interstate or foreign commerce.

DOCUMENT STRUCTURE

As per Part IV of the 2022 MS4 General Permit, permittees must implement a SWMP that documents compliance with the following six (6) minimum control measures (MCMs), or program components:

1. Education/Outreach Program
2. Public Involvement and Participation
3. Illicit Discharge Detection and Elimination (IDDE)
4. Construction Site Stormwater Runoff Control
5. Post-Construction Stormwater Management in New Development and Redevelopment
6. Pollution Prevention/Good Housekeeping for Municipal Operations

In addition, the SWMP must document how the municipality will comply with the Second Step Permit requirements, which apply to impaired waters to which the municipality discharges stormwater.

A comprehensive narrative of each Minimum Control Measure and Second Step Permit requirements and the municipal programs developed to meet the requirements thereof are included in the **Minimum Control Measures section** of this SWMP.

For each Minimum Control Measure and for the Second Step Permit requirements, the City has developed clear, specific, and measurable goals, called Best Management Practices (BMPs), to ensure the City is meeting program objectives and milestones. These BMPs are detailed in the **Measurable Goals section** which includes a comprehensive table that specifies the measurable goal and deadline for implementation, grouped under the MCM for which they were developed.

STORMWATER PROGRAM OVERVIEW

WATER RESOURCES IN PORTLAND

The City of Portland is located within Cumberland County and has a population of over 68,000, according to the 2020 census. The City of Portland is located within the Stroudwater River, Fore River, Capisic Brook, Long Creek, Back Cove and Casco Bay watersheds. The Portland Department of Public Works maintains almost 200 miles of drainage pipe and thousands of drainage structures that discharge stormwater from the MS4 to the environment in hundreds of locations. The City’s drinking water and portions of the sanitary sewer system are operated and maintained by the Portland Water District (PWD), which is a separate entity from the City of Portland. Portland continues to make improvements to its stormwater management program every year to protect and improve its water resources.

WHY IS THIS IMPORTANT?

Stormwater runoff commonly transports pollutants through municipal separate storm sewer systems (MS4s), where it is discharged, often untreated, into local water bodies. To the public, the MS4 is more commonly known as a stormwater drainage system or simply as the “drain.” These stormwater drains have been constructed in developed areas to reduce the risk of flooding and damage to our built infrastructure. Unfortunately, stormwater drainage systems carry pollution during rain events and snow melt – this can include oil, trash, and any other materials found on lawns, streets, and parking lots.

In the City of Portland, stormwater runoff discharges that are conveyed by the MS4 to the environment are regulated under the Clean Water Act and require a permit. Portland is one of thousands of communities and institutions across the country that must comply with these regulations. The stormwater drainage system discharge permit is known as the “MS4 General Permit” and is issued and managed by both the U.S. Environmental Protection Agency (EPA) and the State of Maine Department of Environmental Protection (ME DEP).

WHAT DOES PORTLAND HAVE TO DO?

The City of Portland has had MS4 permit coverage since 2003. As part of new permitting requirements, Portland is required to develop a written Stormwater Management Plan (SWMP) every five years when the permit is reissued. This SWMP (Plan) is a “living” reference document that will guide the City’s implementation of requirements within the permit. Portland is required to keep records of, and report on, the activities and measures that are implemented and consistent with this Plan. The 2022 MS4 General permit requirements fall into these general categories, but are explained in more detail in the next section.



Implement public education programs to help City residents, business owners, and developers understand their role in keeping stormwater clean.



Ensure that construction projects do not pollute runoff with sediments and debris.



Engage the public in decision-making throughout the program.



Ensure that new development and redevelopment control and treat runoff before it leaves the property.



Find and fix leaky or unauthorized sanitary sewer lines or other pollutants that might be discharging into the drainage system.



Engage in pollution prevention efforts (cleaning drainage systems and sweeping pavements) and ensure that municipal activities like vehicle washing, lawn maintenance, and materials storage do not contribute to stormwater pollution.

MINIMUM CONTROL MEASURES

The permit requires certain documents to be included in the SWMP. These documents will be developed consistent with the schedule outlined in Section 1.1. This Section provides information on where these documents can be accessed. Some of these documents have been appended to this SWMP, while others are provided in a location external to the SWMP due to size or complexity. Hard copies of the following documents can be found at the Public Works Department, unless otherwise noted below.

MCM1: EDUCATION AND OUTREACH PLAN

The 2022 MS4 General Permit requires municipalities to develop and implement two Education/Outreach Campaigns to address stormwater issues of significance:

1. An Outreach to Raise Awareness Campaign targeted at two audiences applying three (3) tools per audience per year. One target audience must be the public and the second audience may be selected from: municipal, commercial, development/construction, or institutions.
2. An Outreach to Change Behavior Campaign to promote one behavior change directed at two audiences using a minimum of three (3) outreach tools per year. This campaign will promote and reinforce desirable behaviors designed to reduce stormwater pollution.

In 2018, the ISWG executed a statewide survey to assess public awareness of a variety of stormwater issues and related behaviors. The survey results report¹ was included in the ISWG Permit Year 5 (2017-2018) annual reports. In addition, the ISWG communities reviewed regional water quality related to stormwater issues, examined the unique conditions within each of their communities, and evaluated the needs for public education around stormwater at five of their regional meetings (9/13/2018, 3/21/2019, 7/18/2019, 3/26/2020, 5/21/2020). Based on the survey results and the discussions at their regional meetings, the ISWG communities agreed on which issues of significance to address and what tools and messages might be effective. Each of the BMPs provides a brief introductory section describing the rationale for the selection of the BMP based on the regional and local issues within the ISWG region. The BMPs are further structured to allow for adaptive education and outreach approaches to create a strong, diverse, and effective campaign over the duration of this permit.

The City of Portland will fulfill the requirements for Public Education/Outreach through participation in the ISWG and the Municipality's provision of funding to the Cumberland County Soil & Water Conservation District (CCSWCD) for Public Education/Outreach services, as described in the following BMPs. The BMPs will be implemented according to their individual timelines over the term of the permit.

BMP 1.1a

Background: The 2022 MS4 General Permit requires the permittee to raise awareness of the public as well as one of the following groups: municipal, commercial, development/construction, or institutions. This BMP describes the reasoning and measurable goals for the public audience and the selected second audience: development/construction.

The Think Blue Maine campaign began in 2003 as a statewide effort to raise awareness of common stormwater pollutants and ways to prevent those pollutants. The Think Blue Maine campaign has been historically successful in increasing awareness of stormwater issues. The ISWG, Androscoggin Valley Stormwater Working Group (AVSWG), and Southern Maine Stormwater Working Group (SMSWG) coordinate their Think Blue Maine messaging and

¹ http://thinkbluemaine.cumberlandswcd.com/wp-content/uploads/2018/07/Survey_Summary-FINAL.pdf

education efforts to provide consistent messaging in Southern Maine. In addition, the Massachusetts and New Hampshire small MS4s are using similar Think Blue campaigns, so there is some regionally consistent messaging in circulation.

In 2018, the ISWG executed a statewide survey around public awareness of stormwater issues and behaviors that impact stormwater. Ninety-four percent of survey respondents in the ISWG region ages 25 to 34 stated it was “very important to have clean water in the lakes and streams in [their] community”, and 86% of ISWG respondents ages 25 to 34 believe that stormwater runoff has a major impact or somewhat impacts water quality, but only 46% of ISWG respondents ages 25 to 34 were able to correctly describe what happens to stormwater at their residence. Because this age group has not been targeted before for education and has the potential to impact stormwater for many years into the future, the ISWG, AVSWG, and SMSWG communities will cooperatively use the Think Blue Maine campaign to raise awareness of the target audience to be more aware of stormwater issues and be more willing to change their behavior in the future.

Measurable Goal 1.1a – Portland, through its participation in the ISWG, will implement the following program which is designed to raise 15% of the target audience’s awareness of what happens to stormwater at their residence or place of work. According to the 2019 US Census Bureau, the ISWG region’s population for ages 25 to 34 is approximately 38,000 people: therefore 15% of the target audience is approximately 6,000 people.

- Target Audience: People 25 to 34 in the ISWG region.
- Overarching Message: “Water that lands on our roads, roofs, and other hard surfaces picks up pollutants and carries them to our local waterbodies without being treated.” This message will be presented with variations based on target audience interests and outreach tools used. Outreach Tools: A minimum of three outreach tools will be selected from Appendix E Table 1. Tools for Measurable Goal 1.1a each year. Each tool will be assessed and customized based on the target audience’s receptiveness to the method. Any tool used in a given year will be tailored to the message for the relevant target audience subset based on common characteristics and/or demographics.
- Evaluation: Effectiveness will be evaluated annually by tracking process indicators (indicators related to the execution of the outreach program) for each tool implemented that year and by tracking impact indicators (indicators related to the achievement of the goals or objectives of the program) where available (see Appendix E Table 1. Tools for Measurable Goal 1.1a).
- Implementation schedule: A minimum of three of the tools from Appendix E Table 1. Tools for Measurable Goal 1.1a will be implemented each year for the duration of the permit. As part of the ISWG adaptive management education and outreach program, tools and messaging will be reviewed and evaluated on an annual basis at a minimum as part of annual reporting. To address emerging issues, opportunistic tools and outreach may also be implemented. Seasonal messaging and tool adjustments will be used when applicable. Report findings will be incorporated into ISWG meeting discussions as well as annual workplans and budgets.

BMP 1.1b

Background: Evaluation of municipal stormwater programs, through annual meetings with municipal staff and officials, has revealed a large amount of effort required to comply with MCM 4 tasks. The ISWG communities identified opportunities to address common MCM 4 goals through coordinated regional and statewide stormwater education to contractors to reduce development and construction-related stormwater pollutants that are not already required by MCM 4. Due to the cyclical nature of the development/construction sector, a baseline evaluation will be conducted before or during Permit Year 1 to establish current Maine Department of Environmental Protection (DEP) Erosion and Sediment Control Certified Contractors. If contractors are certified by DEP in erosion and sediment control, their awareness of best practices is established.

Measurable Goal 1.1b – Portland, through its participation in the ISWG, will implement, the following program which is designed to raise awareness of construction-related stormwater pollution by increasing the net number of DEP Certified contractors located in the ISWG region by 15% from the Permit Year 1 established baseline

audience.

- Target Audience: Contractors located within the ISWG region.
Overarching Message: “Through erosion and sediment control best management practices training and certification, contractors can reduce the potential to negatively impact local water bodies.” This message will be presented with variations based on target audience interests and outreach tools used.
- Outreach Tools: A minimum of three outreach tools will be selected from Appendix E Table 2. Tools for Measurable Goal 1.1b each year. Each tool will be assessed and customized based on the target audience’s receptiveness to the method. Any tool used in a given year will be tailored to the message for the relevant target audience subset based on common characteristics and/or demographics.
- Evaluation: Effectiveness will be evaluated annually by tracking process indicators for each tool implemented that year and by tracking impact indicators where available (see Appendix E Table 2. Tools for Measurable Goal 1.1b). Effectiveness will also be measured by the number of DEP certified contractors located in the ISWG region over the course of the permit term.
- Implementation schedule: A minimum of three of the tools from Appendix E Table 2. Tools for Measurable Goal 1.1b will be implemented each year for the duration of the permit.
- Adaptive Management: As part of the ISWG adaptive management education and outreach program, tools and messaging will be reviewed and evaluated on an annual basis at a minimum as part of annual reporting. To address emerging issues, opportunistic tools and outreach may also be implemented. Seasonal messaging and tool adjustments will be used when applicable. Report findings will be incorporated into ISWG meeting discussions as well as annual workplans and budgets.

BMP 1.2

Background: The ISWG communities have focused on changing behavior to reduce nutrients into regional waterbodies in their MS4 permit for the past three permit cycles. The ISWG communities will continue their efforts to reduce sources of nutrients by promoting proper dog waste disposal to two target audiences this permit term for the following reasons:

1. Generally, excess nutrients in our waters are a nationally recognized water quality issue related to stormwater – there are multiple common sources of nutrients including sediments, pet waste, septic systems, and fertilizers.
2. The Statewide survey conducted in Permit Year 5 of the previous cycle identified that survey respondents are aware that nutrient sources (including dog waste) are a common stormwater pollutant and respondents expressed a willingness to take action to help reduce stormwater pollution. Eighty-four percent of 2018 survey respondents in the ISWG region ages 25 to 34 and 67% of 2018 survey respondents in the ISWG region ages 35 to 55 selected “picking up pet waste and putting it in the trash” as a practice they believed could reduce water pollution.
3. Most ISWG communities are part of the Casco Bay watershed. In the June 2019 Casco Bay Nutrient Council report, nutrients were identified as the main pollutant of concern for the health of Casco Bay. While there is discrepancy between nutrient models as to the contribution percentages of the three main sources of nutrients (stormwater, wastewater, and atmospheric deposition), stormwater runoff is believed to contribute between 24% and 64% of the nitrogen entering Casco Bay.
4. Several ISWG communities have encountered problems with dog waste not being picked up or not being properly disposed of in the trash, causing local water quality concerns and unsanitary conditions for the public and municipal staff.
5. Most ISWG communities have taken steps to discourage improper dog waste disposal through ordinances. However, there are currently still barriers to effectively educating and enforcing these types of ordinances.
6. Dog owners ages 25 to 64 are the least likely age group to pick up after their dog. However, dog owners ages 25 to 64 receive their information through different outreach methods. In order to provide effective messaging on proper dog waste management, two audiences will be created to allow appropriate outreach tools to be used per age group. In order to provide effective messaging on proper dog waste management,

two audiences will be created to allow appropriate outreach tools to be used per age group. A baseline evaluation will be conducted in Permit Year 1 to establish dog owner behavior of dog waste disposal and the baseline target audience within the ISWG region.

BMP 1.2a

Measurable Goal 1.2a – Portland, through its participation in the ISWG, will work towards changing the behavior of 15% of pet owners from the Permit Year 1 established baseline field survey findings.

- Target audience: Dog owners ages 25 to 34 within the ISWG region.
- Overarching Message: “Dispose of dog waste as a solid waste, so it does not end up in our stormwater. Once in the stormwater, dog waste contributes nutrients, bacteria, and pathogens to our ponds, lakes, streams, rivers, and bays, which can lower property values, harm our drinking water, and hinder recreational and economic opportunities.” This message will be presented with variations based on target audience interests and outreach tools used. Outreach Tools: A minimum of three outreach tools will be selected from Appendix E Table 3. Tools for Measurable Goal 1.2a each year. Each tool will be assessed and customized based on the target audience’s receptiveness to the method. Any tool used in a given year will be tailored to the message of the relevant target audience subset based on common characteristics and/or demographics.
- Evaluation: Effectiveness will be evaluated annually by tracking process indicators for each tool implemented that year and by tracking impact indicators where available (see Appendix E Table 3. Tools for Measurable Goal 1.2a). Effectiveness will also be evaluated by conducting observational field surveys of improper dog waste disposal at public areas. These annual field surveys will be on established routes and will include geotagging of observed dog waste. Site factors such as signage, community litter cleanups, and other variables will also be documented. In addition, the presence of dog waste bags in catch basins will be recorded during annual inspections. In Permit Year 1 the field survey work will be supplemented by also observing the age groups utilizing the spaces and their pet waste disposal behavior in a subsample of the sites. This supplemental observation will be repeated in Permit Year 5.
- Implementation schedule: A minimum of three of the tools from Appendix E Table 3. Tools for Measurable Goal 1.2a will be implemented each year for the duration of the permit.
- Adaptive Management: As part of the ISWG adaptive management education and outreach program, tools and messaging will be reviewed and evaluated on an annual basis at a minimum as part of annual reporting. To address emerging issues, opportunistic tools and outreach may also be implemented. Seasonal messaging and tool adjustments will be used when applicable. Report findings will be incorporated into ISWG meeting discussions as well as annual workplans and budgets.

BMP 1.2b

Measurable Goal 1.2b – Portland, through its participation in the ISWG, will work towards changing the behavior of 15% of pet owners from the Permit Year 1 established baseline field survey results.

- Target audience: Dog owners ages 35 to 55 within the ISWG region.
- Overarching Message: “Dispose of dog waste as a solid waste, so it does not end up in our stormwater. Once in the stormwater, dog waste contributes nutrients, bacteria, and pathogens to our ponds, lakes, streams, rivers, and bays, which can lower property values, harm our drinking water, and hinder recreational and economic opportunities.” This message will be presented with variations based on target audience interests and outreach tools used. Outreach Tools: A minimum of three outreach tools will be selected from Appendix E Table 4. Tools for Measurable Goal 1.2b each year. Each tool will be assessed and customized based on the target audience’s receptiveness to the method. Any tool used in a given year will be tailored to the message for the relevant target audience subset based on common characteristics and/or demographics.
- Evaluation: Effectiveness will be evaluated annually by tracking process indicators for each tool implemented that year and by tracking impact indicators where available (see Appendix E Table 4. Tools for Measurable Goal 1.2b). Effectiveness will also be evaluated by conducting observational field surveys of

improper dog waste disposal at public areas. These annual field surveys will be on established routes and will include geotagging of observed dog waste. Site factors such as signage, community litter cleanups, and other variables will also be documented. In addition, the presence of dog waste bags in catch basins will be recorded during annual inspections. In Permit Year 1 the field survey work will be supplemented by also observing the age groups utilizing the spaces and their pet waste disposal behavior in a subsample of the sites. This supplemental observation will be repeated in Permit Year 5.

- Implementation schedule: A minimum of three of the tools from Appendix E Table 4. Tools for Measurable Goal 1.2b will be implemented each year for the duration of the permit.
- Adaptive Management: As part of the ISWG adaptive management education and outreach program, tools and messaging will be reviewed and evaluated on an annual basis at a minimum as part of annual reporting. To address emerging issues, opportunistic tools and outreach may also be implemented. Seasonal messaging and tool adjustments will be used when applicable. Report findings will be incorporated into ISWG meeting discussions as well as annual workplans and budgets.

BMP 1.3 Effectiveness Evaluation

Measurable Goal 1.3a – Portland, through its participation in ISWG, will submit an annual report each year of the 2022 MS4 General Permit term documenting the implementation of each BMP. The annual report will include the message for each audience, the methods of distribution, the outreach tools used, the measures/methods used to determine on-going effectiveness of the campaigns, and any changes planned based on the measures of effectiveness.

Measurable Goal 1.3b – In Permit Year 5 of the 2022 MS4 General Permit the Municipality, through its participation in ISWG, will conduct an evaluation of the overall effectiveness of the Awareness and Behavior Change BMPs (BMPs 1.1 and 1.2). The evaluation will be a review of the annually reported benchmark values for the Awareness and Behavior Change BMPs as well as documentation of overall changes during the permit term by comparing back to the established baselines.

- For Measurable Goal 1.1a, a survey will be conducted in Permit Year 5 to assess the target audience’s awareness of stormwater issues and what happens to stormwater at their residence or place of work and will be compared to the survey issued in 2018.
- For Measurable Goal 1.1b, the number of DEP Certified contractors located in the ISWG region in Permit Year 5 will be compared to the Permit Year 1 established baseline audience to determine the net number of new certified contractors aware of erosion and sediment control practices.
- For Measurable Goals 1.2a and 1.2b, the amount and presence of pet waste found in the ISWG region in Permit Year 5 field surveys will be compared to the established baseline field surveys conducted in Permit Year 1.
- The evaluation will identify recommendations for future awareness and behavior change target audiences, messages, tools, and benchmarks.

MCM2: PUBLIC INVOLVEMENT AND PARTICIPATION

The 2022 MS4 General Permit, as did previous permits, requires the City to provide the public with opportunities to participate in the development and implementation of the Stormwater Management Program and recognizes that public involvement and participation go hand in hand with education and outreach. In order to ensure that the public is aware of these opportunities, the City must follow state and local public notice requirements when filing documents, holding meetings and/or events or when seeking public input on issues related to the stormwater management program. The City must also document public meetings and attendance.

In addition, the City is required to host, conduct or participate in at least one public community event each year that features a stormwater pollution prevention and/or water quality theme. For example, in the past the City has hosted and participated in the Urban Runoff 5K Race and Green Neighbor Family Fest, which combined the draw of a race that's proceeds were used to pay for water quality education programs in our local schools, with a family-centric fair featuring a variety of water quality, stormwater pollution prevention and environmental messaging and kid-friendly activities. Events like this help to spread the word about the need for stormwater pollution prevention and water quality protection, promote community participation future activities (e.g.: Volunteer storm drain stenciling events, stream & river cleanups, water quality sampling efforts and pet waste pickup days) and strengthen relationships between the City and its community partners.



MCM3: ILLICIT DISCHARGE DETECTION AND ELIMINATION PLAN

The City of Portland has developed a written IDDE Program Manual consistent with the requirements of part IV.C.3. of the MS4 General Permit. The IDDE Program Manual includes:

- Responsible parties
- Regulatory authority
- Dry weather outfall screening and sampling procedures
- Interconnection screening procedures
- Initial assessment and priority ranking of outfalls/interconnections
- Catchment investigation procedures
- Enforcement procedures
- Training resources and modules

The IDDE Program Manual can be accessed at the Public Works Department.

Separate Storm Sewer System Map

The City of Portland has developed a Separate Stormwater Sewer System Map consistent with the requirements of part IV.C.3.d. of the MS4 General Permit. The map provided in Appendix A includes the following information:

- Catch basins with unique identifier (ID not shown on map but in associated data table and asset management software)
- Connecting surface and subsurface infrastructure
- Direction of flow for all in-flow and out-flow pipes
- Locations of all MS4 outfalls (to waters of the state or interconnected)
- Name of each receiving water to which outfalls discharge

The map will be updated annually.

SSO Inventory

The City will work cooperatively with the Portland Water District to document SSOs that discharge to the MS4 and are within the regulated urbanized area. The City will maintain a database or summary of these SSOs throughout the permit term.



Site Inspections and Erosion and Sediment Control Procedures

Maine’s stormwater regulations identify construction activity as a potentially significant contributor of pollutants to the MS4, which could result in illicit discharges of pollutants to surface waters during wet weather events. Pollutants from active construction sites include but are not limited to: sediment eroded from areas of exposed soil and stockpiles; construction wastes such as drywall compound, brick dust, paint rinse water, mortar and cement; and solid wastes/trash. The MS4 General Permit requires the City to implement a program to regulate construction site runoff. The City must notify developers of the requirements of the Maine Construction General Permit and Chapter 500 stormwater regulations as applicable. The City must also adopt or update an Erosion & Sedimentation Control ordinance or other regulatory mechanism to ensure that developers and contractors are properly implementing stormwater pollution prevention practices. The program includes construction site inspection and enforcement procedures, which are detailed in the City’s Land Disturbance Program Manual, which will be available on the City’s website. This program also includes procedures for documenting, tracking and annually reporting on the City’s efforts to regulate stormwater pollution prevention associated with construction sites.

Post-Construction Stormwater Management

The State’s stormwater regulations and the City’s stormwater standards were established to control stormwater pollution generated by new development and redeveloped properties, because there is a significant increase in the amount of runoff and amount of pollutants emanating from the built environment, as compared to the undeveloped landscape. The MS4 General Permit requires permittees to implement and enforce a program which helps ensure that property owners have properly installed the approved stormwater management systems and that property owners are inspecting, maintaining, and repairing the systems to ensure they function properly and provide the intended stormwater pollution prevention and water quality benefits. Portland’s program requires the owners of new development and redevelopment sites to submit a stormwater management plan for review and approval. The City also requires an executed maintenance agreement, clearly identifying the parties responsible for maintenance of the stormwater system, that provides additional legal basis for enforcement of noncompliance and ensures long-term compliance with the Post-Construction Stormwater Management section of the Stormwater Ordinance (Chapter 24, Article III). The MS4 General Permit requires the City to track, document and report annually on these programmatic elements.

Past permits have required the City to encourage the use of Low Impact Development (LID) and green infrastructure stormwater management BMPs to minimize the impacts of development and redevelopment on water resources. The new MS4 General Permit takes this a significant step further and requires the City to develop, adopt, and implement an ordinance or regulatory mechanism to require development and redevelopment to meet a set of LID standards, based on guidance from the DEP. To this end, Portland participated in a regional stormwater subcommittee to develop a draft model ordinance with LID standards that can be used as a basis for its future ordinance or regulatory mechanism under this minimum control measure.

Comprehensive Operation & Maintenance Plans

The Interlocal Stormwater Working Group has developed Operation and Maintenance Plans consistent with the requirements of part IV.C.6. of the MS4 General Permit. The objectives of the Comprehensive Operation & Maintenance Plans are to provide general guidance on ways to reduce stormwater-transported pollution during typical activities on municipally-owned properties, to establish procedures for MS4 infrastructure maintenance that will help reduce the discharge of pollutants from municipally-owned facilities, and to promote behavior that will improve water quality in the City of Portland.

The Operations & Maintenance Plans, as well as all other written standard operating procedures (SOPs), can be accessed at the Public Works Department and will be made available on the City of Portland website.

Stormwater Pollution Prevention Plans

The City has developed written Stormwater Pollution Prevention Plans (SWPPPs) for the District Road DPW facility, Canco Road facility, Riverside Recycling Center, and Evergreen Cemetery consistent with the requirements of part IV.6.c.d of the MS4 General Permit. The SWPPPs include:

- Pollution prevention team
- Description of the facility and identification of potential pollutant sources
- Identification of stormwater controls
- Material exposure prevention, good housekeeping, preventative maintenance, spill prevention and response, erosion and sediment control, management of runoff, salt storage pile or salt-containing pile management, employee training, and maintenance of control measure practices

The SWPPPs can be accessed at the Public Works Department and will be made available on the City of Portland website.



IMPAIRED WATERS

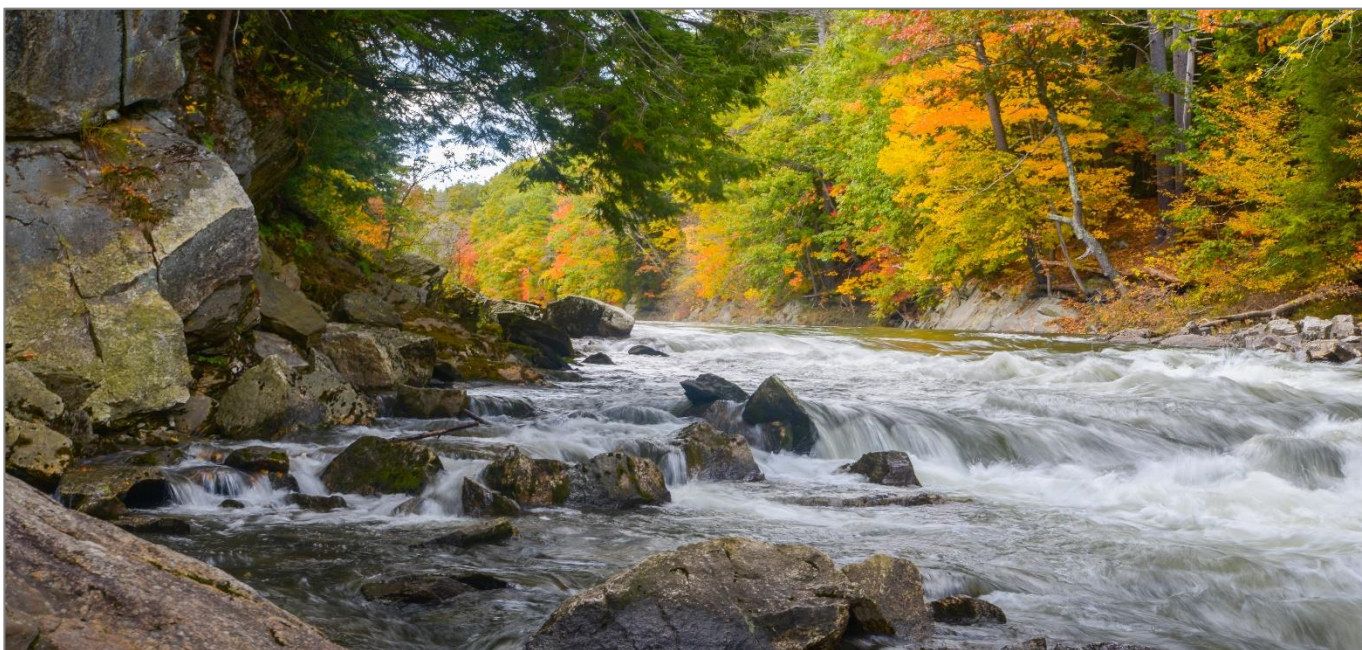
Discharges to waterbodies with impairments and an approved Total Maximum Daily Load (TMDL) have additional requirements in part IV.E. of the 2022 MS4 General Permit. The City of Portland MS4 discharges to waterbodies that are considered impaired, according to ME DEP’s 2016 Integrated List of Waters, including waterbodies with an approved TMDL. For these waterbodies, Portland will address compliance with the TMDL waste load allocations (WLA) as outlined below:

- Consistent with the requirements of MCM 4 and MCM 5, Portland will continue to refine regulatory policies that minimize the impact of development and redevelopment on waters in the City. With existing policies, it is anticipated that there will be reductions in the impact of impervious cover through redevelopment over time.

For waters within the City that are impaired by the Statewide Bacteria TMDL, the City will implement the Illicit Discharge Detection and Elimination Program and the mitigation phase of the Inflow and Infiltration Program, including structural sewer repairs to defective manholes and pipes throughout the City. The City will also continue to reduce the volume of combined sewer discharge through separation and storage projects.

For the areas within the City that directly discharge to an Urban Impaired Stream (UIS), three structural or non-structural BMPs must be considered for inclusion in Portland’s permittee-specific ME DEP Order. The UIS in Portland are Capisic Brook, Dole Brook, Long Creek, Nasons Brook, and Fall Brook; all of which are covered by the Statewide Impervious Cover TMDL, with the exception of Fall Brook, which is classified as Category 5-A (TMDL Required) and Long Creek, which is subject to a separate impervious cover-based permit. Consistent with the requirements in Section IV.E.3. of the MS4 General Permit, the BMPs Portland proposes to implement in these watersheds are included in the Measurable Goals Tables section of this SWMP.

A list of impaired waters within the City of Portland and their impairments is provided in Appendix C. A map of the City’s outfalls which discharge to an impaired water is included as Appendix D.



MEASURABLE GOALS TABLES

MCM 1: EDUCATION/OUTREACH PROGRAM (PERMIT SECTION IV.C.1.)

Objective: To develop and implement two Education/Outreach Campaigns to address stormwater issues of significance: one campaign to raise awareness and one campaign to change behavior. The City of Portland will fulfill the requirements for Public Education/Outreach through participation in the Interlocal Stormwater Working Group (ISWG) and Portland’s provision of funding to the Cumberland County Soil & Water Conservation District (CCSWCD) for Public Education/Outreach services, as described in the following BMPs. The BMPs will be implemented according to their individual timelines over the term of the permit.

BMP ID #	BMP Description	Measurable Goal(s)	Deadline(s)
1.1	Outreach to raise awareness campaign The 2022 MS4 General Permit requires the permittee to raise awareness of the public as well as one of the following groups: municipal, commercial, development/construction, or institutions. This BMP describes the reasoning and measurable goals for the public audience and the selected second audience: development/construction.	1.1a The Municipality, through its participation in the ISWG, will implement the following program which is designed to raise 15% of the target audience’s awareness of what happens to stormwater at their residence or place of work.	Report on progress annually; goal met by end of PY5
		1.1b The Municipality, through its participation in the ISWG, will implement the following program which is designed to raise awareness of construction-related stormwater pollution by increasing the net number of DEP Certified contractors located in the ISWG region by 15% from the Permit Year 1 established baseline audience.	

1.2	<p>Outreach to change behavior campaign</p> <p>The ISWG communities have focused on changing behavior to reduce nutrients into regional waterbodies in their MS4 permit for the past three permit cycles. The ISWG communities will continue their efforts to reduce sources of nutrients by promoting proper dog waste disposal to two target audiences this permit term.</p>	<p>1.2a</p> <p>The Municipality, through its participation in the ISWG, will work towards changing the behavior of 15% of pet owners age 25-34 from the Permit Year 1 established baseline field survey findings.</p>	<p>Report on progress annually; goal met by end of PY5</p>
		<p>1.2b</p> <p>The Municipality, through its participation in the ISWG, will work towards changing the behavior of 15% of pet owners age 35-55 from the Permit Year 1 established baseline field survey results.</p>	
1.3	<p>Evaluate effectiveness of Education and Outreach program</p>	<p>1.3a</p> <p>Portland, through its participation in ISWG, will submit an annual report each year of the 2022 MS4 General Permit term documenting the implementation of each BMP. The annual report will include the message for each audience, the methods of distribution, the outreach tools used, the measures/methods used to determine on-going effectiveness of the campaigns, and any changes planned based on the measures of effectiveness.</p>	<p>Annually</p>
		<p>1.3b</p> <p>In Permit Year 5 of the 2022 MS4 General Permit Portland, through its participation in ISWG, will conduct an evaluation of the overall effectiveness of the Awareness and Behavior Change BMPs (BMPs 1.1 and 1.2). The evaluation will be a review of the annually reported benchmark values for the Awareness and Behavior Change BMPs as well as documentation of overall changes during the permit term by comparing back to the established baselines.</p>	<p>Permit Year 5</p>

1.4	<p>Additional outreach activities This BMP describes activities that are not required by the 2022 MS4 General Permit but are being conducted by the City of Portland to supplement the Education/Outreach program.</p>	<p>1.4a: Youth education outreach Portland will continue to support the Cumberland County Soil & Water Conservation District's youth education curriculum to community schools as funding allows. Annual reports will include the total number of students reached, which schools were involved, and the lesson topics covered.</p>	Annually
		<p>1.4b: Regional waterways nutrient reduction Portland will support the regional YardScaping effort to reduce nutrients from entering regional waterways and increase buffers. Annual reports will include the total number of people reached with workshops, partner point of sale locations, and workshop survey data.</p>	

MCM 2: PUBLIC INVOLVEMENT AND PARTICIPATION (PERMIT SECTION IV.C.2.)

Objective: Provide opportunities to engage the public in both the planning and implementation process of the stormwater program. The City of Portland will fulfill the requirements for Public Involvement and Participation through participation in the ISWG and Portland’s provisions of funding to Cumberland County Soil & Water Conservation District for Public Involvement and Participation services, or through directly fulfilling the requirements, as described in this section of the plan.

BMP ID #	BMP Description	Measurable Goal(s)	Deadline(s)
2.1	Public notice outreach	2.1a Portland will follow applicable state and local public notice requirements for their Stormwater Management Plans and Notices of Intent (NOIs) to comply with the MS4 General Permit. Copies of the NOIs and plans will be made available on the City of Portland’s website. Portland will document public meetings related to their stormwater program and attendance of those meetings in their annual report.	Annually
		2.1b The ISWG members meet as a group 6 times per year to review issues associated with implementation of the Stormwater Management Plan and MS4 General Permit. These meetings will be publicized through the CCSWCD website, on ISWG member websites, and open to the public.	Annually
2.2	Conduct annual public participation activity	Portland will annually host, conduct, and/or participate in a public community event with a pollution prevention and/or water quality theme from the list included in the 2022 MS4 General Permit or another activity approved by the DEP. Stormwater stewardship and educational messages and activities will be incorporated into the event. The event will be advertised on Portland’s website, through Portland’s and CCSWCD’s social media accounts, and other Portland and CCSWCD communication methods. The annual report will include a description of the event and the estimated attendance/participation.	Annually

MCM 3: ILLICIT DISCHARGE DETECTION AND ELIMINATION (IDDE) (PERMIT SECTION IV.C.3.)

Objective: Implement an IDDE program to systematically find and eliminate sources of non-stormwater discharges to the municipal separate storm sewer system.

BMP ID #	BMP Description	Measurable Goal(s)	Deadline(s)
3.1	Continue MS4 system mapping	Update the separate storm sewer system map annually as the following information becomes available: outfalls, pipes, manholes, catch basins, interconnections, stormwater management features, refined catchment delineations, municipal sanitary sewer, and combined sewer systems (if available or applicable).	Annually
3.2	Continue enforcement of non-stormwater ordinance and update written IDDE Program Manual	<p>Continue implementation of non-stormwater discharge ordinance and update written IDDE Program document to meet new permit requirements, ensuring that it includes at a minimum:</p> <ul style="list-style-type: none"> • Legal authority, including a reference to the City’s non-stormwater discharge ordinance, statement of responsibilities, outfall/interconnection inventory and initial catchment priority ranking, dry weather outfall inspection and dry weather flow sampling procedures, Quality Assurance Program Plan (QAPP), and illicit discharge confirmation and removal procedures. 	Prior to NOI Filing
3.3	Conduct dry weather Outfall/ Interconnection screening and sampling	<p>Conduct dry-weather Outfall/Interconnection screening annually to meet permit requirement of all outfalls screened by the end of Permit Year 5.</p> <ul style="list-style-type: none"> • Provide data annually. <p>Dry weather screening and sampling (no more than 0.25” of rainfall within 72 hours):</p> <ul style="list-style-type: none"> • Record condition and information for inventory and priority ranking. • If flowing, collect a sample in accordance with the protocols set forth in the approved QAPP and analyzed for the parameters listed in the IDDE Program Manual. 	All outfalls screened by end of Permit Year 5

BMP ID #	BMP Description	Measurable Goal(s)	Deadline(s)
3.4	Conduct investigation of dry weather flow and potential illicit discharges identified during screening and sampling	<p>Where sampling of dry weather flow at an outfall does not exhibit evidence of an illicit discharge:</p> <ul style="list-style-type: none"> • Take steps to determine and confirm that flow during dry weather conditions is only uncontaminated groundwater, water from a natural resource, or an allowable non-stormwater discharge that has entered the system. • Collect at least one (1) sample per the 5-year permit term in accordance with the protocols set forth in the approved QAPP and analyzed for the parameters listed in the IDDE Program Manual. <p>Where sampling of dry weather flow at an outfall exhibits evidence of a potential illicit discharge:</p> <ul style="list-style-type: none"> • Conduct systematic upstream sampling at key junction manholes until either a source is identified, or it has been determined that the evidence of the illicit discharge is due to naturally occurring source(s). 	During permit term, document annually
3.5	Conduct expeditious removal of verified sources of illicit discharge and confirmatory screening	<p>Upon verification of an illicit discharge, locate, identify, and eliminate the illicit discharge as expeditiously as possible. Where elimination of an illicit discharge within 60 days is not possible, establish an expeditious schedule and report the dates of identification and schedule for removal in the annual report.</p> <ul style="list-style-type: none"> • Confirm removal of verified illicit discharges through follow-up screening and inspection. 	During permit term, document annually

BMP ID #	BMP Description	Measurable Goal(s)	Deadline(s)
3.6	Conduct wet weather assessment	<p>Conduct an assessment to identify outfalls for wet weather monitoring and testing if applicable. The results of the assessment and plan for wet weather monitoring will be incorporated into the IDDE Plan. The assessment will utilize data from existing studies, including (but is not limited to):</p> <ul style="list-style-type: none"> • Areas within the MS4 that have combined sewer systems; • Sanitary sewer systems located in a common trench with stormwater infrastructure, particularly those with known infiltration; • Subsurface wastewater disposal systems that are 20 years old or more, or those in areas known to have experienced recent malfunctions or failures; • Municipally-owned dog parks; • Complaints of sewage odor at a stormwater outfall during wet weather events; • Direct discharge from the stormwater system to any of the following: <ul style="list-style-type: none"> ○ A public beach or recreational area; ○ A water body impaired for bacteria; ○ A shellfish bed; and/or ○ A drinking water supply. 	End of Permit Year 5
3.7	Evaluate the overall effectiveness of the IDDE Program	<p>Evaluate the overall effectiveness of the IDDE Program using the indicators for tracking program success as defined in the IDDE Program Manual. Indicators include: number of illicit discharges identified and removed, number and percent of total catchments investigated, dry and wet weather screening and sampling results, and volume of sewage removed.</p> <ul style="list-style-type: none"> • Provide evaluation of IDDE Program annually via annual report. 	During permit term, document annually
3.8	Conduct Sanitary Sewer Overflow (SSO) reporting and inventory	Document SSOs that discharge to the MS4 and are within the regulated urbanized area. Identify any corrective measures implemented for annual reporting. Maintain database or summary of SSOs through permit term.	Throughout permit term

MCM 4: CONSTRUCTION SITE STORMWATER RUNOFF CONTROL (PERMIT SECTION IV.C.4.)

Objective: Implement an effective construction stormwater runoff control program and policy that minimizes erosion on regulated construction sites within the regulated MS4 area and to ensure that sediment and other pollutants are not transported in stormwater from construction sites and allowed to discharge to a water of the U.S. through the MS4.

BMP ID #	BMP Description	Measurable Goal(s)	Deadline(s)
4.1	Ensure construction stormwater runoff control ordinances are consistent with MS4 General Permit	Review City Ordinances to ensure that site development applicants meet Maine Construction General Permit and Chapter 500 Stormwater Management Law Permit obligations for erosion and sedimentation control. <ul style="list-style-type: none"> • Continue to implement an effective construction stormwater runoff control program. • Continue to require construction site operators, performing land disturbance activities that exceed one acre (or common plan of development greater than one acre), to implement an erosion and sediment control program consistent with the Construction General Permit and Stormwater Management Law Permit. 	End of Permit Year 1
4.2	Review written construction site stormwater runoff control program procedures	Review written Construction guidance. <ul style="list-style-type: none"> • Include references to the City’s Stormwater Management Ordinance, Portland Technical Manual, and other relevant regulations. • Include procedures and workflow for site plan review, inspections, responsible parties, and data tracking. 	Effective Date of the Permit
4.3	Track, inspect, and document applicable construction projects	Review and update written procedures for site inspection and enforcement of erosion and sediment control measures as needed. Track the number of site plan reviews, site inspections, and enforcement actions and include in annual report.	Throughout permit term, annually

MCM 5: POST-CONSTRUCTION STORMWATER MANAGEMENT IN NEW DEVELOPMENT AND REDEVELOPMENT (PERMIT SECTION IV.C.5.)

Objective: Implement and manage a local program and policy to reduce the discharge of pollutants found in stormwater through the retention, detention, and treatment of stormwater on regulated new or redevelopment sites within the regulated MS4 area.

BMP ID #	BMP Description	Measurable Goal(s)	Deadline(s)
5.1	Update local ordinance on stormwater management in new & redevelopment	<p>Review and update the Post Construction Stormwater Management Ordinance or other regulatory mechanism (as needed).</p> <ul style="list-style-type: none"> Require that the owner or operator of a post construction BMP provide an annual report, completed by a qualified inspector, documenting that all onsite BMPs are adequately maintained and functioning as intended. Require that if a post construction BMP requires maintenance, the owner or operator must provide a record of the deficiency and corrective action(s) taken in no later than 60 days following the date the deficiency was identified. Require that, if 60 days is not feasible, then the City may establish an expeditious schedule to complete the maintenance and establish a record of the deficiency and corrective action(s) taken. 	End of Permit Year 1
5.2	Implement procedure for notifying site developers to consider Low Impact Development techniques	<p>Develop a Model LID Ordinance for stormwater management on new and redevelopment sites which establishes performance standards for each of the LID Measures contained in Table 1 of Appendix F of the MS4 GP. The Model LID Ordinance shall be submitted to the Maine DEP for review by September 1, 2022.</p> <ul style="list-style-type: none"> Adopt an ordinance or regulatory mechanism that is at least as stringent as the required elements of the Model LID Ordinance or incorporate all of its required elements into the permittee’s code of ordinances or other enforceable regulatory mechanism. The ordinance or other regulatory mechanism shall be adopted by July 1, 2024. 	Submit draft by September 1, 2022 and adopt regulatory mechanism by July 1, 2024
5.3	Track and document post construction BMP inspection and maintenance	Track and record the number of post construction BMPs, annual inspection reports submitted for each, and documentation of any required maintenance and subsequent corrective action. Include in annual report.	Throughout permit term, annually

MCM 6: POLLUTION PREVENTION AND GOOD HOUSEKEEPING IN MUNICIPAL OPERATIONS (PERMIT SECTION IV.C.6.)

Objective: Implement a Pollution Prevention & Good Housekeeping Program for municipal operations to prevent or reduce pollutants in runoff from all municipal operations and municipal facilities located in the regulated MS4 area.

BMP ID #	BMP Description	Measurable Goal(s)	Deadline(s)
6.1	Update Stormwater Pollution Prevention Plan (SWPPP) for public works facilities, transfer stations, and school bus maintenance facilities	Update SWPPP (and Spill Prevention, Control, and Countermeasure (SPCC), as needed) for the District Road public works facility, Canco Road public works facility, Riverside Recycling Facility & Evergreen Cemetery. The SWPPP shall include the elements listed in IV.C.6.d.	Prior to effective date
6.2	Conduct site inspection procedures consistent with SWPPP for public works facilities, transfer stations, and school bus maintenance facilities	Inspect all areas exposed to stormwater, areas identified in the SWPPP that are potential pollutant sources, areas where spills and leaks have occurred in the past three years, discharge points, and all stormwater control measures at each facility with a SWPPP at least once per calendar quarter and report findings in annual report.	Once per quarter, document annually
6.3	Update Operations & Maintenance (O&M) Program documentation	<p>Review and update written O&M procedures per section IV.C.6. of the permit.</p> <ul style="list-style-type: none"> • Update Pollution Prevention Operation and Maintenance documentation as needed; inclusive of all City facilities within the regulated MS4 area, drainage system operations activities, and inspection obligations. The documentation shall include the following: <ul style="list-style-type: none"> ○ Municipal Facilities Inventory. ○ Municipal Infrastructure Maintenance: Street Sweeping and Catch Basin Cleaning SOPs. ○ Prioritized schedule for repairing or upgrading conveyances, structures, and outfalls of the regulated MS4 area. 	Prior to Effective Date
6.4	Implement street sweeping program	Implement street sweeping program outlined in the Pollution Prevention Operation and Maintenance documentation. At a minimum, sweep all paved streets and municipally owned parking lots annually and soon after snowmelt. Document street sweeping activities and include in annual report.	Throughout permit term, annually

BMP ID #	BMP Description	Measurable Goal(s)	Deadline(s)
6.5	Implement catch basin cleaning program	Implement catch basin cleaning program outlined in the Pollution Prevention Operation and Maintenance documentation. At a minimum, inspect all municipally owned catch basins biennially to ensure that no catch basin sumps exceed 50% full. If two consecutive inspections of a given catch basin show excess accumulation, then that catch basin must be inspected and cleaned annually until two consecutive inspections find less than 25% accumulation. Document catch basin cleaning activities and include in annual report.	Throughout permit term, annually
6.6	Conduct employee training program consistent with SWPPP	Conduct employee training consistent with SWPPP and Pollution Prevention Operation and Maintenance documentation.	Throughout permit term, annually

CAPISIC BROOK AND CAPISIC POND WETLAND

Impairment(s): Benthic Macroinvertebrate Bioassessments, Habitat Assessment, Periphyton (Aufwuchs) Indicator Bioassessments
 TMDL Defined Issue: Impervious Cover

BMP ID #	BMP Description	Measurable Goal(s)	Deadline(s)
1	Commence a targeted public education program to reduce illegal dumping of pet waste bags into catch basins within the Capisic Brook & Dole Brook watersheds.	Implement a targeted public education program to reduce illegal dumping of pet waste into catch basins within the watershed. The program must include but not be limited to, use of a catch basin inspection tracking system, targeted signage and other education and outreach methods developed under the Greener Neighborhoods Cleaner Streams Program to help reduce nutrient and bacteria inputs to the MS4 that contribute to harmful algae blooms lower dissolved oxygen levels and adversely impact both aquatic habitat and water quality. Goal: Implement public pet waste education program & document effectiveness.	Document Annually
2	Review, assess progress on and update the Capisic Brook Watershed Management Plan.	The update shall include a data gap analysis if necessary (e.g.: Impervious cover “disconnection” analysis, habitat assessment, geomorphic stream channel restoration needs, wetlands/groundwater recharge study, etc.). Goal: Update watershed plan	July 1, 2024
3	Sagamore Village Stormwater Retrofit Project.	Install multiple, distributed green infrastructure BMPs to treat 21 acres (approximately 9 acres existing impervious area) directly discharging to the Capisic Brook. Goal: Implement the Sagamore Village Stormwater Retrofit Project.	July 1, 2025

DOLE BROOK AND DOLE BROOK WETLAND

Impairment(s): Benthic Macroinvertebrate Bioassessments | TMDL Defined Issue: Impervious Cover

BMP ID #	BMP Description	Measurable Goal(s)	Deadline(s)
Capisic Brook BMP#1	Implement a targeted public education program to reduce illegal dumping of pet waste bags into catch basins within the Capisic Brook & Dole Brook watersheds.	Implement a targeted public education program to reduce illegal dumping of pet waste into catch basins within the watershed. The program must include but not be limited to, use of a catch basin inspection tracking system, targeted signage and other education and outreach methods developed under the Greener Neighborhoods Cleaner Streams Program to help reduce nutrient and bacteria inputs to the MS4 that contribute to harmful algae blooms lower dissolved oxygen levels and adversely impact both aquatic habitat and water quality. Goal: Implement public pet waste education program & document effectiveness.	Document Annually
1	Conduct preliminary mapping study.	Conduct preliminary mapping study to identify wetlands, stream channel/drainage and other habitat within the Dole Brook watershed in preparation for development of a watershed management plan. Goal: Complete preliminary mapping study.	July 1, 2023
2	Conduct a hydrogeomorphological study.	Conduct a hydrogeomorphological study in preparation for development of a watershed management plan. Goal: Complete hydrogeomorphological study.	July 1, 2024
3	Upgrade Palmer Avenue detention pond.	Upgrade the detention pond on Palmer Avenue to meet the most current stormwater treatment and volume standards of the Department’s Chapter 500 rule. Goal: Complete detention pond upgrade.	July 1, 2025
4	Dole Brook watershed management plan.	Prepare a written watershed management plan for Dole Brook. Goal: Complete watershed management plan.	July 1, 2027

LONG CREEK – ADMINISTERED UNDER THE LONG CREEK WATERSHED MS4 GENERAL PERMIT

Impairment(s): Benthic Macroinvertebrate Bioassessments | TMDL Defined Issue: Impervious Cover

BMP ID #	BMP Description	Measurable Goal(s)	Deadline(s)
1	Long Creek Watershed Management Plan participation & implementation	Continue to work with the Long Creek Watershed Management District (LCWMD) to implement the Long Creek Watershed Management Plan as a Participating Landowner and permittee. Goal: Participate in the LCWMD to implement the Long Creek Watershed Management Plan.	Document Annually

NASONS BROOK AND NASONS BROOK WETLANDS COMPLEX

Impairment(s): Benthic Macroinvertebrate Bioassessments, Dissolved Oxygen, Periphyton (Aufwuchs) Indicator Bioassessments
TMDL Defined Issue: Impervious Cover

BMP ID #	BMP Description	Measurable Goal(s)	Deadline(s)
1	Develop a Salt Reduction Outreach Plan for commercial, industrial and residential property owners in the Nasons Brook Watershed.	Solely or in conjunction with others, develop a Salt Reduction Outreach Plan for commercial, industrial and residential property owners in the Nasons Brook Watershed. Goal: Develop a Salt Reduction Outreach Plan for commercial, industrial and residential property owners.	July 1, 2023
2	Engage with the City of Westbrook to create an Intermunicipal Agreement to implement a study of Nasons Brook.	Engage with the City of Westbrook to create an Intermunicipal Agreement in order to commence implementation of a study (e.g.: hydrogeomorphological, water quality or habitat study) of Nasons Brook and Nasons Brook wetlands complex to support the development of a watershed management plan. Goal: Engage the City of Westbrook to establish an Intermunicipal Agreement	July 1, 2024

BMP ID #	BMP Description	Measurable Goal(s)	Deadline(s)
3	Begin development of a watershed management plan for Nasons Brook.	Solely or in conjunction with others, must begin to prepare a written watershed management plan for Nasons Brook and the Nasons Brook wetlands complex. Goal: Begin development of a Nasons Brook watershed management plan.	July 1, 2027

FALL BROOK

Impairment(s): Habitat Assessment (i.e., base flow) | TMDL Defined Issue: None

BMP ID #	BMP Description	Measurable Goal(s)	Deadline(s)
1	Conduct a hydrogeomorphological study of Fall Brook watershed.	Conduct a hydrogeomorphological study of Fall Brook to better understand how water is moving through the watershed (e.g.: Infiltration and groundwater recharge areas, reasons for lack of base flow in lower reaches, etc.) to support the development of a watershed management plan. Goal: Complete hydrogeomorphological study of Fall Brook.	July 1, 2024
2	Conduct a wetlands, stream channel and MS4/combined sewer mapping study of the Fall Brook watershed.	Conduct a wetlands, stream channel, and MS4/combined sewer mapping study in preparation for development of a watershed management plan. Goal: Complete wetlands, stream channel and MS4/combined sewer mapping study of the Fall Brook watershed.	July 1, 2024
3	Conduct seasonal monitoring of flow, dissolved oxygen and conductivity of the upper reaches of Fall Brook.	Conduct seasonal (June 1 – August 30) monitoring for flow, dissolved oxygen, and conductivity in the upper reaches of the watershed if there is sufficient flow during at least part of the season. Goal: Complete 2 years of flow, dissolved oxygen & conductivity monitoring in the upper reaches of Fall Brook.	July 1, 2026

ANNUAL PROGRAM SELF-EVALUATION, RECORD KEEPING & ANNUAL REPORTING

Permitted municipalities are required to collect and report information about the development and implementation of their SWMP. The City of Portland conducts annual evaluations of its program compliance, the appropriateness of its identified Best Management Practices (BMPs), and progress towards achieving its identified measurable goals, which include reducing the discharge of pollutants to the maximum extent practicable (MEP).

The City of Portland will keep records required by the 2022 MS4 General Permit for at least three (3) years after its expiration. Records include but are not limited to: information used in the development of any written (hardcopy or electronic) program required by the permit, any monitoring results, copies of reports, records of screening, follow-up and elimination of illicit discharges; maintenance records; inspection records; and data used in the development of the Notice of Intent (NOI), SWMP, SWPPP, and annual reports. Records will be available for public observation as requested. Records will be submitted to the ME DEP as requested.

Annual reports are due to the ME DEP each year by September 15. The annual reports shall include the following content for the reporting period:

- Status of compliance with General Permit and permittee specific DEP Order conditions;
- An assessment/evaluation of:
 - The effectiveness of the SWMP.
 - The appropriateness of the identified BMPs.
 - Progress towards achieving the statutory goal of reducing the discharge of pollutants to the MEP.
 - The identified measurable goals for each of the MCMs.
- A summary of all information collected and analyzed, including outfall screening and sampling results;
- Any change in identified BMPs or measurable goals and justification for those changes; and
- A description of the activities, progress, and accomplishments for each MCM, including:
 - The status of education and outreach efforts.
 - The status of public involvement activities.
 - The status of stormwater mapping efforts.
 - The number of visual dry weather inspections performed.
 - The number of inaccessible and new outfalls.
 - The number of dry weather flow sampling events and laboratory results.
 - The number of detected illicit discharges.
 - The number of detected illicit connections.
 - The number of illicit discharges that were eliminated.
 - Construction site inspections and number and nature of enforcement actions.
 - Post construction BMP status and inspections.
 - The number of functioning post construction BMPs.
 - The number of post construction sites requiring maintenance or remedial action.
 - The status of the good housekeeping/pollution prevention program including the percentage of catch basins cleaned, those catch basins cleaned multiple times, and the number of catch basins that could not be evaluated for structural condition in a safe manner.
 - The types of trainings presented, the number of municipal and contract staff that received training, the length of the training, and training content delivered.
 - Revisions to the SWPPP procedures and/or changes in municipal operations.

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."

Signature

Date



8-5-2022

Name



CITY OF PORTLAND
Executive Department
Danielle West, Interim City Manager

August 8, 2022

TO WHOM IT MAY CONCERN:

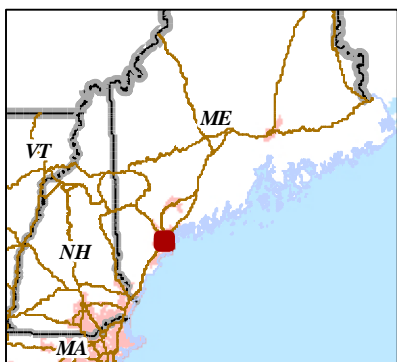
I, Danielle P. West, Interim City Manager of the City of Portland, hereby authorize Mike Murray, who is the City's Acting Director of the Department of Public Works and the person responsible for overseeing the preparation of the City's Stormwater Management Plan, to sign the Certification of the Stormwater Management Plan as required by the Department of Environmental Protection (DEP), in compliance with the records maintained under the 2022 MS4 General Permit with Maine DEP.



Danielle P. West, Interim City Manager
City of Portland, Maine

APPENDICIES

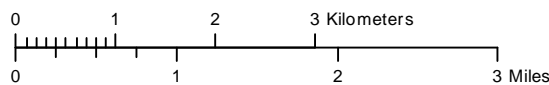
APPENDIX A: CITY OF PORTLAND URBANIZED AREA MAP



NPDES Phase II Stormwater Program
Automatically Designated MS4 Areas

Portland ME

 Regulated Area (2000 + 2010 Urbanized Area)

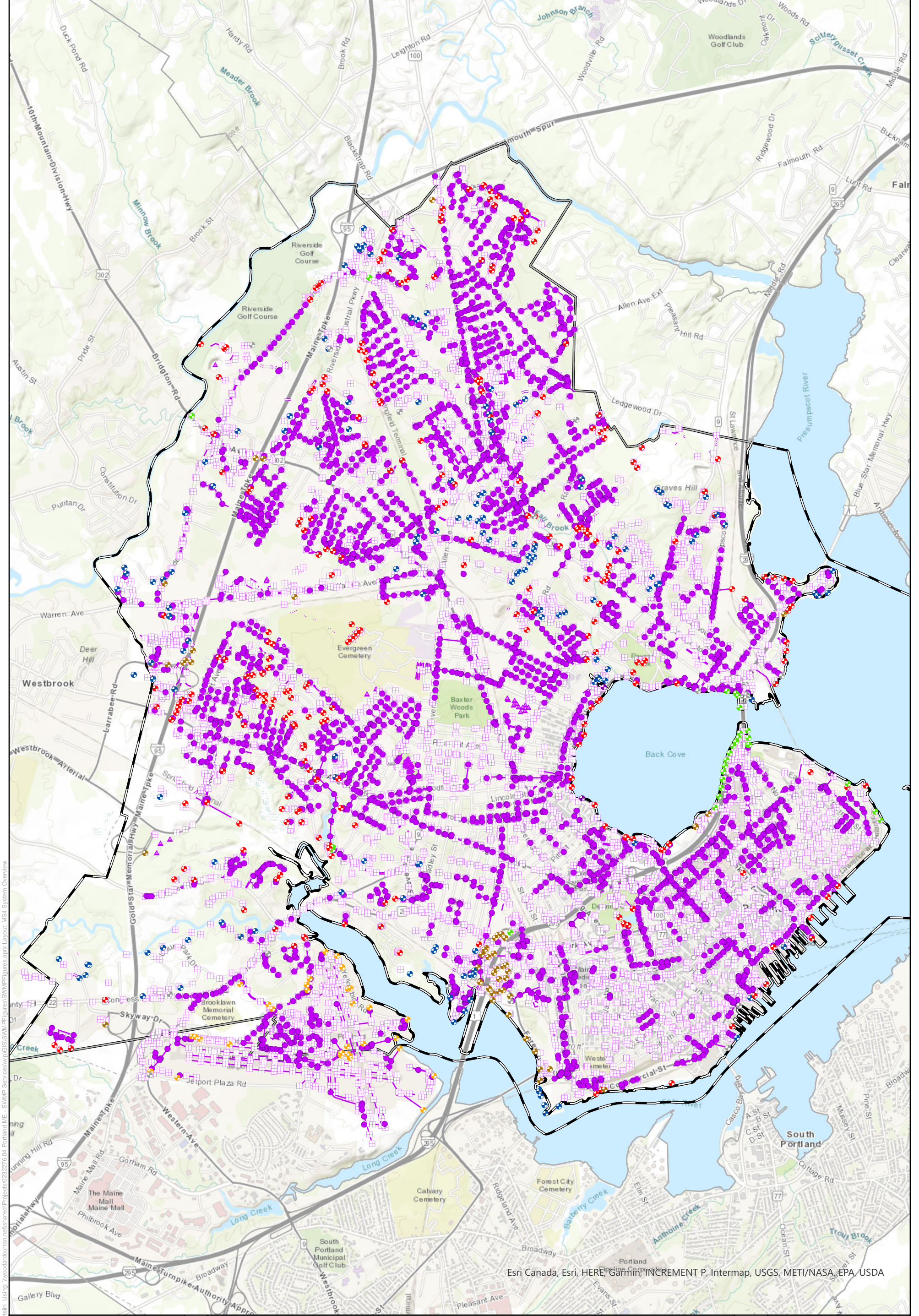


Town Population: 65 606
Regulated Population: 64 581
(Populations estimated from 2010 Census)



Urbanized Areas, Town Boundaries:
US Census (2000, 2010)
Base map © 2010 Microsoft Corporation
and its data suppliers

APPENDIX B: SEPARATE STORM SEWER SYSTEM MAP



Esri Canada, Esri, HERE, Garmin, INCREMENT P, Intermap, USGS, METI/NASA, EPA, USDA

Stormwater Collection System Overview

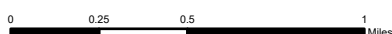
Portland, ME

Legend

- | | | | |
|------------------|-----------|--------------------|---------------------|
| ● StormManholes | Outfalls | ⊕ Private | — Culverts |
| □ Catchbasin | ⊕ Unknown | ⊕ State | ▭ Portland Boundary |
| ▲ Stormwater BMP | ⊕ City | ⊕ PWD | ▭ Town Boundaries |
| | ⊕ Jetport | — Storm Drain Pipe | |
| | ⊕ MDOT | — Underdrain | |



Project #: 0232276.04
Map Created: March 2021



Third Party GIS Disclaimer: This map is for reference and graphical purposes only and should not be relied upon by third parties for any legal decisions. Any reliance upon the map or data contained herein shall be at the users' sole risk. **Data Sources:**

Figure Exported: 3/11/2021 11:21:21 AM. By: stewart. Using: woodardcurran.net\shared\Projects\0232276.04_Portland_ME_-_SWMP_Services\GIS\SWMP\Figures\SWMPFigures.aprx. Layout: MS4_System_Overview

APPENDIX C: IMPAIRED WATERS AND SPECIAL RESOURCE WATERS

Portland, ME (Based on Approved 2016 Integrated List)

Waterbody	ID	Class	Impairment	Category	TMDL Defined Issue	Waste Load Allocation
Capisic Brook ¹	ME01060 00105_61 OR01	C	Benthic Macroinvertebrate Bioassessments Habitat Assessment Periphyton (Aufwuchs) Indicator Bioassessments	4-A TMDL Completed Impaired Use Other than Mercury	Impervious Cover	14% Effective Impervious Cover
Capisic Pond Wetland	ME01060 00105_61 OR01 _W023	C	Benthic - Macroinvertebrate Bioassessments	4-A TMDL Completed Wetland Habitat with Impaired Use	Impervious Cover	14% Effective Impervious Cover
Dole Brook ¹	ME01060 00105_60 9R01	B	Benthic - Macroinvertebrate Bioassessments	4-A TMDL Completed Impaired Use Other than Mercury	Impervious Cover	8% Effective Impervious Cover
Dole Brook Wetland	ME01060 00105_60 9R01 _W026	B	Benthic - Macroinvertebrate Bioassessments	4-A TMDL Completed Wetland Habitat with Impaired Use	Impervious Cover	8% Effective Impervious Cover
Long Creek ¹	ME01060 00105_61 OR03	C	Benthic - Macroinvertebrate Bioassessments	4-B TMDL Completed ³ Pollution Control Requirements Reasonably Expected to Result in Attainment (2020)	Impervious Cover	16% Effective Impervious Cover
Nasons Brook ¹	ME01060 00105_60 7R11_01	C	Benthic - Macroinvertebrate Bioassessments Dissolved Oxygen Periphyton (Aufwuchs) Indicator Bioassessments	4-A TMDL Completed Impaired Use Other than Mercury	Impervious Cover	14% Effective Impervious Cover
Nasons Brook Wetland Complex	ME01060 00105_60 7R11 _01_W12 7	C	Benthic - Macroinvertebrate Bioassessments	4-A TMDL Completed Wetland Habitat with Impaired Use	Impervious Cover	14% Effective Impervious Cover

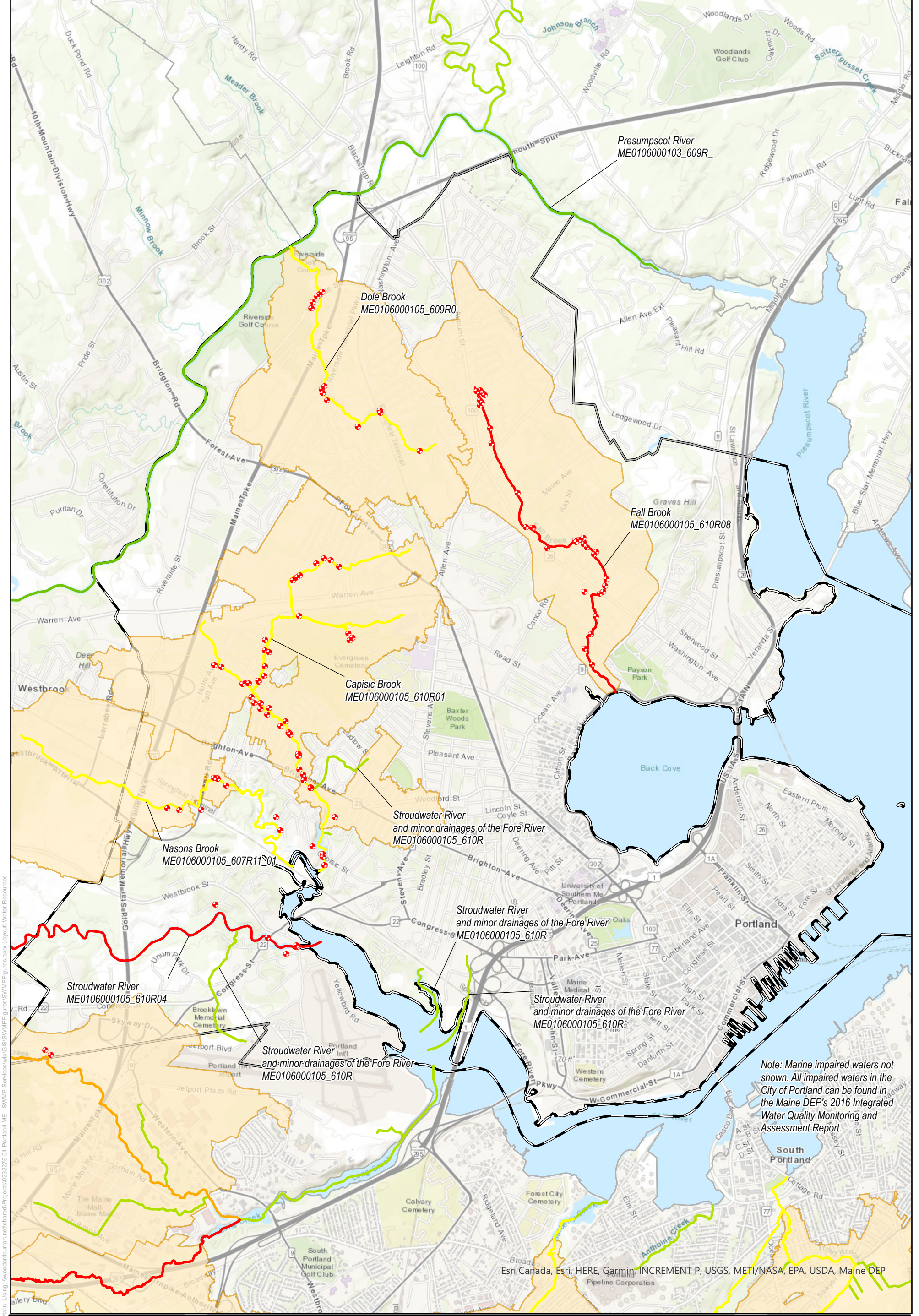
Waterbody	ID	Class	Impairment	Category	TMDL Defined Issue	Waste Load Allocation
Fore River Estuary	804-7	SC	Marine Life Toxics	5-A TMDL Required Estuarine and Marine Waters Impaired by Pollutants Other Than Those Listed in 5-B Through 5-D	No	--
			Fecal Coliform	4-A(b) TMDL Completed Estuarine and Marine Waters with Impaired Use (Bacteria from Combined Sewer Overflows) ²	Statewide Bacteria	14 Fecal Coliform/100mL 31 Fecal Coliform/100 mL ⁴
Fore River, Back Cove, Portland Harbor, Casco Bay	804-5	SC	Fecal Coliform	4-A(b) TMDL Completed Estuarine and Marine Waters with Impaired Use (Bacteria from Combined Sewer Overflows) ³	Statewide Bacteria	14 Fecal Coliform/100mL 31 Fecal Coliform/100 mL ⁴
Fall Brook ¹	ME01060 00105_61 OR08	C	Habitat Assessment	5-A TMDL Required Impaired by Pollutants Other Than Those Listed in 5-B Through 5-D	No	--
Stroudwater River	ME01060 00105_61 OR04	B	Dissolved Oxygen	5-A TMDL Required Rivers and Streams Impaired by Pollutants Other Than Those Listed in 5-B Through 5-D	No	--
Stroudwater River and Minor Drainages of the Fore River	ME01060 00105_61 OR	B	--	3 Insufficient Data	No	--
Presumpscot River	ME01060 00103_60 R_01	C	--	2 Attaining Some Uses Insufficient Information for Other Uses	No	--

1. Watershed is classified as an Urban Impaired Stream watershed. From the 2022 MS4 General Permit: "If the waterbody to which a point source covered by this GP discharges is an UIS (Appendix B of this permit) the permittee must propose and fully implement at least three structural or non-structural

BMPs to be considered for inclusion in the permit modification, unless the Department has determined the MS4 discharge is not causing or contributing to the impairment. The BMPs must address a specific impairment from the MS4 discharge within the UA.”

2. Permitted facilities under this impairment listing are the Portland Water District, City of South Portland, and Town of Cape Elizabeth.
3. Permitted facilities under this impairment listing are the City of Portland and the Portland Water District.
4. In approved shellfish growing areas affected by point sources, Fecal Coliform geometric mean shall not exceed 14/100mL and estimated 90th percentile shall not exceed 31/100mL.

APPENDIX D: MAP OF OUTFALLS TO IMPAIRED WATERS



Note: Marine impaired waters not shown. All impaired waters in the City of Portland can be found in the Maine DEP's 2016 Integrated Water Quality Monitoring and Assessment Report.

Portland's Water Resources

Portland, ME

Legend

- 2016 Integrated List Waters Categories**
- 1
 - 2
 - 3
 - 4A
 - 4B
 - 4C
 - 5

- Chapter 502 At Risk Lakes
- Chapter 502 Urban Impaired Stream Watersheds
- Outfalls with Direct Discharge to Impaired Waters
- Portland Boundary
- Town Boundaries



Project #: 0232276.04
Map Created: March 2021

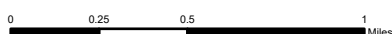


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APPENDIX E: EDUCATION & OUTREACH TOOLS

Audience appropriate social media platforms will be determined by platform use demographics each year.

Table 1. Tools for Measurable Goal 1.1a. (People 25 to 34 in the ISWG region)

Outreach Tool	Minimum Level of Effort	Effectiveness Benchmark
Think Blue Maine Website Content	Semiannual updates to website content	Number of visitors to website
Social Media Post (each platform counts as separate tool)	12 posts	Amount of post engagement (e.g., reactions, comments, shares, etc.)
Social Media Ad (each platform counts as separate tool)	Ad(s) run 90 days (multiple ads may be run for shorter durations to total 90 days)	Amount of ad engagement (e.g., reactions, comments, shares, link clicks, etc.) Number of people reached with ad
Social Media Video (each platform counts as separate tool)	3 videos	Amount of video engagement (e.g., views, reactions, comments, shares, etc.)
Online ad	Ad(s) run 90 days (multiple ads may be run for shorter durations to total 90 days)	Number of people reached with ad Amount of ad engagement (e.g., link clicks)
Outreach Tabling	3 events	Number of interactions
Outreach partnership with local organization	3 content shares by partner organization	Number of people reached
Other DEP-approved tools	Minimum level of effort will be determined based on the tool	Effectiveness benchmark will be determined based on the tool

Table 2. Tools for Measurable Goal 1.1b. (Contractors located within the ISWG region)

Outreach Tool	Minimum Level of Effort	Effectiveness Benchmark
Factsheet	1 factsheet	Total number of factsheets distributed
Email Newsletter	4 email newsletters	Number of people reached with email Number of interactions with email (e.g., link clicks)
Municipal Website Content	Annual updates to website stormwater content	Number of visitors to stormwater webpage(s)
Think Blue Maine Website Content	Semiannual updates to website content	Number of visitors to website
Online ad	Ad(s) run 90 days (multiple ads may be run for shorter durations to total 90 days)	Number of people reached with ad Amount of ad engagement (e.g., link clicks)
Webinar/Workshop	7 hours of training offered (multiple webinars/workshops may be offered to reach 7 hours)	Number of workshop attendees
Outreach partnership with local organization	3 content shares by partner organization	Number of people reached
Other DEP-approved tools	Minimum level of effort will be determined based on the tool	Effectiveness benchmark will be determined based on the tool

Table 3. Tools for Measurable Goal 1.2a. (Dog owners ages 25 to 34 within the ISWG region)

Outreach Tool	Minimum Level of Effort	Effectiveness Benchmark
Targeted Social Media Post (each platform counts as separate tool)	12 posts	Amount of post engagement (e.g., reactions, comments, shares, etc.)
Targeted Social Media Ad (each platform counts as separate tool)	Ad(s) run 90 days (multiple ads may be run for shorter durations to total 90 days)	Amount of ad engagement (e.g., reactions, comments, shares, link clicks, etc.) Number of people reached with ad
Targeted Social Media Video (each platform counts as separate tool)	3 videos	Amount of video engagement (e.g., views, reactions, comments, shares, etc.)
Outreach Tabling	3 events	Number of interactions
Outreach partnership with local organization	3 content shares by partner organization	Number of people reached
Item with branding/messaging	1 item with branding/messaging	Total number of items distributed
Other DEP-approved tools	Minimum level of effort will be determined based on the tool	Effectiveness benchmark will be determined based on the tool

Table 4. Tools for Measurable Goal 1.2b. (Dog owners ages 35 to 55 within the ISWG region)

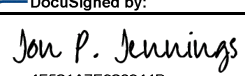
Outreach Tool	Minimum Level of Effort	Effectiveness Benchmark
Story Walk	1 story walk	Number of QR code (or similar technology) scans from signs
Targeted Social Media Post (each platform counts as separate tool)	12 posts	Amount of post engagement (e.g., reactions, comments, shares, etc.)
Targeted Social Media Ad (each platform counts as separate tool)	Ad(s) run 90 days (multiple ads may be run for shorter durations to total 90 days)	Amount of ad engagement (e.g., reactions, comments, shares, link clicks, etc.) Number of people reached with ad
Online ad	Ad(s) run 90 days (multiple ads may be run for shorter durations to total 90 days)	Number of people reached with ad Amount of ad engagement (e.g., link clicks)
Outreach Tabling	3 events	Number of interactions
Outreach partnership with local retailer	50% of industry retailers in region participating	Number of local retailers participating
Item with branding/messaging	1 item with branding/messaging	Total number of items distributed
Other DEP-approved tools	Minimum level of effort will be determined based on the tool	Effectiveness benchmark will be determined based on the tool

APPENDIX F: NOTICE OF INTENT TO COMPLY WITH MS4GP



NOTICE OF INTENT TO COMPLY WITH MAINE GENERAL PERMIT FOR THE DISCHARGE OF STORMWATER FROM MUNICIPAL SEPARATE STORM SEWER SYSTEMS (MS4)

PLEASE TYPE OR PRINT IN **BLACK INK ONLY**

PERMITTEE INFORMATION					
MS4 Entity	City of Portland, Maine	Permittee ID #	MER 041024		
Name and title of chief elected official or principal executive officer	Jon Jennings, City Manager				
Mailing Address	389 Congress Street				
Town/City	Portland	State	Maine	Zip Code	04101
Daytime Phone	207-874-8685	Email	citymanager@portlandmaine.gov		
PRIMARY CONTACT PERSON FOR OVERALL STORMWATER MANAGEMENT PROGRAM (if different than PEO/CEO)					
Name and Title	Christopher Branch, PE, Director of Public Works				
Mailing Address	212 Canco Road, Suite B				
Town/City	Portland	State	Maine	Zip Code	04103
Daytime Phone	207-874-8801	Email	cbranch@portlandmaine.gov		
STORMWATER MANAGEMENT PLAN (SWMP)					
Urbanized Area (sq. mi.)	Approximately 26 sq. miles				
I have attached our updated SWMP with ordinances, SOPs, forms. <input checked="" type="checkbox"/>					
Name of streams, wetlands, or waterbodies to which the regulated small MS4 discharges (<i>attach additional sheets as necessary</i>):					
<small>Capisic Brook & Capisic Pond Wetland, Dole Brook & wetlands, Fall Brook, Long Creek, Nasons Brook & wetlands, Deering Oaks Pond, Back Cove, Fore River Estuary, Stroudwater River & Minor Drainages of the Fore River, Stroudwater River, Presumpscot River, Portland Harbor, Casco Bay</small>					
List of impaired waterbodies that receive stormwater from the regulated small MS4 (<i>attach additional sheets as necessary</i>):					
<small>Capisic Brook & Capisic Pond Wetland, Dole Brook & wetlands, Fall Brook, Long Creek, Nasons Brook & wetlands, Back Cove, Fore River Estuary, Stroudwater River & Minor Drainages of the Fore River, Stroudwater River, Presumpscot River, Portland Harbor, Casco Bay</small>					
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 gather and evaluate 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.					
<small>DocuSigned by:</small>					
Signature of Permittee			Date	3/23/2021	
<small>4F521A7E920344B...</small>					

This NOI registration form must be filed with the Department at the following address:

DS
JT
 Stormwater Program Manager
 Maine Department of Environmental Protection
 Bureau of Water Quality
 17 State House Station
 Augusta ME 04333-0017
Rhonda.Poirier@maine.gov

OFFICE USE ONLY							
Date Recieved		Staff		Date Accepted		Date Not Accepted	

APPENDIX G: NOI OUTREACH TO NESTED & INTERCONNECTED MS4S



CITY OF PORTLAND
Department of Public Works
Christopher C. Branch, P.E., Director

March 15, 2021

Eric Dudley, PE
Director of Engineering & Public Services
City of Westbrook
2 York St
Westbrook, ME 04092

RE: Spill Response Coordination – Interconnected MS4s

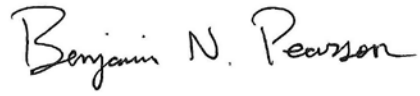
Dear Eric Dudley:

The City of Portland is hereby informing you that it will be filing a **Notice of Intent (NOI) to comply with the Maine General Permit for the Discharge of Stormwater From Small Municipal Separate Sewer Systems (MS4) with the Maine Department of Environmental Protection (DEP) by March 31, 2021**. The permit will cover discharges from the MS4 to the Capisic Brook, Dole Brook, Fall Brook, Nasons Brook, Long Creek, Stroudwater River, Presumpscot River, Fore River, Capisic Pond, Deering Oaks Pond, Back Cove, Portland Harbor and Casco Bay. A copy of the NOI, Stormwater Management Plan and General Permit will be posted on the City of Portland website and the Maine DEP website (<https://www.maine.gov/dep/comment/index.html>) and public comment will be taken during the Maine DEP review period.

The City of Portland is currently regulated by the [General Permit for the Discharge of Stormwater From Small Municipal Separate Storm Sewer Systems](#) (MS4) issued under the Maine Pollution Detection and Elimination System (MEPDES) program administered by the Maine DEP. Under this permit, the City is required to coordinate spill response efforts with other MS4 regulated entities with interconnected and/or nested stormwater systems. Our records indicate your stormwater system connects to the City of Portland's infrastructure (pipes, catch basins, ditch lines, or other conveyances).

Therefore, if there are any spills of hazardous or non-hazardous substances that have the potential to enter the City's stormwater system, please notify staff directly (contact information below). In the event of an emergency after hours, please contact Public Works Dispatch at 207-874-8493.

Please be certain to forward this request to any first responders or other staff that might coordinate spill response efforts. Please do not hesitate to contact me if you have any questions. Thank you for your consideration of this matter.



City of Portland
Department of Public Works
Water Resources Division
212 Canco Road, Suite B
Portland ME 04103

Compliance Section Coordinator:

Ben Pearson

bnp@portlandmaine.gov

(207) 874-8843

Stormwater Program Coordinator:

Douglas Roncarati

dar@portlandmaine.gov

(207) 874-8848



CITY OF PORTLAND
Department of Public Works
Christopher C. Branch, P.E., Director

March 15, 2021

John Souther
Executive Director of Facilities
University of Southern Maine
25 Bedford Street
Portland, ME 04103

RE: Spill Response Coordination – Interconnected MS4s

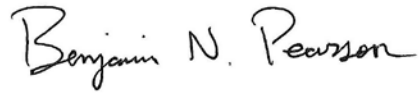
Dear John Souther:

The City of Portland is hereby informing you that it will be filing a **Notice of Intent (NOI) to comply with the Maine General Permit for the Discharge of Stormwater From Small Municipal Separate Sewer Systems (MS4) with the Maine Department of Environmental Protection (DEP) by March 31, 2021**. The permit will cover discharges from the MS4 to the Capisic Brook, Dole Brook, Fall Brook, Nasons Brook, Long Creek, Stroudwater River, Presumpscot River, Fore River, Capisic Pond, Deering Oaks Pond, Back Cove, Portland Harbor and Casco Bay. A copy of the NOI, Stormwater Management Plan and General Permit will be posted on the City of Portland website and the Maine DEP website (<https://www.maine.gov/dep/comment/index.html>) and public comment will be taken during the Maine DEP review period.

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City of Portland
Department of Public Works
Water Resources Division
212 Canco Road, Suite B
Portland ME 04103

Compliance Section Coordinator:

Ben Pearson

bnp@portlandmaine.gov

(207) 874-8843

Stormwater Program Coordinator:

Douglas Roncarati

dar@portlandmaine.gov

(207) 874-8848



CITY OF PORTLAND
Department of Public Works
Christopher C. Branch, P.E., Director

March 15, 2021

Justin Early
Town Engineer
Town of Falmouth
101 Woods Road
Falmouth, ME 04105

RE: Spill Response Coordination – Interconnected MS4s

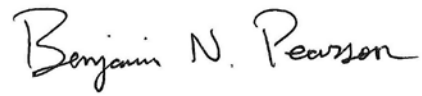
Dear Justin Early:

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CITY OF PORTLAND
Department of Public Works
Christopher C. Branch, P.E., Director

March 15, 2021

Sean Donahue
Permitting Coordinator, Environmental Liaison
MTA
2360 Congress St
Portland, ME 04102

RE: Spill Response Coordination – Interconnected MS4s

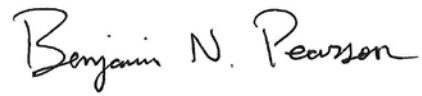
Dear Sean Donahue:

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CITY OF PORTLAND
Department of Public Works
Christopher C. Branch, P.E., Director

March 15, 2021

Dana Banks
Environmental Director
PAN-AM Railroad
1700 Iron Horse Park
No. Billerica, MA 01862

RE: Spill Response Coordination – Interconnected MS4s

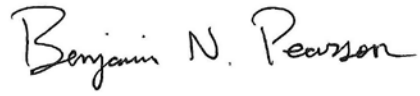
Dear Dana Banks:

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CITY OF PORTLAND
Department of Public Works
Christopher C. Branch, P.E., Director

March 15, 2021

Fred Dillon
Stormwater Coordinator
City of South Portland
PO Box 9422
South Portland, ME 04116-9422

RE: Spill Response Coordination – Interconnected MS4s

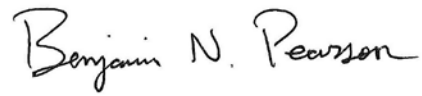
Dear Fred Dillon:

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CITY OF PORTLAND
Department of Public Works
Christopher C. Branch, P.E., Director

March 15, 2021

Karem Gungor
Stormwater Engineer
Maine DOT
16 State House Station
Augusta, ME 04333-0016

RE: Spill Response Coordination – Interconnected MS4s

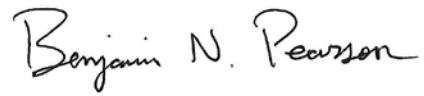
Dear Karem Gungor:

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CITY OF PORTLAND
Department of Public Works
Christopher C. Branch, P.E., Director

March 15, 2021

Wesley Heinz
Executive Director
Narrow Gauge Railroad
58 Fore Street
Portland, ME 04101

RE: Spill Response Coordination – Interconnected MS4s

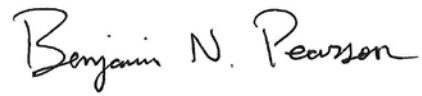
Dear Wesley Heinz:

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APPENDIX H: MS4GP (10/15/20)

**State of Maine
Department of Environmental Protection
Bureau of Water Quality**

**General Permit for the Discharge of Stormwater from Small
Municipal Separate Storm Sewer Systems (MS4)**



MER041000

Final Permit

October 15, 2020

General Permit--Municipal Separate Storm Sewer Systems

Maine Pollutant Discharge Elimination System (MEPDES)/Maine Waste Discharge License (WDL)

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Final Permit
General Permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer Systems



STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION
17 STATE HOUSE STATION
AUGUSTA, ME 04333

DEPARTMENT ORDER

IN THE MATTER OF

MUNICIPAL SEPARATE STORM SEWER SYSTEM	)	MAINE POLLUTANT DISCHARGE
GENERAL PERMIT	)	ELIMINATION SYSTEM PERMIT
STATE OF MAINE)	
MER041000	)	MAINE WASTE DISCHARGE LICENSE
W009170-5Y-C-R	)	RENEWAL
	APPROVAL	

Pursuant to the provisions of Federal law Title 33 USC, §1251, and Maine Law 38 M.R.S., Section 414-A et seq., and applicable regulations, the Maine Department of Environmental Protection (Department/DEP) has considered an application by the State of Maine to renew Maine Pollutant Discharge Elimination System (MEPDES) permit #MER041000/Maine Waste Discharge License W009170-5Y-A-N General Permit (GP), with its supportive data, agency review comments, and other related materials on file and FINDS THE FOLLOWING FACTS:

APPLICATION SUMMARY

Pursuant to applicable laws and rules of the State's MEPDES program, the Department's Bureau of Water Quality, Division of Water Quality Management has developed a GP for discharges of stormwater from Small Municipal Separate Storm Sewer Systems (MS4s) to surface waters of the state. This GP is being issued as a combination MEPDES permit/WDL and has been assigned #MER041000. This GP is a two-step general permit pursuant to 40 Code of Federal Regulation (CFR) §122.28(d)(2). The Department will establish a list of required actions and corresponding schedules of compliance for each small MS4 permittee in a separate Department Order based on a Department review of the permittee's Notice of Intent (NOI) and Storm Water Management Plan (SWMP).

REGULATORY SUMMARY

On January 12, 2001, the Department received authorization from the U.S. Environmental Protection Agency (EPA) to administer the National Pollutant Discharge Elimination System (NPDES) permit program in Maine. From that point forward, the program has been referred to as the MEPDES permit program. The terms and conditions of this GP are consistent with the requirements established in the MEPDES permit program.

Final Permit

General Permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer Systems

CONCLUSIONS

Based on the findings in this GP, and subject to the terms and conditions listed in Parts I-IV of this GP and a list of required actions and corresponding schedules of compliance for each permit specific Department Order, the Department makes the following conclusions:

1. The discharge(s) covered under this GP, either by itself or in combination with other discharges, will not lower the quality of any classified body of water below such classification.
2. The discharge(s) covered under this GP, either by itself or in combination with other discharges, will not lower the quality of any unclassified body of water below the classification which the Department expects to adopt in accordance with state law.
3. The provisions of the State's antidegradation policy, Maine law, 38 M.R.S. § 464(4)(F), will be met, in that:
 - (a) Existing in-stream water uses and the level of water quality necessary to protect and maintain those existing uses will be maintained and protected;
 - (b) Where high quality waters of the State constitute an outstanding natural resource, that water quality will be maintained and protected;
 - (c) Where the standards of classification of the receiving water body are not met, the discharge will not cause or contribute to the failure of the water body to meet the standards of classification;
 - (d) Where the actual quality of any classified receiving water body exceeds the minimum standards of the next highest classification that higher water quality will be maintained and protected; and
 - (e) Where a discharge will result in lowering the existing water quality of any water body, the Department has made the finding, following opportunity for public participation, that this action is necessary to achieve important economic or social benefits to the State.
4. The discharge(s) covered under this GP will be subject to effluent limitations that require application of best practicable treatment as defined in 38 M.R.S. § 414-A(1)(D).

Final Permit

General Permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer Systems


ACTION

Based on the findings and conclusions as stated above, the Department APPROVES GP #MER041000, *General Permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer Systems*, which results in a discharge of stormwater to surface waters of the state, SUBJECT TO THE ATTACHED CONDITIONS, including:

1. The attached conditions included as Part I-IV of this GP.
2. *Maine Pollutant Discharge Elimination System Permit Standard Conditions Applicable To All Permits*, revised July 1, 2002, attached.
3. This GP becomes effective on July 1, 2022 and expires at midnight five (5) years after that date. If the GP is to be renewed, it will remain in force until the Department takes final action on the renewal. Persons wishing to obtain coverage under this GP must apply for coverage by way of the submission of a Notice of Intent (NOI) not later than March 31, 2021.

DONE AND DATED AT AUGUSTA, MAINE, THIS 15 DAY OF October, 2020.

COMMISSIONER OF ENVIRONMENTAL PROTECTION

BY: 

for Melanie Loyzim, Acting Commissioner

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of Public Notice December 9, 2019.

Date filed with Board of Environmental Protection October 15, 2020

This Order prepared by GREGG WOOD, BUREAU OF WATER QUALITY

MS4 Final Permit 2020

10/14/2020

PART I. Coverage Under This Permit**A. AUTHORITY**

A waste discharge permit is required for the direct or indirect discharge of pollutants to waters of the State. A two-step general permit will be issued for point source discharges (direct discharges) of stormwater. A violation of a condition or requirement of a general permit constitutes a violation of Maine's water quality laws and the federal Clean Water Act and subjects the discharger to penalties under *Organization and Powers*, 38 M.R.S. § 349, and § 309 of the Clean Water Act. Nothing in this GP is intended to limit the Department's authority under the waste discharge and water classification statutes or rules. This GP does not affect requirements under other applicable Maine statutes such as Site Location of Development (Site Law), Stormwater Management, and Natural Resources Protection Act (NRPA). This GP does not prevent a municipality from adopting stricter standards than contained in this GP or state or federal standards.

B. PERMIT COVERAGE

This MS4 GP is part of a two-step general permit pursuant to 40 CFR §122.28(d)(2). The terms and conditions contained herein are applicable to all regulated small MS4s. The Department will also issue a separate permittee specific Department Order (DEP Order) for each MS4 that establishes a list of required actions and a corresponding schedule of compliance for each action item. This GP in conjunction with the permittee specific DEP Order authorizes the direct discharge of stormwater from a regulated MS4 to waters of the State other than groundwater, provided that the MS4 is located in an Urbanized Area as determined by the inclusive sum of the 2000 and 2010 Decennial Census by the Bureau of Census. Small MS4s are those entities which meet the definition in 40 CFR Part 122.26(b)(16). Regulated small MS4s are those entities required pursuant to 40 CFR 122.26(a)(9)(i)(A) to obtain stormwater permit coverage to operate their small MS4. Discharges from regulated small MS4s must meet the requirements of this GP, the permittee specific DEP Order, and applicable provisions of Maine's waste discharge and water classification statutes and rules. Compliance with this GP and permittee specific DEP Order authorizes a person to discharge stormwater, pursuant to Water Pollution Control Law, 38 M.R.S. § 413, as described below. Discharges listed in Part IV(C)(3)(h) are excluded from coverage under this GP and the permittee specific DEP Order. Unless otherwise explicitly noted, this GP and the permittee specific DEP Order only covers operations or activities associated with stormwater runoff within an identified Urbanized Area.

- 1. Effective date of this General Permit.** This GP becomes effective on July 1, 2022 and expires at midnight five (5) years after that date. Persons wishing to obtain coverage must apply for coverage by way of the submission of a NOI not later than March 31, 2021. New permittees seeking coverage under this GP may submit a NOI to the Department at any time during the 5-year term of this GP.

PART I. Coverage Under This Permit (cont'd)**B. PERMIT COVERAGE (cont'd)**

The Department must review the NOI submitted by each applicant to determine whether the information is complete and to establish the additional terms and conditions necessary to meet 40 CFR §122.34. The Department will follow the procedure outlined in Part III of this GP to establish a list of required actions and a corresponding schedule of compliance for the action items for each permittee specific DEP Order.

The Department will notify an applicant within 60 calendar days of receipt of an NOI as to whether or not the NOI is deemed complete for processing by the Department. Pursuant to Department rule 06-096 CMR Chapter 2, *Rule Concerning the Processing of Applications And Other Administrative Matters*, a request for a hearing on an application must be received by the Department, in writing, no later than 20 days after the application is accepted as complete for processing. The request must indicate the interest of the person filing the request and specify the reasons why a hearing is warranted. If the Department does not notify the applicant within 60 calendar days of this time, the NOI is accepted. An applicant is authorized to discharge when the GP becomes effective and the applicable permittee specific DEP Order establishing a list of required actions and a corresponding schedule of compliance for the action items is issued as a final agency action. In the event coverage under the GP is not granted, the Department must notify the applicant of the reason(s) for not granting coverage. A person may apply for issuance of an individual MEPDES permit if the proposed discharge(s) is not approvable for coverage under this GP.

2. **Waiver of authorization.** The Department may grant a regulated small MS4 a waiver from the requirement to obtain authorization only if:
 - a. The population within the Urbanized Area portion of the municipality is less than 1,000, and stormwater from the MS4 has not caused, or is not causing or contributing to the impairment of a receiving water body; and
 - b. The MS4 does not contribute to the pollutant load of a physically interconnected regulated MS4 (see 40 CFR 122.32(d)(1)); and
 - c. The MS4 discharges any pollutant(s) that has/have been identified as a cause of impairment of any water body to which it discharges, stormwater controls are not needed based on waste load allocations that are part of an EPA approved or established “total maximum daily load” (TMDL) that addresses the storm water issue of significance. See 40 CFR 122.32(d)(2).
3. **Continuation of Coverage.** Coverage under this GP and the permittee specific DEP Order will be continued provided there are no changes in the discharge as described in the NOI. If changes occur or are proposed, the permittee having filed the NOI must notify the Department, as specified in this GP. Upon reissuance of a new GP, a permittee wishing to continue coverage must submit a new NOI to the Department.

PART I. Coverage Under This Permit (cont'd)

B. PERMIT COVERAGE (cont'd)

If this GP and a permittee specific DEP Order are not reissued, revoked or replaced prior to the expiration date, both will be administratively continued and remain in force and effect. In that case, any permittee who was granted permit coverage prior to the expiration date will automatically remain covered by the administratively continued GP and permittee specific DEP Order until the earlier of:

- a. Reissuance or replacement of this GP, at which time the permittee must submit a new NOI to the Department in accordance with the new GP to maintain authorization to discharge;
 - b. The permittee's submittal of a Notice of Termination (NOT);
 - c. Issuance of an individual permit for the permittee's discharges; or
 - d. A formal permit decision by the Commissioner not to reissue this GP, at which time the permittee must seek coverage under an alternative general permit or individual permit.
4. **Limitations on Coverage.** This GP does not authorize a stormwater discharge that requires an individual waste discharge permit or is required to obtain coverage under another waste discharge GP. The Department may require any permittee with a discharge authorized by this GP to apply for and obtain an individual permit or an alternative GP. Any interested person may petition the Department to take action under this paragraph. Examples of when an individual waste discharge permit may be required are specified in rule.
5. **Annual Fee.** Coverage under the GP and the permittee specific DEP Order will be continued upon payment of an annual fee. Fees must be paid by check or money order, payable to **Treasurer, State of Maine.**
6. **Individual Permit or Alternative GP.** When an individual permit is issued to a discharger otherwise subject to this GP, or the discharger is authorized to discharge under an alternative GP, the applicability of this GP to the individual permittee and the permittee specific DEP Order are automatically terminated on the effective date of the individual permit or the date of authorization of coverage under the alternative GP, whichever the case may be. When an individual permit is denied to a permittee otherwise subject to this GP, or the operator is denied for coverage under an alternative GP, the applicability of this GP to the individual MEPDES permittee is automatically terminated on the date of such denial, unless otherwise specified by the Commissioner.

PART I. Coverage Under This Permit (cont'd)

C. COMPLIANCE

1. **Compliance.** Regulated small MS4s must remain in compliance with all standards and requirements of this GP and the permittee specific DEP Order. Non-compliance with any of the standards and requirements of this GP or with any of the standards and requirements of a permittee specific DEP Order constitutes a violation of the GP and the CWA. If the Department determines that the standards of this GP or permittee specific DEP Order have not been met, the Department will notify the permittee and may undertake one or more of the following actions:
 - a. Authorize coverage under this GP after appropriate controls and implementation procedures designed to bring the discharge into compliance with this GP and the permittee specific DEP Order and water quality standards have been implemented as determined by the Department;
 - b. Require an individual waste discharge permit;
 - c. Inform the person that the discharge is prohibited; or
 - d. Take enforcement action to address the violation(s).
2. **Non-stormwater.** This GP does not authorize discharges that are mixed with sources of non-stormwater, other than those discharges in compliance with Part IV (C)(3)(h).
3. **Discharge of hazardous substances, chemicals, or oil.** This GP does not authorize the discharge of hazardous substances, chemicals, or oil resulting from an on-site spill.
4. **Total maximum daily load (“TMDL”).** This GP does not authorize a direct discharge that is inconsistent with any EPA approved TMDL waste load allocation.
5. **Violation of water quality standards.** This GP does not authorize a discharge that causes or contributes to a violation of a water quality standard. Discharges covered under this GP may not:
 - a. Contain any pollutant, including toxic substances, in quantities or concentrations, which may cause or contribute to any adverse impact on the receiving water;
 - b. Be to a receiving water which is not meeting its classification standard for any characteristic which may be affected by the discharge; or
 - c. Impart color, taste, turbidity, radioactivity, settleable materials, floating substances or other properties that cause the receiving water to be unsuitable for the designated uses ascribed to its classification.

PART I. Coverage Under This Permit (cont'd)

C. COMPLIANCE (cont'd)

6. **Waste discharge license (groundwater).** A waste discharge license (“WDL”) may be required for the discharge of stormwater through any well or wells, including drywells and subsurface fluid distribution systems. For complete requirements, see *Rules To Control The Subsurface Discharge Of Pollutants*, 06-096 CMR 543 (effective October 6, 2006), and *Stormwater Management*, 06-096 CMR 500 Appendix D (last amended August, 2015).
 - a. A “subsurface fluid distribution system” is an assemblage of perforated pipes, drain tiles, or similar mechanisms intended to distribute fluids below the surface of the ground.
 - b. A “well” is a bored, drilled, or driven shaft the depth of which is greater than the largest surface dimension, whether the shaft is typically dry or contains liquid; or a dug hole the depth of which is greater than the largest surface dimension; or a subsurface fluid distribution system.
 - c. “Well injection” means the subsurface discharge of fluids into or through a well.
7. **Removed Substances.** Solids, sludges, filter backwash or other pollutants removed or resulting from the treatment of stormwater must be disposed of in a manner approved by the Department.
8. **Monitoring Requirement.** The Department may require monitoring of an individual discharge as may be reasonably necessary in order to characterize the nature, volume or other attributes of that discharge or its sources.
9. **Other Information.** When the permittee becomes aware that he or she failed to submit any relevant facts or submitted incorrect information in the Notice of Intent or in any other report to the Department, he or she must promptly submit such facts or information.
10. **Endangered Species.** Pursuant to State and Local Cooperation Law, 12 M.R.S. § 12806, A state agency or municipal government shall not permit, license, fund or carry out projects that will:
 - a. Significantly alter the habitat identified under Conservation of Endangered Species Law, 12 M.R.S. § 12804, subsection 2 of any species designated as threatened or endangered under this subchapter; or
 - b. Violate protection guidelines set forth in 12 M.R.S. § 12804, subsection 3.

Final Permit

General Permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer Systems

PART II. Definitions

The following terms have the following meanings as used in this GP and the permittee specific DEP Order in addition to the definitions found in Chapter 520 of the Department's rules, and applicable statutory definitions.

- A. Applicant** - Means a municipality which files an NOI pursuant to Part III of this GP.
- B. Best Management Practices (BMP)** - Means schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of waters of the State. BMPs also include treatment requirements, operating procedures, and practices to control site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.
- C. Catch basin evaluation** - Means an inspection of a catch basin structure that includes documentation of water quality. Water quality evaluation includes, at a minimum, visual observations of sheen, discoloration, foaming, evidence of sanitary sewage, excessive algal growth, and similar visual indicators, as well as observations of odor and the depth of sediment in the sump. This evaluation may be conducted in conjunction with a routine cleaning event or separately, in order to determine which structure(s) require cleaning.
- D. Commissioner** - Means the Commissioner of the Maine Department of Environmental Protection.
- E. Common Plan of Development or Sale** - Means a subdivision under municipal law as determined by the municipality where the subdivision is located.
- F. Compensation Fee Utilization Plan** - Means a plan that specifies how funds received as a fee payment will be allocated to reduce the impact of stormwater pollution to an impaired waterbody.
- G. Construction Activity** - Means:
 - 1. Construction activity including one acre or more of disturbed area, or activity with less than one acre of total land area that is part of a common plan of development or sale, if the common plan of development or sale will ultimately disturb equal to or greater than one acre; or
 - 2. Any other construction activity designated by the Department based on the potential for contribution to a violation of a water quality standard or for significant contribution of pollutants to waters of the State.
- H. Department (DEP)** - Means the State of Maine Department of Environmental Protection.
- I. Direct Discharge** - The definition of "Direct Discharge" in this GP has been taken from Maine law 38 M.R.S. § 466 ("Definitions") and is as follows: "any discernible, confined and discrete conveyance, including, but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation or vessel or other floating craft, from which pollutants are or may be discharged."

PART II. Definitions (cont'd)

- J. Discharge** - Means any spilling, leaking, pumping, pouring, emptying, dumping, disposing or other addition of pollutants to the Waters of the State (for the purpose of this GP, located within the permittee's UA and not including groundwater.)
- K. Discharge Point** – For the purposes of this permit the location where collected and concentrated stormwater flows are discharged from the facility such that the first receiving waterbody into which the discharge flows, either directly or through a separate storm sewer system, is a water of the State.
- L. Disturbed Area** - Means all land areas that are stripped, graded, grubbed, filled or excavated at any time during the site preparation or removing vegetation for, or construction of, a project. Cutting of trees, without grubbing, stump removal, disturbance or exposure of soil is not considered “disturbed area”. “Disturbed area” does not include routine maintenance but does include redevelopment and new impervious areas. “Routine maintenance” is maintenance performed to maintain the original line and grade, hydraulic capacity, and original purpose of the facility. Paving impervious gravel surfaces provided that an applicant or permittee can prove the original line and grade and hydraulic capacity will be maintained and original purpose of the gravel surface remains the same is considered routine maintenance.
- M. Dry Weather Flow** - Means any observable flow from an outfall when there has not been measurable precipitation greater than 1/4 of an inch, or ice or snow melt within 72 hours prior to the outfall inspection.
- N. Dry weather inspection** - Means an inspection of an outfall that includes observations of sheen, discoloration, foaming, evidence of sanitary sewage, excessive algal growth, and similar visual indicators, as well as detection of odor. These inspections must be completed during a dry weather flow condition (when the storm sewer system is not impacted by current or recent precipitation) or when the outfall is not flowing even if it is within the 72 hours of precipitation greater than 1/4 of an inch, or ice or snow melt.
- O. Education/outreach Campaign** - Means a specific set of activities aimed at an identified target audience organized to achieve a particular goal. Campaigns are the totality of all the efforts and tools used to achieve the goal.
- P. Education Outreach tool** – A method used to deliver a message to a target audience. Messages may be printed materials such as brochures or newsletters; electronic materials such as websites or online ads; mass media such as newspaper articles or public service announcements (radio or television); or displays in public areas such as town/city hall.
- Q. Education Outreach to change behavior** – Means to promote and reinforce desirable behaviors designed to reduce stormwater pollution.

Final Permit

General Permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer Systems

PART II. Definitions (cont'd)

- R. Education/outreach Program** - Means all the education and outreach campaigns and activities to meet minimum control measure 1 (MCM1) and may include activities in the other minimum control measures.
- S. Illicit Discharge** - Means any discharge to a regulated MS4 system that is not composed entirely of stormwater other than: discharges authorized pursuant to another permit issued pursuant to 38 M.R.S. §413; uncontaminated groundwater; water from a natural resource [such as a wetland]; or other Allowable Non-Stormwater Discharges identified in Part IV(C)(3)(h) of this GP.
- T. Impaired Waterbody** - Means a waterbody that is not attaining water quality criteria or standards, as determined by the Department.
- U. Low impact development** - “Low impact development” or “green infrastructure” means site planning and design strategies intended to replace or replicate predevelopment hydrology through the use of source control and relatively small-scale measures integrated throughout a site to disconnect impervious surfaces and enhance filtration, treatment, and management of stormwater runoff as close to its source as possible. Low impact development strategies may be either nonstructural or structural, except that low impact development strategies utilizing structural stormwater management techniques shall be limited to an impervious contributing drainage area equal to or less than 1 acre. Low impact development strategies include, but are not limited to: bioretention filters, grass swales and channels, vegetated filter strips, permeable pavements, rain gardens and vegetated rooftops.
- V. Maintenance** - “Maintenance” means an activity undertaken to maintain operating condition, original line and grade, hydraulic capacity, and original purpose of the project. Paving an impervious gravel surface at original line, grade and hydraulic capacity is considered maintenance. Replacement of a building is not considered maintenance of the building.
- W. Message** – Information distributed to a specific target audience.
- X. Municipal Separate Storm Sewer Systems (MS4)** - Means a conveyance or system of conveyances designed or used for collecting or conveying stormwater (other than a publicly owned treatment works (POTW), as defined at 40 CFR 122.2, or a combined sewer), including, but not limited to, roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, human-made channels or storm drains owned or operated by any municipality, sewer or sewage district, Maine Department of Transportation (MDOT), Maine Turnpike Authority (MTA), State agency or Federal agency or other public entity that discharges to waters of the State other than groundwater.
- Y. New development or construction** - “New development or construction” means activity undertaken to develop property, including but not limited to: the construction of buildings, parking lots, roads and other new impervious surfaces; landscaping; and other activities that disturb land areas. New development or construction does not include redevelopment or maintenance. Permitted municipalities may define new development more stringently.

PART II. Definitions (cont'd)

- Z. Notice of Intent (NOI)** - Means a notification of intent to seek coverage under this GP and a permittee specific DEP Order as provided in Part III(A), made by the applicant to the Department on an NOI form(s) provided by the Department. This is also the mechanism used to request coverage under this GP and under a permittee specific DEP Order.
- AA. Outfall** - Means the point source where the MS4 discharges from a pipe, ditch or other discrete conveyance to the waters of the state other than groundwater, or to another entity's MS4, and does not include pipes, cross culverts, tunnels or other conveyances which connect segments of the same stream or other waters of the state and are used to convey waters of the state. For the purposes of this GP, a discharge to a location not defined as a water of the state is not considered an outfall.
- BB. Outreach to raise awareness** – Means to introduce information that may be new to or not well understood by a target audience.
- CC. Permittee** - Means a municipality that owns or operates the storm sewer system authorized under this GP.
- DD. Permittee Specific DEP Order** – Means a document issued by the Department, following a formal public comment period, that establishes a list of required actions and corresponding schedules of compliance for a limited number of BMPs associated with the implementation of the GP.
- EE. Person** - Means an individual, firm, corporation, municipality, quasi-municipal corporation, state agency, federal agency or other legal entity which creates, initiates, originates or maintains a discharge authorized by this GP.
- FF. Point source** - See “**Direct Discharge**”. For the purposes of this GP, the definitions of “Point source” and “Direct Discharge” are identical.
- GG. Redevelopment** - “Redevelopment” means an activity, not including maintenance, undertaken to redevelop or otherwise improve property in which the newly developed area is located within the same footprint as the existing developed area.
- HH. Regulated Small MS4** - Means any Small MS4 authorized by this General Permit or the general permits for the discharge of stormwater from MDOT and MTA small MS4s or state or federally owned or operated small MS4s including all those located partially or entirely within an UA. A list of these regulated small MS4s owned or operated by municipalities is included in Appendix A of this GP.

PART II. Definitions (cont'd)

- II. Small MS4** - Means any MS4 that is not already covered by the Phase I MS4 stormwater program including municipally owned or operated storm sewer systems, state or federally-owned systems, such as colleges, universities, prisons, military bases and facilities, and transportation entities such as MDOT and MTA road systems and facilities. See also 40 CFR 122.26(b)(16).
- JJ. Stormwater** - Means the part of precipitation including runoff from rain or melting ice and snow that flows across the surface as sheet flow, shallow concentrated flow, or in drainage ways.
- KK. Stormwater Issue of Significance (SIS)** – Means any local, regional or statewide issue that must be addressed in order to improve water quality in receiving water bodies. SIS can include single pollutants or multiple pollutants as well as certain actions (increased impervious cover, lack of community awareness, construction, agricultural impacts, etc.) conditions (lack of infiltration, treatment at the source, etc.) or phenomena (development pressure, urban sprawl, flooding, urbanization, pH/acidification, etc.).
- LL. Stormwater Management Plan (SWMP)** - Means a written plan developed, implemented, and enforced by a permittee. The SWMP defines the specific BMPs that will be implemented by the permittee under each of the six MCMs set forth in Part IV of the GP, which are designed to reduce the discharge of pollutants from the MS4 to the maximum extent practicable (MEP). The SWMP defines: the measurable goal(s) by which each BMP will be evaluated; the person(s) responsible for implementing each BMP, and; the date by which each BMP will be implemented.
- MM. Stormwater Pollution Prevention Plan (SWPPP)** - Means a written plan developed and implemented for select municipal operations to reduce or eliminate pollutants as described in this GP.
- NN. Total Maximum Daily Load (TMDL)** – Means the sum of the individual waste load allocations (WLAs) for point sources and load allocations (LAs) for non-point sources, natural background and a margin of safety. If a receiving water has only one point source discharger, the TMDL is the sum of that point source WLA plus the LAs for any nonpoint sources of pollution and natural background sources, tributaries, or adjacent segments. TMDLs can be expressed in terms of either mass per time, toxicity, or other appropriate measure. If BMPs or other nonpoint source pollution controls make more stringent load allocations practicable, then waste load allocations can be made less stringent. Thus, the TMDL process provides for nonpoint source control tradeoffs.
- OO. Urban Impaired Stream** - Means a stream that fails to meet water quality standards because of effects of stormwater runoff from developed land. Urban Impaired Streams are those streams identified in Appendix B of this GP.

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General Permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer Systems

PART II. Definitions (cont'd)

- PP. Urban Runoff** - Means stormwater runoff from an Urbanized Area, that may contain elevated levels of pollutants such as hydrocarbons, chlorides, heavy metals and nutrients which may cause or contribute to a waterbody's impairment. In many instances flow such as frequent elevated storm flows, low base flows, and high temperatures will also be significant contributors to a waterbody's impairment.
- QQ. Urbanized Area (UA)** - Means the area of the State of Maine so defined by the inclusive sum of the 2000 decennial census and latest decennial census (2010) by the U.S. Bureau of the Census.
- RR. Waste Load Allocation (WLA)** – Means the portion of a receiving waters loading capacity that is allocated to one of its existing or future point sources of pollution. WLAs constitutes a type of water quality based effluent limitation.
- SS. Waters of the State** - Means any and all surface waters and subsurface waters that are contained within, flow through, or under or border upon this state or any portion of the state, including the marginal and high seas, except such waters as are confined and retained completely upon the property of one person and do not drain into or connect with any other waters of the state, but not excluding waters susceptible to use in interstate or foreign commerce, or whose use, degradation or destruction would affect interstate or foreign commerce.

Part III. Procedure

A. Obtaining Coverage To Discharge.

1. Public Notice

Applicant Public Notice. Applicants are required to publish a public notice that the NOI and a SWMP are being filed with the Department. The notice must be published **within** the 30 calendar-day period prior to the NOI being sent to the Department. The notice must be published in the legal advertisement section of a daily or weekly newspaper having general circulation in the area where the discharges authorized by this GP will occur and by making the notice available on the municipality's official internet web site. Applicants are required to provide a letter of notice to all regulated small MS4s into which the MS4 discharges, and also to persons who have requested to be notified or interested persons to the respective applicants.

- 2. NOI submission.** The operator of any regulated small MS4 that initiates, creates, originates or maintains a discharge described in Part I of this GP and that wishes to obtain coverage under this GP and a permittee specific DEP Order must file a NOI with the Department that meets the requirements of this GP not later than March 31, 2021. The applicant must file the NOI using a form(s) provided by the Department. The applicant must sign the NOI in accordance with this section. New permittee's seeking coverage under this GP may submit a NOI to the Department at any time during the 5-year term of this GP. By submitting a signed NOI, the applicant agrees to comply with the terms and conditions of this GP and any applicable permittee specific DEP Order. The applicant must register one set of NOI forms for all discharges from the regulated small MS4 within the UA that are operated by the municipality.

A NOI must be filed with the Department electronically via e-mail or via regular mail at the following address:

MS4 Program Manager
Department of Environmental Protection
17 State House Station
Augusta, Maine 04333-0017
e-mail: rhonda.poirier@maine.gov.

- a. **Signatory Requirements.** All NOIs, reports, certifications or information either submitted to the Department, or that this GP requires to be maintained by the permittee, must be signed and certified in accordance with *Waste Discharge Licenses*, 06-096 CMR 521(5) (effective date January 23, 2001).

All permit applications must be signed as follows:

1. For a municipality, the signature must be by either a principal executive officer or ranking elected official. For purposes of this section, a principal executive officer of a Federal agency includes:

Part III. Procedure

- (i) The chief executive officer of the agency, or
 - (ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrators of the USEPA).
- b. **Reports** - All reports required by permits, and other information requested by the Department must be signed by a person described in paragraph (2)(a)(1) of this section, or by a duly authorized representative of that person. A person is a duly authorized representative only if:
- 1. The authorization is made in writing by a person described in paragraph (a) of this section;
 - 2. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the permittee, municipality or regulated MS4, (A duly authorized representative may thus be either a named individual or any individual occupying a named position).
 - 3. The written authorization is submitted to the Department.
- c. **Certification.** Any person signing a document under paragraph (a) or (b) of this section must make the following 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 gather and evaluate 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.

Part III. Procedure (cont'd)

3. Contents of NOI.

- a. **NOI Form.** The NOI must be filed on a form(s) provided by the Department and at a minimum, must include the following.
 - i. Name of the municipality and the name, title, address, email address, and telephone number of the chief elected official or principal executive officer.
 - ii. Name, address, email address, and telephone number of the primary municipal contact person responsible for the stormwater management program.
 - iii. Permit number assigned to the municipality under the previous Department MS4 permit, if any.
 - iv. Name of the receiving stream(s), wetland(s) or waterbody(s) to which the MS4 discharges, and a list of the impaired waterbodies which receive stormwater from the MS4.
 - v. An estimate of the area in square miles, of the UA.
 - vi. A copy of the SWMP detailing how the permittee will comply with the terms and conditions of this GP.

The Department may require an applicant to submit additional information that the Department deems reasonably necessary to evaluate the consistency of the subject activity with the requirements for authorization under this GP.

4. **Public Comment.** The Department will provide the public with an opportunity for comment on or request a public hearing on the contents of the submitted NOIs and the SWMPs by making the information available on the Department's internet site shortly after the NOI has been deemed complete for processing. Pursuant to Department rule 06-096 CMR Chapter 2, *Rule Concerning the Processing of Applications And Other Administrative Matters*, a request for a hearing on an application (NOI in this case) must be received by the Department, in writing, no later than 20 days after the NOI is accepted as complete for processing. The request must indicate the interest of the person filing the request and specify the reasons why a hearing is warranted. The public comment period on the NOI and SWMP documents is a minimum of 30 calendar days. Based on a review of the NOI, SWMP or other information, the Department may extend the public comment period, require additional information or may deny coverage to discharge under this GP and require submission of an application for an individual or alternative MEPDES permit.

Part III. Procedure (cont'd)

- 5. Action by Commissioner.** The Commissioner will return as incomplete any NOI that does not satisfy the requirements of Part III (A)(3) of this GP.

 - a. The Commissioner may deny coverage to discharge under this GP if more than 30 calendar days have elapsed following the applicant's receipt of a written request by the Commissioner that the applicant submit additional information required pursuant to this GP and the applicant has not timely and completely submitted such information.
 - b. The Commissioner will deny coverage to discharge under this GP if the subject activity is ineligible for this GP, if the applicant cannot or is unlikely to comply with this GP, or for any other reason provided by law.
 - c. The Commissioner will grant coverage to discharge under this GP if the SWMP, in combination with the permittee specific DEP Order is consistent with the requirement to reduce pollutants under the Department's standards to protect water quality and to satisfy the appropriate water quality requirements of the Clean Water Act.
- 6. Authorization to Discharge.** The applicant is authorized to discharge under the terms and conditions of this GP and permittee specific DEP Order when the Commissioner issues a Department Order granting said coverage. Granting or denying coverage to discharge under this GP and permittee specific DEP Order must be in writing.
- 7. Effect of Denial of Coverage To Discharge.** Denial of coverage under this GP constitutes notice to the applicant that the subject activity may not lawfully be conducted or maintained without issuance of an individual MEPDES permit or authorization to discharge under an alternative GP. Denial of coverage under this GP must be in writing.
- 8. Permittee Specific DEP Order.** Following the public comment period on the NOI, the Department will issue a permittee specific DEP Order that establishes additional terms and conditions, including but not limited to, a list of required actions and corresponding schedules of compliance for a limited number BMPs associated with the implementation of this GP. The permittee specific DEP Order will be subject to a formal 30-day public comment period. New permittee's seeking coverage under this GP may submit a NOI to the Department at any time during the 5-year term of this GP.

Part IV. Requirements

The permittee must at all times continue to meet the requirements for authorization set forth in this GP and in the permittee specific DEP Order. In addition, the permittee must ensure that authorized discharges and activities are conducted in accordance with the following required conditions.

A. Initial Stormwater Management Plan (SWMP). The permittee must develop an initial SWMP to be submitted with the NOI for coverage under this GP consistent with the requirements of this section. The SWMP must describe how it will implement the six Minimum Control Measures (MCMs), set forth in Part IV(C) of this GP, and how the permittee will implement the requirements of Part IV(D) of the GP.

1. Stormwater Management Plan Requirements.

a. For each of the six MCMs in Part IV(C), the following information must be included:

1. The measurable goal(s) by which each best management practice (BMP) will be evaluated;
2. The person(s) or position(s) responsible for implementing each BMP; and
3. The date by which each BMP will be implemented including as appropriate, timelines and milestones for implementation of BMPs.

b. The SWMP must also address the requirements of Part IV(D) for discharges to waters with EPA-approved TMDLs and to waters that are listed as Urban Impaired Streams.

Part IV. Requirements

B. Modified Stormwater Management Plan (SWMP). The permittee must implement and enforce a written (hardcopy or electronic) SWMP. The initial SWMP must be updated within 60 days of permit authorization to include how the permittee will meet all requirements of the DEP Order. The modified SWMP must include a summary of the comments received during the MS4s public comment period and any corresponding changes to the SWMP made in response to the comments received. The permittee must perform all actions required by the permittee specific DEP Order in accordance with the timelines in the permittee specific DEP Order. Unless otherwise specified by the Department in writing, the permittee must submit the updated SWMP to the Department indicating how the permittee has modified their SWMP to be consistent with the GP and permittee specific DEP Order. To modify the schedule established in the permittee specific DEP Order, the permittee must file an application on a DEP form with the Department that includes a justification to formally modify the original permittee specific DEP Order.

The SWMP must include all information required in Part IV(A)(1) of the GP and include all applicable written standard operating procedures (SOPs), inspection forms for all applicable MCMs and notification letters to inter-connected MS4s. This SWMP must be signed in accordance with the signatory requirements in Part III (A)(2)(a).

- 1. Plan availability.** The permittee must have a signed copy of the SWMP available-at the municipal office and on the official municipal web site if there is a municipal website and must make a copy of the SWMP available to the following immediately upon request;
 - a. Department or U.S. Environmental Protection Agency (EPA) personnel upon request.
 - b. In the case of a regulated small MS4 adjacent to or interconnected with the permittee's storm sewer system, to the operator of that regulated small MS4;
 - c. In the case of a regulated small MS4 stormwater discharge to a water supply watershed, to the public water supply company; and
 - d. Members of the public.
- 2. Keeping Plans Current.** The permittee must keep the SWMP current. The permittee must allow the public the opportunity to comment on changes made to the SWMP consistent with this Part at a minimum of once per year (1/Year).

Part IV. Requirements (cont'd)

The SWMP must be amended if the Department or the permittee determines that:

- a. The actions required by the BMPs fail to control pollutants to meet the terms and conditions of this GP and the permittee specific DEP Order;
- b. The BMPs do not prevent the potential for a significant contribution of pollutants to waters of the State other than groundwater;
- c. New information results in a shift in the SWMP's priorities.

The Department will notify the permittee in writing if the Department determines that the SWMP must be amended to comply with the terms and conditions of the GP and the permittee specific DEP Order. Within 30 calendar days of such notification, unless otherwise specified by the Department in writing, the permittee must respond in writing to the Department indicating how the permittee plans to modify the SWMP to address the Departments comments. Within 90 calendar days of the permittee's written response or within 120 calendar days of the Department's original notification, whichever is less, unless otherwise specified by the Department in writing, the permittee must revise the SWMP and submit it to the Department for final review.

For BMPs in the SWMP that are not required to comply with this GP or the permittee specific DEP Order, the BMPs and or implementation schedule may be amended as appropriate without the need for public comment. Changes must be submitted to the Department in the Annual Report following the permit year the change(s) were made.

Part IV. Requirements (cont'd)

C. Minimum Control Measures (MCMs). For each MCM, the permittee must define specific BMPs; designate a person(s) or position(s) responsible for each BMP; define a time line for implementation of each BMP; and define measurable goals for each BMP. The MCMs to be included in the SWMP are as follows.

1. MCM1 – Education/Outreach Program (Program)

The permittee must at a minimum develop and implement an ongoing Education/Outreach Program addressing stormwater discharges and impacts on water bodies and steps that can be taken to reduce pollutants in stormwater runoff. The program must be designed to address stormwater issues of significance. The ultimate objective of the program is to change behavior of the target audiences so that pollutants in stormwater are reduced.

- a. The permittee must develop an outreach program as part of its SWMP and implement it over the term of the permit.
- b. The education/outreach program must define the target audiences, specific messages, message delivery/distribution tools, evaluation methods and an implementation schedule for each target audience.
- c. The permittee may partner with other MS4s, community groups, or watershed associations to implement the education/outreach program to meet this GP requirement.
- d. The education/outreach program must define the awareness and behavior change goals and identify the party or parties responsible for program implementation.
- e. The permittee may use existing materials if they are appropriate for the target audience and message the permittee chooses to deliver, or the permittee may develop its own outreach materials.
- f. The permittee must identify methods it will use to evaluate the effectiveness of each awareness and behavior change campaign. Any message or delivery mechanism found ineffective or of unsatisfactory efficacy, must be modified accordingly.
- g. The education/outreach program must include the following as a minimum:
 1. An Outreach to Raise Awareness Campaign of storm water pollution issues targeted at the general public and one additional audience: municipal; commercial; development/construction; or institutions. Outreach to raise awareness is defined as a means to introduce information that may be new to or not well understood by the target audience. Campaigns to raise awareness are typically delivered broadly.

Part IV. Requirements (cont'd)

The permittee will implement a minimum of two (2) awareness campaigns during the term of this permit. One campaign shall be targeted to the general public and another campaign shall be targeted to one of the audiences cited above. Each campaign will be delivered using a minimum of three (3) outreach tools per year. These outreach tools may include: printed materials such as brochures, posters or newsletters; electronic materials such as websites, e-mail, or online ads; mass media such as newspaper articles or public service announcements (radio or television); social media such as Facebook or Twitter, public events or meetings or displays in public areas such as town/city hall.

2. An Outreach to Change Behavior Campaign so that pollutants in storm water are reduced. Outreach to Change Behavior means to promote and reinforce desirable behaviors designed to reduce storm water pollution. Campaigns to change behavior are typically delivered to small, targeted segments of the population through direct communication.

The permittee must promote a minimum of one (1) behavior change per permit term and shall be directed to two (2) audiences annually and using a minimum of three (3) different outreach tools per year. Campaigns for behavior change may be delivered through targeted workshops, incentives that encourage desired behavior, pledge drives to commit to desired behaviors, or other methods that effect behavior change. Printed materials such as brochures, posters or newsletters; electronic materials such as websites; mass media such as newspaper articles or public service announcements (radio or television); social media such as Facebook or Twitter, or displays in public areas such as town/city hall may also be used to promote the desired behavior.

- h. The program must show evidence of focused campaigns for specific audiences such that outreach tools and messages are appropriate for the audiences. The program must also show evidence that progress toward the defined awareness and behavior goals of the program has been achieved. The permittee must identify methods that it will use to evaluate the effectiveness of each outreach campaign (awareness two (2) campaigns and behavior change one (1) campaign). If appropriate, evaluation efforts may evaluate more than one campaign. For example, the same evaluation effort may document both the level of the general public's stormwater awareness and the targeted audience's current behavior.

Any methods used to evaluate the effectiveness of the program must be tied to the defined goals of the program and the overall objective of changes in behavior and awareness. To evaluate effectiveness the permittee must conduct a baseline evaluation prior to each campaign. The baseline evaluation must be relevant and appropriate and may have occurred in the previous permit cycle or in the current permit cycle. The baseline evaluation is to be followed by an evaluation in year five of this permit to assess the overall effectiveness of the outreach program.

Part IV. Requirements (cont'd)

- i. The permittee must document in each Annual Compliance Report: the messages for each audience; the methods of distribution; the outreach tools used, the measures/methods used to determine the on-going effectiveness of the campaigns, and any changes planned based on the measures of effectiveness.

2. MCM2 - Public involvement and participation

The objective of this minimum control measure is to involve the public in both the planning and implementation process of improving water quality and reducing storm water quantity via the storm water program. A program planned with a stakeholder group is more likely to be successful in achieving its goals. The public can provide valuable input and assistance to a MS4's municipal storm water management program. Therefore, the public must be given opportunities to play an active role in both the development and implementation of the program. An active and involved community is crucial to the success of a municipal storm water management program because it allows for broader public support, additional expertise and a conduit to other programs. Community members are also more likely to apply these lessons/BMPs at home.

- a. The permittee must comply with applicable state and local public notice requirements using effective mechanisms for reaching the public and comply with the public notice requirements of the Maine Freedom of Access Act, 1 M.R.S. §§ 401 et seq. ("FOAA") when the permittee involves stakeholders in the implementation of this GP. The permittee must document the meetings and attendance in the annual report as a way of measuring this goal.
- b. The permittee or regional storm water group of which the permittee is a member must annually host/conduct or participate in a public event (for example, storm drain stenciling, stream clean-up, household hazardous waste collection day, volunteer monitoring, neighborhood educational events, conservation commission outreach program, Urban Impaired Stream outreach program, or adopt a storm drain or local stream program). The event must include a pollution prevention and/or water quality theme. The target audience does not need to be the entire urbanized area but should be aimed at a segment of the population that the permittee wishes to reach. The permittee is encouraged to plan this event and consult with the Department to ensure it will satisfy this GP's requirements.

Part IV. Requirements (cont'd)**3. MCM3 - Illicit Discharge Detection and Elimination (IDDE) Program**

Each permittee must implement and enforce a program to detect and eliminate illicit discharges and non-stormwater discharges, as defined in 06-096 CMR 521(9)(b)(2), except as provided in paragraph h of this section. The program must address illicit discharges in the following four components: 1) Procedures for prioritizing watersheds, 2) procedures for tracing the source of an illicit discharge, 3) procedures for removing the source of the discharges, and 4) procedures for program evaluation and assessment. The period between identification and elimination of an illicit discharge is not a grace period. Discharges from an MS4 that are mixed with an illicit discharge are not authorized by this GP and remain unlawful until eliminated.

- a. The permittee must continue to implement a non-stormwater discharge ordinance that prohibits the discharge of non-stormwater discharges and provides for the implementation of appropriate enforcement procedures and actions.
- b. The IDDE program must include a written IDDE Plan to address any discharge that is not uncontaminated groundwater, water from a natural resource or an allowable non-stormwater discharge. The plan must address dumping that results in illicit discharges to the MS4. The IDDE plan must set forth all written procedures developed in accordance with the requirements listed in this section including:
 - i. A reference or citation of the authority the permittee will use to implement all aspects of the IDDE program.
 - ii. Clearly identify in the written IDDE Plan the responsibilities with regard to eliminating illicit discharges. The written IDDE Plan must identify the lead municipal agency(ies) or department(s) responsible for implementing the IDDE Program as well as any other agencies or departments that may have responsibilities for aspects of the program (e.g., board of health responsibilities for overseeing septic system construction; sanitary sewer system staff; inspectional services for enforcing plumbing codes; town counsel responsibilities in enforcement actions, etc.). Where multiple departments and agencies have responsibilities with respect to the IDDE program, specific areas of responsibility must be defined and processes for coordination and data must be established and documented.
 - iii. Written procedures for dry weather outfall inspections and wet weather assessments which must be consistent with Part IV(3)(e) and Part IV(3)(f) respectively, of this GP.

Part IV. Requirements (cont'd)

- iv. Steps that must be taken when a potential illicit discharge is identified (whether during dry weather inspections, during routine work, during opportunistic inspection of other infrastructure or through other methods) to perform an initial investigation to identify the source(s) of discharge, including but not limited to: efforts to identify the nature of the discharge; source investigation; reporting; clean up; corrective actions/elimination; and enforcement.
- v. Steps that must be taken, upon verification of the source of the illicit discharge, to notify all responsible parties for any such discharge and require immediate cessation of improper disposal practices in accordance with its legal authorities. Where elimination of an illicit discharge within 60 calendar days of its identification and verification as an illicit discharge is not possible, the permittee must establish an expeditious schedule for its elimination and report the dates of identification and schedules for removal in the permittee's annual reports. The permittee must immediately commence and continue actions identified in the schedule as necessary for elimination. The permittee must diligently pursue actions identified in the schedule to be consistent with the intent of this GP. In the interim, the permittee must take all reasonable and prudent measures to minimize the discharge of pollutants to and from the MS4, including follow-up screening and inspection to confirm permanent elimination of the discharge.
- vi. A Quality Assurance Project Plan (QAPP) describing the procedures to be used during the investigation and monitoring of those outfalls identified as flowing during outfall inspections.
- c. Permittees that can demonstrate compliance with an individual Maine Pollutant Discharge Elimination System (MEPDES) permit and or Maine Waste Discharge License (WDL) conditions within their Urbanized Areas and which result in Sanitary Sewer Evaluation Surveys (SSES) and/or written Capacity, Management, Operations and Maintenance (CMOM) plans may utilize these programs to support the IDDE requirements of this GP at the discretion of the Department, provided the sanitary sewer conveyance and/or treatment provider supports this finding.
- d. Permittees must maintain a map(s) of their municipally-owned or operated storm sewer system. The map(s) must show the location of all stormwater catch basins, connecting surface and subsurface infrastructure and depict the direction of in-flow and out-flow pipes, and the locations of all discharges from all stormwater outfalls operated by the regulated small MS4 to receiving waters or to an interconnected MS4 and the name of the receiving water for each outfall. Each catch basin must be uniquely identified to facilitate control of potential illicit discharges, and proper operation and maintenance of these structures.

Permittees must continue to keep their map(s) current and ensure that maps are reviewed for any updates at least annually. Permittees may choose to utilize paper or electronic maps for their storm sewer system. The permittee is not required to maintain maps of their sanitary sewer system for compliance with this GP.

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General Permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer Systems

Part IV. Requirements (cont'd)

- e. Permittees must implement a dry weather outfall inspection program. This inspection program-must include:
 - i. For each outfall, the following information must be included: type (e.g. pipe or ditch), material, size of conveyance, the name and location of the nearest named waterbody to which the outfall eventually discharges. Each outfall must have a unique identifier.
 - ii Conducting visual dry weather inspections on 100% of their identified outfalls during the five-year term of this GP.
 - iii. Outfalls that are inaccessible due to safety concerns are not required to be inspected but a substitute inspection must be conducted of the first (i.e., closest) accessible inspection location within the stormwater system (e.g., catch basin, manhole, pipe, etc.) that drains to the inaccessible outfall.
 - iv. Where dry weather flow is present the permittee must sample the discharge to determine if the discharge is an illicit discharge and then must investigate until either a source is identified, or it has been determined that the evidence of the illicit discharge is due to naturally occurring source(s).
 1. Sampling and analysis must include, but is not limited to:
 - a. *E.coli*, enterococci, total fecal coliform or human bacteroides;
 - b. Ammonia, total residual chlorine, temperature and conductivity; and
 - c. Optical enhancers or surfactants.

All analyses can be performed with field test kits or field instrumentation and are not subject to 40 CFR Part 136 requirements given the sampling is for investigative purposes and not to determine compliance with this GP. Sampling for ammonia and surfactants must use sufficient sensitive methods to detect said parameters at or below the minimum reporting concentrations as follows: ammonia (0.5 mg/L), surfactants (0.25 mg/L), total residual chlorine (0.05 mg/L), *E. coli* bacteria (4 cfu/100 ml), enterococcus (10 cfu/100 ml).

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Part IV. Requirements (cont'd)

- v. Where dry weather flow at an outfall does not exhibit evidence of an illicit discharge, the permittee must take steps to determine and confirm that flow during dry weather conditions is only uncontaminated groundwater, water from a natural resource, or an allowable non-stormwater discharge that has entered the system and collect at least one (1) sample per the 5-year permit term in accordance with the protocols set forth in the approved QAPP and analyzed for the parameters listed in Part IV(C)(3)(e)(iv)(1).
- vi. Outfalls that are flowing during dry weather are exempt from the dry weather investigation required in Part IV(C)(3)(e)(iv) under any of the following conditions:
 - 1. The outfall is associated with roadway drainage in undeveloped areas with no dwellings and no sanitary sewers,
 - 2. The outfall is associated with only subsurface drainage for any of the following: an athletic field, a park or undeveloped green space and associated parking without services,
 - 3. The outfall is from cross-country drainage that neither cross nor are in proximity to sanitary sewer alignments through undeveloped land,
 - 4. The contributing pipes to the outfall have been televised in a previous permit cycle and determined to be structurally sound with no illicit connections or connections from structures that could contribute an illicit discharge, and no new construction or redevelopment has occurred in the outfall drainage area since the screening, or
 - 5. The outfall was screened in accordance with Part IV(C)(3)(e)(iv) in a previous permit cycle and no new construction or redevelopment has occurred in the outfall drainage area since the screening.
- vii. The permittee may rely on screening conducted under previous permits to the extent it meets the requirements in Part IV(C)(3)(e)(iv) and no new construction or redevelopment has occurred in the outfall drainage area since the screening.
- viii. Steps that must be taken upon verification of the source of the illicit discharge to locate, identify and eliminate the illicit discharge within the UA as expeditiously as possible.

Part IV. Requirements (cont'd)

- f. Prior to the expiration date of this GP, permittees must perform a wet weather assessment for the potential for illicit discharges during wet weather events. The assessment will vary by permittee and utilize data from existing studies, including (but is not limited to):
 - i. Areas within the MS4 that have combined sewer systems;
 - ii. Sanitary sewer systems located in a common trench with stormwater infrastructure, particularly those with known infiltration;
 - iii. Subsurface wastewater disposal systems that are 20 years old or more, or those in areas known to have experienced recent malfunctions or failures;
 - iv. Municipally-owned dog parks;
 - v. Complaints of sewage odor at a stormwater outfall during wet weather events;
 - vi. Direct discharge from the stormwater system to any of the following:
 - a. A public beach or recreational area;
 - b. A water body impaired for bacteria;
 - c. A shellfish bed; and/or
 - d. A drinking water supply.

The outcome of the assessment will be a list of outfalls identified for wet weather monitoring and testing if applicable, by the permittee in the next permit cycle and the rationale for including these outfalls.

On or before the expiration date of this GP, the permittee must identify these wet weather outfalls in its written IDDE plan and identify the wet weather outfalls targeted for wet weather monitoring based on the EPA New England bacterial source tracking protocol or other acceptable protocols or methodologies and specify the timing and frequency of wet weather monitoring to be completed during the term of the next permit cycle. Should the permittee complete the IDDE plan prior to the expiration date of the GP and permittee specific DEP Order, the permittee must implement the wet weather monitoring upon completion of the update IDDE plan update.

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Part IV. Requirements (cont'd)

- g. Permittees are not required to report individual Sanitary Sewer Overflows (SSOs) separately from the sanitary sewer conveyance and/or treatment provider, however, permittees are required to summarize the SSO events that discharge to the MS4 in their annual reports. Permittees must work cooperatively with that provider to identify any potential source of pollution to the MS4 from an SSO.
- h. Allowable Non-Stormwater Discharges. This GP authorizes the following non-stormwater discharges. If the permittee identifies any of these sources as significant contributors of pollutants to the MS4, then the permittee must implement measures and/or cooperate with responsible dischargers to control these sources so they are no longer significant contributors of pollutants. The permittee must identify in its SWMP if it has identified any of these sources as a significant contributor of pollutants to the MS4.
- landscape irrigation
 - diverted stream flows
 - rising ground waters
 - uncontaminated ground water infiltration (as defined at 40 CFR 35.2005(20))
 - uncontaminated pumped ground water
 - uncontaminated flows from foundation drains
 - air conditioning and compressor condensate
 - irrigation water
 - flows from uncontaminated springs
 - uncontaminated water from crawl space pumps
 - uncontaminated flows from footing drains
 - lawn watering runoff
 - flows from riparian habitats and wetlands
 - residual street wash water (where spills/leaks of toxic or hazardous materials have not occurred, unless all spilled material has been removed and detergents are not used), and
 - hydrant flushing and firefighting activity runoff
 - water line flushing and discharges from potable water sources
 - individual residential car washing
 - dechlorinated swimming pool discharges

Part IV. Requirements (cont'd)**4. MCM4 – Construction Site Stormwater Runoff Control**

Each permittee must implement and enforce a program to minimize or eliminate pollutants in any stormwater runoff to the regulated small MS4 from construction activities that result in a land disturbance of greater than or equal to one acre. Reduction of stormwater discharges from construction activity disturbing less than one acre must be included in the program if that construction activity is part of a larger common plan of development or sale that would disturb one acre or more.

- a. The permittee must develop and implement a construction site runoff program that includes the following elements:
 - i. An ordinance or other regulatory mechanism that requires the use of erosion and sediment control BMPs at construction sites consistent with the minimum standards outlined in Appendix C, *Erosion and Sedimentation Control, Inspections and Maintenance and Housekeeping* of this GP. Also see the Department's website for a guidance document entitled *Maine Erosion and Sediment Control Practices Field Guide For Contractors* to assist contractors and municipalities in developing BMPs for the ordinance or other regulatory mechanism. Permittees who have an existing ordinance must evaluate the ordinance and update it as needed within one (1) year of the effective date of this GP to provide the permittee with the necessary enforcement authority. Those permittees without an existing ordinance must develop an ordinance within one (1) year of the effective date of this GP and have an approved ordinance in place with the necessary enforcement authority within two (2) years of the effective date of this GP.
 - ii. Procedures for site plan review that incorporate consideration of potential water quality impacts, erosion control, waste storage, and other elements of this MCM, the ability for the public to comment on such reviews at publicly-noticed meetings, and procedures to consider information submitted by the public.
 - iii. Procedures for notifying construction site developers and operators of the requirements for registration under the Maine Construction General Permit and Chapter 500, Stormwater Management.
 - iv. Procedures for construction site operations to control waste such as discarded building materials, concrete truck wash-outs, chemicals, litter and sanitary waste at the construction site that may cause adverse impacts to water quality.

Part IV. Requirements (cont'd)

- v. Documentation of construction activity that disturbs one or more acres within the urbanized area including:
 - a. Written (hardcopy or electronic) procedures for site inspections and enforcement of erosion and sediment control measures. Inspections are to be conducted by the permittee or third-party inspector. The procedures must clearly define who is responsible for site inspections as well as who has authority to implement enforcement procedures. The program must provide that the permittee may, to the extent authorized by law, impose sanctions to ensure compliance with the local program.
 - b. Inspections of construction sites to ensure erosion and sediment controls are in place and sediment is contained within the project site. Inspections must be completed as follows:
 - i. A minimum of three inspections must be completed during the active earth-moving phase of construction.
 - ii. A minimum of one inspection must be completed annually until a project reaches substantial completion, as defined by the MS4 permittee (i.e., municipality).
 - iii. One of the three inspections must be conducted at project completion to ensure that the site reached permanent stabilization and all temporary erosion and sediment controls have been removed.
 - iv. Documentation of construction inspections, enforcement action and corrective actions taken.

5. MCM5 – Post-Construction Stormwater Management in New Development and Redevelopment.

Each permittee must implement and enforce a program to address post construction stormwater runoff from new development and redevelopment projects that disturb greater than or equal to one acre, including projects less than one acre that are part of a larger common plan of development or sale, that discharge into the MS4.

- a. The permittee must promote strategies which include a combination of structural and/or non-structural BMPs appropriate to prevent or minimize water quality impacts.
 - i. The permittee must implement a procedure for notifying site developers to consider Low Impact Development techniques.

Part IV. Requirements (cont'd)

- b. To ensure adequate long-term operation and maintenance of post construction BMPs, each permittee must have and implement a post construction discharge ordinance, or other regulatory mechanism. This ordinance or other regulatory mechanism must contain provisions as follows:
 - i. Require that the owner or operator of a post construction BMP provide the permittee with an annual report, completed by a qualified inspector documenting that all on-site BMPs are adequately maintained and functioning as intended, and
 - ii. Require that if a post construction BMP requires maintenance, the owner or operator must provide to the permittee, a record of the deficiency and corrective action(s) taken in no later than 60 days following the date the deficiency was identified. If 60 days is not possible, then the permittee must establish an expeditious schedule to complete the maintenance and establish a record of the deficiency and corrective action(s) taken.

6. MCM6 - Pollution Prevention/Good Housekeeping for Municipal Operations.

The objective of this program is to mitigate or eliminate pollutant runoff from municipal operations on property that is owned or managed by the permittee and located within the UA.

- a. Permittees must maintain an inventory of all municipal operations conducted in, on, or associated with facilities, buildings, golf courses, cemeteries, parks and open space owned or operated by the permittee that have the potential to cause or contribute to stormwater or surface water pollution.
- b. Permittees must implement written (hardcopy or electronic) operation and maintenance (O&M) procedures for all municipal operations identified in (a) above to reduce stormwater pollution to the maximum extent practicable. The O&M plan must address stormwater treatment and controls that are used to achieve compliance with the conditions of this GP.
 - i. The O&M plan must be up-to-date prior to the effective date of this GP and must be reviewed annually to iteratively improve strategies and practices to eliminate or better control pollutant discharges.
 - ii. The permittee must conduct annual employee training to prevent and reduce stormwater pollution from the municipal operations and facilities subject to this GP. The permittee must report in each of its Annual Compliance Reports on the types of trainings presented, the percentage of municipal and contract staff, and their occupation, that received training, the length of the training, and training content delivered.

Part IV. Requirements (cont'd)

- iii. The permittees must develop and implement a program to sweep all paved streets and paved parking lots maintained by the permittee at least once a year done soon after snowmelt.
- iv. The permittee must develop and implement a program to inspect catch basins and other stormwater structures that accumulate sediment. This program must include:

Developing and implementing a program to inspect all catch basins at least once every other year and, if necessary, clean catch basins and other stormwater structures that accumulate sediment and dispose of the removed sediments in accordance with current state law. The permittee must clean catch basins more frequently if inspections indicate excessive accumulation of sediment. Excessive accumulation is greater than or equal to 50 percent of the sump filled. If two consecutive inspections show excess accumulation, then the permittee must clean those CBs every year instead of every other year. If it is documented during two consecutive years of cleaning of a CB identified as accumulating excess material that there is little to no material in the sump (less than 25% of the sump) then that CB can return to the list of CBs to be inspected at least once every other year and cleaned more often if two consecutive inspections show excess accumulation.

- c. Permittees must evaluate and implement a prioritized schedule, as necessary, for repairing or upgrading the conveyances, structures and outfalls of the regulated small MS4.
- d. Permittees must implement written (hardcopy or electronic) procedures outlined in a stormwater pollution prevention plan (“SWPPP”) for the following operations or facilities that are owned or operated by the permittee (unless the facility is currently regulated under Maine’s Industrial Stormwater Program): public works facilities; transfer stations; and school bus maintenance facilities. Implementation of this SWPPP must address long-term operation of structural and non-structural controls that reduce stormwater pollution to the maximum extent practicable.

1. Control measures

The permittee must select, design, install and implement control measures, adhering to good engineering practices and manufacturer’s specifications, to minimize pollutant discharges from all potential sources. The control measure(s) selected must be capable of meeting the non-numeric technology-based effluent limitations established in this section. Where more than one standard exists for a specific pollutant, compliance with this GP and the control measure design must be based on the most stringent standard. In selecting control measures, the permittee must consider:

Part IV. Requirements (cont'd)

- a. The quantity and nature of the pollutants and their potential to impact the water quality of the receiving waters;
- b. Preventing stormwater from coming into contact with polluting materials;
- c. Using control measures in combination;
- d. Assessing the type and quantity of pollutants, including their potential to impact receiving water quality;
- e. Minimizing impervious areas at the facility and infiltrating runoff onsite (including bioretention cells, green roofs, and pervious pavement, among other approaches) in accordance with State laws and regulations;
- f. Attenuating flow using open vegetated swales and natural depressions;
- g. Conserving and/or restoring riparian buffers; and
- h. Using treatment interceptors (*e.g.*, swirl separators and sand filters).

2. Non-numeric effluent limitations

The permittee must comply with the following non-numeric effluent limitations.

- a. Minimize exposure. The permittee must minimize the exposure of manufacturing, processing, and material storage areas (including, but not limited to, loading and unloading, storage, disposal, cleaning, maintenance, and fueling operations) to rain, snow, snowmelt, and runoff in order to minimize pollutant discharges. Unless impractical, the permittee must also:
 - i. Use grading, berming or curbing to prevent runoff of contaminated flows and divert run-on away from these areas;
 - ii. Locate materials, equipment, and activities so that potential leaks and spills are contained or able to be contained or diverted before discharge;
 - iii. Clean up spills and leaks promptly using dry methods (*e.g.*, absorbents) to prevent the discharge of pollutants;
 - iv. Properly dispose of materials used for spill or leak clean up to prevent used clean up materials from being a source of pollutants in stormwater;
 - v. Store leaky vehicles and equipment indoors or, if stored outdoors, use drip pans and absorbents;
 - vi. Use spill/overflow protection equipment;
 - vii. The washing of new or used vehicles or equipment is allowed with the following prohibitions and recommended best management practices:
 1. Engine, undercarriage and transmission washing is prohibited. Cleaning operations should minimize the detachment of paint residues, heavy metals or any other potentially hazardous materials from surfaces.

Part IV. Requirements (cont'd)

2. Vehicle and equipment washing should occur, where possible, on an impermeable surface (i.e., concrete, asphalt, plastic or other) and utilize an area that extends to a minimum of four (4) feet on all sides of the vehicle or equipment so that wash water and overspray falls initially on the impermeable surface. From the impermeable surface, wash water should then be directed to a vegetated area.
 3. Vehicles and equipment should not be washed near uncovered repair areas or chemical storage areas such that chemicals can be transported in wash water runoff. All wash water runoff should drain away from a shop repair or chemical storage area.
 4. Wash water from cleaning the interior of truck trailers and other large commodity carrying containers must be collected and discharged to a POTW or treated in a closed-loop, wash water recycling system.
 - viii. Drain fluids from equipment and vehicles that will be decommissioned, and, for any equipment and vehicles that will remain unused for extended periods of time, inspect at least quarterly for leaks.
 - ix. locate industrial materials and activities inside or protect them with storm resistant coverings where practical to do so.
- b. **Good housekeeping.** The permittee must keep clean all exposed areas that are potential sources of pollutants. The permittee must perform good housekeeping measures in order to minimize pollutant discharges, including but is not limited to, the following:
- i. Sweep or vacuum at regular intervals as a primary measure or, alternatively, wash down the area as a secondary measure and collect and/or treat, and properly dispose of the washdown water;
 - ii. Store materials in appropriate containers that are labeled to specify contents;
 - iii. Keep all dumpster lids closed when not in use or ensure that discharges have a control measure. For dumpsters, waste bins and roll-off containers that do not have lids and could leak, ensure that discharges have a control measure (*e.g.* sheet flow to an upland vegetated buffer). Dumpsters and roll-off containers should only be used to hold solid waste materials and never used to hold liquid wastes. This permit does not authorize any dry weather discharges from dumpsters or roll-off containers;
 - iv. Minimize the potential for waste, garbage and floatable debris to be discharged by keeping exposed areas free of such materials, or by intercepting them before they are discharged;
 - v. Site and operate snow storage and disposal areas to prevent the discharge of snow directly into surface waters and minimize discharges of pollutants from snow maintenance activities. Permittees shall minimize the use of sodium chloride or other salts when possible and evaluate opportunities for use of alternative products.

Part IV. Requirements (cont'd)

- c. **Maintenance.** The permittee must maintain all control measures that are used to achieve effective operating condition, as well as all industrial equipment and systems, in order to minimize pollutant discharges. This includes:
- i. Performing and documenting inspections and preventive maintenance of stormwater drainage, source controls, treatment systems, and equipment and systems that could fail and result in contamination of stormwater;
 - ii. Diligently maintaining non-structural control measures (*e.g.*, keep spill response supplies available, personnel appropriately trained);
 - iii. Cleaning catch basins when the depth of sediment or debris reaches 50% of the sump depth and keeping the sediment and debris surface at least six inches below the lowest outlet pipe or alternatively, establish a routine maintenance schedule such each catch basin is inspected at least once per year.
- d. **Spill prevention and response.** The permittee must minimize the potential for leaks, spills and other releases that may be exposed to stormwater and develop plans for effective response to such spills if or when they occur in order to minimize pollutant discharges. The permittee must conduct spill prevention and response measures including, but not limited to, the following:
- i. Plainly label containers 55 gallons or greater (*e.g.*, “Used Oil,” “Spent Solvents,” “Fertilizers and Pesticides”) that could be susceptible to spillage or leakage to encourage proper handling and facilitate rapid response if spills or leaks occur;
 - ii. Implement procedures for material storage and handling, including the use of secondary containment and barriers between material storage and traffic areas, or a similarly effective means designed to prevent the discharge of pollutants from these areas;
 - iii. Develop training on spill response procedures for expeditiously stopping, containing, and cleaning up leaks, spills, and other releases. As appropriate, execute such procedures as soon as possible;
 - iv. Keep adequate and accessible spill kits on-site, located near areas where spills may occur or where a rapid response can be made; and
 - v. Notify appropriate facility personnel when a leak, spill, or other release occurs.
- e. **Erosion and sediment controls.** The permittee must minimize erosion by stabilizing exposed soils at the facility in order to minimize pollutant discharges and by placing flow velocity dissipation devices in stormwater swales and ditches at discharge locations, as necessary, to minimize channel and streambank erosion and scour in the immediate vicinity of discharge points. The permittee must also use structural and non-structural control measures, as necessary, to minimize the discharge of sediment.

Part IV. Requirements (cont'd)

- f. **Management of runoff.** The permittee must divert, infiltrate, reuse, contain, or otherwise manage stormwater runoff to minimize pollutants in the discharges.
- g. **Salt storage piles or piles containing salt.** Unless otherwise authorized by variance pursuant to *Siting and Operation of Road Salt and Sand-Salt Storage Areas*, 06-096 Code of Maine Regulations (CMR) 574 (effective December 3, 2001), the permittee must enclose or cover storage piles of salt, or piles containing salt, used for deicing or other commercial or industrial purposes, including maintenance of paved surfaces, in order to minimize pollutant discharges. This includes preventing stormwater runoff from coming into contact with covered piles. The permittee must implement appropriate measures (*e.g.*, good housekeeping, diversions, containment) to minimize exposure resulting from adding to or removing materials from the pile.
- h. **Employee training.** Annually, the permittee must train all employees who work in areas where industrial materials or activities are exposed to stormwater, or who are responsible for implementing activities necessary to meet the conditions of this permit (*e.g.*, inspectors, maintenance personnel), including all members of the facility's stormwater pollution prevention team. The permittee must ensure the following personnel understand the requirements of this permit and their specific responsibilities with respect to those requirements:
 - i. Personnel who are responsible for the design, installation, maintenance, and/or repair of controls (including pollution prevention measures);
 - ii. Personnel responsible for the storage and handling of chemicals and materials that could become contaminants in stormwater discharges;
 - iii. Personnel who are responsible for conducting and documenting monitoring and inspections pursuant to this GP; and
 - iv. Personnel who are responsible for taking and documenting corrective actions pursuant to this GP.

Personnel must be trained in at least the following if related to the scope of their job duties (*e.g.*, only personnel responsible for conducting inspections need to understand how to conduct inspections):

- v. An overview of what is in the SWPPP;
- vi. Spill response procedures for expeditiously stopping, containing, and cleaning up leaks, spills, and other releases, good housekeeping, maintenance requirements, and material management practices;
- vii. The location of all controls on the site required by this GP, and how they are to be maintained;
- viii. The proper procedures to follow with respect to the GP's pollution prevention requirements; and
- ix. When and how to conduct inspections, record applicable findings, and take corrective actions.

Part IV. Requirements (cont'd)

- i. **Dust generation and vehicle tracking of industrial materials.** The permittee must utilize control measures to minimize generation of dust and off-site tracking of raw, final, or waste materials. Discharges of pollutants associated with the facility's activity as the result of off-site tracking are not authorized by this GP.

3. Storm Water Pollution Prevention Plan – General Requirements

- a. **Availability of SWPPP.** The permittee must prepare a SWPPP for the facility prior to the effective date of this GP. If a permittee prepared a SWPPP for coverage under a previous version of this GP, the permittee must review and update the SWPPP to implement all provisions of this GP prior to the effective date of this GP. Upon receiving authorization under this GP, a copy of the SWPPP must be available to appropriate facility staff, Department staff, and USEPA staff. The permittee must keep a copy of the SWPPP on-site at all times for reference and review.
- b. **SWPPP preparation.** The SWPPP must be up-to-date prior to the effective date of this GP and must be prepared in accordance with good engineering practices and to industry standards. The SWPPP may be developed by either a person on the facility's staff or a third party, but it must be developed by a "qualified person" and must be certified in accordance with the signatory requirements of 06-096 CMR 521(5). A "qualified person" is a person knowledgeable in the principles and practices of stormwater controls and pollution prevention and possesses the education and ability to assess conditions at the facility that could impact stormwater quality, and the education and ability to assess the effectiveness of stormwater controls selected and installed to meet the requirements of the permit. A qualified person may include facility staff that is familiar with the facility's activities and control measures necessary to reduce or eliminate the discharge of pollutants associated with the activity.
- c. **Amended SWPPP.** The permittee must amend the SWPPP within thirty (30) calendar days of completion of any of the following:
 - i. A change in design, construction, operation, or maintenance at the facility that may have a significant effect on the discharge or potential for discharge of pollutants from the facility including the addition or reduction of industrial activity;
 - ii. Monitoring, inspections, or investigations by the permittee or by local, State, or Federal officials which determine the SWPPP is ineffective in eliminating or significantly minimizing the intended pollutants;
 - iii. A discharge under this GP that is determined by Department to cause or have the reasonable potential to cause or contribute to the violation of an applicable water quality standard.

Part IV. Requirements (cont'd)

- d. **SWPPP Contents:** This subsection describes the minimum requirements that must be addressed or contained within an acceptable SWPPP.
- i. **Stormwater Pollution Prevention Team.** The SWPPP must identify the individuals (by name or title) who comprise the facility's Stormwater Pollution Prevention Team. The Stormwater Pollution Prevention Team is responsible for assisting the facility manager in developing, implementing, maintaining and revising the facility's SWPPP. Responsibilities of each team member must be listed.
 - ii. **Nature of activities.** The SWPPP must provide a description of the nature of the activities at each facility.
 - iii. **Maps.** The SWPPP must contain a general location map with sufficient detail to identify the location of the facility and all receiving waters for all stormwater discharges. A site map depicting the following features must also be included with the SWPPP.
 1. Boundaries of the property and the size of the property in acres;
 2. Location and extent of significant structures and impervious surfaces;
 3. Directions of stormwater flow (use arrows);
 4. Locations of all stormwater control measures;
 5. Locations of all receiving waters, including wetlands, in the immediate vicinity of the facility;
 6. Locations of all stormwater conveyances including catch basins, ditches, pipes, and swales;
 7. Locations of potential pollutant sources;
 8. The location of all above ground tanks;
 9. For the purposes of the site map, identify areas of frequent spills (greater than three occurrences per year) and large spills (greater than 10 gallons) that have occurred in the last three years. All locations of fuel frequent/large spills must be documented within the SWPPP or applicable Spill Prevention Control & Counter Measure (SPCC) Plan;

Part IV. Requirements (cont'd)

10. Locations of all stormwater monitoring points;
11. Locations of stormwater inlets, outlets, outfalls, and discharge points, with a unique identification code for each discharge point (*e.g.*, Outfall 001, 002) and an approximate outline of the areas draining to each discharge point;
12. Locations of the following activities where such activities are exposed to precipitation:
 - fueling stations;
 - vehicle and equipment maintenance and/or cleaning areas;
 - loading/unloading areas;
 - locations used for the treatment, storage, or disposal of wastes;
 - liquid storage tanks;
 - processing and storage areas;
 - immediate access roads and rail lines used or traveled by carriers of raw materials, manufactured products, waste material, or by-products used or created by the facility;
 - transfer areas for substances in bulk;
 - machinery; and
 - locations and sources of run-on to the site from adjacent property that contains significant quantities of pollutants.

- e. **Summary of potential pollutant sources.** The SWPPP must provide a description of areas of the facility and operations where materials or activities are exposed to stormwater or from which allowable non-stormwater discharges originate. Materials or activities include but are not limited to: street sweeping, roadway construction, repair and rehabilitation, maintenance of streets and right-of-ways, snow removal and storage, chemical and material storage, fleet maintenance and storage, and fertilizer, pesticide, and insecticide application and storage of materials. Structures located in areas of activity are potential sources of pollutants.

For each separate area identified, the description must include the following.

- i. **Activities in the area.** A list of the activities exposed to stormwater and the predicted direction of flow of stormwater from each activity and outfall/discharge point.

Part IV. Requirements (cont'd)

- ii. **Pollutants.** A list of pollutants associated with each identified activity, which could be exposed to rainfall or snowmelt and could be discharged from the facility. The pollutant list must include all significant materials that have been handled, treated, stored or disposed, and that have been exposed to stormwater in the three years prior to the date you prepare or amend your SWPPP.
- iii. **Spills and leaks.** The permittee must document where potential spills and leaks could occur that could contribute pollutants to stormwater discharges, and the corresponding outfalls/discharge points that would be affected by such spills and leaks. The permittee must document all frequent or large spills and leaks of oil or toxic or hazardous substances that actually occurred at exposed areas, or that drained to a stormwater conveyance, in the three years prior to the date the SWPPP was prepared or last amended. The permittee must document the circumstances leading to the release and actions taken in response to the release and the measures taken to prevent the recurrence of such releases.
- iv. **Wastewater or process water containment.** Any stationary above ground tank, container, or container storage area used for the storage of wastewater or process water (does not include deicing materials for winter road maintenance) that has the potential to discharge to surface waters or a stormwater conveyance during a malfunction must be held in a secondary containment device capable of containing 100% of the contents of the tank, plus precipitation. The containment devices must meet all Federal and State rules for primary and secondary containment. Secondary containment requirements are waived if the tank is equipped with a level sensor and alarm to signal an overflow or leak and the facility has a contingency plan in place to remove excess liquid to a second containment structure or off-site treatment facility to prevent exposure to stormwater. The containment structures must be visually inspected for signs of deterioration at least once per year. The contingency plan and tank inspection procedure must be documented in the SWPPP.
- v. **Non-stormwater discharges** – The permittee must document that it has evaluated its site for the presence non-stormwater discharges not listed in MCM3 of this GP. Documentation must include the following.
 - 1. The date of the evaluation;
 - 2. A description of the evaluation criteria used;
 - 3. A list of the outfalls or onsite drainage points that were directly observed during the evaluation; and
 - 4. The action(s) taken, such as a list of control measures used to eliminate unauthorized discharge(s), or documentation that a separate MEPDES permit was obtained.

Part IV. Requirements (cont'd)

- vi. **Salt storage.** The permittee must document the location of any storage piles containing salt or other material or products, or liquid brine used for deicing or other municipal purposes.
- vii. **Sampling data.** Existing dischargers must summarize all stormwater discharge sampling data collected at the facility during the previous permit term. The summary must include a narrative description (and may include data tables/figures) that adequately summarizes the collected sampling data to support identification of potential pollution sources at the facility. New dischargers and new sources must provide a summary of any available stormwater runoff data they may have.
- viii. **Method of on-site storage or disposal.** A storage practice or disposal method must be detailed for all raw materials, intermediate materials, final products and waste materials. Waste materials must be handled in accordance with applicable federal and State waste management rules and regulations.

4. Storm Water Pollution Prevention Plan – Control Measures

The permittee must review all control measures at least quarterly and complete corrective actions to modify any control measures that are not achieving the intended effect of minimizing pollutant discharges. The SWPPP must document the type and location of all control measures selected to ensure compliance with technology-based and water quality-based effluent limitations.

- a. **Best management practices (BMPs) considerations.** Best management practices must be applied to all areas described in the summary of potential pollutant sources documented in the SWPPP. The SWPPP must include an implementation schedule for all proposed BMPs. The permittee must consider, at a minimum, the following in selection of BMPs:
 - i. The quantity and nature of the pollutants, and their potential to impact the water quality of receiving waters;
 - ii. Preventing stormwater from coming into contact with polluting materials;
 - iii. Using control measures in combination to minimize pollutants in stormwater discharges;
 - iv. Opportunities to offset stormwater and temperature impacts from impervious areas on dry weather flows and low flow situations to streams;
 - v. Minimizing impervious areas at the facility and infiltrating runoff onsite (including bioretention cells, green roofs, and pervious pavement, among other approaches);
 - vi. Attenuating flow using open vegetated swales and natural depressions; and
 - vii. Use of treatment interceptors (*e.g.*, swirl separators, sand filters, catch basin inserts/filters) to minimize the discharge of pollutants.

Part IV. Requirements (cont'd)

- b. **Non-structural control measures** The permittee must comply with the non-structural control measures in Part IV (6)(d)(2), *Non-Numeric Effluent Limitations*.

The permittee must review all structural BMPs at least quarterly and complete corrective actions to modify any BMPs that are not achieving the intended effect of minimizing pollutant discharges. The SWPPP must document the type and location of all BMPs selected to ensure compliance with technology-based and water quality-based effluent limitations.

5. Stormwater Pollution Prevention Plan Records

The permittee must keep the following inspection, monitoring, and certification records on site with the SWPPP. Records required to be kept with a facility's SWPPP are facility-specific except that any of the records listed below that are already being maintained in order to comply with other portions of this GP (e.g. catch basin cleaning, street sweeping) do not need to be stored on site with the SWPPP.

- a. Documentation of maintenance and repairs of control measures, including the date(s) of regular maintenance, date(s) of discovery of areas in need of repair/replacement, and for repairs, date(s) that the control measure(s) returned to full function, and the justification for any extended maintenance/repair schedules;
- b. All SWPPP inspection reports and visual monitoring reports required by this GP;
- c. A description of any deviations from the schedule for visual monitoring, and the reason for the deviations (e.g., adverse weather or it was impracticable to collect samples within the first 60 minutes of a measurable storm event);
- d. Dates and descriptions of all spills and leaks and corrective actions taken;
- e. Corrective Action Reports and summary of completed actions taken at the site, including event(s) and date(s) when problems were discovered and modifications occurred; and
- f. A copy of records for all employee SWPPP related training as required.

6. Monitoring Requirements

- a. **Procedures for conducting monitoring.** This GP contains routine facility inspections and visual monitoring. Samples and measurements taken for the purpose of monitoring must be representative of the volume and nature of the discharge over the sampling and reporting period.

Part IV. Requirements (cont'd)

The SWPPP must document the procedures and frequencies for conducting quarterly routine facility inspections and visual monitoring where applicable. SWPPP documentation must include the following.

- i. Location of sample collection (discharge point designation);
- ii. Monitoring schedule including monitoring exceptions, adverse weather conditions, and waivers.
- iii. Stormwater samples should, whenever practicable, be collected within the first sixty (60) minutes of the beginning of a discharge during a storm event of greater than $\frac{1}{4}$ of an inch during a 24-hour period. Sampling events are only required during normal business hours. If a sample cannot be collected within the first 60 minutes, the permittee must document with inspection forms the reason(s) or circumstance(s) why it was not practicable to obtain a timely sample. Samples collected more than two (2) hours following the beginning of a discharge are not acceptable and will be rejected by the Department.

In the case of snowmelt, samples must be collected during a period with a measurable discharge from the representative outfall/discharge point.

If a stormwater discharge event does not occur during normal operating business hours an entire calendar quarter, the permittee must document in the SWPPP that there was no discharge to sample. Monitoring requirements under these circumstances are waived.

7. Routine Facility Inspections

- a. **Applicability.** All permittees with public works facilities; transfer stations; school bus and other maintenance garages located in the UA must conduct routine facility inspections of areas of the facility covered by the requirements in this GP, including, but not limited to, the following:
 - i. Areas where materials or activities are exposed to stormwater;
 - ii. Areas identified in the SWPPP and those that are potential pollutant sources;
 - iii. Areas where spills and leaks have occurred in the past three years;
 - iv. Discharge points; and
 - v. Control measures used to comply with the limits contained in this GP.

Part IV. Requirements (cont'd)

- b. **Minimum inspection requirements** - Routine facility inspections must be conducted once per calendar quarter each year the permittee is covered under this GP. These inspections must be equally spaced with a minimum of sixty (60) days between inspections whenever possible. At least once each calendar year, the routine inspection must be conducted during a period when a stormwater discharge is occurring. The permittee must document findings from each routine facility inspection in a signed, certified report maintained with the SWPPP including, but not limited to, the following:
- i. The inspection date and time;
 - ii. The name(s) and signature(s) of the inspector(s);
 - iii. Weather information (precipitation in the previous 48 hour period of time);
 - iv. All observations relating to the implementation of control measures at the operations or facility, including:
 1. A description of any discharges occurring at the time of the inspection;
 2. Any new discharges from and/or pollutants at the site;
 3. Any evidence of, or the potential for, pollutants entering the drainage system;
 4. Observations regarding the physical condition of and around all outfalls/discharge points, including any flow dissipation devices, and evidence of pollutants in discharges and/or the receiving water;
 - v. Any control measures needing maintenance, repairs, or replacement;
 - vi. Any additional control measures needed to comply with the GP requirements; and
 - vii. Any incidents of noncompliance.

Routine facility inspection requirements may be satisfied at the same time visual monitoring is conducted provided they are conducted during a qualifying storm event and all components of both monitoring types are included in the report.

- c. **Visual Monitoring.** All permittees required to have a SWPPP must conduct visual monitoring once per calendar quarter each year the permittee is covered under this GP. The permittee must collect a stormwater sample from each outfall/discharge point or a representative outfall/discharge point during a qualifying storm event of greater than 0.25 inches, or ice or snow melt and conduct a visual assessment of these samples. These samples are not required to be collected in accordance with 40 CFR Part 136 procedures but must be collected in such a manner that the samples are representative of the stormwater discharge. The sample must be collected in a clean, colorless glass or plastic container, and examined in a well-lit area. The visual assessment must be performed and documented in accordance with standard operating procedures outlined in document dated June 12, 2017, DEPLW0768 (or most current version), *Visual Monitoring of Stormwater Discharges Associated with Industrial Activity*. See Attachment E of this GP. The quarterly Visual Monitoring sample forms must be completed and kept on file with the SWPPP. Visual evidence of pollution in a stormwater sample indicates that modifications or additions to control measures are needed at the site.

Part IV. Requirements (cont'd)

The permittee must visually inspect and document or observe the sample for the following water quality characteristics:

1. Color;
2. Odor;
3. Clarity (diminished);
4. Floating solids;
5. Settled solids;
6. Suspended solids;
7. Foam;
8. Oil sheen; and
9. Other obvious indicators of stormwater pollution

If a stormwater discharge event associated with a qualifying storm event does not occur during normal operating business hours for an entire calendar quarter, the permittee must document in the SWPPP that there was no discharge to sample. Monitoring requirements under these circumstances are waived.

8. **Conditions Requiring SWPPP Review and Revision.** When any of the following conditions occur or are detected during an inspection, monitoring or other means, or the Department informs the permittee that any of the following conditions have occurred, the permittee must review and revise, as appropriate, the SWPPP (*e.g.*, sources of pollution; spill and leak procedures; non-stormwater discharges; the selection, design, installation and implementation of your control measures) so that pollutant discharges are minimized:
 - a. An unauthorized release or discharge (*e.g.*, spill, leak, or discharge of non-stormwater not authorized by this or another MEPDES permit to a water of the State) occurs at the operation or facility;
 - b. A discharge violates a condition of this GP or permittee-specific DEP Order;
 - c. A discharge violates a non-numeric effluent limitation contained in this GP, or an applicable water quality-based limitation or ambient water quality criteria associated with impaired waters monitoring;
 - d. The control measures are not stringent enough for the discharge to meet applicable water quality standards;
 - e. A required control measure was never installed, was installed incorrectly, or is not being properly operated or maintained; or
 - f. Whenever a visual assessment shows evidence of stormwater pollution (*e.g.*, color, odor, floating solids, settled solids, suspended solids, foam).

Part IV. Requirements (cont'd)**9. Corrective Actions and Deadlines.**

- a. **Immediate actions.** If corrective action is needed, the permittee must immediately take all reasonable steps necessary to minimize or prevent the discharge of pollutants until a permanent solution is installed and made operational, including cleaning up any contaminated surfaces so that the material will not discharge in subsequent storm events.

Note: In this context, the term “immediately” requires the permittee to, on the same day a condition requiring corrective action is found, take all reasonable steps to minimize or prevent the discharge of pollutants until a permanent solution is installed and made operational. However, if a problem is identified at a time in the work day when it is too late to initiate corrective action, the initiation of corrective action must begin no later than the following work day. “All reasonable steps” means that the permittee has undertaken initial actions to assess and address the condition causing the corrective action, including, for example, cleaning up any exposed materials that may be discharged in a storm event (e.g., through sweeping, vacuuming) or making arrangements (i.e., scheduling) for a new BMP to be installed at a later date. “All reasonable steps” for purposes of complying with Conditions Requiring SWPPP Review to Determine if Modifications Are Necessary, when the permittee concludes a corrective action is, in fact, not necessary, could include documenting why a corrective action is unnecessary.

- b. **Subsequent actions.** If the permittee determines that additional actions are necessary beyond those implemented in accordance with immediate action response, the permittee must complete the corrective actions (e.g., install a new or modified control and make it operational, complete the repair) before the next storm event if possible, and within 14 calendar days from the time of discovery of the corrective action condition. If it is infeasible to complete the corrective action within 14 calendar days, the permittee must document why it is infeasible to complete the corrective action within the 14-day timeframe. The permittee must also identify the schedule for completing the work, which must be done as soon as practicable after the 14-day timeframe but no longer than 45 days after discovery. If the completion of corrective action will exceed the 45-day timeframe, the permittee may take the minimum additional time necessary to complete the corrective action, provided that the permittee notifies the Department of the intention to exceed 45 days, the permittee’s rationale for an extension, and a completion date, which the permittee must also include in its corrective action documentation. Where the permittee’s corrective actions result in changes to any of the controls or procedures documented in your SWPPP, the permittee must modify the SWPPP accordingly within 14 calendar days of completing corrective action work.

Part IV. Requirements (cont'd)

- c. **Corrective Action Report (CAR).** A Corrective Action Report is a signed, certified report to document actions taken in response to triggering the need for corrective action. The existence of any of the conditions listed in Part IV(8)(a-f) of this GP triggers the need for corrective action review.

A complete CAR must contain the following information:

1. The existence of any of the conditions listed in Part IV(8)(a-f) of this GP and description of the condition triggering the need for corrective action review;
 2. For any spills or leaks: a description of the incident including material, date/time, amount, location, and cause for spill, and any leaks, spills or other releases that resulted in discharges of pollutants to the MS4 or waters of State, through stormwater or otherwise;
 3. Date the condition was identified in a facility or Department inspection;
 4. Description of immediate actions completed, including measures taken to prevent the reoccurrence of such releases;
 5. A description of the corrective actions taken or to be taken as a result of the identified conditions;
 6. The dates when each corrective action was initiated and completed (or is expected to be completed); and
- d. **Effect of corrective action.** If the event triggering the review is a violation of this GP correcting it does not remove the original violation. Additionally, failing to take corrective action in accordance with this section is an additional violation of this GP.

D. Sharing responsibility

1. **Reliance on other entity.** The permittee may satisfy the requirement to implement a BMP for a MCM by having a third party implement the BMP. For example, if a local watershed organization organized or funded by the permittee performs an annual “river clean-up”, this event may be used to satisfy a BMP for the Public Participation.

If the permittee is relying on a third party to implement one or more BMP(s), the permittee must note that fact in the SWMP and Annual Compliance Report required in Part IV (F). If the third party fails to implement the BMP(s), the permittee remains responsible for its implementation.

2. **Qualifying state or federal program.** If a BMP or MCM is the responsibility of a third party under another NPDES or MEPDES permit, the permittee is not required to include such BMP or MCM in its SWMP. The permittee must reference this qualifying program in their SWMP. However, the permittee is responsible for its implementation if the third party fails to perform. The permittee must annually confirm that the third party is still implementing this measure. If the third party fails to implement the measure, the SWMP must be modified to address the measure.

Part IV. Requirements (cont'd)

In the case of a permitted municipal industrial activity, such as a publicly owned treatment works covered by the Multi Sector General Permit For The Discharge of Stormwater Associated With An Industrial Activity (MSGP), the permittee may reference the industrial activity's SWPPP to address a portion of the permittee's SWMP.

3. **Other MS4 Permittees.** The permittee must identify interconnections within the regulated small MS4s and find ways to cooperate with other regulated or non-regulated entities. Where a portion of the separate storm sewer system within a municipality is owned, operated or otherwise the responsibility of another regulated small MS4, the two entities may coordinate the development and implementation of their respective SWMP to address all elements of Part IV B (1-6). At the very least, a clear description of their respective responsibilities for these elements must be included in each regulated small MS4's SWMP.

For example, a storm sewer system within a municipality may be operated and maintained by the Maine DOT, or other public or quasi-public entity. In cases such as these, the two entities must cooperate and coordinate their SWMP to reduce duplicative efforts to address the MCMs, particularly at the interconnections within storm sewer systems. Where an illicit discharge is detected from an outfall near an interface between two storm sewer systems and where there is more than one responsible entity, the two entities must coordinate their efforts to detect and ultimately eliminate the cause of the illicit discharge. These efforts must be noted in both the regulated small MS4's Annual Compliance Reports.

E. Discharges To Impaired Waters

1. If the waterbody to which a point source discharge drains is impaired and has an EPA approved total maximum daily load (TMDL), then the SWMP must address compliance with the TMDL waste load allocation ("WLA") and any implementation plan. This GP does not authorize a direct discharge that is inconsistent with the WLA of an approved TMDL. EPA approved TMDLs prior to the issuance date of this permit, can be found at <https://www.epa.gov/tmdl/region-1-approved-tmdls-state#tmdl-me>. This GP does not authorize a new or increased discharge of storm water to an impaired waterbody that contributes to the impairment at a detectable level.
2. If a TMDL is approved or modified by EPA subsequent to the issuance date of this GP, the Department will notify the permittee and may:
 - a. Require the permittee to review its permittee specific DEP Order and SWMP for consistency with the TMDL, and propose any necessary changes to the permittee specific DEP Order and SWMP to be submitted to the Department within six months of the receipt of notification concerning the TMDL;
 - b. Issue a watershed-specific general permit for the area draining to the impaired waterbody or
 - c. Require the permittee to apply to the Department for an individual permit.

Part IV. Requirements (cont'd)

This GP will not be reopened for modification to address a TMDL that is approved or modified by EPA subsequent to the issuance date of this GP. The Department may however, after proper notice to the permittee, modify the terms and conditions of the permittee specific DEP Order to be consistent with the newly approved or modified TMDL. Modification of the permittee specific DEP Order will be subject to public process as described in Part III A(1).

3. If the waterbody to which a point source covered by this GP discharges is an Urban Impaired Stream (UIS) (Appendix B of this permit) the permittee must propose and fully implement at least three structural or non-structural BMPs to be considered for inclusion in the permittee specific DEP Order, unless the Department has determined the MS4 discharge is not causing or contributing to the impairment. The BMPs must address a specific impairment from the MS4 discharge within the UA, be clear, specific and measurable. Structural or nonstructural BMPs may selected from a) MCMs 1-6, b) an existing Department approved Watershed Management Plan, or c) BMPs in Appendix D, *BMPs for Discharges to Urban Impaired Streams*, of this GP or more specifically developed by the permittee. For receiving waters impaired in whole or in part by nutrient loading, including UISs covered by the Impervious Cover TMDL, permittees may propose measures designed to reduce loads into the MS4 system. The permittee specific DEP Order will set forth those measures the permittee must take, and may include, in whole or in part, the measures proposed by the permittee.

F. Record Keeping

The permittee must keep all records required by this GP for at least three (3) years following its expiration or longer if requested by the Department or the USEPA. The permittee must make records, including its SWMP, available to the public during regular business hours.

G. Annual Compliance Report

By September 15 of each year, the permittee must electronically submit an Annual Compliance Report to the Department for review. Standardized Annual Compliance Report forms are to be provided by the Department or the permittee may submit an alternative form to the Department for review and approval.

MS4 Program Manager
Department of Environmental Protection
17 State House Station
Augusta, Maine 04333-0017
e-mail: rhonda.poirier@maine.gov.

Part IV. Requirements (cont'd)

The Annual Compliance Report must include the following.

- a. The status of compliance with the terms and conditions of this GP and permittee specific DEP Order based on the implementation of the permittee's SWMP for each permit year, an assessment of the effectiveness of the components of its stormwater management program, an assessment of the appropriateness of identified BMPs, progress towards achieving identified measurable goals for each of the MCMs and progress toward achieving the goal of reducing the discharge of pollutants to the MEP.
- b. A summary of information collected and analyzed, including monitoring data, if any, during the reporting period.
- c. A summary of the stormwater activities the permittee intends to undertake pursuant to its SWMP to comply with the terms and conditions of this GP and permittee specific DEP Order during the next reporting cycle.
- d. A change in any identified BMPs or measurable goals that apply to the SWMP.
- e. A description of the activities, progress, and accomplishments for each of the MCMs #1 through #6 including such items as the status of education and outreach efforts, public involvement activities, stormwater mapping efforts, the number of visual dry weather inspections performed, the number of inaccessible and new outfalls, dry weather flow sampling events and laboratory results, detected illicit discharges, detected illicit connections, illicit discharges that were eliminated, construction site inspections, number and nature of enforcement actions, post construction BMP status and inspections, the number of functioning post construction BMPs, the number of post construction sites requiring maintenance or remedial action, the status of the permittee's good housekeeping/pollution prevention program including the percentage of catch basins cleaned, those catch basins cleaned multiple times and the number of catch basins that could not be evaluated for structural condition in a safe manner. Where applicable, the MS4 must quantify steps/measures/activities taken to comply with this GP and its SWMP including reporting on the types of trainings presented, the number of municipal and contract staff that received training, the length of the training and training content delivered as well as any revisions to the SWPPP procedures and/or changes in municipal operations.

Changes to the report based on the Department's review comment(s) must be submitted to the Department within 60 calendar days of the receipt of the comment(s).

Final Permit

General Permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer Systems

Part IV. Requirements (cont'd)

H. Reopener. This GP may be modified or reopened by the Department, after providing notice to the permittee's, as provided in Water Pollution Control, 38 M.R.S. § 414-A(5) as follows:

1. When necessary to correct legal, technical or procedural mistakes or errors;
2. When there has been or will be a substantial change in the activity or means of treatment that occurred after the time the permit was issued;
3. When new information other than revised rules, guidance or test methods becomes available that would have justified different conditions at the time the permit was issued;
4. When a pollutant not included in the permit may be present in the discharge in quantities sufficient to require treatment, such as when the pollutant exceeds the level that can be achieved by the technology-based treatment standards appropriate to the permittee or contribute to water quality violations;
5. When necessary to make changes as a result of the failure of one state to notify another state whose waters may be affected by a discharge; or

ATTACHMENT A

Appendix A

Regulated Small MS4 Municipal Operators

Auburn
Bangor
Berwick
Biddeford
Brewer
Cape Elizabeth
Cumberland
Eliot
Falmouth
Freeport
Gorham
Hampden
Kittery
Lewiston
Lisbon
Milford
Old Orchard Beach
Old Town
Orono
Portland
Sabattus
Saco
Scarborough
South Berwick
South Portland
Veazie
Westbrook
Windham
Yarmouth
York

ATTACHMENT B

APPENDIX B

Urban impaired streams

STREAM	TOWN*
LOGAN BROOK	AUBURN**
UNNAMED TRIBUTARY TO BOND BROOK (entering below I-95, drains Turnpike Mall Shopping Center)	AUGUSTA
KENNEDY BROOK	AUGUSTA
WHITNEY BROOK	AUGUSTA
PENJAJAWOC STREAM, including MEADOW BROOK	BANGOR**
BIRCH STREAM (OHIO STREET)	BANGOR**
CAPEHART BROOK	BANGOR**
ARCTIC BROOK (VALLEY AVENUE)	BANGOR**
SHAW BROOK	BANGOR**, HAMPDEN**
SUCKER BROOK	BANGOR**, HAMPDEN**
THATCHER BROOK	BIDDEFORD**
MARE BROOK	BRUNSWICK
UNNAMED TRIBUTARY TO ANDROSCOGGIN RIVER (near Jordan Avenue)	BRUNSWICK
UNNAMED TRIBUTARY TO ANDROSCOGGIN RIVER (near River Road)	BRUNSWICK
UNNAMED TRIBUTARY TO ANDROSCOGGIN RIVER (near Water Street)	BRUNSWICK
CARIBOU STREAM	CARIBOU
FROST GULLY BROOK	FREEPORT**
CONCORD GULLY	FREEPORT**
HART BROOK	LEWISTON**
JEPSON BROOK	LEWISTON**
UNNAMED STREAM (Route 196)	LISBON FALLS**
CAPISIC BROOK	PORTLAND**
DOLE BROOK	PORTLAND**
FALL BROOK	PORTLAND**
NASONS BROOK	PORTLAND**
GOOSEFARE BROOK	SACO**
GOODALL BROOK	SANFORD
TROUT BROOK (including KIMBALL BROOK)	SOUTH PORTLAND**
BARBERRY CREEK	SOUTH PORTLAND**
LONG CREEK	SOUTH PORTLAND**
PHILLIPS BROOK	SCARBOROUGH **
RED BROOK	SCARBOROUGH **, SOUTH PORTLAND**

WHITTEN BROOK	SKOWHEGAN
UNNAMED TRIBUTARY TO ANDROSCOGGIN RIVER (near Topsham Fairgrounds)	TOPSHAM
UNNAMED TRIBUTARY TO ANDROSCOGGIN RIVER (draining Topsham Fair Mall area)	TOPSHAM

*Town listed provides the general location of the stream. The stream may pass through other municipalities, which are also included even if not listed in this table.

** Town is regulated by this GP

ATTACHMENT C

Erosion and sedimentation control

A person who conducts, or causes to be conducted, an activity that involves filling, displacing or exposing soil or other earthen materials shall take measures to prevent unreasonable erosion of soil or sediment beyond the project site or into a protected natural resource as defined in 38 M.R.S. §480-B. Erosion control measures must be in place before the activity begins. Measures must remain in place and functional until the site is permanently stabilized. Adequate and timely temporary and permanent stabilization measures must be taken.

NOTE: Other requirements may apply, including, but not limited to the *Natural Resources Protection Act* 38 M.R.S. §480-B.

NOTE: The Department has prepared protocols for the control of erosion and sedimentation. See "Maine Erosion and Sediment Control BMPs Maine Department of Environmental Protection."

- 1. Pollution prevention.** Minimize disturbed areas and protect natural downgradient buffer areas to the extent practicable. Control stormwater volume and velocity within the site to minimize soil erosion. Minimize the disturbance of steep slopes. Control stormwater discharges, including both peak flow rates and volume, to minimize erosion at outlets. The discharge may not result in erosion of any open drainage channels, swales, stream channels or stream banks, upland, or coastal or freshwater wetlands off the project site.

Whenever practicable, no disturbance activities should take place within 50 feet of any protected natural resource. If disturbance activities take place between 30 feet and 50 feet of any protected natural resource, and stormwater discharges through the disturbed areas toward the protected natural resource, perimeter erosion controls must be doubled. If disturbance activities take place less than 30 feet from any protected natural resource, and stormwater discharges through the disturbed areas toward the protected natural resource, perimeter erosion controls must be doubled and disturbed areas must be temporarily or permanently stabilized within 7 days.

NOTE: Buffers improve water quality by helping to filter pollutants in run-off both during and after construction. Minimizing disturbed areas through phasing limits the amount of exposed soil on the site through retention of natural cover and by retiring areas as permanently stabilized. Less exposed soil results in fewer erosion controls to install and maintain. If work within an area is not anticipated to begin within two weeks' time, consider leaving the area in its naturally existing cover.

NOTE: Many construction activities within 75 feet of a protected natural resource require a permit under the *Natural Resources Protection Act* prior to initiation. For more information regarding the applicability of the NRPA to your project, you can visit the Department's website at <http://www.maine.gov/dep/land/nrpa/index.html> or contact staff of the Division of Land Resource Regulation at the nearest regional office.

- 2. Sediment barriers.** Prior to construction, properly install sediment barriers at the downgradient edge of any area to be disturbed and adjacent to any drainage channels within the disturbed area. Sediment barriers should be installed downgradient of soil or sediment stockpiles and stormwater prevented from running onto the stockpile. Maintain the sediment barriers by removing accumulated sediment, or removing and replacing the barrier, until the disturbed area is permanently stabilized. Where a
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discharge to a storm drain inlet occurs, if the storm drain carries water directly to a surface water and you have authority to access the storm drain inlet, you must install and maintain protection measures that remove sediment from the discharge.

3. **Stabilized construction entrance.** Prior to construction, properly install a stabilized construction entrance (SCE) at all points of egress from the site. The SCE is a stabilized pad of aggregate, underlain by a geotextile filter fabric, used to prevent traffic from tracking material away from the site onto public ROWs. Maintain the SCE until all disturbed areas are stabilized.
4. **Temporary stabilization.** Within 7 days of the cessation of construction activities in an area that will not be worked for more than 7 days, stabilize any exposed soil with mulch, or other non-erodible cover. Stabilize areas within 75 feet of a wetland or waterbody within 48 hours of the initial disturbance of the soil or prior to any storm event, whichever comes first.
5. **Removal of temporary measures.** Remove any temporary control measures, such as silt fence, within 30 days after permanent stabilization is attained. Remove any accumulated sediments and stabilize.

NOTE: It is recommended that silt fences be removed by cutting the fence materials at ground level to avoid additional soil disturbance.

6. **Permanent stabilization.** If the area will not be worked for more than one year or has been brought to final grade, then permanently stabilize the area within 7 days by planting vegetation, seeding, sod, or through the use of permanent mulch, or riprap, or road sub-base. If using vegetation for stabilization, select the proper vegetation for the light, moisture, and soil conditions; amend areas of disturbed subsoils with topsoil, compost, or fertilizers; protect seeded areas with mulch or, if necessary, erosion control blankets; and schedule sodding, planting, and seeding so to avoid die-off from summer drought and fall frosts. Newly seeded or sodded areas must be protected from vehicle traffic, excessive pedestrian traffic, and concentrated runoff until the vegetation is well-established with 90% cover by healthy vegetation. If necessary, areas must be reworked and restabilized if germination is sparse, plant coverage is spotty, or topsoil erosion is evident. One or more of the following may apply to a particular site.
 - (a) **Seeded areas.** For seeded areas, permanent stabilization means a 90% cover of the disturbed area with mature, healthy plants with no evidence of washing or rilling of the topsoil.
 - (b) **Sodded areas.** For sodded areas, permanent stabilization means the complete binding of the sod roots into the underlying soil with no slumping of the sod or die-off.
 - (c) **Permanent Mulch.** For mulched areas, permanent mulching means total coverage of the exposed area with an approved mulch material. Erosion Control Mix may be used as mulch for permanent stabilization according to the approved application rates and limitations.
 - (d) **Riprap.** For areas stabilized with riprap, permanent stabilization means that slopes stabilized with riprap have an appropriate backing of a well-graded gravel or approved geotextile to prevent soil movement from behind the riprap. Stone must be sized appropriately. It is recommended that angular stone be used.

- (e) **Agricultural use.** For construction projects on land used for agricultural purposes (e.g., pipelines across crop land), permanent stabilization may be accomplished by returning the disturbed land to agricultural use.
 - (f) **Paved areas.** For paved areas, permanent stabilization means the placement of the compacted gravel subbase is completed, provided it is free of fine materials that may runoff with a rain event
 - (g) **Ditches, channels, and swales.** For open channels, permanent stabilization means the channel is stabilized with a 90% cover of healthy vegetation, with a well-graded riprap lining, turf reinforcement mat, or with another non-erosive lining such as concrete or asphalt pavement. There must be no evidence of slumping of the channel lining, undercutting of the channel banks, or down-cutting of the channel.
7. **Winter Construction.** "Winter construction" is construction activity performed during the period from November 1 through April 15. If disturbed areas are not stabilized with permanent measures by November 1 or new soil disturbance occurs after November 1, but before April 15, then these areas must be protected and runoff from them must be controlled by additional measures and restrictions.
- (a) **Site Stabilization.** For winter stabilization, hay mulch is applied at twice the standard temporary stabilization rate. At the end of each construction day, areas that have been brought to final grade must be stabilized. Mulch may not be spread on top of snow.
 - (b) **Sediment Barriers.** All areas within 75 feet of a protected natural resource must be protected with a double row of sediment barriers.
 - (c) **Ditch.** All vegetated ditch lines that have not been stabilized by November 1, or will be worked during the winter construction period, must be stabilized with an appropriate stone lining backed by an appropriate gravel bed or geotextile unless specifically released from this standard by the Department.
 - (d) **Slopes.** Mulch netting must be used to anchor mulch on all slopes greater than 8% unless erosion control blankets or erosion control mix is being used on these slopes.

NOTE: The Department has prepared protocols for the control of erosion and sedimentation during the winter months. See "Maine Erosion and Sediment Control BMPs Maine Department of Environmental Protection."

8. **Stormwater channels.** Ditches, swales, and other open stormwater channels must be designed, constructed, and stabilized using measures that achieve long-term erosion control. Ditches, swales and other open stormwater channels must be sized to handle, at a minimum, the expected volume runoff. Each channel should be constructed in sections so that the section's grading, shaping, and installation of the permanent lining can be completed the same day. If a channel's final grading or lining installation must be delayed, then diversion berms must be used to divert stormwater away from the channel, properly-spaced check dams must be installed in the channel to slow the water velocity, and a temporary lining installed along the channel to prevent scouring. Permanent stabilization for channels is addressed under Appendix A(5)(g) above.
- (a) The channel should receive adequate routine maintenance to maintain capacity and prevent or correct any erosion of the channel's bottom or side slopes.
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- (b) When the watershed draining to a ditch or swale is less than 1 acre of total drainage and less than $\frac{1}{4}$ acre of impervious area, diversion of runoff to adjacent wooded or otherwise vegetated buffer areas is encouraged where the opportunity exists.

9. **Sediment basins.** Sediment basins must be designed to provide storage for either the calculated runoff from a 2-year, 24-hour storm or provide for 3,600 cubic feet of capacity per acre draining to the basin. Outlet structures must discharge water from the surface of the basin whenever possible. Erosion controls and velocity dissipation devices must be used if the discharging waters are likely to create erosion. Accumulated sediment must be removed as needed from the basin to maintain at least $\frac{1}{2}$ of the design capacity of the basin.

The use of cationic treatment chemicals, such as polymers, flocculants, or other chemicals that contain an overall positive charge designed to reduce turbidity in stormwater must receive prior approval from the Department. When requesting approval to use cationic treatment chemicals, you must describe appropriate controls and implementation procedures to ensure the use will not lead to a violation of water quality standards. In addition, you must specify the type(s) of soil likely to be treated on the site, chemicals to be used and how they are to be applied and in what quantity, any manufacturer's recommendations, and any training had by personnel who will handle and apply the chemicals.

10. **Roads.** Gravel and paved roads must be designed and constructed with crowns or other measures, such as water bars, to ensure that stormwater is delivered immediately to adjacent stable ditches, vegetated buffer areas, catch basin inlets, or street gutters.

NOTE: (1) Gravel and paved roads should be maintained so that they continue to conform to this standard in order to prevent erosion problems. (2) The Department recommends that impervious surfaces, including roads, be designed and constructed so that stormwater is distributed in sheet flow to natural vegetated buffer areas wherever such areas are available. Road ditches should be designed so that stormwater is frequently (at least every 100 to 200 feet) discharged via ditch turnouts in sheet flow to adjacent natural buffer areas wherever possible.

11. **Culverts.** Culverts must be sized to avoid unintended flooding of upstream areas or frequent overtopping of roadways. Culvert inlets must be protected with appropriate materials for the expected entrance velocity, and protection must extend at least as high as the expected maximum elevation of storage behind the culvert. Culvert outlet design must incorporate measures, such as aprons, to prevent scour of the stream channel. Outlet protection measures must be designed to stay within the channel limits. The design must take account of tailwater depth.

12. **Parking areas.** Parking areas must be constructed to ensure runoff is delivered to adjacent swales, catch basins, curb gutters, or buffer areas without eroding areas downslope. The parking area's subbase compaction and grading must be done to ensure runoff is evenly distributed to adjacent buffers or side slopes. Catch basins must be located and set to provide enough storage depth at the inlet to allow inflow of peak runoff rates without by-pass of runoff to other areas.

13. **Additional requirements.** Additional requirements may be applied on a site-specific basis.
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Inspection and maintenance**1. During construction.** The following standards must be met during construction.

- (a) **Inspection and corrective action.** Inspect disturbed and impervious areas, erosion control measures, materials storage areas that are exposed to precipitation, and locations where vehicles enter or exit the site. Inspect these areas at least once a week as well as before and within 24 hours after a storm event (rainfall), and prior to completing permanent stabilization measures. A person with knowledge of erosion and stormwater control, including the standards and conditions in the permit, shall conduct the inspections.
- (b) **Maintenance.** If best management practices (BMPs) need to be repaired, the repair work should be initiated upon discovery of the problem but no later than the end of the next workday. If additional BMPs or significant repair of BMPs are necessary, implementation must be completed within 7 calendar days and prior to any storm event (rainfall). All measures must be maintained in effective operating condition until areas are permanently stabilized.
- (c) **Documentation.** Keep a log (report) summarizing the inspections and any corrective action taken. The log must include the name(s) and qualifications of the person making the inspections, the date(s) of the inspections, and major observations about the operation and maintenance of erosion and sedimentation controls, materials storage areas, and vehicles access points to the parcel. Major observations must include BMPs that need maintenance, BMPs that failed to operate as designed or proved inadequate for a particular location, and location(s) where additional BMPs are needed. For each BMP requiring maintenance, BMP needing replacement, and location needing additional BMPs, note in the log the corrective action taken and when it was taken.

The log must be made accessible to Department staff and a copy must be provided upon request. The permittee shall retain a copy of the log for a period of at least three years from the completion of permanent stabilization.

2. Post-construction. The following standards must be met after construction.

- (a) **Plan.** Carry out an approved inspection and maintenance plan that is consistent with the minimum requirements of this section. The plan must address inspection and maintenance of the project's permanent erosion control measures and stormwater management system. This plan may be combined with the plan listed in Section 2(a) of this appendix. See Section 7(C)(2) for submission requirements.
 - (b) **Inspection and maintenance.** All measures must be maintained in effective operating condition. A person with knowledge of erosion and stormwater control, including the standards and conditions in the permit, shall conduct the inspections. The following areas, facilities, and measures must be inspected and identified deficiencies must be corrected. Areas, facilities, and measures other than those listed below may also require inspection on a specific site. Inspection or maintenance tasks other than those discussed below must be included in the maintenance plan developed for a specific site.
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NOTE: Expanded and more-detailed descriptions for specific maintenance tasks may be found in the Maine DEP's "Stormwater Management for Maine: Best Management Practices."

- (i) Inspect vegetated areas, particularly slopes and embankments, early in the growing season or after heavy rains to identify active or potential erosion problems. Replant bare areas or areas with sparse growth. Where rill erosion is evident, armor the area with an appropriate lining or divert the erosive flows to on-site areas able to withstand the concentrated flows. See permanent stabilization standards in Appendix A(5).
 - (ii) Inspect ditches, swales and other open stormwater channels in the spring, in late fall, and after heavy rains to remove any obstructions to flow, remove accumulated sediments and debris, to control vegetated growth that could obstruct flow, and to repair any erosion of the ditch lining. Vegetated ditches must be mowed at least annually or otherwise maintained to control the growth of woody vegetation and maintain flow capacity. Any woody vegetation growing through riprap linings must also be removed. Repair any slumping side slopes as soon as practicable. If the ditch has a riprap lining, replace riprap on areas where any underlying filter fabric or underdrain gravel is showing through the stone or where stones have dislodged. The channel must receive adequate routine maintenance to maintain capacity and prevent or correct any erosion of the channel's bottom or sideslopes.
 - (iii) Inspect culverts in the spring, in late fall, and after heavy rains to remove any obstructions to flow; remove accumulated sediments and debris at the inlet, at the outlet, and within the conduit; and to repair any erosion damage at the culvert's inlet and outlet.
 - (iv) Inspect and clean out catch basins. Clean-out must include the removal and legal disposal of any accumulated sediments and debris at the bottom of the basin, at any inlet grates, at any inflow channels to the basin, and at any pipes between basins. If the basin outlet is designed to trap floatable materials, then remove the floating debris and any floating oils (using oil-absorptive pads).
 - (v) Inspect resource and treatment buffers once a year for evidence of erosion, concentrating flow, and encroachment by development. If flows are concentrating within a buffer, site grading, level spreaders, or ditch turn-outs must be used to ensure a more even distribution of flow into a buffer. Check down slope of all spreaders and turn-outs for erosion. If erosion is present, adjust or modify the spreader's or turnout's lip to ensure a better distribution of flow into a buffer. Clean-out any accumulation of sediment within the spreader bays or turn-out pools.
 - (vi) Inspect at least once per year, each stormwater management pond or basin, including the pond's embankments, outlet structure, and emergency spillway. Remove and dispose of accumulated sediments in the pond. Control woody vegetation on the pond's embankments.
 - (vii) Inspect at least one per year, each underdrained filter, including the filter embankments, vegetation, underdrain piping, and overflow spillway. Remove and dispose of accumulated sediments in the filter. If needed, rehabilitate any clogged surface linings, and flush underdrain piping.
 - (viii) Inspect each manufactured system installed on the site, including the system's inlet, treatment chamber(s), and outlet at least once per year, or in accordance with the maintenance
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guidelines recommended by the manufacturer based on the estimated runoff and pollutant load expected to the system from the project. Remove and dispose of accumulated sediments, debris, and contaminated waters from the system and, if applicable, remove and replace any clogged or spent filter media.

(c) **Regular maintenance**

- (i) Clear accumulations of winter sand in parking lots and along roadways at least once a year, preferably in the spring. Accumulations on pavement may be removed by pavement sweeping. Accumulations of sand along road shoulders may be removed by grading excess sand to the pavement edge and removing it manually or by a front-end loader. Grading of gravel roads, or grading of the gravel shoulders of gravel or paved roads, must be routinely performed to ensure that stormwater drains immediately off the road surface to adjacent buffer areas or stable ditches, and is not impeded by accumulations of graded material on the road shoulder or by excavation of false ditches in the shoulder. If water bars or open-top culverts are used to divert runoff from road surfaces, clean-out any sediments within or at the outlet of these structures to restore their function.
- (ii) Manage each buffer's vegetation consistently with the requirements in any deed restrictions for the buffer. Wooded buffers must remain fully wooded and have no disturbance to the duff layer. Vegetation in non-wooded buffers may not be cut more than three times per year, and may not be cut shorter than six inches.

NOTE: Contact the Department's Division of Watershed Management (Maine DEP) for assistance developing inspection and maintenance requirements for other drainage control and runoff treatment measures installed on the site. The maintenance needs for most measures may be found in the Maine DEP's "Stormwater Management for Maine: Best Management Practices."

- (d) **Documentation.** Keep a log (report) summarizing inspections, maintenance, and any corrective actions taken. The log must include the date on which each inspection or maintenance task was performed, a description of the inspection findings or maintenance completed, and the name of the inspector or maintenance personnel performing the task. If a maintenance task requires the clean-out of any sediments or debris, indicate where the sediment and debris was disposed after removal. The log must be made accessible to Department staff and a copy provided to the Department upon request. The permittee shall retain a copy of the log for a period of at least five years from the completion of permanent stabilization.
3. **Re-certification.** Submit a certification of the following to the Department within three months of the expiration of each five-year interval from the date of issuance of the permit.
- (a) **Identification and repair of erosion problems.** All areas of the project site have been inspected for areas of erosion, and appropriate steps have been taken to permanently stabilize these areas.
 - (b) **Inspection and repair of stormwater control system.** All aspects of the stormwater control system have been inspected for damage, wear, and malfunction, and appropriate steps have been taken to repair or replace the system, or portions of the system.
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- (c) **Maintenance.** The erosion and stormwater maintenance plan for the site is being implemented as written, or modifications to the plan have been submitted to and approved by the Department, and the maintenance log is being maintained.

Municipalities with separate storm sewer systems regulated under the Maine Pollutant Discharge Elimination System (MPDES) Program may report on all regulated systems under their control as part of their required annual reporting in lieu of separate certification of each system. Municipalities not regulated by the MPDES Program, but that are responsible for maintenance of permitted stormwater systems, may report on multiple stormwater systems in one report.

4. **Duration of maintenance.** Perform maintenance as described and required in the permit unless and until the system is formally accepted by the municipality or quasi-municipal district, or is placed under the jurisdiction of a legally created association that will be responsible for the maintenance of the system. If a municipality or quasi-municipal district chooses to accept a stormwater management system, or a component of a stormwater system, it must provide a letter to the Department stating that it assumes responsibility for the system. The letter must specify the components of the system for which the municipality or district will assume responsibility, and that the municipality or district agrees to maintain those components of the system in compliance with Department standards. Upon such assumption of responsibility, and approval by the Department, the municipality, quasi-municipal district, or association becomes a co-permittee for this purpose only and must comply with all terms and conditions of the permit.
5. **Additional requirements.** Additional requirements may be applied on a site-specific basis.
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Housekeeping

These performance standards apply to all projects except for stormwater PBR projects.

1. **Spill prevention.** Controls must be used to prevent pollutants from construction and waste materials stored on site to enter stormwater, which includes storage practices to minimize exposure of the materials to stormwater. The site contractor or operator must develop, and implement as necessary, appropriate spill prevention, containment, and response planning measures.

NOTE: Any spill or release of toxic or hazardous substances must be reported to the Department. For oil spills, call 1-800-482-0777 which is available 24 hours a day. For spills of toxic or hazardous material, call 1-800-452-4664 which is available 24 hours a day. For more information, visit the Department's website at : <http://www.maine.gov/dep/spills/emergspillresp/>

2. **Groundwater protection.** During construction, liquid petroleum products and other hazardous materials with the potential to contaminate groundwater may not be stored or handled in areas of the site draining to an infiltration area. An "infiltration area" is any area of the site that by design or as a result of soils, topography and other relevant factors accumulates runoff that infiltrates into the soil. Dikes, berms, sumps, and other forms of secondary containment that prevent discharge to groundwater may be used to isolate portions of the site for the purposes of storage and handling of these materials. Any project proposing infiltration of stormwater must provide adequate pre-treatment of stormwater prior to discharge of stormwater to the infiltration area, or provide for treatment within the infiltration area, in order to prevent the accumulation of fines, reduction in infiltration rate, and consequent flooding and destabilization.

See Appendix D for license by rule standards for infiltration of stormwater.

NOTE: Lack of appropriate pollutant removal best management practices (BMPs) may result in violations of the groundwater quality standard established by 38 M.R.S.A. §465-C(1).

3. **Fugitive sediment and dust.** Actions must be taken to ensure that activities do not result in noticeable erosion of soils or fugitive dust emissions during or after construction. Oil may not be used for dust control, but other water additives may be considered as needed. A stabilized construction entrance (SCE) should be included to minimize tracking of mud and sediment. If off-site tracking occurs, public roads should be swept immediately and no less than once a week and prior to significant storm events. Operations during dry months, that experience fugitive dust problems, should wet down unpaved access roads once a week or more frequently as needed with a water additive to suppress fugitive sediment and dust.

NOTE: Dewatering a stream without a permit from the Department may violate state water quality standards and the *Natural Resources Protection Act*.

4. **Debris and other materials.** Minimize the exposure of construction debris, building and landscaping materials, trash, fertilizers, pesticides, herbicides, detergents, sanitary waste and other materials to precipitation and stormwater runoff. These materials must be prevented from becoming a pollutant source.

NOTE: To prevent these materials from becoming a source of pollutants, construction and post-construction activities related to a project may be required to comply with applicable

provision of rules related to solid, universal, and hazardous waste, including, but not limited to, the Maine solid waste and hazardous waste management rules; Maine hazardous waste management rules; Maine oil conveyance and storage rules; and Maine pesticide requirements.

5. **Excavation de-watering.** Excavation de-watering is the removal of water from trenches, foundations, coffer dams, ponds, and other areas within the construction area that retain water after excavation. In most cases the collected water is heavily silted and hinders correct and safe construction practices. The collected water removed from the ponded area, either through gravity or pumping, must be spread through natural wooded buffers or removed to areas that are specifically designed to collect the maximum amount of sediment possible, like a cofferdam sedimentation basin. Avoid allowing the water to flow over disturbed areas of the site. Equivalent measures may be taken if approved by the Department.

NOTE: Dewatering controls are discussed in the "Maine Erosion and Sediment Control BMPs, Maine Department of Environmental Protection."

6. **Authorized Non-stormwater discharges.** Identify and prevent contamination by non-stormwater discharges. Where allowed non-stormwater discharges exist, they must be identified and steps should be taken to ensure the implementation of appropriate pollution prevention measures for the non-stormwater component(s) of the discharge. Authorized non-stormwater discharges are:
- (a) Discharges from firefighting activity;
 - (b) Fire hydrant flushings;
 - (c) Vehicle washwater if detergents are not used and washing is limited to the exterior of vehicles (engine, undercarriage and transmission washing is prohibited);
 - (d) Dust control runoff in accordance with permit conditions and Appendix (C)(3);
 - (e) Routine external building washdown, not including surface paint removal, that does not involve detergents;
 - (f) Pavement washwater (where spills/leaks of toxic or hazardous materials have not occurred, unless all spilled material had been removed) if detergents are not used;
 - (g) Uncontaminated air conditioning or compressor condensate;
 - (h) Uncontaminated groundwater or spring water;
 - (i) Foundation or footer drain-water where flows are not contaminated;
 - (j) Uncontaminated excavation dewatering (see requirements in Appendix C(5));
 - (k) Potable water sources including waterline flushings; and
 - (l) Landscape irrigation.
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DEPARTMENT OF ENVIRONMENTAL PROTECTION

7. **Unauthorized non-stormwater discharges.** The Department's approval under this Chapter does not authorize a discharge that is mixed with a source of non-stormwater, other than those discharges in compliance with Appendix C (6). Specifically, the Department's approval does not authorize discharges of the following:
- (a) Wastewater from the washout or cleanout of concrete, stucco, paint, form release oils, curing compounds or other construction materials;
 - (b) Fuels, oils or other pollutants used in vehicle and equipment operation and maintenance;
 - (c) Soaps, solvents, or detergents used in vehicle and equipment washing; and
 - (d) Toxic or hazardous substances from a spill or other release.
- (8) **Additional requirements.** Additional requirements may be applied on a site-specific basis.
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ATTACHMENT D

BMPs for Discharges to Urban Impaired Streams

Stormwater effects can be lessened, water quality improved, and impairments curtailed by implementing best management practices (BMPs) and remedial actions in a cost-effective manner using the following adaptive management approach:

- Implement BMPs strategically through a phased program which focuses on getting the most reductions, for least cost, in sensitive areas first (for example, begin with habitat restoration, flood plain recovery, and treatment of smaller, more frequent storms);
- Monitor ambient water quality to assess stream improvement;
- Compare monitoring results to water quality standards (aquatic life criteria);
- Continue BMP implementation in a phased manner until water quality standards are attained.

General Stream Restoration Techniques

Following is a list of general BMPs and stream restoration techniques and how they can alleviate stressors and improve stream health. Short-term implementation of these measures will complement the long-term strategy of disconnecting or removing impervious surfaces suggested above.

- Maintaining the riparian buffer composed of native plants, including mature trees. Enhancing or replanting the riparian buffer where it is inadequate. An adequate buffer will filter runoff from commercial and residential lots, improves shading (which helps to keep water temperature low), and increases large woody debris availability, and food input. It will also provide terrestrial and aquatic habitat for insects with aquatic life stages, thus enhancing recolonization potential of the macroinvertebrate community.
- Reclamation of flood plains by returning these areas to a natural state will naturally moderate floods; reduce stress on the stream channel; provide habitat for fish, wildlife, and plant resources; promote groundwater recharge; and help maintain water quality. Protection of intact flood plains should be a high priority.
- Improving channel morphology (restoring sinuosity, pool availability and diversity, and flow diversity) by installing double wing deflectors and low crib walls in the stream will improve flow conditions and habitat for macroinvertebrates. Because of the complex nature of channel restoration, any improvement activity will require the extensive involvement of a trained professional.
- Reducing erosion from land use activities with mulches, grass covers, geotextiles or riprap will reduce excess sedimentation. In stream bank stabilization projects, use of woody vegetation is preferred over riprap in most cases.

General Stream Restoration Techniques (cont'd)

- Reducing the input of winter road sand and road dirt by sweeping roads, parking areas or driveways will reduce excess sedimentation.
- Reducing the incidence of spills (accidental and deliberate) for example by improving education and training will reduce toxic contaminant input.
- Minimizing waste input from pets by picking up waste will reduce bacteria and nutrient input.
- Eliminating the potential for sewer/septic system leaks by regularly inspecting and maintaining sewer/septic systems will reduce toxic contaminant and nutrient input.
- Eliminating illicit discharges by detecting and eliminating discharges will reduce toxic contaminant and nutrient input.
- Minimizing lawn/landscaping runoff by minimizing fertilizer/pesticide use and using more efficient application methods will reduce nutrient and toxic contaminant input.
- Reducing the temperature of water discharged from a detention structure by redesigning and retrofitting existing detention with outlet structures (e.g., underdrains) that cool the discharge will reduce negative temperature effects on the stream.
- Investing in education and outreach efforts will raise public awareness for the connections between urbanization, impervious cover, stormwater runoff, and overall stream health.
- Encouraging responsible development by promoting Smart Growth or Low-Impact Development guidelines and the use of pervious pavement techniques will minimize overall effects of urbanization.
- Reducing new impervious cover by promoting shared parking areas between homes or between facilities that require parking at different times will reduce impacts related to impervious surfaces. Lowering minimum parking requirements for businesses and critically assessing the need for new impervious surfaces will have the same effect.
- Eliminating septic systems in the watershed by expanding the municipal sewer system will reduce toxic contaminant and nutrient input.
- Discouraging the use of pavement sealants on driveways and parking lots will reduce the input of toxic contaminants. A recent study showed that runoff from sealed parking lots could account for the majority of the PAH load in urban streams. PAHs are a group of toxic contaminants with known negative effects on aquatic communities. Sealants are often applied for aesthetic reasons only, and decreasing their use represents a simple way to reduce the toxics load in runoff.
- Performing regular maintenance on detention ponds will reduce export of accumulated sediment and nutrients into the stream during large storms.

Disconnection of Impervious Surfaces

The purpose here is to prevent stormwater runoff from reaching the stream directly (via the storm drain system), thus reducing % IC. There are various options for achieving this goal:

- Channel runoff from large parking lots, roads or highways into;
 - o detention/retention BMPs (e.g., dry/wet pond, extended detention pond, created wetland), preferably one equipped with a treatment system (e.g., underdrains);
 - o vegetative BMPs (e.g., vegetated buffers or swales);
 - o infiltration BMPs (e.g., dry wells, infiltration trenches/basins, bio-islands/cells);
 - o underdrained soil filters (e.g., bioretention cells, dry swales).
- Redesign and retrofit existing detention to provide extended detention for 6 month and 1 year storms.
- Guide runoff from paved driveways and roofs towards pervious areas (grass, driveway drainage strip, decorative planters, rain gardens).
- Remove curbs on roads or parking lots.
- Collect roof runoff in rain barrels and discharge into pervious areas.

All of these options for disconnection of impervious surfaces provide for a virtual elimination of runoff during light rains (which account for the majority of runoff events but not the majority of pollutant or stormwater input), reduction in peak discharge rate and volume during heavy rains, sedimentation or filtration of some pollutants, and improvement in groundwater recharge. Disconnection of impervious surfaces can often be achieved at reasonable cost and, unlike the removal of impervious surfaces (below), does not generally create material for disposal. These BMPs cover most sizes of impervious surfaces (private driveways and small building roofs to large parking lots and highways), and many have been widely used in cold climates. Disconnection of impervious surfaces is a particularly useful option in watersheds with relatively high imperviousness.

Conversion of Impervious Surfaces

This is achieved by replacing impervious surfaces with pervious surfaces, for example by using the following BMPs:

- Replace asphalt on little-used parking lots, driveways or other areas with light vehicular traffic with porous pavement blocks or grass/gravel pave.
- Replace small areas of asphalt on large parking lots with bioretention structures (bioislands/cells).
- Replace existing parking lot expanses with more space-efficient multistory parking garages (i.e., go vertical).
- Replace conventional roofs with green roofs.

These options for conversion of impervious surfaces also provide for a virtual elimination of runoff during light rains (which account for the majority of runoff events), reduction in peak discharge rate and volume during heavy rains, filtration of some pollutants, and improvement in groundwater recharge.

Structural and Non-Structural BMPs for Watersheds with Chloride as Stressor

- Follow or require the use of BMPs for snow and ice control product selection, application processes, application equipment, loading and washing, per the Maine Environmental Best Management Practices Manual for Snow and Ice Control (2015). Cover sand/salt piles and manage loading area to reduce runoff from becoming contaminated with salt.
- Develop, or require the development of a salt management plan, to ensure BMPs are used, and only areas that truly need to be salted are. Consider whether all the impervious area needs to be plowed and salted, or if some of the area could be out of service for the winter. For instance, after the busy holiday season, consider only plowing the area of a commercial parking lot that is actually used during that time period.
- For developments currently being planned, consider reducing the number of parking spaces and/or reducing road widths. If there are municipal requirements, consider revising those requirements to allow for less parking spaces or smaller road widths in certain areas.
- Reduce infiltration of salty water in vulnerable areas. While stormwater BMPs that infiltrate, or simply allowing stormwater to infiltrate, are recommended for treating nutrients, metals, and other pollutants, when chloride impact to a small stream is the biggest current or future concern, infiltration is discouraged.

- Don't infiltrate salty water if possible. For instance, don't plow onto pervious areas, and capture salty runoff so it goes to the stormwater system. Since stormwater systems can often have leaks which would allow salty water to exfiltrate into the groundwater, ensure stormwater system in vulnerable areas is secure. Stormwater ponds should be lined so the salty water doesn't infiltrate.
- Infiltrate clean, non-salty water (e.g. roof runoff) since infiltration is still a good practice if the water is not salty. The non-salty water will help flush the groundwater, and any contaminated water with it. It also will not be adding to the volume of salt-laden water that needs to be managed.
- For new development being planned, don't allow or encourage (through infiltration BMPs) future infiltration of areas likely to be salted.
- Install solar parking canopies - The canopy provides protection from the elements (and therefore reduction of salt use) and shaded parking in summer, along with the benefit of producing energy.
- Install heated sidewalks or roads to reduce the need for shoveling and salt.

ATTACHMENT E



Standard Operating Procedure
Bureau of Water Quality Date: April
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**Bureau of Water Quality
Division of Water Quality Management
Industrial Stormwater Program**

Standard Operating Procedures and Visual Monitoring Guidelines
for Stormwater Discharges Associated With Industrial Activities.

1. **APPLICABILITY.** This Standard Operating Procedure (SOP) applies to all industrial facilities covered under Maine's Multi-Sector General Permit (MSGP) for Stormwater Discharges Associated with Industrial Activity. Permitted facilities are required to perform quarterly visual monitoring of their stormwater discharges and record and maintain the results in the facility's Stormwater Pollution Prevention Plans (SWPPP).

Monitoring requirements are not required for entities that are participating in a Watershed Management Plan. The Long Creek Watershed Management Plan in the municipalities of South Portland, Portland, Westbrook and Scarborough is a Department Approved Watershed Management Plan. In addition, the requirements for visual monitoring does not apply at a facility that is inactive and unstaffed, provided that there are no industrial materials or activities exposed to stormwater. To invoke this exception, the permittee must maintain a signed and certified statement with the facility SWPPP stating that the site is inactive and unstaffed, and that there is no exposure to stormwater.

2. **PURPOSE.** This document provides guidelines for standardized collection and visual examination of quarterly visual monitoring samples for indicators of stormwater pollution as defined in Special Condition N. of the MSGP and to provide guidelines describing standardized methods of data recording and record keeping of all quarterly visual stormwater discharge monitoring data as described in Special Condition N. of the MSGP.

3. **DEFINITIONS.**

- 3.1. **MULTI-SECTOR GENERAL PERMIT (MSGP).** A general permit for Stormwater Discharges Associated with Industrial Activity. Authorizes the direct discharge or point source discharge of stormwater associated with industrial activity to waters of the State (other than groundwater) or to an MS4 (which discharges to waters of the State), provided the discharge meets the requirements stated in this permit. This permit is effective March 7, 2017 and expires March 7, 2022. It replaces Maine's 2011 MSGP for Industrial Activity issued April 26, 2011.
- 3.2. **SWPPP.** Stormwater Pollution Prevention Plan. A written plan developed and implemented by each permitted facility to reduce or eliminate pollutants which come in contact with stormwater associated with industrial activity. This plan outlines sources of potential stormwater pollutants and the methods by which these pollutants will be reduced or prevented from entering waters of the State.

Standard Operating Procedure Guidelines For Visual Monitoring of Stormwater Discharges Associated With Industrial Activities. Division of Water Quality Management, Industrial Stormwater Program



- 3.3. GRAB SAMPLE. A single sample or collection of stormwater taken during a qualifying storm event from a single stormwater outfall. The sample may be collected manually or with an automatic sampler.
- 3.4. OUTFALL. The location where collected and concentrated stormwater flows are discharged from the facility such that the first receiving waterbody into which the discharge flows, either directly or through a separate storm sewer system, is a water of the State.
- 3.5. QUALIFYING STORM EVENT. A storm event that is either precipitation, ice or snow melt that produces a measureable discharge of 0.1 inch or more in a 24-hour period at an outfall and occurs at least 72 hours from a previous qualifying storm event.

4. RESPONSIBILITIES.

- 4.1. MONITORING PROGRAM IMPLEMENTATION. The visual monitoring schedule listed below in this section is also outlined in Maine's 2016 MSGP Special Condition N. Visual examinations must be clearly documented and maintained in the facility's SWPPP. The permittee shall perform and document a quarterly visual examination of industrial stormwater discharges from each outfall which discharges stormwater associated with industrial activity from the facility.
- 4.2. OUTFALL IDENTIFICATION. The permittee shall identify each industrial stormwater outfall at the facility. All outfalls must be clearly identified on the facility site map which is part of the facility's SWPPP and presented in the written text of the SWPPP.
- 4.3. REPRESENTATIVE OUTFALLS. "Representative outfalls" mean two or more outfalls with a single drainage area that are anticipated to discharge substantially similar pollutants resulting from substantially similar industrial activities, materials, or practices occurring within the outfalls' designated drainage area. If the facility contains representative outfalls, visual monitoring may be conducted at one of the outfalls during a given monitoring period provided that subsequent samples are taken from a different outfall within the representative outfalls' drainage area. The facility is not required to monitor more than one representative outfall within a designated drainage area per monitoring event as long as the site's SWPPP contains the required information as identified in Special Condition B(15) of the MSGP.
- 4.4. EMPLOYEE TRAINING. The permittee shall ensure that all facility personnel involved in stormwater sampling are properly trained. Staff involved in sampling shall:
 - a. Be familiar with the site map and outfall locations
 - b. Walk the site to physically identify each sampling location
 - c. Become familiar with local rainfall and drainage patterns
 - d. Become competent with proper sample collection procedures



Personnel involved in sampling should also be trained in all facility safety procedures as they apply to stormwater sampling. If possible, the same individual should carry out the collection and examination of discharges for the entire permit term. Written documentation signed by a qualified person certifying that all personnel involved in sampling have been properly trained should be documented in the SWPPP.

4.5. **SAMPLE COLLECTION FREQUENCY.** Visual examination of industrial stormwater discharges must be performed once per monitoring quarter. If a qualifying storm event does not occur at the facility for a particular monitoring quarter, the permittee is excused from visual monitoring for that quarter, provided the permittee documents in the monitoring records that no qualifying event occurred. The Visual Monitoring Form shall be used to document both qualifying and non-qualifying storm events. Schedule of monitoring quarters is listed below.

- First: January 1 – March 31
- Second: April 1 – June 30
- Third: July 1 – September 30
- Fourth: October 1 – December 31

All other time specific sampling requirements are to be performed in accordance with the parameters outlined in the procedures section of this document.

4.6. **RECORD KEEPING AND REPORTING.** The permittee shall maintain all visual monitoring reports/records onsite with the SWPPP. The permittee is not required to submit visual monitoring results to DEP unless specifically requested to do so.. Requirements for recording visual examination data are outlined in the procedures section of this document.

5. PROCEDURES

5.1. **SAMPLE COLLECTION TIMING.** A grab sample must be collected from each facility outfall (except representative outfalls) once per quarter during a qualifying storm event. During a qualifying storm event, a grab sample for visual examination should be collected during the first 60 minutes or as soon thereafter, but must not to exceed 2.25 hours of when runoff begins discharging from an outfall. During monitoring quarters when snow or icemelt represents the only stormwater discharge, a grab sample must also be collected during periods of significant snow or ice melt within the first 60 minutes or as soon thereafter, but not to exceed 2.25 hours of when snow or icemelt begins discharging from an outfall. Stormwater runoff from employee parking lots, administration buildings, and landscaped areas that is not mixed with stormwater associated with industrial activity, or stormwater discharges to municipal sanitary sewers does not need to be sampled. Samples must be collected during daylight hours and normal operations.



5.2. **SAMPLE CONTAINER CLEANING AND PREPARATION.** The facility should have an adequate supply of containers prepared for collection of industrial stormwater samples from each outfall prior to collecting samples for visual examination. All sample containers used for sampling for visual examination should be certified as clean and free of residue. After each use and for cleaning the Imhoff Settling Cone or graduated beaker. A bottle brush will aid in removing any fine sediment trapped in the bottom point of the Imhoff cone:

- Wash containers in a non-phosphate detergent and tap water wash.
- Thoroughly fill and rinse containers with tap water at least three (3) times.
- Store containers closed, and in an area free of dust and other potential sample contaminants.
- If additional containers are needed to collect samples from less accessible outfalls (e.g. buckets which are attached to poles for reaching outfalls), these containers should also be cleaned and prepared as indicated above.

5.3 **MANUAL GRAB SAMPLE COLLECTION.** Manual grab samples should be collected by inserting a container under or downstream of a discharge with the container opening facing upstream, and with the opening of the container completely immersed under water, whenever possible. A sample container at least 1000 ml should be used to collect the sample. In most cases the sample container can be held in hand while the sample is collected. Less accessible outfalls may require the use of poles and buckets to collect grab samples. Take the grab from the horizontal and vertical center of the outfall. If sampling in a channel, (e.g., ditch, trench, rill) avoid stirring up bottom sediments. Avoid touching the inside of the container to prevent contamination. Transfer sample to a clear glass or plastic container if using another container such as a bucket to collect a sample from a less accessible location. If taking samples from multiple outfalls, label containers with outfall identification prior to taking samples. Make sure samples are securely capped until examination.

5.4 **COLLECTION OF GRAB SAMPLES BY AUTOMATIC SAMPLER.** Facilities which use automatic samplers for stormwater sampling may collect grab samples for visual examination by this method. Programming for collecting grab samples is specific to the type of automatic sampler. All facility personnel who collect stormwater samples using automatic samplers should be properly trained in operation of the sampler before doing so. Several different types of automatic samplers are available for stormwater sampling. However, the following guidelines should be followed when sampling regardless of the type of sampler used. All equipment must be properly cleaned, particularly the tubing and sample containers. Deionized water should be drawn through the sampler to remove any residuals prior to taking samples. Tubing should also be periodically replaced to avoid algae or bacterial growth. Additionally, a distilled/deionized water blank



sample should be taken at each outfall sampled to determine if contamination of storm-water samples by the sampling equipment has occurred. Samplers should be used in exact accordance with the manufacturers' instructions. All sampler calibration and maintenance data should be kept on site with the SWPPP.

- 5.5 **SAMPLE EXAMINATION.** Visual examination of all grab samples collected must be performed within the first sixty (60) minutes. Bring the collected samples to a well lit indoor area. Pour each sample into a separate 1 L polycarbonate plastic graduated Imhoff settling cone or 1000 ml graduated cylinder. The Imhoff settling cone or beaker should have graduations that allow volume measurement to the nearest 10 milliliter. Record the total sample volume to the nearest milliliter on the visual monitoring form. Examine the samples for the following criteria according to the instructions provided with the visual monitoring form: Foam, odor, clarity, floating solids, suspended solids, color, oil sheen, settled solids, and any other obvious indicators of stormwater pollution. Read the settled solids 1 hour after pouring the sample into the cone, as this assures that all solids are settled out of the water. Settled solids in the bottom of the cone should be measured to the nearest milliliter.

*Note: Clear polycarbonate plastic Imhoff cones are available from several scientific supply companies. You may also purchase 1000 ml graduated beakers from various scientific supply companies.

- 5.6 **SAMPLE DATA RECORDING.** Record all sample data on the visual monitoring form after examining the sample for all of the criteria listed in the instructions. The form should include the examination date and time, examination personnel, the nature of the discharge (e.g., rain, snow or icemelt), identification of outfall sampled, quality of the stormwater discharge (including observations of color, odor, clarity, floating solids, settled solids, suspended solids, foam, oil sheen, and any other obvious indicators of stormwater pollution), and probable sources of any observed contamination including any corrective actions taken. The permittee must sign and certify the documentation in accordance with Standard Condition 2 of the Maine MSGP. All visual examination reports must be maintained with the facility SWPPP.

- 5.7 **RECOMMENDATIONS FOR SOLVING SAMPLE LOCATION PROBLEMS.** Consult guidelines listed below when it is necessary to sample an outfall located at a less than ideal location for sampling.

- **PROBLEM:** Sampling where stormwater comingles with process water or other non-stormwater discharge.

RECOMMENDATION: Attempt to sample the stormwater discharge before it mixes with the non-stormwater discharge. If this is impossible, sample the discharge and maintain a record of the visual examination data observed under both conditions on site with the



SWPPP. This will provide an indication of the contribution of any observable contamination from each source.

- **PROBLEM:** Numerous small point channels make up an outfall from which it is difficult to collect a sample.

RECOMMENDATION: Impound channels or join their flow together by building a weir or digging a ditch to collect discharge at a low point for sampling. This artificial collection point should be lined with plastic or filter fabric and stone to prevent infiltration and/or high levels of sediment.

- **PROBLEM:** Inaccessible discharge point. Examples include underwater discharges or unreachable discharges (e.g., out of a cliff, steep slope or bank of a stream).

RECOMMENDATION: Go up the pipe to sample (e.g., to the nearest manhole or inspection point). If these are not available, tap into the pipe, or sample at several locations upstream of the pipe if the pipe is the only outfall for the facility.

- **PROBLEM:** Managing multiple sampling sites to collect grab samples during the first 60 minutes of a measurable storm event.

RECOMMENDATION: Have a sampling crew ready to help when forecasts indicate that a measurable storm event is likely to occur. If this is not possible, sample the missed outfall locations during other measurable storm events and record this circumstance in the SWPPP.

- **PROBLEM:** Commingling of parking lot runoff with discharge associated with industrial activity.

RECOMMENDATION: The combined runoff must be sampled at the discharge point as near as possible to the industrial activity or at the parking lot drain inlet if there is one.

- **PROBLEM:** Sampling in manholes.

RECOMMENDATION: Sample with a collection device on the end of a pole to reach stormwater. Personnel sampling in manholes should have confined space safety training and ambient air monitoring sampling devices if manholes have to be entered.

- **PROBLEM:** Run-on from other property.

RECOMMENDATION: If possible, collect and examine a sample of the stormwater at the border of the property where the run-on occurs. Then, collect and examine a sample of the stormwater at a facility outfall downstream of the run-on point. Note any ob-



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servable differences between the samples and maintain the documentation with the SWPPP.

- When confronted with other difficult sampling scenarios not addressed above, the permittee should consult DEP for guidance on how to best address the situation.

6. REFERENCES

- 5.5** GUIDANCE MANUAL FOR THE MONITORING AND REPORTING REQUIREMENTS OF THE NPDES MULTI-SECTOR STORM WATER GENERAL PERMIT
United States Environmental Protection Agency, Office of Water (EN-336), EPA 833-B-99-001(January, 1999)
- 5.6** NPDES STORM WATER SAMPLING GUIDANCE DOCUMENT
United States Environmental Protection Agency, Office of Water (EN-336), EPA 833-8-92-001 (July, 1992)
- 5.7** STATE OF MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION MULTI-SECTOR GENERAL PERMIT MAINE POLLUTANT DISCHARGE ELIMINATION SYSTEM STORMWATER DISCHARGE ASSOCIATED WITH INDUSTRIAL ACTIVITY
Maine Department of Environmental Protection, Bureau Water Quality, Waste Discharge License # W-008227-MN-C-RR (Dec. 2016)

MAINE POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT

STANDARD CONDITIONS APPLICABLE TO ALL PERMITS

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A. GENERAL PROVISIONS

1. General compliance. All discharges shall be consistent with the terms and conditions of this permit; any changes in production capacity or process modifications which result in changes in the quantity or the characteristics of the discharge must be authorized by an additional license or by modifications of this permit; it shall be a violation of the terms and conditions of this permit to discharge any pollutant not identified and authorized herein or to discharge in excess of the rates or quantities authorized herein or to violate any other conditions of this permit.

2. Other materials. Other materials ordinarily produced or used in the operation of this facility, which have been specifically identified in the application, may be discharged at the maximum frequency and maximum level identified in the application, provided:

- (a) They are not
 - (i) Designated as toxic or hazardous under the provisions of Sections 307 and 311, respectively, of the Federal Water Pollution Control Act; Title 38, Section 420, Maine Revised Statutes; or other applicable State Law; or
 - (ii) Known to be hazardous or toxic by the licensee.
- (b) The discharge of such materials will not violate applicable water quality standards.

3. Duty to comply. The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of State law and the Clean Water Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or denial of a permit renewal application.

- (a) The permittee shall comply with effluent standards or prohibitions established under section 307(a) of the Clean Water Act, and 38 MRSA, §420 or Chapter 530.5 for toxic pollutants within the time provided in the regulations that establish these standards or prohibitions, even if the permit has not yet been modified to incorporate the requirement.
- (b) Any person who violates any provision of the laws administered by the Department, including without limitation, a violation of the terms of any order, rule license, permit, approval or decision of the Board or Commissioner is subject to the penalties set forth in 38 MRSA, §349.

4. Duty to provide information. The permittee shall furnish to the Department, within a reasonable time, any information which the Department may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit or to determine compliance with this permit. The permittee shall also furnish to the Department upon request, copies of records required to be kept by this permit.

5. Permit actions. This permit may be modified, revoked and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any permit condition.

6. Reopener clause. The Department reserves the right to make appropriate revisions to this permit in order to establish any appropriate effluent limitations, schedule of compliance or other provisions which may be authorized under 38 MRSA, §414-A(5).

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7. Oil and hazardous substances. Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities or penalties to which the permittee is or may be subject under section 311 of the Federal Clean Water Act; section 106 of the Federal Comprehensive Environmental Response, Compensation and Liability Act of 1980; or 38 MRSA §§ 1301, et. seq.

8. Property rights. This permit does not convey any property rights of any sort, or any exclusive privilege.

9. Confidentiality of records. 38 MRSA §414(6) reads as follows. "Any records, reports or information obtained under this subchapter is available to the public, except that upon a showing satisfactory to the department by any person that any records, reports or information, or particular part or any record, report or information, other than the names and addresses of applicants, license applications, licenses, and effluent data, to which the department has access under this subchapter would, if made public, divulge methods or processes that are entitled to protection as trade secrets, these records, reports or information must be confidential and not available for public inspection or examination. Any records, reports or information may be disclosed to employees or authorized representatives of the State or the United States concerned with carrying out this subchapter or any applicable federal law, and to any party to a hearing held under this section on terms the commissioner may prescribe in order to protect these confidential records, reports and information, as long as this disclosure is material and relevant to any issue under consideration by the department."

10. Duty to reapply. If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee must apply for and obtain a new permit.

11. Other laws. The issuance of this permit does not authorize any injury to persons or property or invasion of other property rights, nor does it relieve the permittee of its obligation to comply with other applicable Federal, State or local laws and regulations.

12. Inspection and entry. The permittee shall allow the Department, or an authorized representative (including an authorized contractor acting as a representative of the EPA Administrator), upon presentation of credentials and other documents as may be required by law, to:

- (a) Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;
- (b) Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
- (c) Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and
- (d) Sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the Clean Water Act, any substances or parameters at any location.

B. OPERATION AND MAINTENANCE OF FACILITIES

1. General facility requirements.

- (a) The permittee shall collect all waste flows designated by the Department as requiring treatment and discharge them into an approved waste treatment facility in such a manner as to

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- maximize removal of pollutants unless authorization to the contrary is obtained from the Department.
- (b) The permittee shall at all times maintain in good working order and operate at maximum efficiency all waste water collection, treatment and/or control facilities.
 - (c) All necessary waste treatment facilities will be installed and operational prior to the discharge of any wastewaters.
 - (d) Final plans and specifications must be submitted to the Department for review prior to the construction or modification of any treatment facilities.
 - (e) The permittee shall install flow measuring facilities of a design approved by the Department.
 - (f) The permittee must provide an outfall of a design approved by the Department which is placed in the receiving waters in such a manner that the maximum mixing and dispersion of the wastewaters will be achieved as rapidly as possible.

2. Proper operation and maintenance. The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems which are installed by a permittee only when the operation is necessary to achieve compliance with the conditions of the permit.

3. Need to halt or reduce activity not a defense. It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

4. Duty to mitigate. The permittee shall take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

5. Bypasses.

- (a) Definitions.
 - (i) Bypass means the intentional diversion of waste streams from any portion of a treatment facility.
 - (ii) Severe property damage means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.
- (b) Bypass not exceeding limitations. The permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions of paragraphs (c) and (d) of this section.
- (c) Notice.
 - (i) Anticipated bypass. If the permittee knows in advance of the need for a bypass, it shall submit prior notice, if possible at least ten days before the date of the bypass.

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- (ii) Unanticipated bypass. The permittee shall submit notice of an unanticipated bypass as required in paragraph D(1)(f), below. (24-hour notice).
- (d) Prohibition of bypass.
 - (i) Bypass is prohibited, and the Department may take enforcement action against a permittee for bypass, unless:
 - (A) Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;
 - (B) There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance; and
 - (C) The permittee submitted notices as required under paragraph (c) of this section.
 - (ii) The Department may approve an anticipated bypass, after considering its adverse effects, if the Department determines that it will meet the three conditions listed above in paragraph (d)(i) of this section.

6. Upsets.

- (a) Definition. Upset means an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.
- (b) Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology based permit effluent limitations if the requirements of paragraph (c) of this section are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review.
- (c) Conditions necessary for a demonstration of upset. A permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:
 - (i) An upset occurred and that the permittee can identify the cause(s) of the upset;
 - (ii) The permitted facility was at the time being properly operated; and
 - (iii) The permittee submitted notice of the upset as required in paragraph D(1)(f) , below. (24 hour notice).
 - (iv) The permittee complied with any remedial measures required under paragraph B(4).
- (d) Burden of proof. In any enforcement proceeding the permittee seeking to establish the occurrence of an upset has the burden of proof.

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C. MONITORING AND RECORDS

1. General Requirements. This permit shall be subject to such monitoring requirements as may be reasonably required by the Department including the installation, use and maintenance of monitoring equipment or methods (including, where appropriate, biological monitoring methods). The permittee shall provide the Department with periodic reports on the proper Department reporting form of monitoring results obtained pursuant to the monitoring requirements contained herein.

2. Representative sampling. Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge. If effluent limitations are based wholly or partially on quantities of a product processed, the permittee shall ensure samples are representative of times when production is taking place. Where discharge monitoring is required when production is less than 50%, the resulting data shall be reported as a daily measurement but not included in computation of averages, unless specifically authorized by the Department.

3. Monitoring and records.

- (a) Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.
- (b) Except for records of monitoring information required by this permit related to the permittee's sewage sludge use and disposal activities, which shall be retained for a period of at least five years, the permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least 3 years from the date of the sample, measurement, report or application. This period may be extended by request of the Department at any time.
- (c) Records of monitoring information shall include:
 - (i) The date, exact place, and time of sampling or measurements;
 - (ii) The individual(s) who performed the sampling or measurements;
 - (iii) The date(s) analyses were performed;
 - (iv) The individual(s) who performed the analyses;
 - (v) The analytical techniques or methods used; and
 - (vi) The results of such analyses.
- (d) Monitoring results must be conducted according to test procedures approved under 40 CFR part 136, unless other test procedures have been specified in the permit.
- (e) State law provides that any person who tampers with or renders inaccurate any monitoring devices or method required by any provision of law, or any order, rule license, permit approval or decision is subject to the penalties set forth in 38 MRSA, §349.

MAINE POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT

STANDARD CONDITIONS APPLICABLE TO ALL PERMITS

D. REPORTING REQUIREMENTS

1. Reporting requirements.

- (a) Planned changes. The permittee shall give notice to the Department as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required only when:
 - (i) The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in 40 CFR 122.29(b); or
 - (ii) The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants which are subject neither to effluent limitations in the permit, nor to notification requirements under Section D(4).
 - (iii) The alteration or addition results in a significant change in the permittee's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan;
- (b) Anticipated noncompliance. The permittee shall give advance notice to the Department of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.
- (c) Transfers. This permit is not transferable to any person except upon application to and approval of the Department pursuant to 38 MRSA, § 344 and Chapters 2 and 522.
- (d) Monitoring reports. Monitoring results shall be reported at the intervals specified elsewhere in this permit.
 - (i) Monitoring results must be reported on a Discharge Monitoring Report (DMR) or forms provided or specified by the Department for reporting results of monitoring of sludge use or disposal practices.
 - (ii) If the permittee monitors any pollutant more frequently than required by the permit using test procedures approved under 40 CFR part 136 or as specified in the permit, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the DMR or sludge reporting form specified by the Department.
 - (iii) Calculations for all limitations which require averaging of measurements shall utilize an arithmetic mean unless otherwise specified by the Department in the permit.
- (e) Compliance schedules. Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than 14 days following each schedule date.
- (f) Twenty-four hour reporting.
 - (i) The permittee shall report any noncompliance which may endanger health or the environment. Any information shall be provided orally within 24 hours from the time the permittee becomes aware of the circumstances. A written submission shall also be provided within 5 days of the time the permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance

MAINE POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT

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has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

(ii) The following shall be included as information which must be reported within 24 hours under this paragraph.

(A) Any unanticipated bypass which exceeds any effluent limitation in the permit.

(B) Any upset which exceeds any effluent limitation in the permit.

(C) Violation of a maximum daily discharge limitation for any of the pollutants listed by the Department in the permit to be reported within 24 hours.

(iii) The Department may waive the written report on a case-by-case basis for reports under paragraph (f)(ii) of this section if the oral report has been received within 24 hours.

(g) Other noncompliance. The permittee shall report all instances of noncompliance not reported under paragraphs (d), (e), and (f) of this section, at the time monitoring reports are submitted. The reports shall contain the information listed in paragraph (f) of this section.

(h) Other information. Where the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Department, it shall promptly submit such facts or information.

2. Signatory requirement. All applications, reports, or information submitted to the Department shall be signed and certified as required by Chapter 521, Section 5 of the Department's rules. State law provides that any person who knowingly makes any false statement, representation or certification in any application, record, report, plan or other document filed or required to be maintained by any order, rule, permit, approval or decision of the Board or Commissioner is subject to the penalties set forth in 38 MRSA, §349.

3. Availability of reports. Except for data determined to be confidential under A(9), above, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the offices of the Department. As required by State law, effluent data shall not be considered confidential. Knowingly making any false statement on any such report may result in the imposition of criminal sanctions as provided by law.

4. Existing manufacturing, commercial, mining, and silvicultural dischargers. In addition to the reporting requirements under this Section, all existing manufacturing, commercial, mining, and silvicultural dischargers must notify the Department as soon as they know or have reason to believe:

(a) That any activity has occurred or will occur which would result in the discharge, on a routine or frequent basis, of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":

(i) One hundred micrograms per liter (100 ug/l);

(ii) Two hundred micrograms per liter (200 ug/l) for acrolein and acrylonitrile; five hundred micrograms per liter (500 ug/l) for 2,4-dinitrophenol and for 2-methyl-4,6-dinitrophenol; and one milligram per liter (1 mg/l) for antimony;

(iii) Five (5) times the maximum concentration value reported for that pollutant in the permit application in accordance with Chapter 521 Section 4(g)(7); or

(iv) The level established by the Department in accordance with Chapter 523 Section 5(f).

MAINE POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT

STANDARD CONDITIONS APPLICABLE TO ALL PERMITS

- (b) That any activity has occurred or will occur which would result in any discharge, on a non-routine or infrequent basis, of a toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":
- (i) Five hundred micrograms per liter (500 ug/l);
 - (ii) One milligram per liter (1 mg/l) for antimony;
 - (iii) Ten (10) times the maximum concentration value reported for that pollutant in the permit application in accordance with Chapter 521 Section 4(g)(7); or
 - (iv) The level established by the Department in accordance with Chapter 523 Section 5(f).

5. Publicly owned treatment works.

- (a) All POTWs must provide adequate notice to the Department of the following:
- (i) Any new introduction of pollutants into the POTW from an indirect discharger which would be subject to section 301 or 306 of CWA or Chapter 528 if it were directly discharging those pollutants.
 - (ii) Any substantial change in the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of issuance of the permit.
 - (iii) For purposes of this paragraph, adequate notice shall include information on (A) the quality and quantity of effluent introduced into the POTW, and (B) any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW.
- (b) When the effluent discharged by a POTW for a period of three consecutive months exceeds 80 percent of the permitted flow, the permittee shall submit to the Department a projection of loadings up to the time when the design capacity of the treatment facility will be reached, and a program for maintaining satisfactory treatment levels consistent with approved water quality management plans.

E. OTHER REQUIREMENTS

1. Emergency action - power failure. Within thirty days after the effective date of this permit, the permittee shall notify the Department of facilities and plans to be used in the event the primary source of power to its wastewater pumping and treatment facilities fails as follows.

- (a) For municipal sources. During power failure, all wastewaters which are normally treated shall receive a minimum of primary treatment and disinfection. Unless otherwise approved, alternate power supplies shall be provided for pumping stations and treatment facilities. Alternate power supplies shall be on-site generating units or an outside power source which is separate and independent from sources used for normal operation of the wastewater facilities.
- (b) For industrial and commercial sources. The permittee shall either maintain an alternative power source sufficient to operate the wastewater pumping and treatment facilities or halt, reduce or otherwise control production and or all discharges upon reduction or loss of power to the wastewater pumping or treatment facilities.

MAINE POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT

STANDARD CONDITIONS APPLICABLE TO ALL PERMITS

2. Spill prevention. (applicable only to industrial sources) Within six months of the effective date of this permit, the permittee shall submit to the Department for review and approval, with or without conditions, a spill prevention plan. The plan shall delineate methods and measures to be taken to prevent and or contain any spills of pulp, chemicals, oils or other contaminants and shall specify means of disposal and or treatment to be used.

3. Removed substances. Solids, sludges trash rack cleanings, filter backwash, or other pollutants removed from or resulting from the treatment or control of waste waters shall be disposed of in a manner approved by the Department.

4. Connection to municipal sewer. (applicable only to industrial and commercial sources) All wastewaters designated by the Department as treatable in a municipal treatment system will be cosigned to that system when it is available. This permit will expire 90 days after the municipal treatment facility becomes available, unless this time is extended by the Department in writing.

F. DEFINITIONS. For the purposes of this permit, the following definitions shall apply. Other definitions applicable to this permit may be found in Chapters 520 through 529 of the Department's rules

Average means the arithmetic mean of values taken at the frequency required for each parameter over the specified period. For bacteria, the average shall be the geometric mean.

Average monthly discharge limitation means the highest allowable average of daily discharges over a calendar month, calculated as the sum of all daily discharges measured during a calendar month divided by the number of daily discharges measured during that month. Except, however, bacteriological tests may be calculated as a geometric mean.

Average weekly discharge limitation means the highest allowable average of daily discharges over a calendar week, calculated as the sum of all daily discharges measured during a calendar week divided by the number of daily discharges measured during that week.

Best management practices ("BMPs") means schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of waters of the State. BMPs also include treatment requirements, operating procedures, and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.

Composite sample means a sample consisting of a minimum of eight grab samples collected at equal intervals during a 24 hour period (or a lesser period as specified in the section on monitoring and reporting) and combined proportional to the flow over that same time period.

Continuous discharge means a discharge which occurs without interruption throughout the operating hours of the facility, except for infrequent shutdowns for maintenance, process changes, or other similar activities.

Daily discharge means the discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling. For pollutants with limitations expressed in units of mass, the daily discharge is calculated as the total mass of the pollutant discharged over the day. For pollutants with limitations expressed in other units of measurement, the daily discharge is calculated as the average measurement of the pollutant over the day.

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Discharge Monitoring Report ("DMR") means the EPA uniform national form, including any subsequent additions, revisions, or modifications for the reporting of self-monitoring results by permittees. DMRs must be used by approved States as well as by EPA. EPA will supply DMRs to any approved State upon request. The EPA national forms may be modified to substitute the State Agency name, address, logo, and other similar information, as appropriate, in place of EPA's.

Flow weighted composite sample means a composite sample consisting of a mixture of aliquots collected at a constant time interval, where the volume of each aliquot is proportional to the flow rate of the discharge.

Grab sample means an individual sample collected in a period of less than 15 minutes.

Interference means a Discharge which, alone or in conjunction with a discharge or discharges from other sources, both:

- (1) Inhibits or disrupts the POTW, its treatment processes or operations, or its sludge processes, use or disposal; and
- (2) Therefore is a cause of a violation of any requirement of the POTW's NPDES permit (including an increase in the magnitude or duration of a violation) or of the prevention of sewage sludge use or disposal in compliance with the following statutory provisions and regulations or permits issued thereunder (or more stringent State or local regulations): Section 405 of the Clean Water Act, the Solid Waste Disposal Act (SWDA) (including title II, more commonly referred to as the Resource Conservation and Recovery Act (RCRA), and including State regulations contained in any State sludge management plan prepared pursuant to subtitle D of the SWDA), the Clean Air Act, the Toxic Substances Control Act, and the Marine Protection, Research and Sanctuaries Act.

Maximum daily discharge limitation means the highest allowable daily discharge.

New source means any building, structure, facility, or installation from which there is or may be a discharge of pollutants, the construction of which commenced:

- (a) After promulgation of standards of performance under section 306 of CWA which are applicable to such source, or
- (b) After proposal of standards of performance in accordance with section 306 of CWA which are applicable to such source, but only if the standards are promulgated in accordance with section 306 within 120 days of their proposal.

Pass through means a discharge which exits the POTW into waters of the State in quantities or concentrations which, alone or in conjunction with a discharge or discharges from other sources, is a cause of a violation of any requirement of the POTW's NPDES permit (including an increase in the magnitude or duration of a violation).

Permit means an authorization, license, or equivalent control document issued by EPA or an approved State to implement the requirements of 40 CFR parts 122, 123 and 124. Permit includes an NPDES general permit (Chapter 529). Permit does not include any permit which has not yet been the subject of final agency action, such as a draft permit or a proposed permit.

Person means an individual, firm, corporation, municipality, quasi-municipal corporation, state agency, federal agency or other legal entity.

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Point source means any discernible, confined and discrete conveyance, including, but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation or vessel or other floating craft, from which pollutants are or may be discharged.

Pollutant means dredged spoil, solid waste, junk, incinerator residue, sewage, refuse, effluent, garbage, sewage sludge, munitions, chemicals, biological or radiological materials, oil, petroleum products or byproducts, heat, wrecked or discarded equipment, rock, sand, dirt and industrial, municipal, domestic, commercial or agricultural wastes of any kind.

Process wastewater means any water which, during manufacturing or processing, comes into direct contact with or results from the production or use of any raw material, intermediate product, finished product, byproduct, or waste product.

Publicly owned treatment works ("POTW") means any facility for the treatment of pollutants owned by the State or any political subdivision thereof, any municipality, district, quasi-municipal corporation or other public entity.

Septage means, for the purposes of this permit, any waste, refuse, effluent sludge or other material removed from a septic tank, cesspool, vault privy or similar source which concentrates wastes or to which chemicals have been added. Septage does not include wastes from a holding tank.

Time weighted composite means a composite sample consisting of a mixture of equal volume aliquots collected over a constant time interval.

Toxic pollutant includes any pollutant listed as toxic under section 307(a)(1) or, in the case of sludge use or disposal practices, any pollutant identified in regulations implementing section 405(d) of the CWA. Toxic pollutant also includes those substances or combination of substances, including disease causing agents, which after discharge or upon exposure, ingestion, inhalation or assimilation into any organism, including humans either directly through the environment or indirectly through ingestion through food chains, will, on the basis of information available to the board either alone or in combination with other substances already in the receiving waters or the discharge, cause death, disease, abnormalities, cancer, genetic mutations, physiological malfunctions, including malfunctions in reproduction, or physical deformations in such organism or their offspring.

Wetlands means those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.

Whole effluent toxicity means the aggregate toxic effect of an effluent measured directly by a toxicity test.

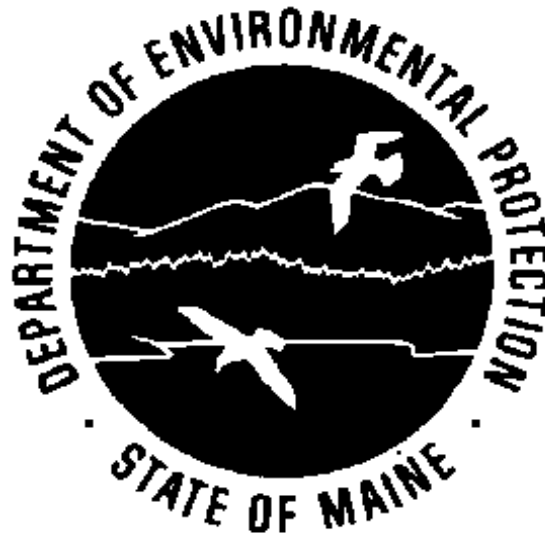
STATE OF MAINE

DEPARTMENT OF ENVIRONMENTAL PROTECTION

Small Municipal Separate Storm Sewer System Systems

Maine Pollutant Discharge Elimination System Permit

**FACT SHEET AND
RESPONSE TO COMMENTS**



Bureau of Water Quality

December 6, 2019

MEPDES Permit #MER41000

Revised October 14, 2020

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PART I. BACKGROUND

A. Clean Water Act

Section 301(a) of the Clean Water Act (CWA) provides that “the discharge of any pollutant by any person shall be unlawful” unless the discharge is in compliance with certain other sections of the Act. 33 U.S.C. 1311(a). The CWA defines “discharge of a pollutant” as “(A) any addition of any pollutant to navigable waters from any point source, (B) any addition of any pollutant to the waters of the contiguous zone or the ocean from any point source other than a vessel or other floating craft.” 33 U.S.C. 1362(12).

In 1987, Congress amended the Clean Water Act to better regulate stormwater discharges. Congress enacted Section 402(p) of the Clean Water Act, which requires that “permits for discharges from municipal storm sewers . . . shall include a requirement to effectively prohibit non-stormwater discharges into the storm sewers; and shall require controls to reduce the discharge of pollutants to the maximum extent practicable...and such other provisions as the Administrator . . .determines appropriate for the control of such pollutants.” CWA §§ 402(p)(3)(B)(ii)-(iii).

B. General Permit (GP) Authority

Section 301(a) of the CWA, 33 USC 1311(a), and Maine law 38 M.R.S. §413 makes it unlawful to discharge pollutants to waters of the United States or state without a permit. The State of Maine may issue a GP authorizing the discharge of certain pollutants pursuant to 06-096 CMR 529. 06-096 CMR Chapter 521§9 authorizes the State of Maine to require Maine Pollutant Discharge Elimination System (MEPDES) permits for the discharge storm water from regulated MS4 communities.

Section 402 of the Act provides that the Administrator of the United States Environmental Protection Agency (EPA) may issue National Pollutant Discharge Elimination System (NPDES) permits or the State of Maine can issue MEPDES permits for discharges of any pollutant into waters of the United States according to such specific terms and conditions as the Administrator may require. Although such permits are generally issued to individual subcategories of discharges, including stormwater point source discharges, within a geographic area. 40 CFR §122.28(a)(1) and (2)(i). EPA and the State of Maine issue GPs under the same CWA authority as individual permits. Violations of a general permit condition constitute a violation of the CWA and may subject the discharger to the enforcement remedies provided in Section 309 of the Act, including injunctive relief and penalties.

PART I. BACKGROUND

C. Authorization Under the Permit

The GP authorizes stormwater discharges from small municipal separate storm sewer systems meeting the definition of “small municipal separate storm sewer system” at 40 CFR § 122.26(b)(16) and described in 40 CFR § 122.32(a)(1) (applicable to small MS4s located in an urbanized area) or designated by EPA as needing a permit pursuant to 40 CFR § 122.32(a)(2) or 40 CFR § 122.26(f).

Phase II stormwater regulations, among other things, set forth requirements for stormwater discharges from small municipal separate storm sewer systems, (“small MS4s”) which are defined at 40 CFR § 122.26(b)(16) as follows:

Small municipal separate storm sewer system means all separate storm sewers that are:

- (i) Owned or operated by the United States, a State, city, town, borough, county, parish, district, association, or other public body (created by or pursuant to State law) having jurisdiction over disposal of sewage, industrial wastes, stormwater, or other wastes including special districts under State law such as a sewer, flood control district or drainage district, or similar entity or an Indian tribe or an authorized Indian tribal organization, or a designated and approved management agency under section 208 of the CWA that discharges to waters of United States.
- (ii) Not defined as “large” or “medium” municipal separate storm sewer systems pursuant to [40CFR § 122.26(b)(4) or (b)(7)] or designated under [40 CFR § 122.26(a)(1)(v)].
- (iii) This term includes systems similar to separate storm sewer systems in municipalities such as military bases, large hospital or prison complexes, and highways and other thoroughfares. The term does not include separate storm sewers in very discrete areas, such as individual buildings.

Most small MS4s that will be authorized by this GP are located entirely within an urbanized area as defined by the Bureau of the Census. On March 26, 2012, the Census Bureau published the final listing of urbanized areas for the 2010 census. An urbanized area encompasses a densely settled territory that consists of core census block groups or blocks that have a population of at least 1,000 people per square mile and surrounding census blocks that have an overall density of at least 500 people per square mile or are included to link outlying densely settled territory with a densely settled urban core. Urbanized areas are not divided along political boundaries. Because of this non-political division, a municipality may be entirely in an urbanized area or partially in an urbanized area. The Phase II regulations require a small MS4 to implement its program in the urbanized area. If a small MS4 is only partially within the urbanized area, the MS4 may decide to implement the SWMP within its entire jurisdiction, or just in the urbanized area. Both approaches are acceptable under EPA’s regulations. However, EPA encourages MS4s to implement the Storm Water Management Plan (SWMP) in the entire jurisdiction, especially for areas that discharge to waters that are subject to approved total maximum daily loads (TMDLs).

PART I. BACKGROUND

The regulations at 40 CFR § 122.32(a)(1) state that an MS4 is regulated by the program if the MS4 is located in an urbanized area as determined by the latest Decennial Census by the Bureau of the Census unless granted a waiver by the permitting authority. The latest Decennial Census was conducted in 2010. MS4s located in an urbanized area as determined by the 2010 Census will be subject to the stormwater requirements for small MS4s unless they receive a waiver in accordance with 40 CFR §122.32(c) or 40 CFR § 123.35(d). MS4s located in an urbanized area as defined by the 2010 census remain subject to the stormwater regulation even if there is a change in the reach of “urbanized area” because of a change in census data. This is consistent with the preamble to the Phase II rule that states “...a small MS4 that is automatically designated into the NPDES program for stormwater under an urbanized area calculation for any given Census year will remain regulated regardless of the results of subsequent urbanized area calculations.” 64 FR 68752, December 8, 1999.

As stated previously, this GP applies to small MS4s located in urbanized areas and those MS4s designated by EPA to need a permit. EPA has authority under the CWA to designate stormwater sources other than those that are specifically identified by the stormwater regulations as needing to obtain a permit when necessary to protect water quality or remedy localized water quality impacts, including small MS4s not in an urbanized area. If EPA decides to designate additional MS4s, EPA will provide public notice and an opportunity to comment on the designation. Once designated, such sources would be eligible for coverage under this general permit.

D. Obtaining Authorization to Discharge

The regulations at 40 CFR § 122.33 require small MS4s who apply for a GP to submit information on best management practices (BMPs) and measurable goals designed to meet the minimum control measures (MCMs) required by 40 CFR § 122.34(d). To obtain authorization to discharge, the operator of a small MS4 must submit a complete and accurate Notice of Intent (NOI) containing the information requested in Part III(D) of the GP. The NOI must be signed in accordance with the requirements as specified in Part III(D)(2) of the GP. The NOI must be submitted on or before March 31, 2021. The effective date of the permit is July 1, 2022. A small MS4 will be authorized to discharge under this permit upon the issuance of written authorization by the Maine Department of Environmental Protection (MDEP).

The MS4 operators must complete the information required in the NOI to the best of their knowledge. The NOI must contain the details of an MS4’s planned approach to meeting the terms of the GP. The NOI should detail milestones as well as interim steps. The NOI does not require the development of technical or engineering reports for its submission. The GP does not incorporate the contents of the NOI into the permit as conditions. The GP and the permittee specific MDEP Order conditions are those that are contained in the GP and the permittee specific MDEP Order and those are the requirements the permittee is expected to meet. The NOI presents the BMPs that the MS4 intends to implement to meet the permit terms. Since the BMPs presented in the NOI are not incorporated into the GP and the permittee specific MDEP Order, this means that a permittee is able to adjust the initially planned BMPs based on progress and circumstances encountered during program implementation.

PART I. BACKGROUND

All NOIs must be submitted to MDEP **on or before March 31, 2021**, and addressed to the MS4 Program Manager as follows:

Ms. Rhonda Poirier
MS4 Program Manager
Department of Environmental Protection
17 State House Station
Augusta, Maine 04333-0017

The GP provides continued authorization for permittees authorized by the MS4-2013 permit whose authorization was effective beginning July 1, 2013 and who submits a complete and accurate NOI on or before March 31, 2021. Permittees will remain authorized under the MS4-2013 permit until authorization under the newly issued GP is either granted or denied.

NOIs will be available for public comment for a minimum of 30 days. Once MDEP determines that an NOI is complete, the NOI will be posted on MDEP's website. Any comments on an NOI must be submitted to the MDEP. MDEP will work with the municipality to address public comments as appropriate. Following the close of the public comment period on the NOI, the MDEP will issue a permittee specific MDEP Order for a 30-day public comment period that establishes a list of required actions and corresponding schedules of compliance for a limited number of BMPs associated with the implementation of the GP. Following the 30-day comment period, the MDEP will issue a final permittee specific MDEP Order. An applicant is authorized to discharge when the GP becomes effective and the applicable permittee specific DEP Order establishing a list of required actions and a corresponding schedule of compliance for the action items is issued as a final agency action.

E. Individual and Alternative Permits

Any owner or operator of a small MS4 authorized by a GP may request to be excluded from authorization under a GP by applying for an individual permit pursuant to 40 CFR § 122.33(b)(2)(i) or (ii). This request shall be made by submitting a Maine Pollutant Discharge Elimination System (MEPDES) permit application together with reasons supporting the request. The MDEP may require any permittee authorized by a general permit to apply for and obtain an individual permit. Any interested person may petition the MDEP to take this action. 40 CFR § 122.28(b)(3).

However, individual permits will not be issued for sources authorized by the GP unless it can be clearly demonstrated that inclusion under the GP is inappropriate or an individual permit is more applicable to the applicant's system.

The MDEP may consider requiring an individual permit when:

- a. The discharger is not in compliance with the terms and conditions of the GP;
- b. A change has occurred in the availability of demonstrated technology or practices for the control or abatement of pollutants applicable to the point source;

PART I. BACKGROUND

- c. Effluent limitations guidelines are subsequently promulgated for the point sources covered by the GP;
- d. A Water Quality Management Plan (WQMP) or Total Maximum Daily Load (TMDL) containing requirements applicable to such point sources is approved;
- e. Circumstances have changed since the time of the request to be covered so that the discharger is no longer appropriately controlled under the GP, or either a temporary or permanent reduction or elimination of the authorized discharge is necessary; and
- f. The discharge(s) is a significant contributor of pollutant or in violation of state water quality standards for the receiving water.

In accordance with 40 CFR § 122.28(b)(3)(iv), the applicability of the GP is automatically terminated on the effective date of the individual permit.

Additionally, any interested person may petition the MDEP to require a MEPDES permit for a discharge composed entirely of stormwater which contributes to a violation of a water quality standard or is a significant contributor of pollutants to waters of the United States pursuant to 40 CFR § 122.26(f) or waters of the state pursuant to Maine law 38 M.R.S. §413.

PART II. BASIS FOR CONDITIONS OF THE DRAFT MEPDES GENERAL PERMIT

A. Maine Pollutant Discharge Elimination System (MEPDES) Permits

A MEPDES permit authorizes the discharge of a pollutant or pollutants into a receiving water under certain conditions. The MEPDES program relies on two types of permits: individual and general. An individual permit is a permit specifically tailored for an individual discharger or situations that require individual consideration. Upon receiving the appropriate permit application(s), the permitting authority develops a draft permit for public comment for that particular discharger based on the information contained in the permit application (e.g., type of activity, nature of discharge, receiving water quality). Following consideration of public comments, a final permit is then issued to the discharger for a specific time period (not to exceed five years) with a provision for reapplying for further permit coverage prior to the expiration date.

In contrast, a GP covers multiple facilities/sites/activities within a specific category for a specific period of time (not to exceed 5 years). For GPs, the MDEP develops and issues the permit in advance, with dischargers then generally obtaining coverage under the permit through submission of a NOI. A GP is also subject to public comment prior to issuance. For the case of this GP, the MDEP is the permitting authority. The permitting authority reviews the permittees and geographic area and develops appropriate permits considering technology and water quality. In addition, the Department may issue a permit that

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has different requirements from a NPDES permit issued by the EPA for similar types of discharges, as long as it satisfies the regulatory requirements of the NPDES program, the CWA, and state law.

Under 40 CFR 122.28 and 06-096 Code of Maine Regulation (CMR) Chapter 529, §(2)(a)(1)(iv), GPs may be written to cover categories of point sources having common elements, such as facilities that involve the same or substantially similar types of operations, that discharge the same types of wastes, or that are more appropriately regulated by a GP.

The final MS4 GP Remand Rule promulgated by the EPA in December 2016, establishes two alternative approaches an NPDES/MEPDES permitting authority can use to issue and administer small MS4 GPs that address a partial remand of the Phase II stormwater regulations by the U.S. Court of Appeals for the Ninth Circuit. Both approaches ensure that the permitting authority establishes what is necessary for the MS4 to “reduce the discharge of pollutants from the MS4 to the maximum extent practicable, to protect water quality, and to satisfy the appropriate water quality requirements of the Clean Water Act,” referred to as the “MS4 permit standard,” and that the public participation requirements of the CWA are met.

The final rule amends 40 CFR § 122.28(d) to require permitting authorities to choose one of these two types of general permits whenever issuing a small MS4 general permit. Permitting authorities are required to select either the “Comprehensive General Permit” or “Two-Step General Permit”. The “Comprehensive General Permit” is essentially the “Traditional General Permit”, or “Option 1”, from the proposed rule. The “Two-Step General Permit” encompasses both the “Procedural Approach”, or “Option 2” and the “hybrid approach” that was described as part of “Option 3” from the proposed rule. The Two-Step General Permit allows the permitting authority to establish some requirements in the general permit and others applicable to individual MS4s through a second proposal and public comment process. The State of Maine has selected the Two-Step General Permit approach.

Part IV of the GP sets forth the requirements for the MS4 to “reduce pollutants in discharges to the maximum extent practicable (MEP), including management practices, control techniques, and system, design and engineering methods...” CWA § 402(p)(3)(B)(iii). MEP is the statutory standard that describes the level of pollutant reduction that MS4 operators must achieve, but also includes a recognition that the effort may be increased under some circumstances. The MDEP believes implementation of best management practices (BMPs) designed to control stormwater runoff from the MS4 is generally the most appropriate approach for reducing pollutants to satisfy the MEP standard. Pursuant to 40 CFR §122.44(k), the GP requires permittees to control stormwater discharges through BMPs, including development and implementation of a comprehensive stormwater management program (SWMP) as the mechanism to achieve the required pollutant reductions.

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Neither the CWA nor the stormwater regulations provide a specific definition of MEP. The lack of a detailed definition allows flexibility in MS4 permitting. The MDEP views the MEP standard in the CWA as an iterative process. MEP should continually adapt to current conditions and BMP effectiveness. The MDEP and EPA believe that compliance with the MEP requirements (Part IV) of this draft GP will meet the MEP standard of the CWA and the stormwater regulations. The iterative process of MEP consists of a municipality developing a program consistent with specific permit requirements, implementing the program, evaluating the effectiveness of BMPs included as part of the program, revising those parts of the program that are not effective at controlling pollutants, implementing the revisions, and then evaluating again. This process continues until water quality standards are attained. The changes contained in the GP from the previous permit reflect the iterative process of MEP. Accordingly, the GP contains more specific tasks and details than the previous MS4 permit.

MS4s are required to implement and enforce SWMPs designed to reduce pollutants discharged from their MS4s to the maximum extent practicable and to protect water quality. Implementation of a program to these standards should ensure the protection of aquatic life and maintenance of the receiving water as an aquatic habitat.

In addition, the GP prohibits violations of state water quality standards and imposes a variety of additional conditions on discharges to Urban Impaired Streams (UISs) which are found in Appendix B of the GP.

The conditions of this GP also aim to achieve and maintain water quality standards through the antidegradation provisions contained within the Clean Water Act (CWA).

B. Non- Numeric Effluent Limitations

When the regulatory agencies have not promulgated national limitation guidelines (NEGs) for a category of discharges, or if an operator is discharging a pollutant not covered by a NEG, permit limitations may be based on the best professional judgment (BPJ) of the agency or permit writer. For this permit, effluent limits are based on BPJ. The BPJ limits in this permit are in the form of non-numeric control measures, commonly referred to as best management practices (BMPs). Non-numeric limits are employed under limited circumstances, as described in 40 CFR § 122.44(k) and 06-096 CMR Chapter 525 §5(k). 40 CFR § 122.44(k), and 06-096 CMR Chapter 525 §5(k) provides that permits may include BMPs to control or abate the discharge of pollutants when: “(1)[a]uthorized under section 304(e) of the CWA for the control of toxic pollutants and hazardous substances from ancillary industrial activities; (2) [a]uthorized under section 402(p) of the CWA for the control of stormwater discharges; (3) [n]umeric effluent limitations are infeasible; or (4) [t]he practices are reasonable to achieve effluent limitations and standards or to carry out the purpose of the CWA.” The GP regulates stormwater discharges with BMPs. Due to the variability associated with stormwater, EPA and the MDEP believe the use of BMPs is currently the most appropriate method to regulate discharges of stormwater from municipal systems in accordance with the above referenced regulation.

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1. Water Quality Based Effluent Limitations

If an MS4 discharges into waters that are meeting water quality standards, and there is no specific evidence to suggest that a permittee's MS4 discharges would cause or contribute to exceedances of water quality standards, then the permittee is subject to the permit's MEP- based minimum control measures to protect water quality. "Absent evidence to the contrary, EPA and MDEP presume that a small MS4 program that implements the six minimum measures... "does not require more stringent limitations to meet water quality standards." However, MEP-level controls alone may not suffice to eliminate stormwater-based exceedances of water quality standards. Consequently, EPA and the MDEP have determined that it is necessary and "appropriate" to include water quality based effluent limitations (WQBELs). The purpose of these parts is to establish the broad inclusion of water quality-based effluent limitations for those discharges requiring additional controls in order to achieve water quality standards. For example, discharges that would cause or contribute to an instream exceedance of water quality standards are not authorized. Similarly, discharges into any water for which a TMDL had been established were not authorized unless they were consistent with the TMDL [see Part IV(D)]. Since the issuance of the MS4-2013 permit, permittees have implemented SWMPs to comply with the conditions of that permit. This GP requires the permittees to implement an updated SWMP to comply with several additional and strengthened permit conditions, which should result in further water quality improvements.

2. Allowable Non-Stormwater Discharges

Part IV(3)(h) of the GP lists sources of non-stormwater discharges contained in 40 CFR § 122.34(b)(3). These are sources of allowable non-stormwater into the MS4. However, if the permittee or the MDEP determines that these sources (either categorically or individually) are significant contributors of pollutants to the MS4, the permittee must control or prohibit these sources of non-stormwater as part of its illicit discharge detection and elimination (IDDE) program. The GP does not require any action by the permittee regarding these discharges if the permittee determines that these sources are not significant contributors of pollutants to the MS4. The EPA and MDEP expect MS4s to examine the sources of non-stormwater discharges as categories and examine their potential to contribute pollutants to the MS4. For example, potable water may not contribute pollutants that affect the MS4 discharges because the source is associated with the water supply. However, foundation drains and crawl spaces may be within residential basements and the type of pollutants associated with the non-stormwater discharge may be unknown. The permittee must document its determinations on the categories of non-stormwater in its SWMP and must prohibit any sources identified as a significant contributor of pollutants.

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3. Discharges to Waterbodies with an Approved TMDL

The EPA and MDEP regulations require that TMDLs be developed for water bodies listed pursuant to CWA §303(d) as not meeting applicable standards (see 40 CFR § 130.7 for the regulations associated with TMDLs). A TMDL specifies the maximum amount of a pollutant that a waterbody can receive and still meet water quality standards. The TMDL allocates pollutant loadings to the impaired waterbody from all point and non-point pollutant sources. Regulations at 40 CFR § 130.2 define the TMDL as “the sum of the individual waste load allocations (WLA) for point sources and load allocations (LAs) for non-point sources.” Mathematically, a TMDL is expressed as:

$$\text{TMDL} = \sum \text{WLA} + \sum \text{LA} + \text{MOS}$$

The MOS (margin of safety) takes into account any lack of knowledge concerning the relationship between effluent limitations and water quality in determining an acceptable load of pollutants to a receiving water. In addition to the MOS, WLAs and LAs make up portions of a receiving water’s loading capacity. The TMDL forms the basis for an implementation plan to meet the loading capacity of the waterbody. Implementation of the plan should result in the achievement of water quality standards. See Part IV(E) of this GP for compliance with TMDL requirements.

4. Requirements to Reduce Pollutants to the Maximum Extent Practicable (MEP)

MEP is the statutory standard that established the level of pollutant reduction required by permits for operators of MS4s. All MS4 permittees are subject to MEP requirements. There is not a precise regulatory definition of MEP. Rather, as EPA explained in the preamble to the Phase II regulations, “MS4s need the flexibility to optimize reductions in storm water pollutants on a location-by-location basis.... The pollutant reductions that represent MEP may be different for each small MS4, given the unique local hydrologic and geologic concerns that may exist and the differing possible pollutant control strategies.” Accordingly, the GP requires each permittee to determine appropriate BMPs to satisfy each of the six minimum control measures through an evaluative process.

MEP is expected to continue to adapt based on changing conditions, improving BMP effectiveness, and increasing operator capabilities. Practices that were considered MEP under the MS4-2013 permit may no longer meet that standard and must be improved or expanded based on changed conditions. The MDEP developed the MEP provisions in this GP after reviewing annual reports and stormwater management plans to consider measures being employed by MS4s to implement the MS4-2013 permit. The MDEP also reviewed other MS4 general permits in New England to better understand what other MS4s are being required to do to control stormwater pollutants in order to determine what would be practicable enhancements to the MS4-2013 MEP requirements. The MEP provisions in this GP reflect the approach of building on the existing programs of the 2013 permit with additional requirements that the MDEP believes are practicable and satisfy the MEP statutory requirement.

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C. Stormwater Management Program (SWMP)

The SWMP is a written document required by the GP. The SWMP is the mechanism used to document the practices the permittee is implementing to meet the terms and conditions of the GP. The SWMP is expected to accurately reflect the permittee's activities. The document should be updated and/or modified during the permit term as the permittee's activities are modified or changed during the permit term or to incorporate additional BMPs to comply with permit conditions during the permit term.

The GP requires that the SWMP be a written document and signed in accordance with Part III(A)(2)(a). The SWMP must be available at the office or facility of the person identified on the NOI as the contact person for the SWMP. The SWMP must be immediately available to MDEP and EPA upon request. The permittee must also make the SWMP available to any member of the public who makes a request. The GP requires the permittee to post the SWMP online if a website is available for posting of documents under the control of the permittee, or make it available at a public location such as the library or town/city hall if the permittee does not have a website on which to make the SWMP available.

The MDEP and EPA believe that a written program provides a central, accessible source for all information relating to the SWMP. The SWMP required by this GP builds on the requirements of the MS4-2013 permit. While updating the SWMP required by this GP, the permittee must continue to implement the SWMP that was required by the MS4-2013 permit. Permittees covered by the MS4-2013 permit must update their SWMP and submit the updated SWMP as an attachment to the NOI.

The SWMP must document the actions the permittee has taken or will take to demonstrate compliance with the control measures and other conditions of the GP. The MDEP has determined that implementation of the conditions required by Part IV of this GP will meet the MEP standard of the CWA and will be protective of water quality.

1. Control Measures

Implementation of the SWMP involves the identification of BMPs to address the control measures and the identification of measurable goals for the BMP. The GP identifies the long-term objective of each control measure. The long-term objective of the control measure may not be completely met at the end of the term of the GP, but the permittee should be able to demonstrate progress towards the defined long-term objective. The permittee must implement the control measures described in the GP and document actions in the SWMP demonstrating progress towards achievement of the objective of the control measure. The permittee must identify interim goals as steps towards achievement of the long-term objective. This process represents the iterative nature of MEP.

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Goals identified as part of the SWMP must be measurable. A “measurable goal” is a goal for which progress can be tracked or measured. A well-defined goal will have an outcome associated with it. Goals can be expressed as short term, mid-range or long term. The permittee must evaluate the success of a goal. The permittee can evaluate the success of the goals using a variety of indicators including programmatic, social, physical, hydrological, or environmental changes.

Measurable goals may be expressed either quantitatively or qualitatively. The method used to assess whether a goal has been met should be measurable, reliable, relevant, and an actual measure of the outcome. There are various methods to measure outcome. These include confirmation or documentation that a task has been completed; tracking an absolute number or value of something; surveying to determine the knowledge or awareness of a group; inspections to make actual observations of an event; and monitoring to obtain an actual measurement of a pollutant in-stream or in an outfall, and using surrogates for pollutant removal. In some instances, the GP identifies specific measurement methodologies. In others, the permittee may select a method of evaluation that satisfies the discussions above.

In accordance with 40 CFR § 122.35, the GP allows an MS4 to rely on another entity for implementation of all or part of a permit condition or control measure. The permittee may rely on the other entity if the other entity is actually implementing the control measure or permit condition. The other entity must agree to implement the measure or condition for the MS4. This agreement must be included as part of the SWMP. If the other party fails to implement the measure or permit condition, the permittee is ultimately legally responsible for its implementation.

The intent of this provision is not that the other entity is provided more flexibility than the permittee. The permit is intended to allow flexibility to the permittee in the methodology it uses to implement some of the GP provisions. Many permit requirements are an “end point” and typically do not dictate the process to that end point. Different activities can accomplish the same task. For example, the permit requires an education program, but does not provide the methodology for putting the program together. Another entity could develop an education program which has the same elements of the GP and the permittee could rely on that other entity to comply with the terms of the GP. The permittee is expected to achieve the “end point” and this provision allows it to rely on another entity to accomplish the required measure. The permittee remains responsible for complying with the permit even if it shares, delegates, or otherwise arranges for another entity to perform some of the actions under the permit.

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2. Implementation of the SWMP includes:

- a. **MCM1 - A Public Education/Outreach Program:** The GP requires that the permittees implement a public education program to distribute educational materials to the populations within the MS4 or conduct other outreach activities about the impacts of stormwater discharges on water bodies within the MS4 jurisdiction and steps the public can take to reduce pollutants in stormwater runoff [See Part IV(C)(1) of the permit].

The permittee must at a minimum develop and implement an ongoing Education/Outreach Program addressing stormwater discharges and impacts on water bodies and steps that can be taken to reduce pollutants in stormwater runoff. The program must be designed to address stormwater issues of significance. The ultimate objective of the program is to change behavior of the target audiences so that pollutants in stormwater are reduced.

The education program must be specific to the MS4 and builds upon what was conducted as required by the MS4-2013 permit. The GP describes requirements that slightly increase the expectations and requirements for a permittee's public education program and attempts to provide more guidance on targets for the program, building upon what was conducted and reported as completed by permittees in the previous permit term. The overall long-term goal of an effective education program is to change an identified behavior and increase the knowledge of the community. The MDEP and EPA recognize that the goal may take more than one permit term to achieve.

The MDEP expects an education program to have a defined and targeted message for each of the different audiences and to include methods to evaluate effectiveness of the educational messages. Based on review of annual reports from the MS4-2013 permit, the MDEP found that some of the education programs developed by MS4s did not reflect these expectations. In order to achieve the objective of this measure, the GP includes detailed expectations for educating the public.

As stated previously, the GP defines target audiences and requires the permittee to provide educational materials to each. The GP includes topics for consideration for all audiences. The permittee may use those topics listed or may focus on other topics specific to the small MS4. Any method the permittee uses to measure the effectiveness of the education should be linked to the established measurable goals. Some examples include surveys to gauge changes in behavior or awareness. Quantifiable data such as the number of brochures distributed, the number of hits on a website, or the number of public attendees at MS4 sponsored events can be tracked. The permittee may identify a specific behavior the program is targeting and track metrics which show the adaptation of that behavior. The educational messages should reflect the needs and characteristics of the area served by the MS4. This may include distribution of materials in a language other than English, as appropriate. Permittees can form partnerships with other organizations to assist in the implementation of its education and outreach programs. These partnerships may include other MS4s in a watershed, environmental groups, watershed associations, or other civic organizations.

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The GP contains requirements to evaluate the effectiveness of the education program. When designing the education program, the municipality should determine evaluation techniques up front. For example, if a municipality wants to track the number of hits on the municipal website, the website should be designed with a tracking mechanism. Evaluations can focus on the process, the impact, or the content. Indicators such as administrative, social or environmental can also factor into the evaluation of program effectiveness.

Ideally, an MS4's public education program should include goals and objectives that are based on specific stormwater issues in the municipality or pollutants of concern within a waterbody. Each MS4 may select its own unique set of goals or objectives, but the ultimate outcome of the program is to elicit specific changes in behavior that in turn benefits water quality. The measurement of the effectiveness of the educational messages should be linked to the measurable goals established by the MS4. For example, a measurable goal may be to decrease the amount of trash in a local park by a certain percentage. The municipality installs more trash barrels and signs, establishes a clean-up day then monitors the results for a defined period of time. If the amount of trash decreases based on the efforts of the municipality, then the municipality could conclude that both the message and delivery of the message were effective.

Watershed and other environmental organizations, regional stormwater coalitions, and other municipalities may collaborate with permittees and many have materials for use in conducting outreach.

b. MCM2 - Public Involvement and Participation

This control measure is closely related to the public education and outreach control measure. When the public is given an opportunity to understand and participate in a stormwater protection program, the public generally will become supportive of the program. This measure is to provide and engage the public with opportunities to participate in the review and implementation of the SWMP. [See Part IV(C)(2) of the permit].

The objective of this minimum control measure is to involve the public in both the planning and implementation process of improving water quality and reducing storm water quantity via the storm water program. A program planned with a stakeholder group is more likely to be successful in achieving its goals. The public can provide valuable input and assistance to a MS4's municipal storm water management program. Therefore, the public should be given opportunities to play an active role in both the development and implementation of the program. An active and involved community is crucial to the success of a municipal storm water management program because it allows for broader public support, additional expertise and a conduit to other programs. Community members are also more likely to apply these lessons/BMPs at home.

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Permittees are encouraged to provide more interactive opportunities for public participation. Examples include volunteer water quality monitoring, community clean up days, hazardous waste collection days, and adopt a drain/adopt a stream programs.

The GP requires that the permittee annually provide an opportunity for the public to participate in the implementation of the SWMP. Participation efforts should attempt to engage all groups serviced by the MS4. This effort may include creative public information messages such as announcements in neighborhood newsletters, use of television spots on the local cable channel, or announcements or displays at civic meetings. One goal of public participation is to involve a diverse cross-section of people and businesses in the community to assist in development of a stormwater management program that meets the needs of the permittee and the community serviced by the MS4.

- c. **MCM-3 - Illicit Discharge Management:** The GP requires that the permittees prohibit the discharge of non-precipitation flows (“illicit” or “non-stormwater” flows) to the MS4s. Permittees must conduct aggressive, thorough, and systematic illicit discharge investigations and removal of illicit connections. The GP requires permittees to develop a written Illicit Discharge Detection and Elimination (IDDE) protocol that includes specific requirements and procedures for implementation of the IDDE program. Examples of these requirements are a detailed map, a written prioritization of areas with a potential of illicit discharges, dry weather outfall monitoring, wet weather assessment, record keeping, and thorough and complete storm drain network investigations that systematically and progressively evaluate manholes in the storm system to narrow the location of a suspected illicit connection or discharge to an isolated pipe segment (see Part IV(C)(3) of the permit).

Each permittee must implement and enforce a program to detect and eliminate illicit discharges and non-stormwater discharges, as defined in 06-096 CMR 521(9)(b)(2), except as provided for allowable non-stormwater discharges. The program must address illicit discharges in the following four components: 1) Procedures for prioritizing watersheds, 2) procedures for tracing the source of an illicit discharge, 3) procedures for removing the source of the discharges, and 4) procedures for program evaluation and assessment. The period between identification and elimination of an illicit discharge is not a grace period. Discharges from an MS4 that are mixed with an illicit discharge are not authorized by this GP and remain unlawful until eliminated.

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The MS4-2013 permit required each MS4 to develop and implement an IDDE program. Since issuance of that permit, the MDEP and MS4s have gained an improved and more comprehensive understanding of the nature of illicit discharge connections; the extent of the problem; effective technologies and procedures to detect and verify illicit connections; and the best practices to reduce discharges of contaminated stormwater due to the presence of illicit connections. In light of the demonstrated results and practical experience gained from these efforts, the GP requires more specific BMPs than the MS4-2013 permit. Examples of these requirements are a detailed map, a written prioritization of areas with a potential of illicit discharges, dry weather screening and monitoring, wet weather outfall assessments, record keeping, and thorough and complete storm drain network investigations that systematically and progressively evaluate manholes in the storm system to narrow the location of a suspected illicit connection or discharge to an isolated pipe segment.

This control measure requires the MS4 to detect and eliminate illicit discharges from its municipal separate storm sewer system. The regulations at 40 CFR §122.26(b)(2) define an illicit discharge as "...any discharge to a municipal separate storm sewer system that is not composed entirely of stormwater except discharges pursuant to a NPDES permit (other than the NPDES permit for discharges from the municipal separate storm sewer) and discharges resulting from firefighting activities." Some illicit discharges enter the storm system directly, such as incorrectly connected wastewater discharge lines, while others may enter indirectly, such as through infiltration from cracked sanitary lines or spills collected by drain outlets. Both types of discharges can contribute pollutants to the system that in turn affect water quality. An illicit discharge is, with limited exceptions, any discharge to a municipal separate storm sewer system that is not stormwater.

Consistent with 40 CFR § 122.34(b)(3)(iii), the GP contains a list of specific types of non-stormwater discharges that the permittee must address only if the permittee identifies such discharges as significant contributors of pollutants. MS4s should examine the potential sources as categories or individual discharges and examine the potential of those categories or individual discharges to contribute pollutants to the MS4.

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For example, potable water may not contribute pollutants that affect the MS4 discharges because the source is associated with the water supply. However, foundation drains and crawl spaces may be associated with residential basements and the type of pollutants may be unknown. In this situation, the MS4 may want to establish a registration program and incorporate an educational message about proper storage of household chemicals, or the permittee may prohibit this source of non-stormwater due to the unknown nature of the pollutants. The permittee must document its determinations on the categories of non-stormwater in its SWMP and must prohibit any sources identified as significant contributors of pollutants.

For all other non-stormwater discharges, the GP describes required components of an illicit discharge detection and elimination program.

The EPA and MDEP believe that the inclusion of elements in the permit as requirements instead of guidance represents a necessary step to strengthen requirements of the IDDE program and creates an aggressive, thorough, and systematic approach that can be implemented across the state that will lead to improvements to water quality. The EPA and MDEP feel that the level of effort described in Part IB(C)(3) of the GP is necessary and appropriate to ensure discharges from the MS4 are limited to the stormwater discharges authorized by this NPDES permit.

1. Written Illicit Discharge Detection and Elimination Program

The MS4 must have adequate legal authority to implement the following activities as part of the IDDE program: prohibit illicit discharges; investigate suspected illicit discharges; eliminate illicit discharges and enforce the IDDE program. The MS4-2013 permit required development of an ordinance or other regulatory mechanism to address the required program components. The MS4 must reference the authority to implement this measure in the IDDE program. The IDDE program is part of the overall SWMP.

The GP builds on the requirements of the MS4-2013 permit by detailing additional required components of an illicit discharge detection and elimination program. One component is a written protocol that clearly identifies responsibilities with regard to eliminating illicit connections. A second component is to maintain up-to-date maps of the municipally owned or operated storm sewer system. The final component is a written systematic protocol for locating and removing illicit connections.

The permittee must have in place a written protocol that clearly identifies methodologies and responsibilities with regard to detecting and eliminating illicit discharges. The protocol must identify who is responsible to pay for removal of an illicit connection/discharge. The permittee may incur the initial costs and seek partial or complete reimbursement from the owner of the illicit connection

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depending on the specifics of the situation and local and state law. The MDEP does not require a specific methodology, only that one exists and that the staff responsible for locating and removing illicit connections is familiar with it. The protocol must also define appropriate methods for removal of the illicit discharge or connection. The protocol must identify appropriate procedures or methodologies for confirmation of removal of illicit discharges or connections.

A storm drain network investigation involves systematically and progressively opening and inspecting key junction manholes in the system to narrow the location of an illicit discharge to an isolated pipe segment between two manholes. The permittee shall inspect key junction manholes for visual evidence of illicit connections or discharges (e.g. excrement, toilet paper, or sanitary products). When flow is observed in the manhole, the permittee may sample for ammonia and surfactants using field test kits if desired. Ammonia is a useful indicator of sewage. The concentration of ammonia is higher in sewage than in ground water or tap water. Surfactants are the active ingredient in most commercial detergents. Surfactants are typically measured as Methyl Blue Active Substances (MBAS). These are a synthetic replacement for soap. The presence of surfactants is an indicator of sewage and wash waters. There are other indicator parameters the permittee could use such as fluoride; municipalities typically add fluoride to drinking water supplies, and its presence is an indicator of tap water. Potassium is another indicator that has relatively high concentrations in sewage and the permittee may choose to sample for potassium but it is not required. When the concentration of potassium is evaluated in combination with the concentration of ammonia, the ratio of the two can help distinguish wash waters from sanitary wastes. In addition to the use of indicators to help identify the source of an illicit connection or discharge, the permittee may use dye testing, video testing, smoke testing or other appropriate methods to locate illicit connections or discharges.

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The GP requires the permittee to either remove or eliminate the illicit discharge or take appropriate enforcement action within sixty (60) days of detection. Where elimination of an illicit discharge within 60 calendar days of its identification and verification as an illicit discharge is not possible, the permittee must establish an expeditious schedule for its elimination and report the dates of identification and schedules for removal in the permittee's annual reports. The permittee must also track the progress of the IDDE program implementation. Appropriate tracking indicators are those that demonstrate elimination of a pollutant source and/or water quality improvements. For example, if a permittee has a beach that has closures due to bacteria, an appropriate indicator for tracking progress would be a decrease in the frequency of beach closures or water quality monitoring that indicates that the water is meeting standards.

Other examples include the number of reported illicit discharges, the number of illicit connections located, and the number of illicit connections repaired or removed and volume of illicit discharge removed.

In addition to detecting and removing illicit discharges, the permittee must also develop and implement mechanisms and procedures for preventing illicit discharges. This includes training to inform public employees, businesses, and the general public of the hazards associated with illegal discharges. The requirement to prevent illicit discharges can be incorporated into the public education and public participation control measures. Examples of mechanisms to prevent illicit discharges include identification of opportunities for pollution prevention or source control; distribution of information concerning car washing or swimming pool draining; routine maintenance activities; and inspections of facilities particularly municipal drains undergoing work by private parties.

2. Dry weather monitoring

This GP advances the dry weather outfall inspection program in the MS4-2013 permit by requiring permittees to conduct dry weather sampling for parameters depending on evidence observed during the inspections. Where dry weather flow exhibits evidence of an illicit discharge based on the dry weather inspection, the permittee must investigate the source of the illicit discharge using one or more of the following techniques until either a source is identified, or it has been determined that the evidence of the illicit discharge is due to naturally occurring source(s).

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Sampling and analysis for one or more parameters consistent with the source that is suspected based on the evidence observed including but not limited to:

- *E.coli*, enterococci, total fecal coliform or human bacteroides, ammonia, optical enhancers, or surfactants.
- Total residual chlorine or free chlorine.
- Optical enhancers or surfactants

All analyses can be performed with field test kits or field instrumentation and are not subject to 40 CFR Part 136 requirements given the sampling is for investigative purposes and not to determine compliance with this permit. Sampling for ammonia and surfactants must use sufficient sensitive methods to detect said parameters at or below the minimum reporting concentrations as follows: ammonia (0.5 mg/L), surfactants (0.25 mg/L), total residual chlorine (0.05 mg/L), *E. coli* bacteria (4 cfu/100 ml), enterococcus (10 cfu/100 ml).

3. Wet weather assessment

The GP advances the IDDE program required by the 2013 MS4 permit by requiring the permittee to conduct a wet weather assessment of their collection system. The outcome of the assessment will be a list of outfalls identified for wet weather monitoring and testing if applicable by the permittee in the next permit cycle during wet weather conditions and the rationale for including these outfalls.

On or before the expiration date of this permit, the permittee must identify these wet weather outfalls in its written IDDE plan and identify the wet weather outfalls targeted for wet weather monitoring based on the EPA New England bacterial source tracking protocol or other acceptable protocols or methodologies and specify the timing and frequency of wet weather monitoring to be completed during the term of the next permit cycle.

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- d. **MCM4 - Construction Site Runoff Control:** The draft permit requires the permittees to implement a construction site runoff control program, which includes enacting and enforcing requirements for control of pollutants from construction sites, preconstruction plan review and approval, site inspections, and education for construction site operators. [See Part IV(C)(4) of the permit].

Each permittee must implement and enforce a program to minimize or eliminate pollutants in any stormwater runoff to the regulated small MS4 from construction activities that result in a land disturbance of greater than or equal to one acre. Reduction of stormwater discharges from construction activity disturbing less than one acre must be included in the program if that construction activity is part of a larger common plan of development or sale that would disturb one acre or more.

MS4s are required to continue to review and enforce a program to reduce pollutants in stormwater runoff from construction activities that result in a land disturbance equal to or greater than one acre that discharge to the MS4. The overall objective of an effective construction runoff management program is to have a program that minimizes or eliminates erosion and maintains sediment on site.

The construction program required by the GP is different from the MDEP's program that is implemented through the Construction General Permit (CGP), although there is some overlap. The MS4 construction program must address the discharges from construction projects within its jurisdiction that discharge directly to the MS4. A project may need a CGP from the MDEP as well as be regulated under the permittee's construction program.

The permittee must have an ordinance or other regulatory mechanism requiring proper sediment and erosion control. In addition to addressing sediment and erosion control, the ordinance must include controls for other wastes on construction sites such as demolition debris, litter and sanitary wastes. The MDEP encourages permittees to include design standards in local regulations for sediment and erosion control BMPs. The GP cites two guidance documents entitled, *Erosion and Sediment Control, Housekeeping and Inspections and Maintenance* (Appendix C of the permit) and *Maine Erosion and Sediment Control Practices Field Guide For Contractors* (found on the MDEP website) to assist contractors and municipalities in developing BMPs for the ordinance or other regulatory mechanisms that could be included as part of the local program.

This GP requires the program to include written procedures for pre-construction review and approval of site plans. Permittees should make every effort to ensure that qualified personnel review plans. In addition, the program must include a procedure for receiving information from the public and taking such information into consideration during the site plan review. The plan review procedures must include consideration of water quality impacts. The MDEP believes the site plan review requirement is a necessary

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step to control the discharge from construction sites that enters the permittee's MS4 and ensures the construction site operators have taken the necessary steps to control stormwater generated on site before the stormwater is discharged to the MS4 system.

The GP requirements build upon the 2013 MS4 permit requirements by requiring the program to have procedures for site inspections and enforcement. Qualified personnel should perform inspections. Qualified personnel are those who possess the knowledge and the skills to assess conditions and activities that could impact stormwater quality and who can also evaluate the effectiveness of stormwater control measures. Inspections should occur during construction as well as after construction to ensure that BMPs are installed and operating as described in approved plans. The permittee shall have clearly defined procedures regarding who is responsible for inspections at construction sites and what aspects of the construction site are to be inspected. The permittee must have authority to impose sanctions if construction projects are found not to be in compliance with local ordinance. Sanctions can include monetary penalties, stop work orders, or other remedies authorized by law.

MS4s should review existing procedures in the community that apply to these activities (plan reviews and inspections). Often construction plans are seen by the planning board that may not have the technical expertise or engineering staff to evaluate them. A MS4 should look at the various components of the local government, and whenever possible, optimize coordination between municipal offices as appropriate to ensure adequate review of plans and other documents associated with a construction project. These measures are enhanced from the 2013 MS4 permit to provide a more thorough construction site stormwater management program. MS4 systems are responsible for the discharges they accept into their system and therefore, a thorough understanding and control of development projects that discharge to the permittee's MS4 is necessary to protect water quality.

e. **MCM5 - Storm Water Management for New Development and Redevelopment:**

This GP requires that permittees to promote strategies for stormwater runoff from areas of new development and redevelopment disturbing one (1) or more acres. One objective of this measure is to have the hydrology associated with new development closely mirror the pre-development hydrology and to improve the hydrology of redevelopment sites through required onsite retention/infiltration or treatment of stormwater. Another objective of this measure is to reduce the concentration and pollutant loadings found in stormwater prior to discharge of stormwater from new and re-development projects within the regulated area. Permittees must also conduct preconstruction plan review and approval for all new development and redevelopment projects; ensure proper operation and maintenance of permanent stormwater management controls; conduct site inspections; and enforce local requirements within their jurisdictional powers [See Part IV(C)(5) of the permit].

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Post construction stormwater runoff may cause two types of impacts. One is an increase in the type and the quantity of pollutants. The alteration of the land by development can increase the discharge of pollutants such as oil and grease (hydrocarbons), heavy metals, solids and nutrients. Another impact occurs with an increase in the quantity of stormwater that is delivered to water bodies during storm events. Increases in impervious area decrease the amount of precipitation that naturally infiltrates into the ground, which provides for natural filtration of many pollutants found in stormwater. The lack of natural infiltration increases the volume of stormwater runoff into water bodies which causes increased flows and increase in sediment loadings in the stream that can cause stream bank scouring, impacts to aquatic habitat, and flooding. The increased pollutant loading associated with increased impervious area will further degrade the receiving waterbodies if new and redevelopment is allowed to continue unmitigated. Planning and design for the minimization of pollutants in post construction stormwater discharges is the most cost-effective approach to stormwater quality management.

The GP contains Appendix C, *Erosion and Sediment Control, Housekeeping and Inspections and Maintenance*, as well as guidance entitled *Maine Erosion and Sediment Control Practices Field Guide For Contractors*, found on the MDEP website to assist contractors and municipalities in developing BMPs for the ordinance or other regulatory mechanism.

f. **MCM6 - Good Housekeeping/Operations and Maintenance Program for Municipal Operations:**

The objective of this program is to mitigate or eliminate pollutant runoff from municipal operations on property that is owned or managed by the permittee and located within the UA. Permittees must properly operate and maintain their stormwater infrastructure to reduce discharges of pollutants. All permittees must ensure that catch basins do not become more than 50% full and sweep their streets a minimum of one time per year. Permittees must maintain Operation and Maintenance (O&M) programs for all properties exposed to stormwater runoff and enact programs to reduce stormwater pollutants through appropriate application of pesticides, herbicides, and fertilizers in all permittee areas, as well as enacting pollution prevention actions at material storage facilities, maintenance yards, and salt storage sites. Additional measures are required at waste handling facilities to reduce pollutants associated with those facilities. (See Part IV(C)(6) of the permit).

The GP includes more detailed requirements than the MS4-2013 permit for the implementation of this control measure. The permittee must develop an inventory of municipal buildings and facilities and update it annually. Permittees are required to develop an operations and maintenance plan for the following permittee-owned activities or facilities: parks and open spaces; buildings and facilities; vehicles and equipment maintenance; and infrastructure (roadways and storm sewer systems). While the 2013

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GP did not require a written operation and maintenance plan for permittee-owned activities or facilities, it did require the development of a program to prevent/reduce pollutant runoff for the same activities or facilities identified above. Creating a written plan is intended to provide more clarity and responsibility for staff when dealing with stormwater runoff from permittee owned property. This GP is also more prescriptive of what certain operation and maintenance plans must contain based on the type of operation at the facility in order to be more protective of water quality than the MS4-2013 permit provisions.

The permittee must consider all buildings it owns for the evaluation of buildings and facilities. The permittee shall evaluate the use and storage of petroleum products, management of dumpsters, and other wastes at police and fire stations, schools, and other permittee owned buildings. In areas where permittee-owned vehicles are stored, the permittee must establish procedures to ensure that vehicles that are leaking or require maintenance are stored indoors to the extent practicable. Municipal fueling areas must be covered unless impracticable. Wash waters from permittee-owned vehicles must not be discharged to the MS4 or directly to a water of the state.

The GP requires the permittee to either establish or continue the implementation of a program to repair and rehabilitate its infrastructure in a timely manner. The GP requires the MS4 to maintain its streets, roads and rights of way in such manner as to minimize the discharge of pollutants from the MS4. Permittee's must develop and implement a program to inspect all catch basins and, if necessary, at least once every other year, clean catch basins and other stormwater structures that accumulate sediment and dispose of the removed sediments in accordance with current state law. The permittee must clean catch basins more frequently if inspections indicate excessive accumulation of sediment. Excessive accumulation is greater than or equal to 50 percent of the sump filled.

The GP requires street sweeping to occur at least once per year. More frequent sweeping, especially using a high efficiency vacuum sweeper, can have positive impacts on receiving water quality and many permittees may choose increased sweeping frequencies in heavy use areas.

In addition to the operation and maintenance plans required for permittee-owned operations, the permittee must develop a Stormwater Pollution Prevention Plan (SWPPP) for municipal maintenance garages, public works facilities, transfer stations, or other waste management facilities. Waste management facilities are those facilities that accept or store material accepted from public or private entities, including recycling facilities, compost areas, organic debris collection, hazardous waste collection areas, etc. These facilities are targeted in this GP because they can be large generators of stormwater pollution and may not be covered under another MEPDES permit. However, if a facility is already covered by Maine's Multi-Sector General Permit (MSGP), the SWPPP required by the MSGP will satisfy this requirement. The SWPPP required by the MSGP shall be referenced in the MS4's SWMP.

PART II. BASIS FOR CONDITIONS OF THE DRAFT MEDES GENERAL PERMIT

The permittee must develop a SWPPP that consists of the following elements;

1. The SWPPP must identify the individuals (by name or title) who comprise the facility's Stormwater Pollution Prevention Team. The Stormwater Pollution Prevention Team is responsible for assisting the facility manager in developing, implementing, maintaining and revising the facility's SWPPP. Responsibilities of each team member must be listed.
2. Nature of activities. The SWPPP must provide a description of the nature of the activities at the facility.
3. Maps. The SWPPP must contain a general location map with sufficient detail to identify the location of the facility and all receiving waters for all stormwater discharges. A site map depicting the following features must also be included with the SWPPP.
 - i. Boundaries of the property and the size of the property in acres;
 - ii. Location and extent of significant structures and impervious surfaces;
 - iii. Directions of stormwater flow (use arrows);
 - iv. Locations of all stormwater BMPs;
 - v. Locations of all receiving waters, including wetlands, in the immediate vicinity of the facility;
 - vi. Locations of all stormwater conveyances including catch basins, ditches, pipes, and swales;
 - vii. Locations of potential pollutant sources;
 - viii. The location of all above ground wastewater or process water containment tanks;
 - ix. For the purposes of the site map, identify areas of frequent spills (greater than three occurrences per year) and large spills (greater than 10 gallons) that have occurred in the last three years. All locations of fuel frequent/large spills must be documented within the SWPPP or applicable Spill Prevention Control & Counter Measure (SPCC) Plan;

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- x. Locations of all stormwater monitoring points;
- xi. Locations of stormwater inlets, outlets, and outfalls, with a unique identification code for each outfall (*e.g.*, Outfall 001, 002) and an approximate outline of the areas draining to each outfall;
- xii. Locations of the following activities where such activities are exposed to precipitation:
 - fueling stations;
 - vehicle and equipment maintenance and/or cleaning areas;
 - loading/unloading areas;
 - locations used for the treatment, storage, or disposal of wastes;
 - liquid storage tanks;
 - processing and storage areas;
 - immediate access roads and rail lines used or traveled by carriers of raw materials, manufactured products, waste material, or by-products used or created by the facility;
 - transfer areas for substances in bulk;
 - machinery; and
 - locations and sources of run-on to the site from adjacent property that contains significant quantities of pollutants.

The permittee must have a signed copy of the SWMP available-at the municipal office and on the official municipal web site if there is a municipal website and must make a copy of the SWMP available to the general public and regulatory authorities. The permittee must keep the SWMP current. The permittee must allow the public the opportunity to comment on changes made to the SWMP at a minimum of once per year (1/Year). If there are no changes to the SWMP no opportunity for public comment is necessary. Posting the SWMP on the municipal website or at the municipal office for comment at any time is acceptable to meet the once per year (1/Year) requirement. The municipality does not need to publish a notice in a local newspaper to fulfill this requirement.

PART II. BASIS FOR CONDITIONS OF THE DRAFT MEPDES GENERAL PERMIT

D. Impaired Waters & Total Maximum Daily Loads

The EPA has approved a number of Impervious Cover (IC) TMDLs in Maine in which waste load allocations (WLAs) have been developed. If the waterbody to which a point source discharge drains is impaired and has an EPA approved TMDL, then the point source discharge must be consistent with the TMDL WLA and any implementation plan. This GP does not authorize a direct discharge that is inconsistent with the WLA of an approved TMDL.

This GP is utilizing the adaptive management approach to address waterbody impairments. Appendix B of the GP contains a list of Urban Impaired Streams (UISs). This GP requires the permittee to fully implement at least three structural or non-structural BMPs to address the impairment. These proposed BMPs and other BMPs will be established in the final permittee specific MDEP Order.

For point source discharges to impaired waterbodies without an approved TMDL, the permittee must consult with the Department's Division of Environmental Assessment to identify the root cause(s) of the impairment and develop a strategy reduce the discharge of pollutants of concern if the permittee is causing or contributing to the impairment.

E. Record Keeping and Annual Reporting

1. Record Keeping

The permittee must keep all records required by this permit for a period of five years from the date the record is generated. The SWMP must be available to members of the public who request a copy.

2. Annual Compliance Reporting

The permittee must submit an annual report by September 15th of each calendar year. The reporting period will be a one-year period commencing on the permit effective date, and subsequent anniversaries thereof. The report must include a self-assessment regarding compliance with the terms of the GP, the appropriateness of selected BMPs, and the progress towards achieving the permittee identified measurable goals. The report must also contain a summary of any information that has been collected and analyzed. This includes all data. The permittee must also indicate what activities are planned for the next reporting cycle and discuss any changes to either BMPs or measurable goals. The report must indicate if any control measure or measurable goal is the responsibility of another entity. [See Part IV(G) of the GP]

PART III - DEPARTMENT CONTACTS

Additional information concerning this permitting action may be obtained from, and written comments sent to:

Gregg Wood
 Division of Water Quality Management
 Bureau of Water Quality
 Department of Environmental Protection
 17 State House Station
 Augusta, Maine 04333-0017
 e-mail: gregg.wood@maine.gov
 Telephone: (207) 287-7693

PART IV - RESPONSE TO COMMENTS

During the period December 9, 2019 – January 9, 2020, the MDEP made the draft MS4 permit available for a formal 30-day public comment period, consistent with the MEPDES rules. The MDEP received comments from the following entities:

U.S. Environmental Protection Agency (USEPA)
 Maine Municipal Association (MMA)
 Conservation Law Foundation (CLF)
 Interlocal Stormwater Working Group (ISWG)
 Southern Maine Stormwater Working Group (SMSWG)
 Maine Turnpike Authority (MTA)
 CES Inc. (CES)
 Friends of Casco Bay Baykeeper (FOCB)
 Casco Bay Estuary Partnership (CEBP)
 City of Lewiston (Lewiston)

The MDEP provides the following responses to substantive comments received.

Comment #1 (USEPA): Language throughout the draft permit must be revised to comply with 40 C.F.R §122.28(d)(2) and should include an explanation of the process MDEP will take to complete the two-step process.

Response #1: Special Condition Part II (A) of the final permit has been rewritten to include an explanation of the process MDEP will take to complete the two-step process.

Comment #2 (USEPA): Deadlines are missing for many of the plans (e.g. O&M plans, SWPPPs) and MDEP should add deadlines for completion for any plans or programs required by the GP.

Response #2: The final permit has been modified to require completion of the SWMP by the date of submission of the NOI for permit coverage and the O&M plan and SWPPP are to be completed/updated prior to the effective date of the permit.

PART IV - RESPONSE TO COMMENTS

Comment #3 (USEPA): The two-step process explained on page 6 of the Fact Sheet is not consistent with the two-step process approach which requires MDEP to post additional individualized permit requirements for each applicant consistent with 40 C.F.R. §122.28(d)(2).

Response #3: Page 6 of the Fact Sheet has been revised to clarify that in addition to the NOI being subject to a 30-day public comment period, the MDEP will be required to issue a draft permittee specific MDEP Order for a 30-day public comment period that establishes a list of required actions and corresponding schedules of compliance for a limited number of BMPs associated with the implementation of the GP. Following the 30-day comment period, the MDEP will issue a final permittee specific MDEP Order. A MS4 is not authorized to discharge until a final permittee specific MDEP Order is issued granting authorization to discharge.

Comment #4 (USEPA): Part IV(C)(3) MCM3– Illicit Discharge Detection and Elimination (IDDE) Program – The permit should require that every outfall exhibiting dry weather flow be sampled in order to fulfill the requirement of CWA 402(p)(3)(B)(ii).

Response #4: Part IV(C)(3)(iv) of the final permit has been revised accordingly.

Comment #5 (USEPA) – Part IV(C)(5) MCM5 – Post Construction Stormwater Management in Development and Redevelopment – This part must be revised as it does not contain clear, specific and measurable requirements of 40 C.F.R. §122.28 and 40 C.F.R. §122.34 or alternatively, the two-step process could be used to require the permittee to submit how they plan to regulate new development and redevelopment in the urbanized area and create clear, specific and measurable requirements in the two-step process.

Response #5 – The MDEP will review the SWMP upon submission and will utilize the permittee specific MDEP Order to establish clear, specific and measurable goals to regulate new development and redevelopment in the urbanized area.

Comment #6 (ISWG, SMSWG, MMA) – All three parties object to following paragraph on the bottom of page 27 of the December 6, 2019 draft Fact Sheet:

For point source discharges to impaired waterbodies without an approved TMDL, the permittee must consult with the Department’s Division of Environmental Assessment to identify the root cause(s) of the impairment and develop a strategy reduce the discharge of pollutants of concern if the permittee is causing or contributing to the impairment.

MMA s objects to the statement stating “ By directing the MS4s to consult with the Department, these municipalities are now obligated to participate in identification of the root causes.” “Permittee’s are not responsible to address-let alone identify-root impairments on waters that do not carry an approved EPA TMDL.” “Municipal officials are not environmental specialists and do not have a staff of scientists available to conduct these activities, nor should they be required to invest in such staffing simple because they require a stormwater permit. Additionally, determining TMDL is the role of the Department as directed by federal regulation and should be addressed from a whole systems view and not a municipal boundary view.”

PART IV - RESPONSE TO COMMENTS

Response #6 – 06-096 CMR Chapter 2, *Rules Concerning The Processing of Applications And Other Administrative Matters* (June 9, 2018) Section 11(F) *Burden of Proof and Governing Laws* states that “An applicant for a license has the burden of proof to affirmatively demonstrate to the Department that each of the licensing criteria in statute or rule has been met.”

Maine law, 38 M.R.S. §414-A(1), *Conditions of Licenses*, states “The Department shall issue a license for the discharge of pollutants only if it finds that,”

- A. The discharge either by itself or in combination with other discharges will not lower the quality of any classified body of water below such classification.

The Department disagrees with MMAs position that it is not the permittee’s responsibility to address let alone identify-root impairments on waters that do not carry an approved EPA TMDL. This statement in the Fact Sheet does not require permittees to develop TMDLs for any impaired waterbodies. The Department agrees with the commenters statements that preparing TMDLs for approval by EPA is the Department’s responsibility. However, permittees are responsible for affirmatively demonstrating their discharge is not causing or contributing to the impairment. By consulting with the Department on the severity of the impairment and the potential root cause(s), the Department and the permittees can work collaboratively to address the impairment and assist the permittee in demonstrating whether it is causing or contributing to the impairment.

It was agreed during the stakeholder process that working to address the impairments in the Urban Impaired Streams listed in Appendix B of the permit would be the priority for this five-year permit but that impaired waterbodies not in Appendix B still need to be addressed. Consultation with the Department would be the first step in addressing the impairments.

Comment #7 (ISWG, SMSWG) – The commenters have asked for clarification if the secondary containment requirements in Part IV(3)(e)(iv) are applicable to storage tanks for deicing fluids such magnesium chloride since these tanks do not have federal or state requirements for secondary containment.

Response #7 – The Department agrees there are no federal or state requirements for these types of storage tanks. Therefore, the first sentence of the above referenced section of the final permit has been revised to read as follows:

Any stationary above ground tank, container, or container storage area used for the storage of wastewater or process water (does not include deicing materials for winter road maintenance) that has the potential to discharge to surface waters or a stormwater conveyance during a malfunction must be held in a secondary containment device capable of containing 100% of the contents of the tank, plus precipitation.

PART IV - RESPONSE TO COMMENTS

Comment #8 (CES) – The commenter requests that the language in MCM Part IV(B)(3)(f) of the permit stating that permittees must update their written IDDE plan during the term of this permit to identify protocols, timing and frequency of wet weather monitoring to be completed during the next permit cycle be removed from the permit. The remainder of the permit requirements are related to activities completed within the terms of this permit and we feel it is inappropriate for permittees to identify how they will comply with future permits as a prerequisite for compliance with this permit.

Response #8 – During the stakeholder process, FOCB advocated for MS4 permittees to be required to conduct wet weather monitoring in this permit. The USEPA supported FOCB's position. The MS4 permittees acknowledge that federal regulations require each renewal of the MS4 permit advance the requirements of the previous permit. Permittees argued that conducting wet weather monitoring on top of the other new requirements in this permit renewal would not be doable from a planning or financial standpoint but they would be willing to begin the process of developing a wet weather monitoring program. Stakeholders agreed that advancing wet weather requirements could be started during the term of this permit by requiring the permittees to conduct a wet weather assessment for the potential for illicit discharges during wet weather events. The permit requires that if the wet weather assessment is completed during the term of the permit, wet weather monitoring shall be carried out accordingly and not wait until the issuance of the permit renewal in calendar year 2027. This compromise was acceptable to both the FOCB and the USEPA. Therefore, the final permit remains as drafted.

Comment #9 (MMA): The commenters objected to the following statement in paragraph #2 on page 18 of the Fact Sheet under the heading of Written Illicit Discharge Detection and Elimination Program. *“A second component is an assessment and ranking of the catchments within the MS4 for their potential to have illicit discharges.”* The commenter states this sentence on prioritizing catchments is inconsistent with the requires in paragraph #1 on page 25 of the GP under the heading of MCM3 - Illicit Discharge Detection and Elimination Program, that states in part. *“The program must address illicit discharges in the following four components: 1) Procedures for prioritizing waters,.....”*

Response #9 – The Department agrees with the commenter and the sentence on page 18 of the final Fact Sheet referencing catchments has been deleted.

Comment #10 (MMA) – The commenter objected to the following statement in paragraph #3 on page 20 of the Fact Sheet under Written Illicit Discharge Detection and Elimination Program. *“In addition to detecting and removing illicit discharges, the permittee must also develop and implement mechanisms and procedures for preventing illicit discharges. This includes training to inform public employees, businesses, and the general public of the hazards associated with illegal discharges.”* The commenter states that training of this nature is beyond the maximum extent practicable, not a permit requirement, and clearly the responsibility of the permit authority (MDEP) not the permittee. The Department needs to invest more of its own resources in robust and uniform statewide training for contractors, employees and the general public as these illicit discharges can occur unchecked in communities without a permit requirement. This is a statewide water quality need, not just a regulated community concern.

PART IV - RESPONSE TO COMMENTS

Response #10 – The Department agrees with commenter that this training is not a permit requirement in MCM3 Illicit Discharge Detection and Elimination Program, beginning on page 25 of the permit. However, the rest of the paragraph #3 on page 20 of the Fact Sheet reads as follows;

“The requirement to prevent illicit discharges can be incorporated into the public education and public participation control measures. Examples of mechanisms to prevent illicit discharges include identification of opportunities for pollution prevention or source control; distribution of information concerning car washing or swimming pool draining; routine maintenance activities; and inspections of facilities particularly municipal drains undergoing work by private parties.”

The language of the Fact Sheet was simply pointing out that there are opportunities for the permittee to get the message out to members of their community and employees of the MS4 via public informational flyers, formal training, etc.

Comment #11 (Lewiston) – The commenter is concerned the last paragraph on Part IV(B)(3)(f) under the heading MCM3 Illicit Discharge Detection and Elimination Program, on page 29 of the permit, appears to indicate that the EPA New England bacterial tracking source is the primary means of detecting illicit discharges. The commenter states there are other methods and protocols such as sandbagging, smoke testing, dye testing, CCTV/video inspections, optical brightener monitoring and IDDE canines are also tools that can be utilized as well to detect illicit discharges. The GP should not tie the permittees to a limited methodology in this complex and important task of identifying and eliminating illicit discharges.

Response #11 – The Department agrees with the commenter. The paragraph in the draft permit cited by the commenter states in part,

“On or before the expiration date of this GP, the permittee must identify these wet weather outfalls in its written IDDE plan and identify the wet weather outfalls targeted for wet weather monitoring based on the EPA New England bacterial source tracking protocol or other acceptable protocol and specify the timing and frequency of wet weather monitoring to be completed during the term of the next permit cycle.”

To address the commenter’s concern the final permit has been revised to include the word methodologies as well and reads as follows:

On or before the expiration date of this GP, the permittee must identify these wet weather outfalls in its written IDDE plan and identify the wet weather outfalls targeted for wet weather monitoring based on the EPA New England bacterial source tracking protocol or other acceptable protocols or methodologies and specify the timing and frequency of wet weather monitoring to be completed during the term of the next permit cycle.

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Comment #12 (MTA) – The commenter questions if all stormwater direct discharges to wetlands that are not surface waters (*i.e.* streams, rivers, brooks, ponds, lakes or other waters) are considered “outfalls” under this GP? In addition, the commenter questions if outlets from post-construction stormwater BMPs such as detention/retention BMPs, vegetative BMPs, infiltration BMPs, and underdrained soil filters that have provided treatment to stormwater runoff are still considered ‘outfalls’ or ‘direct discharges’ that are regulated under the MS4 GP?

Response #12 – Any direct discharge to a surface water, including wetlands, is considered an outfall under this GP even if it is treated through a BMP before discharge. Discharges that are directed to infiltration galleries or other subsurface BMPs and do not discharge to surface waters are not considered outfalls under this GP.

Comment #13 (FOCB) – The FOCB states chlorides are a major source of pollutants to urban streams. MCM 6 should require that regulated communities establish and implement procedures for winter road maintenance that minimize the use of sodium chloride and other salts, evaluate opportunities for use of alternative materials, and ensure that snow disposal activities do not result in disposal of snow into waters of the United States.

Response #13 – The Department concurs that chlorides are a major source of pollution as evidenced in the Long Creek watershed in Southern Maine. MCM6, Part IV(6)(d)(2)(b)(5) on page 37 of the final permit has been revised as follows:

- v. Site and operate snow storage and disposal areas to prevent the discharge of snow directly into surface waters and minimize discharges of pollutants from snow maintenance activities. Permittees shall minimize the use of sodium chloride or other salts when possible and evaluate opportunities for use of alternative products.

Comment #14 (FOCB) – The FOCB suggests the Part I(D), *Obtaining Coverage to Discharge*, on page 5 of the December 6, 2019 Fact Sheet should more clearly state in the first paragraph that authorization to discharge is a two-step process under this permit cycle, and that the general permit in conjunction in the individual permit modification authorizes the discharge of stormwater from a regulated MS4.

Response #14 – The Department agrees the paragraph should clarify that authorization to discharge will only be granted after both the GP and permittee specific MDEP Order are both issued as final agency actions. Therefore, paragraph #2 in Part I(B), *Permit Coverage*, of the final permit and paragraph #2 in Part I(D)(1), *Effective Date of this General Permit*, on page 6 of the Fact Sheet have both been modified to include the following sentence.

An applicant is authorized to discharge when the GP becomes effective and the applicable permittee specific DEP Order establishing a list of required actions and a corresponding schedule of compliance for the action items is issued as a final agency action.

Comment #15 (ISWG, SMSWG) – The commenter wanted clarification regarding language in Part IV(B)(2), *Keeping Plans Current*, on page 21 of the permit. The commenter requested language be incorporated into the Fact Sheet indicating that placing the SWMP on the permittee’s website giving the public the opportunity to comment on the SWMP at any time satisfies the requirement to allow the public to comment on the SWMP at least 1/Year and that annually publishing a public notice in the newspaper is not required given the plan is available on the permittee’s website.

Response #15: The Department agrees a clarification is necessary. The following paragraph has been added to page 27 of the Fact Sheet:

The permittee must have a signed copy of the SWMP available-at the municipal office and on the official municipal web site if there is a municipal website and must make a copy of the SWMP available to the general public and regulatory authorities. The permittee must keep the SWMP current. The permittee must allow the public the opportunity to comment on changes made to the SWMP at a minimum of once per year (1/Year). If there are no changes to the SWMP no opportunity for public comment is necessary. Posting the SWMP on the municipal website or at the municipal office for comment at any time is acceptable to meet the once per year (1/Year) requirement. The municipality does not need to publish a notice in a local newspaper to fulfill this requirement.

APPENDIX I: FINAL MS4GP PERMIT MODIFICATION (11/23/21)



STATE OF MAINE
DEPARTMENT OF
ENVIRONMENTAL PROTECTION



JANET L. MILLS
GOVERNOR

MELANIE LOYZIM
COMMISSIONER

November 23, 2021

RE: Maine Pollutant Discharge Elimination System (MEPDES) Permit MER041000
Maine Waste Discharge License (WDL) W009170-5Y-E-M
Municipal Separate Storm Water Sewer System – General Permit
Final General Permit Modification

Dear Stakeholders:

Enclosed is the final MEPDES General Permit/WDL **modification**. The final permit modification is being issued by the Department to satisfy the appeal of the MS4 permit issued on October 15, 2020.

Any interested person aggrieved by a Department determination made pursuant to applicable regulations, may appeal the decision following the procedures described in the attached DEP FACT SHEET entitled “*Appealing a Commissioner’s Licensing Decision.*”

If you have any questions regarding the matter, please feel free to call me at 287-7693. The Department’s MS4 Stormwater Coordinator in the Bureau of Water Quality and the regional compliance inspectors have been copied on this final permit modification and can be utilized as a resource that can assist you with compliance. Please do not hesitate to contact them with any questions.

Thank you for your efforts to protect and improve the waters of the great state of Maine!

AUGUSTA
17 STATE HOUSE STATION
AUGUSTA, MAINE 04333-0017
(207) 287-7688 FAX: (207) 287-7826

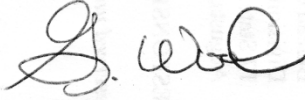
BANGOR
106 HOGAN ROAD, SUITE 6
BANGOR, MAINE 04401
(207) 941-4570 FAX: (207) 941-4584

PORTLAND
312 CANCO ROAD
PORTLAND, MAINE 04103
(207) 822-6300 FAX: (207) 822-6303

PRESQUE ISLE
1235 CENTRAL DRIVE, SKYWAY PARK
PRESQUE ISLE, MAINE 04769
(207) 764-0477 FAX: (207) 760-3143

If you have any questions regarding the matter, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "G. Wood". The signature is fluid and cursive, with the first name "G." and the last name "Wood" clearly distinguishable.

Gregg Wood
Division of Water Quality Management
Bureau of Water Quality

Enc.

cc:

William Hinkel, BEP Analyst
Laura Jensen, AAG
Lori Mitchell, MDEP/CMRO
Damien Houlihan, USEPA
Newton Tedder, USEPA
Nathan Chien, USEPA
Richard Carvalho, USEPA
Alex Rosenberg, USEPA
Stakeholder List



DEP INFORMATION SHEET

Appealing a Department Licensing Decision

Dated: November 2018

Contact: (207) 287-2452

SUMMARY

There are two methods available to an aggrieved person seeking to appeal a licensing decision made by the Department of Environmental Protection's (DEP) Commissioner: (1) an administrative process before the Board of Environmental Protection (Board); or (2) a judicial process before Maine's Superior Court. An aggrieved person seeking review of a licensing decision over which the Board had original jurisdiction may seek judicial review in Maine's Superior Court.

A judicial appeal of final action by the Commissioner or the Board regarding an application for an expedited wind energy development (35-A M.R.S. § 3451(4)) or a general permit for an offshore wind energy demonstration project (38 M.R.S. § 480-HH(1)) or a general permit for a tidal energy demonstration project (38 M.R.S. § 636-A) must be taken to the Supreme Judicial Court sitting as the Law Court.

This information sheet, in conjunction with a review of the statutory and regulatory provisions referred to herein, can help a person to understand his or her rights and obligations in filing an administrative or judicial appeal.

I. ADMINISTRATIVE APPEALS TO THE BOARD

LEGAL REFERENCES

The laws concerning the DEP's *Organization and Powers*, 38 M.R.S. §§ 341-D(4) & 346; the *Maine Administrative Procedure Act*, 5 M.R.S. § 11001; and the DEP's *Rules Concerning the Processing of Applications and Other Administrative Matters* ("Chapter 2"), 06-096 C.M.R. ch. 2.

DEADLINE TO SUBMIT AN APPEAL TO THE BOARD

The Board must receive a written appeal within 30 days of the date on which the Commissioner's decision was filed with the Board. Appeals filed more than 30 calendar days after the date on which the Commissioner's decision was filed with the Board will be dismissed unless notice of the Commissioner's license decision was required to be given to the person filing an appeal (appellant) and the notice was not given as required.

HOW TO SUBMIT AN APPEAL TO THE BOARD

Signed original appeal documents must be sent to: Chair, Board of Environmental Protection, 17 State House Station, Augusta, ME 04333-0017. An appeal may be submitted by fax or e-mail if it contains a scanned original signature. It is recommended that a faxed or e-mailed appeal be followed by the submittal of mailed original paper documents. The complete appeal, including any attachments, must be received at DEP's offices in Augusta on or before 5:00 PM on the due date; materials received after 5:00 pm are not considered received until the following day. The risk of material not being received in a timely manner is on the sender, regardless of the method used. The appellant must also send a copy of the appeal documents to the Commissioner of the DEP; the applicant (if the appellant is not the applicant in the license proceeding at issue); and if a hearing was held on the application, any intervenor in that hearing process. All of the information listed in the next section of this information sheet must be submitted at the time the appeal is filed.

INFORMATION APPEAL PAPERWORK MUST CONTAIN

Appeal materials must contain the following information at the time the appeal is submitted:

1. *Aggrieved Status.* The appeal must explain how the appellant has standing to maintain an appeal. This requires an explanation of how the appellant may suffer a particularized injury as a result of the Commissioner's decision.
2. *The findings, conclusions, or conditions objected to or believed to be in error.* The appeal must identify the specific findings of fact, conclusions regarding compliance with the law, license conditions, or other aspects of the written license decision or of the license review process that the appellant objects to or believes to be in error.
3. *The basis of the objections or challenge.* For the objections identified in Item #2, the appeal must state why the appellant believes that the license decision is incorrect and should be modified or reversed. If possible, the appeal should cite specific evidence in the record or specific licensing requirements that the appellant believes were not properly considered or fully addressed.
4. *The remedy sought.* This can range from reversal of the Commissioner's decision on the license or permit to changes in specific permit conditions.
5. *All the matters to be contested.* The Board will limit its consideration to those matters specifically raised in the written notice of appeal.
6. *Request for hearing.* If the appellant wishes the Board to hold a public hearing on the appeal, a request for public hearing must be filed as part of the notice of appeal, and must include an offer of proof in accordance with Chapter 2. The Board will hear the arguments in favor of and in opposition to a hearing on the appeal and the presentations on the merits of an appeal at a regularly scheduled meeting. If the Board decides to hold a public hearing on an appeal, that hearing will then be scheduled for a later date.
7. *New or additional evidence to be offered.* If an appellant wants to provide evidence not previously provided to DEP staff during the DEP's review of the application, the request and the proposed evidence must be submitted with the appeal. The Board may allow new or additional evidence, referred to as supplemental evidence, to be considered in an appeal only under very limited circumstances. The proposed evidence must be relevant and material, and (a) the person seeking to add information to the record must show due diligence in bringing the evidence to the DEP's attention at the earliest possible time in the licensing process; or (b) the evidence itself must be newly discovered and therefore unable to have been presented earlier in the process. Specific requirements for supplemental evidence are found in Chapter 2 § 24.

OTHER CONSIDERATIONS IN APPEALING A DECISION TO THE BOARD

1. *Be familiar with all relevant material in the DEP record.* A license application file is public information, subject to any applicable statutory exceptions, and is made easily accessible by the DEP. Upon request, the DEP will make application materials available during normal working hours, provide space to review the file, and provide an opportunity for photocopying materials. There is a charge for copies or copying services.
2. *Be familiar with the regulations and laws under which the application was processed, and the procedural rules governing your appeal.* DEP staff will provide this information on request and answer general questions regarding the appeal process.
3. *The filing of an appeal does not operate as a stay to any decision.* If a license has been granted and it has been appealed, the license normally remains in effect pending the processing of the appeal. Unless a stay of the decision is requested and granted, a license holder may proceed with a project pending the outcome of an appeal, but the license holder runs the risk of the decision being reversed or modified as a result of the appeal.

WHAT TO EXPECT ONCE YOU FILE A TIMELY APPEAL WITH THE BOARD

The Board will formally acknowledge receipt of an appeal, and will provide the name of the DEP project manager assigned to the specific appeal. The notice of appeal, any materials accepted by the Board Chair as supplementary evidence, any materials submitted in response to the appeal, and relevant excerpts from the DEP's application review file will be sent to Board members with a recommended decision from DEP staff. The appellant, the license holder if different from the appellant, and any interested persons are notified in advance of the date set for Board consideration of an appeal or request for public hearing. The appellant and the license holder will have an opportunity to address the Board at the Board meeting. With or without holding a public hearing, the Board may affirm, amend, or reverse a Commissioner decision or remand the matter to the Commissioner for further proceedings. The Board will notify the appellant, the license holder, and interested persons of its decision.

II. JUDICIAL APPEALS

Maine law generally allows aggrieved persons to appeal final Commissioner or Board licensing decisions to Maine's Superior Court (see 38 M.R.S. § 346(1); 06-096 C.M.R. ch. 2; 5 M.R.S. § 11001; and M.R. Civ. P. 80C). A party's appeal must be filed with the Superior Court within 30 days of receipt of notice of the Board's or the Commissioner's decision. For any other person, an appeal must be filed within 40 days of the date the decision was rendered. An appeal to court of a license decision regarding an expedited wind energy development, a general permit for an offshore wind energy demonstration project, or a general permit for a tidal energy demonstration project may only be taken directly to the Maine Supreme Judicial Court. See 38 M.R.S. § 346(4).

Maine's Administrative Procedure Act, DEP statutes governing a particular matter, and the Maine Rules of Civil Procedure must be consulted for the substantive and procedural details applicable to judicial appeals.

ADDITIONAL INFORMATION

If you have questions or need additional information on the appeal process, for administrative appeals contact the Board's Executive Analyst at (207) 287-2452, or for judicial appeals contact the court clerk's office in which your appeal will be filed.

Note: The DEP provides this INFORMATION SHEET for general guidance only; it is not intended for use as a legal reference. Maine law governs an appellant's rights.

MODIFICATION

General Permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer



STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION
17 STATE HOUSE STATION
AUGUSTA, ME 04333

DEPARTMENT ORDER

IN THE MATTER OF

MUNICIPAL SEPARATE STORM SEWER SYSTEM	)	MAINE POLLUTANT DISCHARGE
GENERAL PERMIT	)	ELIMINATION SYSTEM PERMIT
STATE OF MAINE)	
MER041000	)	MAINE WASTE DISCHARGE LICENSE
W009170-5Y-E-M	)	MODIFICATION
		APPROVAL

Pursuant to the provisions of Federal law Title 33 USC, §1251, and Maine Law 38 M.R.S., Section 414-A et seq., and applicable regulations, the Maine Department of Environmental Protection (Department/DEP) is initiating a modification to Maine Pollutant Discharge Elimination System (MEPDES) General Permit (GP) #MER041000/Maine Waste Discharge License W009170-5Y-C-R. The GP was issued on October 15, 2020 for a five-year term with an effective date of July 1, 2022. With its supportive data, agency review comments and other related materials on file, the Department FINDS THE FOLLOWING FACTS:

1. PROCEDURAL HISTORY

On November 13, 2020, the Friends of Casco Bay (FOCB) filed a timely appeal of the GP with the Maine Board of Environmental Protection (BEP). On June 17, 2021, the BEP took up the appeal by the FOCB at its meeting and issued a Board Order on the appeal on the same date. See Attachment A of the Fact Sheet of this permit modification for a copy of the Board Order - Findings of Fact and Order of Appeal for an in-depth discussion on the appeal and the BEP's decision. The Board Order concluded and ordered as follows:

“In consideration of FOCB’s arguments on appeal, responses from the EPA Region I, ISWG, SMSWG, BASWG and the CLF, information from the Commissioner, and review of applicable regulations, including the Remand Rule, the Board concludes that the Final Permit should be remanded to the Commissioner for further proceedings to modify Part IV.C.5 and Part IV.E of the Final Permit. The Board further concludes that the Response to Comments document accompanying the Final Permit must be modified to specify and give reasoned bases for the effective date of the Final Permit and the forthcoming modifications to Part IV.C.5 and Part IV.E of the Final Permit.

MODIFICATION

General Permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer

1. PROCEDURAL HISTORY (cont'd)

Notwithstanding the Board's decision to remand the Final Permit and Response to Comments document for modification as described above, the Board affirms all other findings of fact and conclusions in the Final Permit and the associated Fact Sheet and Response to Comments document.

Therefore, the Board REMANDS to the Commissioner the Municipal Separate Storm Sewer System General Permit MER041000/W009170-5Y-C-R for further proceedings on only Part IV.C.5 and Part IV.E, and the Response to Comments document in accordance with this Order."

On September 14, 2021 the Department issued a proposed draft permit modification for a formal 30-day public comment period to satisfy the appeal of the MS4 permit issued on October 15, 2020. The proposed draft permit modification inadvertently included Table 10.2 in Appendix F. Appendix F was not intended to establish minimum numeric design standards as Table 10.2 does. The intent of Appendix F is to provide regulated entities with guidance regarding the minimum requirements of the ordinance, in that it must be "at least as stringent as" LID measures and techniques contained in Appendix F. The inclusion of the guidance responds to a concern raised by the municipalities on appeal and provides uniform guidance consistent with the order from the BEP and the Remand Rule. Appendix F was not intended to establish minimum numeric design standards as Table 10.2 does. Therefore, the Department modified Appendix F to remove Table 10.2 in the September 24, 2021 corrected proposed draft permit modification. All other terms and conditions of the proposed draft permit modification issued on September 14, 2021 for a 30-day public comment period remained the same.

2. MODIFICATIONS

Based on the comments received from stakeholders on the September 14, 2021 proposed draft permit modification and the September 24, 2021 corrected proposed draft permit modification (see Section 4 - Response to Comments of the Fact Sheet attached to this permit modification), the language is being modified as follows (with modifications emphasized in italics):

A. Low Impact Development

5. **MCM5 - Post-Construction Stormwater Management in New Development and Redevelopment.**

Each permittee must implement and enforce a program to address post construction stormwater runoff to the *maximum extent practicable* from new development and redevelopment projects that disturb greater than or equal to one acre, including projects less than one acre that are part of a larger common plan of development that discharge into the MS4.

MODIFICATION

General Permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer

2. MODIFICATIONS (cont'd)

- a. The permittee must *implement* strategies which include a combination of structural and/or non-structural BMPs appropriate to prevent or minimize water quality impacts as follows:

On or before September 1, 2022, each permittee must develop a Model LID Ordinance for stormwater management on new and redevelopment sites which establishes performance standards for each of the LID Measures contained in Table 1 of Appendix F. The Model LID ordinance should, at a minimum, refer to Appendix F for guidance.

The Model LID Ordinance shall be submitted to the Maine DEP for review by September 1, 2022. DEP will post the model ordinance for public comments and approve it, with or without modifications, on or before November 1, 2022.

On or before July 1, 2024 each permittee shall adopt an ordinance or regulatory mechanism that is at least as stringent as the required elements of the Model LID Ordinance or incorporate all of its required elements into the permittee's code of ordinances or other enforceable regulatory mechanism.

B. Impaired Waters

To resolve the appeal, Part IV.E is being modified as follows (with modifications emphasized in italics):

E. Discharges To Impaired Waters

1. If the waterbody to which a point source discharge drains is impaired and has an EPA approved total maximum daily load (TMDL), then the SWMP must *propose clear, specific and measurable actions to comply* with the TMDL waste load allocation ("WLA") and any implementation plan. This GP does not authorize a direct discharge that is inconsistent with the WLA of an approved TMDL. EPA approved TMDLs prior to the issuance date of this permit, can be found at <https://www.epa.gov/tmdl/region-1-approved-tmdls-state#tmdl-me>. This GP does not authorize a new or increased discharge of storm water to an impaired waterbody that contributes to the impairment at a detectable level.

MODIFICATION

General Permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer

C. Response to Comments

Part 4(B) on page 4 of the June 17, 2021 BEP Order on Appeal, the BEP stated that “the Response to Comments document accompanying the Final Permit did not comply with 40 C.F.R. § 124.17(a)(1) because it did not specify and give reasoned bases for the three changes from the Final Draft to the final MS4 General Permit.” In accordance with the BEP Order on Appeal, the Response to Comments document accompanying this permit modification will comply with 40 C.F.R. § 124.17(a)(1). Additionally, the Fact Sheet accompanying this modification sets out the Department’s reasoning for these three changes that occurred between the final draft GP dated June 23, 2020 and the final permit dated October 15, 2020 that were challenged in the FOCB appeal.

MODIFICATION

General Permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer

CONCLUSIONS

Based on the findings in this modification, the Department makes the following CONCLUSIONS:

1. The discharge(s) covered under this GP, either by itself or in combination with other discharges, will not lower the quality of any classified body of water below such classification.
2. The discharge(s) covered under this GP, either by itself or in combination with other discharges, will not lower the quality of any unclassified body of water below the classification which the Department expects to adopt in accordance with state law.
3. The provisions of the State's antidegradation policy, Maine law, 38 M.R.S. § 464(4)(F), will be met in that:
 - (a) Existing in-stream water uses and the level of water quality necessary to protect and maintain those existing uses will be maintained and protected,
 - (b) Where high quality waters of the State constitute an outstanding natural resource, that water quality will be maintained and protected/
 - (c) Where the standards of classification of the receiving water body are not met, the discharge will not cause or contribute to the failure of the water body to meet the standards of classification,
 - (d) Where the actual quality of any classified receiving water body exceeds the minimum standards of the next highest classification that higher water quality will be maintained and protected; and
 - (e) Where a discharge will result in lowering the existing water quality of any water body, the Department has made the finding, following opportunity for public participation, that this action is necessary to achieve important economic or social benefits to the State.
4. The discharge(s) covered under this GP will be subject to effluent limitations that require application of best practicable treatment as defined in 38 M.R.S. § 414-A(1)(D).

MODIFICATION

General Permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer


ACTION

Based on the findings and conclusions as stated above, the Department APPROVES the modification of #MER041000/W009170-5Y-C-R, *General Permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer Systems*, issued by the Department on October 15, 2020, SUBJECT TO THE ATTACHED CONDITIONS, including:

1. The terms and conditions included in Part I-IV of #MER041000/W009170-5Y-C-R, *General Permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer Systems*, issued by the Department on October 15, 2020, not modified by this permit modification remain in effect and enforceable.
2. *Maine Pollutant Discharge Elimination System Permit Standard Conditions Applicable To All Permits*, revised July 1, 2002, attached to #MER041000/W009170-5Y-C-R, *General Permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer Systems*, issued by the Department on October 15, 2020.
3. This permit modification becomes effective on July 1, 2022 and expires at midnight five (5) years after that date. If the GP is to be renewed, it will remain in force until the Department takes final action on the renewal.

DONE AND DATED AT AUGUSTA, MAINE, THIS 23 DAY OF November 2021.

COMMISSIONER OF ENVIRONMENTAL PROTECTION

BY: 
for Melanie Loyzim, Commissioner

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of Public Notice September 14, 2021.

FILED
NOV 23, 2021
State of Maine Board of Environmental Protection

This Order prepared by GREGG WOOD, BUREAU OF WATER QUALITY

MS4 Final Permit Modification

11/23/2021

APPENDIX F

Guidance

Low Impact Development (LID)

LID is a process of developing land that mimics the natural hydrologic regime. LID begins at the design phase of a new development or redevelopment, incorporating planning techniques that minimize site clearing and impervious surfaces to reduce impact and stormwater runoff generated from the site. By reducing the volume of water leaving a site, the pollutant loading is also reduced. Other techniques that will reduce the volume and peak flow rates of runoff from the development are then incorporated throughout the site. LID is an effective tool that reduces pollutant loading, thermal impacts, stream flows, and minimizes stream channel erosion.

LID is not a rigid set of standards, or a one size fits all approach and has many benefits:

- ✓ **Benefits to the Developer:** The owner and developer will see reduced costs for land clearing and grading, infrastructure, and stormwater management while seeing an increased aesthetic value in the development.
- ✓ **Benefits to the Municipality:** The local government and community will benefit from reduced infrastructure maintenance costs and reductions in property damage from flooding, while having more green space, protected natural resources, and increased water quality.
- ✓ **Benefits to the Environment:** The hydrologic cycle is preserved; streams are less prone to erosion, and stream flows are maintained which benefits fish and wildlife.

LID goals and objectives shall be incorporated into the site planning process as early as possible. The following steps serve as a guideline to use in the planning stage:

- ✓ Identify and preserve areas that will affect the hydrology of the site. Features that should be protected are sensitive areas and natural resources including down gradient waterways.
- ✓ Minimize site disturbance and impervious areas with an alternative layout for the development within the constraints of local development criteria.
- ✓ Minimize the impervious surfaces directly connected to drainage conveyance systems to reduce the time of concentration.
- ✓ Break the site into smaller drainage areas that can be handled using basic LID techniques.

PLANNING FOR LID

Minimize Site Clearing: Development typically involves new impervious surfaces such as roads and buildings, and landscaped areas for lawns. Avoid developing soils with high permeability where possible. Protect areas that are sensitive to disturbance and that will sustain groundwater recharge and reduce runoff. For example, developing a vegetated, tight clay soil area will have less impact on stormwater runoff than developing a forested area on sandy soils. Once the sensitive areas have been identified, the layout of the development should be aligned with the conservation of these areas.

Minimize Impervious Areas: The traffic distribution network (roadways, sidewalks, driveways, and parking areas) is generally the greatest source of site imperviousness and should be the focus for reducing impervious area. The following techniques may be considered, where appropriate and permitted by local land use codes and/or ordinances:

Alternative Roadway Layout: Alternative roadway layouts can be used to reduce total pavement, while allowing for the same amount of development. Cluster development, in accordance with and as allowed by local ordinances can decrease imperviousness.

- ✓ *Narrow Road Sections:* The width of pavement can be reduced by including the primary driving surface, a pervious base for the shoulders, and ditch drainage swale in place of curb and gutter, as deemed appropriate. Use of this technique should be evaluated in accordance with site-specific conditions.
- ✓ *Sidewalks:* Sidewalks can be reduced to one side of the road or eliminated. The use of pervious materials can reduce runoff.
- ✓ *On-Street Parking:* Reduction to one side or elimination of on-street parking has significant potential to reduce overall site imperviousness. On-street parking may be a desirable practice in highly urbanized areas to reduce on-site disturbance.
- ✓ *Rooftops:* The number and size of buildings dictates the impervious area associated with rooftops. Vertical construction and/or the use of green roofs can minimize imperviousness.
- ✓ *Driveways:* Minimizing paved or impervious driveway area can be accomplished through the design of narrower driveways or by reducing the length of driveways. Shared driveways can also reduce imperviousness, where appropriate. In addition, the use of pervious materials can minimize runoff.

Minimize Connected Impervious Areas: The impacts from impervious surfaces can be minimized by disconnecting these areas from piped drainage networks and by managing runoff at the source.

- ✓ Paved driveways and roads can be directed to stabilized, vegetated areas.
- ✓ Flows from large, paved surfaces can be broken up to facilitate on-site management of smaller flows. Breaking flows up allows the flows to be directed to vegetation as sheet flow.
- ✓ LID techniques can be dispersed throughout the development, such as at individual houselots to obtain the most benefit. They can be incorporated into the landscaping of the property to provide a natural treatment system.

Maintain Time of Concentration: When development occurs, the time of concentration (T_c) is often shortened due to the impervious area, causing greater flows over a shorter period of time. LID practices can maintain the pre-development T_c by:

- ✓ Minimizing land disturbance,
- ✓ Detaining flows on site,
- ✓ Increasing the flow length,
- ✓ Increasing the surface roughness of the flow path,
- ✓ Creating flatter slopes, and/or
- ✓ Disconnecting impervious areas, which will decrease their travel rates.

Manage Stormwater at the Source: The impact from a development can be mitigated at the source by reestablishing a more natural hydrologic cycle that sustains a clean stream base flow. Typically, the most economical and simplistic stormwater management strategy is achieved by controlling runoff at the source with a variety of small treatment structures that will result in the reduction of stormwater discharge and more flexibility in the site design.

Soil Considerations:

Minimize Compaction: Compaction reduces the natural infiltrating ability of soils; thus, avoiding disturbance by heavy equipment can benefit infiltration. Designing development to situate impervious surfaces and development disturbances on the more impermeable soils of a site can leave more pervious soils to continue infiltrating runoff.

Increase Organic Content of Soils: When constructing many of the LID vegetated techniques, such as filtration Best Management Practices (BMP), a quality topsoil can optimize pollutant removal. In this case, the soil bed should consist of organic content as described in the relevant filtration BMP. This highly organic layer traps contaminants, absorbs more runoff and provides a medium for biological activity that helps break down pollutants. Planting soil provides a healthy growing medium for vegetation by encouraging strong root growth. In addition, microbes found in healthy soils transform nutrients for plant growth. Compost or other organic amendments can be added at the site preparation level, typically by the truckload. It is also available for little or no cost from many community leaf compost programs. For rain gardens and bioretention areas, organic content can also be valuable in absorbing and retaining moisture for plant life, filtering pollutants, and providing an active layer for microorganisms to reside and reproduce. A healthy microorganism population is key to the decomposition of many pollutants, whether in the home rain garden or in a parking lot.

- Avoid Pesticides/Herbicides: Healthy soil is alive with microorganisms that decompose and inactivate pollutants, but these may be killed by excessive chemicals. Although the soil microorganisms are not typically the target of these chemicals, many of them may fall victim to the use of pesticides. Additionally, insect species that prey on pests are also killed by pesticides. Since the predatory species tend to have slower reproduction than the pest species, a natural defense against insect pests may be lost.

LID TECHNIQUES

Many LID techniques rely on infiltration, retention, and evapotranspiration of stormwater to reduce runoff. When infiltration is not a possibility, the initial planning techniques described above should be the primary focus, followed by the use of small disconnected underdrained systems that rely on soil and vegetation to retain runoff. Examples of LID measures and techniques are shown on Table 1.

- Filters (Bioretention Cells and Rain gardens): Bioretention areas or rain gardens are built with a specific soil filter media (containing organic material and planted with vegetation that can handle wet and dry conditions) that will reduce the volume of runoff through absorption and evapotranspiration. A slight depression allows the ponding of stormwater as it filtrates through the soil media and into the groundwater or to an underdrain for surface discharge.
- Infiltration: Infiltration reduces runoff and mimics the natural hydrologic cycle by redirecting water into the ground rather than to a piped system. Runoff can be reduced by using smaller infiltration basins that fit into the natural landscape.
- Buffers: Vegetated buffers use soils and vegetation to remove pollutants from stormwater. Buffers can be used as a stormwater BMP for small developments by minimizing the amount of runoff generated through infiltration and evapotranspiration. Filter strips are typically used as pretreatment devices for bioretention cells and other infiltration practices.
- Collection Cisterns: In a commercial setting, the collection of rain runoff can be put to use in the building to off-set the cost of water supply. Cisterns can be located either above or below ground, and in out-of-the-way places that can easily be incorporated into a site design. Commercially available systems are typically constructed of high-density plastics and can include pumps and filtration devices. Rain barrels are inexpensive, effective, and easily maintainable when used in residential applications to capture roof runoff for later watering of lawns and gardens.
- Vegetated Rooftops: Vegetated rooftops provide three primary benefits: attenuation of stormwater runoff and peak flows, reductions of the heat island effects with an increase in building insulation, and a longer life expectancy for the base roof material. The stormwater benefit is that the smaller more common storm events are absorbed, which minimizes peak runoff and the net volume of runoff typically produced by roofs.

- ✓ Porous Pavement: Porous pavement is a permeable surface (pervious asphalt, concrete or pavers), a granular base, and subbase materials which allow the penetration of runoff into the underlying soils. The efficiency of pavement alternative systems depends on whether the pavement is designed to store and infiltrate most runoff, or only limited volumes of runoff (e.g., "first-flush") with the remainder discharged to a storm drainage system or overland flow. Maintenance is essential for long-term use and effectiveness. Pavement alternatives vary in load bearing capacities but generally can be designed for low traffic areas such as sidewalks, parking lots, overflow parking and residential roads. It is important to choose a material appropriate for the desired use (light, moderate or heavy use).
- ✓ Other Techniques: LID is about creativity. Multiple practices can be implemented and adapted into various sites and situations. However, they are mostly dependent upon the layout of the development and the disconnection of its individual elements.

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Table 1 – LID Measures and Techniques*

LID Measure	Example Technique	Design
Minimize site clearing	<ul style="list-style-type: none"> • Promote compact development on the site • Place parking underneath or inside structures • Avoid developing in areas with high-permeable soils to retain natural infiltration • Align development layout with conservation of sensitive areas 	
Protect natural drainage system	<ul style="list-style-type: none"> ✓ Maintain a minimum 25 foot buffer on all natural water resources including intermittent channels ✓ Do not divert stormwater from its natural sub-watershed 	
Minimize the decrease in time of concentration	<ul style="list-style-type: none"> ✓ Break up or disconnect the flow of runoff over impervious surfaces ✓ Sheet flow over pavement that is less than 100 feet 	
Minimize impervious area or the effect of impervious area	<ul style="list-style-type: none"> ✓ Build vertically with multi story buildings and parking garages ✓ More than 25% of pavement area (overflow) in pervious pavement. All pedestrian walkways are pavers or pervious pavement. Runoff from paved surfaces should be directed to stabilized, vegetated areas ✓ Disperse LID techniques throughout development and incorporate into the landscaping ✓ Infiltrate as much roof runoff as standards allow <p>Minimize the use of paved areas (sidewalks, driveways and streets)</p> <p>Minimize the use of hardscaped areas.</p>	<p>Design practices developed at the planning phase that will help mitigate environmental impacts. Ideally, these are cost-effective and environmentally friendly.</p>

Table 1 – LID Measures and Techniques*		
LID Measure	Example Technique	Design
Minimize soil compaction	<ul style="list-style-type: none"> · Minimize the construction window and target the development area · Rototilling all areas to be revegetated 	<p>Design practices developed at the planning phase that will help mitigate environmental impacts. Ideally, these are cost-effective and environmentally friendly.</p>
Minimize lawns and maximize landscaping that encourages runoff retention	<ul style="list-style-type: none"> · Low maintenance Maine native plants · No invasive plants · Limit the use of pesticides and biocides · Fertilizer application only during initial planting and repair of damaged areas. 	
Provide vegetated open-channel conveyance systems	<ul style="list-style-type: none"> · Evaluate road gutters and roof gutters to determine effective means to direct runoff to treatment BMPs · Level spreaders to buffers where possible · Underdrained swales 	
Rainwater is stored for later reuse for the building or landscape	Rain Collection Cisterns	
Stormwater Quality Treatment and Retention Requirements	Buffers	
	Infiltration (basins, trenches, dry wells, etc.)	
	Underdrained grass filters	
	Underdrained filter bioretention	
	Roofline filtration	
	Roof Greening	
	Pervious Pavement	

*LID measures, example techniques and design practices in this table are intended to be illustrative and shall be taken into consideration where applicable, practicable and allowable pursuant to applicable land use planning and development requirements.

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General Permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer



STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION
17 STATE HOUSE STATION
AUGUSTA, ME 04333

PERMIT MODIFICATION

FACT SHEET

1. PROCEDURAL HISTORY

On November 13, 2020, the Friends of Casco Bay (FOCB) filed a timely appeal of the GP with the Maine Board on Environmental Protection (BEP). On June 17, 2021, the BEP took up the appeal by the FOCB at its meeting and issued a Board Order on the appeal on the same date. See Attachment A of this Fact Sheet for a copy of the Board Order - Findings of Fact and Order of Appeal for an in-depth discussion on the appeal and the BEP's decision. The Board Order concluded and ordered as follows:

“In consideration of FOCB’s arguments on appeal, responses from the EPA Region I, ISWG, SMSWG, BASWG and the CLF, information from the Commissioner, and review of applicable regulations, including the Remand Rule, the Board concludes that the Final Permit should be remanded to the Commissioner for further proceedings to modify Part IV.C.5 and Part IV.E of the Final Permit. The Board further concludes that the Response to Comments document accompanying the Final Permit must be modified to specify and give reasoned bases for the effective date of the Final Permit and the forthcoming modifications to Part IV.C.5 and Part IV.E of the Final Permit.

Notwithstanding the Board's decision to remand the Final Permit and Response to Comments document for modification as described above, the Board affirms all other findings of fact and conclusions in the Final Permit and the associated Fact Sheet and Response to Comments document.

Therefore, the Board REMANDS to the Commissioner the Municipal Separate Storm Sewer System General Permit MER041000/W009170-5Y-C-R for further proceedings on only Part IV.C.5 and Part IV.E, and the Response to Comments document in accordance with this Order.”

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General Permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer

2. MODIFICATION SUMMARY

Part 4(B) on page 4 of the June 17, 2021 BEP Order on Appeal, the BEP stated that “the Response to Comments document accompanying the Final Permit did not comply with 40 C.F.R. § 124.17(a)(1) because it did not specify and give reasoned bases for the three changes from the Final Draft to the final MS4 General Permit.” In accordance with the BEP Order on Appeal, the Response to Comments document accompanying this permit modification will comply with 40 C.F.R. § 124.17(a)(1). Additionally, the Fact Sheet accompanying this permit modification sets out the Department’s reasoning for these three changes that occurred between the final draft GP dated June 23, 2020 and the final permit dated October 15, 2020 that were challenged in the FOCB appeal.

On September 14, 2021 the Department issued a proposed draft permit modification for a formal 30-day public comment period to satisfy the appeal of the MS4 permit issued on October 15, 2020. The proposed draft permit modification inadvertently included Table 10.2 in Appendix F.

The intent of Appendix F was to provide regulated entities with guidance regarding the minimum requirements of the ordinance, in that it must be “at least as stringent as” LID measures and techniques contained in Appendix F. The inclusion of the guidance document responded to a concern raised by the municipalities on appeal and provided uniform guidance consistent with the order from the BEP and the Remand Rule. Appendix F was not intended to establish minimum numeric design standards as Table 10.2 set forth. Therefore, the Department modified Appendix F to remove Table 10.2 in the September 24, 2021 corrected proposed draft permit modification. All other terms and conditions of the proposed draft permit modification issued on September 14, 2021 for a 30-day public comment period remained the same.

A. Low Impact Development

In the November 13, 2021 appeal, the Appellant argued that the LID requirement must be restored to the Final Permit because the Remand Rule requires MCM5 to contain clear, specific, and measurable terms designed to reduce pollution from new construction to the maximum extent practicable, and LID “is the very means by which new development can be designed and stormwater treated before it enters receiving waters.” ISWG, SMSWG, and BASWG responded that the Remand Rule does not mandate the use of LID and that LID is not the only way to reduce stormwater runoff from new development to the maximum extent practicable. ISWG, SMSWG, and BASWG further stated that Department rule Chapter 500, *Stormwater Management*, already mandates the use of LID for developments that disturb one acre or more of land. They argued a statewide rule mandating LID provides more consistency than a patchwork of municipal ordinances that could be created by including the LID term in MCM5 of the MS4 General Permit. ISWG and SMSWG also submitted supplemental evidence suggesting that the Department will be amending Chapter 500, although the emails do not reveal a timeline for this rulemaking or details of how the rule might be amended.

FACT SHEET

General Permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer

2. MODIFICATION SUMMARY (cont'd)

In its comments on the June 23, 2020 Draft Permit and the October 15, 2020 Final Permit, EPA Region I stated that this part of MCM5 did not contain clear, specific, and measurable terms as required by the Remand Rule. EPA further commented that the Department could cure this defect by (1) restoring the LID term that appeared in the Final Draft, (2) referencing Chapter 500 in the permit, or (3) requiring each MS4 permittee to submit how it plans to regulate new development and redevelopment and create clear, specific, and measurable requirements in the second step of the two-step permitting process.

The Response to Comments section of the October 15, 2020 Final Permit should have addressed the lack of clear, specific and measurable terms placed into the Final Permit. At the time, the Department accepted ISWG's, SMSWG's and BASWG's position that LID is not required by the Remand Rule and the Final Permit condition stated "The permittee must implement a procedure for notifying site developers to consider Low Impact Development techniques" was sufficient. This explanation should have been included in the Response to Comments section of the Final Permit.

Applicable sections of Part IV.C.5 of the Final Permit issued by the Department on October 15, 2020 states in relevant part:

5. MCM5 - Post-Construction Stormwater Management in New Development and Redevelopment.

Each permittee must implement and enforce a program to address post construction stormwater runoff from new development and redevelopment projects that disturb greater than or equal to one acre, including projects less than one acre that are part of a larger common plan of development or sale, that discharge into the MS4.

- a. The permittee must promote strategies which include a combination of structural and non-structural BMPs appropriate to prevent or minimize water quality impacts.
 - i. The permittee must implement a procedure for notifying site developers to consider Low Impact Development techniques.

In paragraph #4 of section 4(D) on page 6 of the June 17, 2021 BEP Order on Appeal, the BEP stated in relevant part:

"... the Board finds that, although LID best management practices (BMPs) are not specifically required by the Remand Rule or Department regulations (Chapter 500), incorporating clear, specific, and measurable LID BMPs into the permit would satisfy the Remand Rule and is also reasonable and appropriate given that the Department has historically endorsed the use of these BMPs in site development approvals."

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General Permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer

2. MODIFICATION SUMMARY (cont'd)

Pursuant to the BEP Order on Appeal, the Department is modifying the language in Part IV.C.5.a.i to be consistent with the Remand Rule, 40 C.F.R. §122.34.b.5 which states in relevant part:

“At a minimum, the permit must require the permittee to;

- A. Develop and implement strategies which include a combination of structural and non-structural best management practices (BMPs) appropriate for the community;
- B. Use an ordinance or other regulatory mechanism to address post-construction runoff from new development and redevelopment projects to the extent allowable under State, federal or local law.”

The U.S. Environmental Protection Agency (USEPA) recently issued the small MS4 permits for the states of Massachusetts and New Hampshire as those states have not been granted the authority to administer the National Pollutant Discharge Elimination System (NPDES) permit programs. Under MCM5 of both permits, the USEPA required LID site planning and design strategies be used to the maximum extent practicable and gave the permittees a two-year schedule of compliance beginning upon the effective date of the permit, to develop or modify an ordinance or other regulatory mechanism.

06-096 Code of Maine Regulations (CMR) Chapter 523.7 states in relevant part, "The permit may, when appropriate, specify a schedule of compliance leading to compliance with CWA and regulations."

During the June 17, 2021 BEP meeting on the appeal, permittees argued that developing or modifying local ordinances or a regulatory mechanism to require LID BMPs is a lengthy process and will likely not be able to be completed on or before the effective date of the permit, July 1, 2022. Therefore, to be consistent with recently issued small MS4 permits for the states of New Hampshire and Massachusetts, the September 14, 2021 proposed draft permit modification and September 24, 2021 corrected permit modification established a two-year schedule of compliance for permittees to develop or modify local ordinances or a regulatory mechanism to require LID BMPs for post construction stormwater management in new development and redevelopment. Municipal Separate Storm Sewer System General Permit MER041000/W009170-5Y-C-R, issued by the Department on October 15, 2020 was proposed to be modified as follows (with modifications emphasized in italics):

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General Permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer

2. MODIFICATIONS (cont'd)

5. MCM5 - Post-Construction Stormwater Management in New Development and Redevelopment.

Each permittee must implement and enforce a program to address post construction stormwater runoff from new development and redevelopment projects that disturb greater than or equal to one acre, including projects less than one acre that are part of a larger common plan of development that discharge into the MS4.

- a. The permittee must *implement* strategies which include a combination of structural and/or non-structural BMPs appropriate to prevent or minimize water quality impacts.
 - i. *On or before July 1, 2024, permittees must develop or update an enforceable ordinance or other regulatory mechanism to require that LID techniques be used to the maximum extent practicable for stormwater management on new and redevelopment sites. The ordinance or regulatory mechanism must be at least as stringent as the LID techniques found in Appendix F of this permit, unless such techniques are infeasible on site.*

During the period September 14, 2021 – October 25, 2021, the Department made the permit modifications available for a 30-day public comment period. The Department received comments from the Friends of Casco Bay (FOCB), the U.S. Environmental Protection Agency (USEPA), the City of Lewiston (Lewiston), the Interlocal Stormwater Working Group (ISWG), Southern Maine Stormwater Working Group (SMSWG), and Bangor Area Stormwater working Group (BASWG). See Section 4, Response To Comments, of this Fact Sheet for the responses to substantive comments received. As a result of the comments received, the final language for MCM5 is as follows:

5. MCM5 - Post-Construction Stormwater Management in New Development and Redevelopment.

Each permittee must implement and enforce a program to address post construction stormwater runoff to the *maximum extent practicable* from new development and redevelopment projects that disturb greater than or equal to one acre, including projects less than one acre that are part of a larger common plan of development that discharge into the MS4.

- a. The permittee must *implement* strategies which include a combination of structural and/or non-structural BMPs appropriate to prevent or minimize water quality impacts as follows:

On or before September 1, 2022, each permittee must develop a Model LID Ordinance for stormwater management on new and redevelopment sites which establishes performance standards for each of the LID Measures contained in Table 1 of Appendix F. The Model LID ordinance should, at a minimum, refer to Appendix F for guidance.

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General Permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer

2. MODIFICATIONS (cont'd)

The Model LID Ordinance shall be submitted to the Maine DEP for review by September 1, 2022. DEP will post the model ordinance for public comments and approve it, with or without modifications, on or before November 1, 2022.

On or before July 1, 2024 each permittee shall adopt an ordinance or regulatory mechanism that is at least as stringent as the required elements of the Model LID Ordinance or incorporate all of its required elements into the permittee's code of ordinances or other enforceable regulatory mechanism.

B. Impaired Waters

The provision for Pollution Prevention/Good Housekeeping for Municipal Operations (MCM 6) in the June 23, 2020 Final Draft provided that, if an MS4 discharges to impaired waters for which EPA has approved a TMDL, its SWMP "must propose clear, specific and measurable actions to comply with the TMDL waste load allocation, and any implementation plan." Final Draft, Part IV.E.1, p. 51. The October 15, 2020 Final Permit omits the words "clear, specific and measurable." Final Permit, Part IV.E.1, p. 51. Instead, the Final Permit required a permittee that discharges to an impaired water with an EPA approved TMDL to "address compliance" with the TMDL, the waste load allocation, and any implementation plan in its SWMP.

The Appellant states that this change removes the requirement to propose BMPs for discharges to impaired waters other than to urban impaired streams, for which permittees are required to propose and fully implement at least three structural or non-structural BMPs. FOCB argues that the change in language between the Final Draft and Final Permit fails to advise permittees of how they must address compliance with TMDL waste load allocations, and that it is insufficient to address this issue in the second step of the MS4 permitting process. ISWG and SMSWG responded that the Final Permit satisfies the Remand Rule because it includes clear, specific, and measurable actions to address stormwater runoff to impaired waters. Specifically, ISWG and SMSWG point to the following actions required by the Final Permit: (1) development of three BMPs for urban impaired streams, which account for most of the MS4 discharges to impaired waters, *see* Final Permit, Part IV.3, p. 26; (2) implementation of illicit discharge detection and elimination plans, *see* Final Permit, Part IV.E, p. 52; and (3) Department review and approval of SWMPs that include BMPs, *see* Final Permit, Part IV.A- B, pp. 20-22. They note that nothing in the Final Permit authorizes discharges to impaired waters that are inconsistent with a TMDL waste load allocation. EPA Region I and BASWG did not comment on this change, although BASWG indicated its general support for the arguments made by ISWG and SMSWG.

The Response to Comments section of the October 15, 2020 Final Permit should have addressed the language change from the June 23, 2020 Final Draft permit. At the time, the Department agreed with ISWG and the SWSWG that other provisions within the Final Permit were sufficient to address discharges impaired waterbodies and that including the terms clear, specific, and measurable actions in the paragraph may have been interpreted as additional BMPs above and beyond what was already included in other terms and conditions of the permit. This explanation should have been included in the Response to Comments section of the Final Permit.

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General Permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer

2. MODIFICATION SUMMARY (cont'd)

Applicable sections of Part IV.E. of the final permit issued by the Department on October 15, 2020, states in relevant part as follows:

E. Discharges To Impaired Waters

1. If the waterbody to which a point source discharge drains is impaired and has an EPA approved total maximum daily load (TMDL), then the SWMP must address compliance with the TMDL waste load allocation ("WLA") and any implementation plan. This GP does not authorize a direct discharge that is inconsistent with the WLA of an approved TMDL. EPA approved TMDLs prior to the issuance date of this permit, can be found at <https://www.epa.gov/tmdl/region-1-approved-tmdls-state#tmdl-me>. This GP does not authorize a new or increased discharge of storm water to an impaired waterbody that contributes to the impairment at a detectable level.

In paragraph #1 of section 4(E) on page 8 of the June 17, 2021 BEP Order on Appeal, the BEP stated in relevant part:

"Having considered these arguments and responses, the Board finds that actions to be taken by the permittee to address compliance with TMDL waste load allocations must be clear, specific and measurable to comply with the Remand Rule. Incorporating the words 'clear, specific, and measurable' into Part IV. E.1 of the Final Permit as FOCB requests is therefore reasonable and appropriate."

Therefore, Municipal Separate Storm Sewer System General Permit MER041000/W009170-5Y-C-R, issued by the Department on October 15, 2020 is being modified as follows (with modifications emphasized in italics):

E. Discharges To Impaired Waters

1. If the waterbody to which a point source discharge drains is impaired and has an EPA approved Total maximum daily load (TMDL), then the SWMP must *propose clear, specific and measurable actions to comply* with the TMDL waste load allocation ("WLA") and any implementation plan. This GP does not authorize a direct discharge that is inconsistent with the WLA of an approved TMDL. EPA approved TMDLs prior to the issuance date of this permit, can be found at <https://www.epa.gov/tmdl/region-1-approved-tmdls-state#tmdl-me>. This GP does not authorize a new or increased discharge of storm water to an impaired waterbody that contributes to the impairment at a detectable level.

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General Permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer

2. MODIFICATION SUMMARY (cont'd)

C. Term of the permit

The June 23, 2020, Final Draft set an effective date of September 1, 2021, for the general permit. Final Draft, Part LB.I, p. 5. The Final Permit sets an effective date of July 1, 2022. Final Permit, Part LB.I p. 5. The Appellant argues that the Board must restore the effective date that appeared in the Final Draft in the Final Permit because the extended effective date "fails to meet the tenets of the Remand Rule and reduce stormwater pollution to the [maximum extent practicable]." ISWG and SMSWG responded that the Remand Rule does not specify what the effective date of the new MS4 General Permit must be and that the Department may use its best professional judgment in setting the effective date.

The second step of the MS4 general permitting process requires the Department to review NOIs and SWMPs submitted by thirty regulated entities and issue final permittee-specific orders for those entities. Although the Department has temporarily reallocated resources to assist in the reviews and issuance of orders necessary for coverage under the MS4 General Permit, the Department would nevertheless be unable to complete these reviews and issue these orders by the effective date of September 1, 2021, that appeared in the Final Draft. This would mean that some regulated entities would not have coverage under the MS4 General Permit by that effective date. Therefore, shortly before issuing the Final Permit, the Department reevaluated the permitting timeline and concluded that an effective date of July 1, 2022, was the earliest possible effective date that the Department could set for the MS4 General Permit. Although the change was not identified in the Response to Comments document, Department staff informed FOCB of this change before issuing the final permit. Regardless, the October 15, 2020 should have formally responded to the comment submitted by the Appellant.

The June 17, 2021 BEP Order of Appeal states "Based on the arguments of the participants and the information provided by the Commissioner, the Board finds that the effective date that appears in the Final Permit is reasonable and necessary and not prohibited by the Remand Rule. The Department would be unable to complete the second step of the MS4 permitting process by the effective date of September 1, 2021, that appeared in the Final Draft. In contrast, the effective date of July 1, 2022, provides the Department with the time necessary to properly review the required NOIs and SWMPs and issue permittee-specific orders in the second step of the MS4 permitting process. The effective date in the Final Permit is both reasonable under the circumstances and within the Commissioner's discretion. The Board is satisfied that the Remand Rule does not mandate a particular effective date and that the Commissioner and Department staff have used their best judgment in setting the earliest possible effective date for the Final Permit. Accordingly, the Board affirms that portion of the Commissioner's decision."

FACT SHEET

General Permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer

3. DEPARTMENT CONTACTS

Additional information concerning this permitting action may be obtained from, and written comments sent to:

Gregg Wood
Division of Water Quality Management
Bureau of Water Quality
Department of Environmental Protection
17 State House Station
Augusta, Maine 04333-0017
e-mail: gregg.wood@maine.gov
Telephone: (207) 287-7693

4. RESPONSE TO COMMENTS

During the period September 14, 2021 – October 25, 2021, the Department made this permit modification to settle the appeal by the Friends of Casco Bay (FOCB) available for a formal 30-day public comment period. The Department received comments from the FOCB, the U.S. Environmental Protection Agency (USEPA), the City of Lewiston (Lewiston), the Interlocal Stormwater Working Group (ISWG), Southern Maine Stormwater Working Group (SMSWG), and Bangor Area Stormwater Working Group (BASWG). Response to substantive comments are as follows:

Comment #1 (City of Lewiston and BASWG): The commenters stated that MCM5 as written in the September 24, 2021 draft permit modification is not consistent with the Maine Administrative Procedures Act (APA; Maine Revised Statute §8001 – 11008) and the National Pollutant Discharge Elimination System (NPDES) MS4 General Permit Remand Rule (Remand Rule). The commenter cited the language “The ordinance must be at least as stringent as the LID techniques found in Attachment F (emphasis added) of the permit unless such techniques are infeasible on site.” The use of the term “at least as stringent as” in the proposed draft modification for the MS4 Permit establishes Attachment F as a regulatory benchmark, performance standard and enforceable requirement that is subject to the requirements of the Maine APA and Remand Rule. Attachment F does not meet the Maine APA requirements because it does not establish specific requirements by which a determination of compliance can be made and therefore lacks the specificity necessary to render it judicially enforceable. The commenter also states Attachment F does not meet the Remand Rule requirements because it provides generalized guidance rather than clear, specific and measurable performance standards. Without clear, specific and measurable performance standards, Attachment F is likely to yield inconsistent interpretations from the permittee, the public and the permitting authority.

Response #1: The first italicized paragraph in the final language in MCM 5 of the permit modification (*On or before September 1, 2022, each permittee must develop a Model LID Ordinance for stormwater management on new and redevelopment sites which establishes performance standards for each of the LID Measures contained in Table 1 of Appendix F. The Model LID ordinance should, at a minimum, refer to Appendix F for guidance.*) requires the permittee to develop an ordinance or regulatory mechanism that establishes specific performance standards taking into consideration the LID measures included in the guidance document in Appendix F.

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General Permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer

4. RESPONSE TO COMMENTS (cont'd)

In addition, the second italicized paragraph in the final language in MCM 5 of the permit modification (*The Model LID Ordinance shall be submitted to the Maine DEP for review by September 1, 2022. DEP will post the model ordinance for public comments and approve it, with or without modifications, on or before November 1, 2022.*) provides individual permittees the flexibility to tailor the LID ordinance or regulatory mechanism to their specific city or town. These requirements are consistent with the Maine APA and Remand Rule as they are requiring the permittees to propose clear, specific and measurable performance standards for their ordinances/regulatory mechanism.

Comment #2 (City of Lewiston and BASWG): The commenters stated the underlined language below in MCM 5 as written in the September 24, 2021 corrected proposed draft permit modification is inconsistent the Maine APA and Remand Rule.

- ii. On or before July 1, 2024, permittees must develop or update an enforceable ordinance or other regulatory mechanism to require that LID techniques be used to the maximum extent practicable (emphasis added) for stormwater management on new and redevelopment sites. The ordinance or regulatory mechanism must be at least as stringent as the LID techniques found in Appendix F of this permit, unless such techniques are infeasible on site. (emphasis added)

The commenters stated the Maine APA and Remand Rule require that the MS4 Permit contain requirements that are clear, specific, and measurable. In the September 24, 2021 corrected proposed draft permit modification, the Department does not establish clear, specific, and measurable criteria by which permittees shall make determinations of maximum practicability or infeasibility. As such, the draft MS4 Permit does not comply with the Maine APA or Remand Rule.

Response #2: See Response #1. The final language in MCM 5 requires the permittee to develop an ordinance or regulatory mechanism that establishes specific performance standards taking into consideration the LID measures included in the guidance document in Appendix F.

During the preliminary drafting of the original MS4 permit that was issued as a final order on October 15, 2020, the Department included a definition for maximum extent practicable. The USEPA objected to the inclusion of the definition because the definition proposed was a “one size fits all” approach. The USEPA suggested deleting the definition and have each permittee propose what is maximum extent practicable and feasible for their particular town or city and not the permitting authority.

Comment #3 (USEPA): The commenter stated “The proposed modification to the Final Permit dated September 14, 2021 included a provision for Post Construction Stormwater Management in New Development and Redevelopment that required permit holders to develop a regulatory mechanism that adopted Low Impact Development (LID) techniques with specific performance standards that are found in the proposed Attachment F to the Final Permit. This approach is consistent with 40 C.F.R. §122.28 and 40 C.F.R. §122.34 and includes clear, specific, and measurable goals for permit holders. However,

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General Permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer

4. RESPONSE TO COMMENTS (cont'd)

the updated modification dated September 24, 2021 removed the performance standards for the LID practices and the proposed modification is no longer consistent with 40 C.F.R. §122.28 or 40 C.F.R. §122.34. To remedy this situation EPA offers the following two potential options:

1. Issue the Final Permit modification consistent with the proposed modification language dated September 14, 2021 including all performance standards for LID measures to be incorporated into each permittee's regulatory mechanism.
2. Update the Final Permit modification language to include a requirement that each permittee submit proposed performance standards to be included in their regulatory mechanism for each LID measure in Attachment F. This can be done as part of each permittee's permit application, consistent with the two-step permitting process found in 40 C.F.R. §122.28, or during the permit term provided MDEP allows for public comment on each permittee's proposed regulatory mechanism for post-construction stormwater management."

Response #3: The language in the final permit modification is remedied by USEPA's suggestion in number two above of their comments. The final language in this permit modification states;

The Model LID Ordinance shall be submitted to the Maine DEP for review by September 1, 2022. DEP will post the model ordinance for public comments and approve it, with or without modifications, on or before November 1, 2022.

Comment #4 (FOCB, CLF): The commenter stated "Overall, Friends of Casco Bay supports the Permit Modification. We do, however, recommend editing the language related to Part IV.C.5 or Minimum Control Measure (MCM) 5. The language requires that each permittee: "*must develop or update an enforceable ordinance or other regulatory mechanism to require that LID techniques be used to the maximum extent practicable for stormwater management on new and redevelopment sites. The ordinance or regulatory mechanism must be at least as stringent as the LID techniques found in Attachment F of this permit, unless such techniques are infeasible on site.*"

This language conforms to the BEP Order but creates two potential issues, one related to who determines the "maximum extent practicable" and the other related to Attachment F. Attachment F should be relabeled as Appendix F to be consistent with the remainder of the Final Permit. It incorporates Chapter 10 of Maine's Stormwater Best Management Practices Manual as guidance. Appendix F includes Table 1 but not Table 2 of Chapter 10. Without Table 2, Appendix F does not include performance standards to set the clear, specific and measurable targets for reducing stormwater pollution from new development and redevelopment.

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General Permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer

4. RESPONSE TO COMMENTS (cont'd)

To address both issues, Friends of Casco Bay requests that DEP revise this section of the Permit Modification as follows:

5. *MCM5 - Post-Construction Stormwater Management in New Development and Redevelopment*

Each permittee must implement and enforce a program to address post construction stormwater runoff to the maximum extent practicable from new development and redevelopment projects that disturb greater than or equal to one acre, including projects less than one acre that are part of a larger common plan of development that discharge into the MS4.

- a. The permittee must implement strategies which include a combination of structural and/or non-structural BMPs appropriate to prevent or minimize water quality impacts, as follows:*

On or before September 1, 2022, each permittee must develop a Model LID Ordinance for stormwater management on new and redevelopment sites which establishes performance standards for each of the LID Measures contained in Table 1 of Appendix F. The Model LID ordinance should, at a minimum, refer to Appendix F for guidance.

The Model LID Ordinance shall be submitted to the Maine DEP for review by September 1, 2022. DEP will post the model ordinance for public comments and approve it, with or without modifications, on or before November 1, 2022.

On or before July 1, 2024 each permittee shall adopt an ordinance or regulatory mechanism that is at least as stringent as the required elements of the Model LID Ordinance or incorporate all of its required elements into the permittee's code of ordinances or other enforceable regulatory mechanism.

In addition, the FOCB stated "We further request that DEP modify Table 1 in Appendix F. See attachment and comments of ISWG/SMSWG."

Response #4: The final permit language proposed by the FOCB and modifications to Appendix F as suggested by ISWG/SMSWG the CLF and the City of Lewiston have been incorporated into the final permit modification.

Comment #5 (BASWG): The commenter stated "The BASWG members plan to participate in the model ordinance development as indicated by Ms. Rabasca. The timeline and proposed process for the model ordinance as summarized by Ms. Rabasca (on behalf of ISWG/SMSWG) will help to streamline the process of adopting ordinances in individual communities. However, some of our members have concerns that coming to an agreement statewide on how that model ordinance should be written may be difficult. Please ensure that the final language allows for individual permittees to craft model ordinance language to be submitted to and approved by Maine DEP."

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General Permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer

4. RESPONSE TO COMMENTS (cont'd)

Response #5 – The final language in the permit modification does allow individual permittees to craft model ordinance language to be submitted and approved by the Department. The final language states in relevant part as follows:

On or before September 1, 2022, each permittee must develop a Model LID Ordinance for stormwater management on new and redevelopment sites which establishes performance standards for each of the LID Measures contained in Table 1 of Appendix F. The Model LID ordinance should, at a minimum, refer to Appendix F for guidance.

The Model LID Ordinance shall be submitted to the Maine DEP for review by September 1, 2022. DEP will post the model ordinance for public comments and approve it, with or without modifications, on or before November 1, 2022.

On or before July 1, 2024 each permittee shall adopt an ordinance or regulatory mechanism that is at least as stringent as the required elements of the Model LID Ordinance or incorporate all of its required elements into the permittee's code of ordinances or other enforceable regulatory mechanism.

ATTACHMENT A

STATE OF MAINE
BOARD OF ENVIRONMENTAL PROTECTION



JANET T. MILLS
GOVERNOR

Mark C. Draper, Chair

William F. Hinkel
Executive Analyst

Ruth Ann Burke
Board Clerk

June 22, 2021

SENT VIA ELECTRONIC MAIL AND U.S. POSTAL MAIL

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RE: Municipal Storm Sewer System General Permit, MS4 General Permit
#MER041000/W009170-5Y-C-R
Appeal by Friends of Casco Bay
Board Findings of Fact and Order on Appeal

Dear Participants:

Attached, please find a copy of the Board of Environmental Protection's June 17, 2021, decision on the appeal of Friends of Casco Bay of Department Order #MER041000/W009170-5Y-C-R, the MS4 General Permit.

Maine law generally allows aggrieved persons to appeal final Board licensing decisions to Maine's Superior Court. A party's appeal must be filed with the Superior Court within 30 days

June 22, 2021

BEP Decision Re: Municipal Storm Sewer System General Permit
MS4 General Permit

of receipt of notice of the Board's decision. For any other person, an appeal must be filed within 40 days of the date the decision was rendered. A copy of the DEP Information Sheet "Appealing a Department Licensing Decision" (November 2018) is enclosed.

If you have any questions regarding the Board's decision, you may contact Board Executive Analyst William Hinkel (bill.hinkel@maine.gov or 207-314-1458) or Assistant Attorney General Laura Jensen (207-626-8868).

Sincerely,



Ruth Ann Burke, Administrative Assistant
Board of Environmental Protection

Attachments: Board Decision on Appeal
DEP Information Sheet *Appealing a Department Licensing Decision*

cc: Service List w/ attachments



STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION
17 STATE HOUSE STATION AUGUSTA, MAINE 04333-0017

BOARD ORDER

IN THE MATTER OF

MUNICIPAL SEPARATE STORM	)	BOARD ORDER
SEWER SYSTEM GENERAL PERMIT)	
STATE OF MAINE	)	FINDINGS OF FACT AND
MER041000	)	ORDER ON APPEAL
W009170-5Y-D-Z)	

Pursuant to 38 M.R.S. § 341-D(4) and 06-096 C.M.R., ch. 2, *Rule Concerning the Processing of Applications and Other Administrative Matters* (Chapter 2), the Board of Environmental Protection (Board) has considered the appeal of Friends of Casco Bay (FOCB or Appellant) of the Municipal Separate Storm Sewer System General Permit (MS4 General Permit or Final Permit) issued by the Commissioner of the Department of Environmental Protection (Department). Based upon materials filed in support of the appeals, the responses to the appeals, comments received, and other related materials in the Department's file, the Board FINDS THE FOLLOWING FACTS:

1. PROCEDURAL HISTORY

On December 6, 2019, the Department initiated the formal process to renew the MS4 General Permit, last issued by the Department on July 1, 2013, for a five-year term. The MS4 General Permit regulates discharges of stormwater from small municipal separate storm sewer systems (MS4s)¹ to surface waters of the State. It sets forth permit coverage and limitations, definitions, authorization and notice requirements, stormwater program management plan (SWMP) requirements, and standard conditions for covered municipalities and other MS4s entities.

Between March 2017 and December 2019, the Department held stakeholder meetings regarding the renewal of the MS4 General Permit. On December 6, 2019, Department staff released a draft MS4 General Permit and associated draft fact sheet (Draft) for a formal 30-day public comment period in accordance with Chapter 2, § 18 and 06-096 C.M.R., ch. 522, *Application Processing Procedures for Waste Discharge Licenses*. The Department received comments from interested persons between December 6, 2019, and January 5, 2020, when the comment period closed. After making changes to the Draft based on the comments received, Department staff released a revised draft MS4 General Permit on June 23, 2020 (Final Draft) for additional public comment. The Department received comments on the Final Draft from interested persons between June 23, 2020, and July 10, 2020, when the additional comment period closed.

¹ Generally, the definition of small MS4 includes those MS4s that serve less than 100,000 persons and are located within the urbanized area boundary as determined by the latest U.S. Census and construction sites that disturb one to five acres. *See* 40 C.F.R. § 122.26(b)(16).

On October 15, 2020, the Commissioner of the Department issued combined Waste Discharge License W009170-5Y-C-R and Maine Pollutant Discharge Elimination System permit MER041000, thereby renewing for a period of five years the July 1, 2013, MS4 General Permit. Pursuant to 40 C.F.R. § 122.28(d)(2), the Department incorporated a two-step permitting process for MS4s in Maine into the renewed MS4 General Permit. Issuance of the MS4 General Permit is the first step in the process; the second step is granting coverage for individual dischargers under the MS4 General Permit. Each entity seeking coverage under the MS4 General Permit must submit to the Department a Notice of Intent to Comply with the MS4 General Permit (NOI) and a SWMP. In granting coverage under the MS4 General Permit, the Department issues an Order that may or may not establish additional required actions and corresponding schedules of compliance based upon the circumstances and the Department's review of each NOI.

On November 13, 2020, FOCB filed with the Board a timely appeal of the MS4 General Permit pursuant to 38 M.R.S. § 341-D(4)(A) and Chapter 2, § 24. The Appellant argues that certain terms that had been included in the Final Draft were changed or omitted from the Final Permit without explanation. Specifically, FOCB argued that the following terms from the Final Draft must be restored in the Final Permit in order for it to comply with the federal Clean Water Act (CWA):

- 1) an effective date of September 1, 2021;
- 2) a requirement that municipalities mandate the use of Low Impact Development (LID) site planning and design strategies to the maximum extent feasible; and
- 3) for municipalities that discharge to an impaired water body, a requirement that SWMPs contain clear, specific, and measurable actions to comply with the total maximum daily load (TMDL), waste load allocation, and any implementation plan.

The United States Environmental Protection Agency (EPA), Region 1; the Interlocal Stormwater Working Group and the Southern Maine Stormwater Working Group, jointly, (ISWG and SMSWG); and the Bangor Area Stormwater Group (BASWG) each filed timely responses to FOCB's appeal. ISWG and SMSWG proposed as supplemental evidence Department emails "regarding Chapter 500 Updates." The Appellant objected to this proposed supplemental evidence, arguing that it was not relevant and was not the type of evidence on which reasonable persons would rely. In a procedural order dated March 2, 2021, the Presiding Officer admitted the proposed supplemental evidence pursuant to Chapter 2, § 24(D)(2).

Additionally, FOCB requested a hearing on the appeal pursuant to Chapter 2, § 24(A).

2. APPLICABLE STANDARDS ON APPEAL

Pursuant to Chapter 2, § 24(G) the Board is not bound by the Commissioner's findings of fact or conclusions of law. The Board shall affirm all or part, affirm with conditions, order a hearing to be held as expeditiously as possible, reverse all or part of the decision of the Commissioner, or remand the matter to the Commissioner for further proceedings. The Board's decision is based on the administrative record on appeal, including any supplemental evidence admitted into the record and any evidence admitted during the course of a hearing on the appeal. The decision to hold a hearing is discretionary with the Board.

3. STANDING

The Appellant states that it is a nonprofit organization with more than 3,000 members that works to improve and protect the environmental health of Casco Bay and its watershed. FOCB states that its members depend on clean and healthy water in the Bay and that it has identified stormwater pollution as one of the most serious threats to the Bay. FOCB further states that it will be negatively affected if stormwater pollution is not adequately controlled. The Appellant participated in the MS4 permitting process before the Department by filing comments and attending stakeholder meetings. No Respondent challenged FOCB's standing on appeal.

The Board finds that the Appellant may suffer particularized injury as a result of the Department's MS4 permitting decision and that FOCB therefore is an aggrieved person and has standing to bring this appeal pursuant to Chapter 2, §§ 1(B) and 24.

4. DISCUSSION AND FINDINGS OF FACT

A. Background

Municipal and industrial stormwater discharges are subject to regulation pursuant to section 402(p) of the CWA. 33 U.S.C. § 1342(p). In 1999, EPA promulgated a rule requiring National Pollutant Discharge Elimination System (NPDES) permits for discharges from small MS4s (the Phase II Rule). 64 Fed. Reg. 68722, Dec. 8, 1999. The Phase II Rule requires small MS4s to develop and implement SWMPs designed to reduce pollutants discharged from the MS4 "to the maximum extent practicable (MEP), to protect water quality, and to satisfy the appropriate water quality requirements of the Clean Water Act," and requires that the SWMPs include six "minimum control measures" (MCMs). 40 C.F.R. § 122.34. Small MS4s may seek coverage under an applicable general permit or may apply for an individual NPDES permit.

In 2001, the Department received authorization from the EPA to administer the NPDES permit program for most of the State of Maine,² commonly referred to as the Maine Pollutant Discharge Elimination System (MEPDES) permit program. Department rule, 06-096 C.M.R., ch. 529, *General Permits for Certain Wastewater Discharges*, authorizes the Department to

² EPA took no action at that time regarding Maine's implementation of the NPDES program in Indian country in Maine. *See Maine v. Johnson*, 498 F.3d 37, 40 (1st Cir. 2007).

issue general permits for certain wastewater discharges, including discharges from MS4s. The Department issued the first MS4 General Permit for the State of Maine on July 1, 2013.

In 2003, petitions for review of the Phase II Rule were filed in federal court. The reviewing court partially remanded the rule to EPA because it lacked adequate procedures for permitting authority review and public notice and the opportunity to request a hearing on NOIs. *Environmental Defense Center v. U.S. Environmental Protection Agency*, 344 F.3d. 832 (9th Cir. 2003). To remedy these defects, EPA promulgated an amended rule, *National Pollutant Discharge Elimination System (NPDES) Municipal Separate Storm Sewer System General Permit Remand Rule*, 81 Fed. Reg. 89320-01 (Dec. 9, 2016) (the Remand Rule). The Remand Rule requires state permitting authorities to select either a “Comprehensive General Permit” or “Two-Step General Permit.” See 40 C.F.R. § 122.28(d). It also clarifies that the terms and conditions of the general permit “must be expressed in terms that are ‘clear, specific, and measurable’” and that “the permit requirements must be enforceable, and must provide a set of performance expectations and schedules that are readily understood by the permittee, the public, and the [state] permitting authority alike.” 81 Fed. Reg. at 89326.

Because the permit was due to expire on July 1, 2018, Maine initiated the renewal permitting process for the MS4 General Permit in March 2017. The Department was aware of the Remand Rule and incorporated its requirements into the permit renewal process.

B. Response to Comments (Part IV of the Fact Sheet)

Pursuant to 40 C.F.R. § 124.17(a)(1), upon issuing a MEPDES permit, the Department must also issue a response to comments that “[specifies] which provisions, if any, of the draft permit have been changed in the final permit decision, and the reasons for the change.” In the Response to Comments document that accompanied the Final Permit, the Department failed to specify or explain the rationale for the three changes it made to the Final Draft challenged by the Appellant. In its comments on the MS4 General Permit, EPA Region 1 noted that the Response to Comments document issued by the Department does “not address or justify” two of those three changes—the change in the effective date and the change to Part IV.C.5 of the Final Permit. See Sections 4(C) and (D) below.

The Board finds that the Response to Comments document accompanying the Final Permit did not comply with 40 C.F.R. § 124.17(a)(1) because it did not specify and give reasoned bases for the three changes from the Final Draft to the final MS4 General Permit. Specifically, the Response to Comments document should have noted and explained the changes to (1) the effective date; (2) the LID term component of the required municipal post construction ordinance or other regulatory mechanism; and (3) the requirement to propose clear, specific, and measurable actions to comply with the TMDL waste load allocation and any implementation plan for discharges to impaired waters.

C. Effective Date (Part I.B.1 of the Final Permit)

The Final Draft set an effective date of September 1, 2021, for the general permit. Final Draft, Part I.B.1, p. 5. The Final Permit sets an effective date of July 1, 2022. Final Permit, Part I.B.1, p. 5. The Appellant argues that the Board must restore the effective date that appeared in the Final Draft in the Final Permit because the extended effective date “fails to meet the tenets of the Remand Rule and reduce stormwater pollution to the [maximum extent practicable].” ISWG and SMSWG respond that the Remand Rule does not specify what the effective date of the new MS4 General Permit must be and that the Department may use its best professional judgment in setting the effective date.

The second step of the MS4 general permitting process requires the Department to review NOIs and SWMPs submitted by thirty regulated entities and issue final permittee-specific orders for those entities. Although the Department has temporarily reallocated resources to assist in the reviews and issuance of orders necessary for coverage under the MS4 General Permit, the Department would nevertheless be unable to complete these reviews and issue these orders by the effective date of September 1, 2021, that appeared in the Final Draft. This would mean that some regulated entities would not have coverage under the MS4 General Permit by that effective date. Therefore, shortly before issuing the Final Permit, the Department reevaluated the permitting timeline and concluded that an effective date of July 1, 2022, was the earliest possible effective date that the Department could set for the MS4 General Permit. Although the change was not identified in the Response to Comments document, Department staff informed FOCB of this change before issuing the final permit.

Based on the arguments of the participants and the information provided by the Commissioner, the Board finds that the effective date that appears in the Final Permit is reasonable and necessary and not prohibited by the Remand Rule. The Department would be unable to complete the second step of the MS4 permitting process by the effective date of September 1, 2021, that appeared in the Final Draft. In contrast, the effective date of July 1, 2022, provides the Department with the time necessary to properly review the required NOIs and SWMPs and issue permittee-specific orders in the second step of the MS4 permitting process. The effective date in the Final Permit is both reasonable under the circumstances and within the Commissioner’s discretion. The Board is satisfied that the Remand Rule does not mandate a particular effective date and that the Commissioner and Department staff have used their best judgment in setting the earliest possible effective date for the Final Permit. Accordingly, the Board affirms that portion of the Commissioner’s decision.

D. Low Impact Development (LID) (Part IV.C.5.b of the Final Permit)

In accordance with the Remand Rule, the MS4 General Permit requires regulated entities to implement and enforce a program to address post-construction stormwater runoff from new development and redevelopment projects that disturb greater than or equal to one acre, including projects less than one acre that are part of a larger common plan of development or sale. Minimum Control Measure (MCM) 5 (Post-Construction Stormwater Management in New Development and Redevelopment) of the Final Draft required permittees to have and implement a post-construction discharge ordinance or other regulatory mechanism that contains “Low Impact Development site planning and design strategies must be used to the maximum extent feasible.” Final Draft, Part IV.C.5.b.1, p. 34. The Final Permit omits this LID requirement. Final Permit, Part IV.C.5.b, p. 34.

The Appellant argues that the LID requirement must be restored to the Final Permit because the Remand Rule requires MCM 5 to contain clear, specific, and measurable terms designed to reduce pollution from new construction to the maximum extent practicable, and LID “is the very means by which new development can be designed and stormwater treated before it enters receiving waters.” ISWG, SMSWG, and BASWG respond that the Remand Rule does not mandate the use of LID and that LID is not the only way to reduce stormwater runoff from new development to the maximum extent practicable. ISWG, SMSWG, and BASWG further state that Department rule Chapter 500, *Stormwater Management*, already mandates the use of LID for developments that disturb one acre or more of land. They argue a statewide rule mandating LID provides more consistency than a patchwork of municipal ordinances that could be created by including the LID term in MCM 5 of the MS4 General Permit. ISWG and SMSWG also submitted supplemental evidence suggesting that the Department will be amending Chapter 500, although the emails do not reveal a timeline for this rulemaking or details of how the rule might be amended.

In its comments on the Draft and the Final Permit, EPA Region 1 stated that this part of MCM 5 did not contain clear, specific, and measurable terms as required by the Remand Rule. EPA further commented that the Department could cure this defect by (1) restoring the LID term that appeared in the Final Draft, (2) referencing Chapter 500 in the permit, or (3) requiring each MS4 permittee to submit how it plans to regulate new development and redevelopment and create clear, specific, and measurable requirements in the second step of the two-step permitting process.

Having considered these arguments, responses, and comments, the Board finds that, although LID best management practices (BMPs) are not specifically required by the Remand Rule or Department regulations (Chapter 500), incorporating clear, specific, and measurable LID BMPs into the permit would satisfy the Remand Rule and is also reasonable and appropriate given that the Department has historically endorsed the use of these BMPs in site development approvals. Chapter 10 of the Department’s publication *Maine Stormwater Management Design Manual, Stormwater Management Manual Volume I (March 2016)* contains a list of specific

measures and techniques to reduce the impacts of stormwater runoff from new development and redevelopment. Rather than referencing Chapter 500 as suggested by EPA Region 1, the measures and techniques in Chapter 10 should be incorporated into the MS4 General Permit as an appendix. The Department and members of the stakeholders that participated in the draft of the permit were in agreement that simply referencing the Chapter 500 rules would be cumbersome and confusing to permittees as there are numerous provisions in the rule that are not applicable to the GP. All parties agreed that rather than referencing to other Department rules or documents, the GP should be a stand-alone document with all of the requirements incorporated within. Incorporating the LID measures and techniques into the GP will satisfy the Remand Rule by giving permittees clear, specific, and measurable BMPs to be utilized to the maximum extent practicable for stormwater management unless the BMPs are infeasible for a particular site.

E. Discharges to Impaired Waters (Part IV.E.1 of the Final Permit)

The provision for Pollution Prevention/Good Housekeeping for Municipal Operations (MCM 6) in the Final Draft provided that, if an MS4 discharges to impaired waters for which EPA has approved a TMDL, its SWMP “must propose clear, specific and measurable actions to comply with the TMDL waste load allocation, and any implementation plan.” Final Draft, Part IV.E.1, p. 51. The Final Permit omits the words “clear, specific and measurable.” Final Permit, Part IV.E.1, p. 51. Instead, the Final Permit requires a permittee that discharges to an impaired water with an EPA approved TMDL to “address compliance” with the TMDL, the waste load allocation, and any implementation plan in its SWMP.

The Appellant states that this change removes the requirement to propose BMPs for discharges to impaired waters other than to urban impaired streams, for which permittees are required to propose and fully implement at least three structural or non-structural BMPs. FOCB argues that the change in language between the Final Draft and Final Permit fails to advise permittees of how they must address compliance with TMDL waste load allocations, and that it is insufficient to address this issue in the second step of the MS4 permitting process. ISWG and SMSWG respond that the Final Permit satisfies the Remand Rule because it includes clear, specific, and measurable actions to address stormwater runoff to impaired waters. Specifically, ISWG and SMSWG point to the following actions required by the Final Permit: (1) development of three BMPs for urban impaired streams, which account for most of the MS4 discharges to impaired waters, *see* Final Permit, Part IV.3, p. 26; (2) implementation of illicit discharge detection and elimination plans, *see* Final Permit, Part IV.E, p. 52; and (3) Department review and approval of SWMPs that include BMPs, *see* Final Permit, Part IV.A-B, pp. 20-22. They note that nothing in the Final Permit authorizes discharges to impaired waters that are inconsistent with a TMDL waste load allocation. EPA Region 1 and BASWG did not comment on this change, although BASWG indicated its general support for the arguments made by ISWG and SMSWG.

**Municipal Separate Storm Sewer
System General Permit
State of Maine
MER041000
W009170-5Y-D-Z**

**FINDINGS OF FACT
AND
ORDER ON APPEAL**

Having considered these arguments and responses, the Board finds that actions to be taken by the permittee to address compliance with TMDL waste load allocations must be clear, specific and measurable to comply with the Remand Rule. Incorporating the words “clear, specific, and measurable” into Part IV. E.1 of the Final Permit as FOCB requests is therefore reasonable and appropriate.

CONCLUSIONS

In consideration of FOCB’s arguments on appeal, responses from the EPA Region I, ISWG, SMSWG, BASWG and the CLF, information from the Commissioner, and review of applicable regulations, including the Remand Rule, the Board concludes that the Final Permit should be remanded to the Commissioner for further proceedings to modify Part IV.C.5 and Part IV.E of the Final Permit. The Board further concludes that the Response to Comments document accompanying the Final Permit must be modified to specify and give reasoned bases for the effective date of the Final Permit and the forthcoming modifications to Part IV.C.5 and Part IV.E of the Final Permit.³

Notwithstanding the Board’s decision to remand the Final Permit and Response to Comments document for modification as described above, the Board affirms all other findings of fact and conclusions in the Final Permit and the associated Fact Sheet and Response to Comments document.

ORDER ON APPEAL

Therefore, the Board REMANDS to the Commissioner the Municipal Separate Storm Sewer System General Permit MER041000/W009170-5Y-C-R for further proceedings on only Part IV.C.5, Part IV.E, and the Response to Comments document in accordance with this Order.

DONE AND DATED IN AUGUSTA, MAINE THIS 17th DAY OF JUNE, 2021.

BOARD OF ENVIRONMENTAL PROTECTION

BY: 

PRESIDING OFFICER

³ Although the Board has discretion to modify the Final Permit itself, the Board concludes that the Commissioner is in a better position to do so on remand in this particular instance where the CWA imposes specific requirements for notice and comment. See 38 M.R.S. § 414-A(5); 06-096 C.M.R. ch. 522, § 4; 06-096 C.M.R. ch. 529, § 2(b)(1).

**Board of Environmental Protection
Appeal of MS4 General Permit
Maine Pollutant Discharge Elimination System Permit #MER041000
Waste Discharge License #W009170-5Y-C-R
Service List, revised March 1, 2021**

Every document or communication filed with the Board in this matter must be served on all parties on this service list.

BEP

Filings with the Board must be directed to Ruth Ann Burke

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Appellant

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Respondents

Interlocal Stormwater Working Group (ISWG) is comprised of Biddeford, Cape Elizabeth, Cumberland, Cumberland County Soil and Water Conservation District, Falmouth, Freeport, Gorham, Old Orchard Beach, Portland, Saco, Scarborough, South Portland, Southern Maine Community College, University of Southern Maine, Westbrook, Windham, and Yarmouth jointly with

Southern Maine Stormwater Working Group (SMSWG) is comprised of Berwick, Eliot, Kittery, South Berwick, and York

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Board of Environmental Protection
Appeal of MS4 General Permit
Maine Pollutant Discharge Elimination System Permit #MER041000
Waste Discharge License #W009170-5Y-C-R
Service List, revised March 1, 2021

Every document or communication filed with the Board in this matter must be served on all parties on this service list.

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Respondents (cont'd)

Bangor Area Stormwater Group (BASWG) is comprised of City of Bangor, City of Brewer, Town of Hampden, Town of Milford, City of Old Town, Town of Orono, Town of Veazie, Dorothea Dix Psychiatric Center, Eastern Maine Community College, Maine Air National Guard, University of Maine Augusta at Bangor, and University of Maine

Represented by:
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City of Bangor Engineering Department
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DEP INFORMATION SHEET

Appealing a Department Licensing Decision

Dated: November 2018

Contact: (207) 314-1458

SUMMARY

There are two methods available to an aggrieved person seeking to appeal a licensing decision made by the Department of Environmental Protection's (DEP) Commissioner: (1) an administrative process before the Board of Environmental Protection (Board); or (2) a judicial process before Maine's Superior Court. An aggrieved person seeking review of a licensing decision over which the Board had original jurisdiction may seek judicial review in Maine's Superior Court.

A judicial appeal of final action by the Commissioner or the Board regarding an application for an expedited wind energy development (35-A M.R.S. § 3451(4)) or a general permit for an offshore wind energy demonstration project (38 M.R.S. § 480-HH(1)) or a general permit for a tidal energy demonstration project (38 M.R.S. § 636-A) must be taken to the Supreme Judicial Court sitting as the Law Court.

This information sheet, in conjunction with a review of the statutory and regulatory provisions referred to herein, can help a person to understand his or her rights and obligations in filing an administrative or judicial appeal.

I. ADMINISTRATIVE APPEALS TO THE BOARD

LEGAL REFERENCES

The laws concerning the DEP's *Organization and Powers*, 38 M.R.S. §§ 341-D(4) & 346; the *Maine Administrative Procedure Act*, 5 M.R.S. § 11001; and the DEP's *Rules Concerning the Processing of Applications and Other Administrative Matters* ("Chapter 2"), 06-096 C.M.R. ch. 2.

DEADLINE TO SUBMIT AN APPEAL TO THE BOARD

The Board must receive a written appeal within 30 days of the date on which the Commissioner's decision was filed with the Board. Appeals filed more than 30 calendar days after the date on which the Commissioner's decision was filed with the Board will be dismissed unless notice of the Commissioner's license decision was required to be given to the person filing an appeal (appellant) and the notice was not given as required.

HOW TO SUBMIT AN APPEAL TO THE BOARD

Signed original appeal documents must be sent to: Chair, Board of Environmental Protection, 17 State House Station, Augusta, ME 04333-0017. An appeal may be submitted by fax or e-mail if it contains a scanned original signature. It is recommended that a faxed or e-mailed appeal be followed by the submittal of mailed original paper documents. The complete appeal, including any attachments, must be received at DEP's offices in Augusta on or before 5:00 PM on the due date; materials received after 5:00 pm are not considered received until the following day. The risk of material not being received in a timely manner is on the sender, regardless of the method used. The appellant must also send a copy of the appeal documents to the Commissioner of the DEP; the applicant (if the appellant is not the applicant in the license proceeding at issue); and if a hearing was held on the application, any intervenor in that hearing process. All of the information listed in the next section of this information sheet must be submitted at the time the appeal is filed.

INFORMATION APPEAL PAPERWORK MUST CONTAIN

Appeal materials must contain the following information at the time the appeal is submitted:

1. *Aggrieved Status.* The appeal must explain how the appellant has standing to maintain an appeal. This requires an explanation of how the appellant may suffer a particularized injury as a result of the Commissioner's decision.
2. *The findings, conclusions, or conditions objected to or believed to be in error.* The appeal must identify the specific findings of fact, conclusions regarding compliance with the law, license conditions, or other aspects of the written license decision or of the license review process that the appellant objects to or believes to be in error.
3. *The basis of the objections or challenge.* For the objections identified in Item #2, the appeal must state why the appellant believes that the license decision is incorrect and should be modified or reversed. If possible, the appeal should cite specific evidence in the record or specific licensing requirements that the appellant believes were not properly considered or fully addressed.
4. *The remedy sought.* This can range from reversal of the Commissioner's decision on the license or permit to changes in specific permit conditions.
5. *All the matters to be contested.* The Board will limit its consideration to those matters specifically raised in the written notice of appeal.
6. *Request for hearing.* If the appellant wishes the Board to hold a public hearing on the appeal, a request for public hearing must be filed as part of the notice of appeal, and must include an offer of proof in accordance with Chapter 2. The Board will hear the arguments in favor of and in opposition to a hearing on the appeal and the presentations on the merits of an appeal at a regularly scheduled meeting. If the Board decides to hold a public hearing on an appeal, that hearing will then be scheduled for a later date.
7. *New or additional evidence to be offered.* If an appellant wants to provide evidence not previously provided to DEP staff during the DEP's review of the application, the request and the proposed evidence must be submitted with the appeal. The Board may allow new or additional evidence, referred to as supplemental evidence, to be considered in an appeal only under very limited circumstances. The proposed evidence must be relevant and material, and (a) the person seeking to add information to the record must show due diligence in bringing the evidence to the DEP's attention at the earliest possible time in the licensing process; or (b) the evidence itself must be newly discovered and therefore unable to have been presented earlier in the process. Specific requirements for supplemental evidence are found in Chapter 2 § 24.

OTHER CONSIDERATIONS IN APPEALING A DECISION TO THE BOARD

1. *Be familiar with all relevant material in the DEP record.* A license application file is public information, subject to any applicable statutory exceptions, and is made easily accessible by the DEP. Upon request, the DEP will make application materials available during normal working hours, provide space to review the file, and provide an opportunity for photocopying materials. There is a charge for copies or copying services.
2. *Be familiar with the regulations and laws under which the application was processed, and the procedural rules governing your appeal.* DEP staff will provide this information on request and answer general questions regarding the appeal process.
3. *The filing of an appeal does not operate as a stay to any decision.* If a license has been granted and it has been appealed, the license normally remains in effect pending the processing of the appeal. Unless a stay of the decision is requested and granted, a license holder may proceed with a project pending the outcome of an appeal, but the license holder runs the risk of the decision being reversed or modified as a result of the appeal.

WHAT TO EXPECT ONCE YOU FILE A TIMELY APPEAL WITH THE BOARD

The Board will formally acknowledge receipt of an appeal, and will provide the name of the DEP project manager assigned to the specific appeal. The notice of appeal, any materials accepted by the Board Chair as supplementary evidence, any materials submitted in response to the appeal, and relevant excerpts from the DEP's application review file will be sent to Board members with a recommended decision from DEP staff. The appellant, the license holder if different from the appellant, and any interested persons are notified in advance of the date set for Board consideration of an appeal or request for public hearing. The appellant and the license holder will have an opportunity to address the Board at the Board meeting. With or without holding a public hearing, the Board may affirm, amend, or reverse a Commissioner decision or remand the matter to the Commissioner for further proceedings. The Board will notify the appellant, the license holder, and interested persons of its decision.

II. JUDICIAL APPEALS

Maine law generally allows aggrieved persons to appeal final Commissioner or Board licensing decisions to Maine's Superior Court (see 38 M.R.S. § 346(1); 06-096 C.M.R. ch. 2; 5 M.R.S. § 11001; and M.R. Civ. P. 80C). A party's appeal must be filed with the Superior Court within 30 days of receipt of notice of the Board's or the Commissioner's decision. For any other person, an appeal must be filed within 40 days of the date the decision was rendered. An appeal to court of a license decision regarding an expedited wind energy development, a general permit for an offshore wind energy demonstration project, or a general permit for a tidal energy demonstration project may only be taken directly to the Maine Supreme Judicial Court. See 38 M.R.S. § 346(4).

Maine's Administrative Procedure Act, DEP statutes governing a particular matter, and the Maine Rules of Civil Procedure must be consulted for the substantive and procedural details applicable to judicial appeals.

ADDITIONAL INFORMATION

If you have questions or need additional information on the appeal process, for administrative appeals contact the Board's Executive Analyst at (207) 314-1458, or for judicial appeals contact the court clerk's office in which your appeal will be filed.

Note: The DEP provides this INFORMATION SHEET for general guidance only; it is not intended for use as a legal reference. Maine law governs an appellant's rights.

APPENDIX J: CITY OF PORTLAND MS4 PERMIT APPROVAL AND LICENSE (06/07/22)



STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION



JANET T. MILLS
GOVERNOR

MELANIE LOYZIM
COMMISSIONER

June 7, 2022

Ms. Danielle West
Interim City Manager
389 Congress Street
Portland, Maine 04101
e-mail: citymanager@portlandmaine.gov

**RE: Municipal Separate Storm Sewer System (MS4) General Permit #MER041000
Final - MER041024**

Dear Ms. West:

Enclosed please find a copy of your **final** MEPDES permit and Maine WDL which was approved by the Department of Environmental Protection. Please read this permit/license and its attached conditions carefully. Compliance with this permit/license will protect water quality.

Any interested person aggrieved by a Department determination made pursuant to applicable regulations, may appeal the decision following the procedures described in the attached DEP FACT SHEET entitled “*Appealing a Commissioner’s Licensing Decision.*”

If you have any questions regarding the matter, please feel free to call me at 287-7693. Your Department compliance inspector copied below is also a resource that can assist you with compliance. Please do not hesitate to contact them with any questions.

Thank you for your efforts to protect and improve the waters of the great state of Maine!

Sincerely,

Gregg Wood
Division of Water Quality Management
Bureau of Water Quality

Enc.

cc: Alison Moody, DEP/SMRO
Irene Saumur, DEP/CMRO
Richard Carvalho, USEPA

Lori Mitchell, DEP/CMRO
Damien Houlihan, USEPA
Newton Tedder, USEPA

Holliday Keen, DEP/CMRO
Nathan Chien, USEPA
Ivy Frignoca, FOCB

AUGUSTA
17 STATE HOUSE STATION
AUGUSTA, MAINE 04333-0017
(207) 287-7688 FAX: (207) 287-7826

BANGOR
106 HOGAN ROAD, SUITE 6
BANGOR, MAINE 04401
(207) 941-4570 FAX: (207) 941-4584

PORTLAND
312 CANCO ROAD
PORTLAND, MAINE 04103
(207) 822-6300 FAX: (207) 822-6303

PRESQUE ISLE
1235 CENTRAL DRIVE, SKYWAY PARK
PRESQUE ISLE, MAINE 04769
(207) 764-0477 FAX: (207) 760-3143



STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION
17 STATE HOUSE STATION
AUGUSTA, ME 04333

**DEPARTMENT ORDER
IN THE MATTER OF**

CITY OF PORTLAND	)	MUNICIPAL SEPARATE STORM
PORTLAND, CUMBERLAND COUNTY, MAINE	)	SEWER SYSTEM
MER041024	)	MER041000
	)	GENERAL PERMIT COVERAGE
APPROVAL	)	RENEWAL

The Department of Environmental Protection (Department/DEP) has considered the Notice of Intent submitted by the CITY OF PORTLAND (City/permittee), with supportive data, agency review comments and other related materials on file for coverage under the Municipal Separate Storm Sewer System (MS4) General Permit, #MER041000, issued by the Department on October 15, 2020 and revised on November 23, 2021, and FINDS THE FOLLOWING FACTS.

The permittee submitted a Notice of Intent (NOI) with an initial Stormwater Management Plan (SWMP) to the Department on March 31, 2021 that were made available for a 30-day public comment period on the Department's website at <https://www.maine.gov/dep/comment/comment.html?id=4463193>. No public comments were received on the NOI or the initial SWMP. The Department has reviewed the initial SWMP document and made the determination that the document is consistent with and fully articulates what is required to meet the MS4 GP standard. Pursuant to Part IV(B) of MS4 GP issued by the Department on October 15, 2020 and revised on November 23, 2021, the permittee must update the initial SWMP within 60 days of the effective date of this DEP permittee specific order or within 60 days of the final resolution to an appeal of this DEP permittee specific order. The final plan must be submitted to the Department and will be posted on the Department's website.

The permittee must fully implement all actions, schedules and milestones established in the March 31, 2021 initial SWMP and any revisions to the initial SWMP reflected in the final plan.

- MCM 1: BMPs 1.1, 1.2, 1.3, and 1.4
- MCM 2: BMPs 2.1 and 2.2
- MCM 3: BMPs 3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 3.7, and 3.8
- MCM 4: BMPs 4.1, 4.2, and 4.3
- MCM 5: BMPs 5.1, 5.2, and 5.3
- MCM 6: BMPs 6.1, 6.2, 6.3, 6.4, 6.5, and 6.6

Impaired Streams

The Urban Impaired Streams (UISs) in Portland are Capisic Brook, Dole Brook, Long Creek, Nasons Brook, and Fall Brook; all of which are covered by the Statewide Impervious Cover TMDL, with the exception of Fall Brook, which is classified as Category 5-A (TMDL Required) in the Department's document entitled, *2016 Integrated Water Quality Monitoring and Assessment Report* and Long Creek, which is subject to a separate impervious cover-based permit. To meet the standards of the MS4 GP for impaired waters, the permittee must also fully implement the following Best Management Practices in accordance with their associated schedules of compliance, as established in the Modified Stormwater Management Plan that is in effect at the time any schedule for compliance is due.

Capisic Brook and Capisic Pond Wetland: BMP 1, BMP 2, and BMP 3

Dole Brook and Dole Brook Wetland: BMP 1, BMP 2, and BMP 3

Nasons Brook and Nasons Brook Wetlands Complex: BMP 1, BMP 2, and BMP 3

Fall Brook: BMP 1, BMP 2, and BMP 3

Long Creek: As a Participating Landowner and permittee under the Long Creek General Permit, the permittee must continue to work with the LCWMD to implement the Long Creek Watershed Management Plan.

The permittee must collaborate with the City of Westbrook to develop a Salt Reduction Outreach Plan for commercial and potentially industrial and residential property owners in the Nasons Brook watershed. On before July 1, 2024, the permittee must enact a Salt Reduction Outreach Plan.

The permittee has agreed to comply with all terms and conditions of the MS4 General Permit, #MER041000, dated October 15, 2020 and revised on November 23, 2021. Operated in accordance with the Municipal Separate Storm Sewer System (MS4) General Permit, #MER041000, the discharges identified by the permittee will not have a significant adverse effect on water quality or cause or contribute to the violation of the water quality standards of the receiving water. To meet the standards of the MS4 General Permit, the permittee must implement the following terms and conditions.

THEREFORE, the Department GRANTS the CITY OF PORTLAND, coverage under the Municipal Separate Storm Sewer System (MS4) General Permit, #MER041000, issued by the Department on October 15, 2020 and revised on November 23, 2021, subject to the terms and conditions therein.

This DEP permittee specific order becomes effective on July 1, 2022 and expires at midnight five (5) years after that date. If the GP is to be renewed, this DEP permittee specific order will remain in effect and enforceable until the Department takes final action on the renewal.

DONE AND DATED AT AUGUSTA, MAINE, THIS 7 DAY OF June, 2022.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY: 
_____ *for* Melanie Loyzim, Commissioner

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

The Notice of Intent was received by the Department on _____ March 31, 2021 _____.

The Notice of Intent was accepted by the Department on _____ April 5, 2021 _____.

FILED
JUNE 7, 2022
State of Maine
Board of Environmental Protection

Date filed with Board of Environmental Protection: _____

This Order prepared by GREGG WOOD, BUREAU OF WATER QUALITY

RESPONSE TO COMMENTS

During the period of March 16, 2022 through the date of signature of this final agency action, the Department solicited comments on the draft MEPDES DEP permittee specific order. The Department did receive timely written comments from the permittee, the Friends of Casco Bay (FOCB) and the U.S. Environmental Protection Agency (USEPA). Responses to substantive comments are as follows:

Comment #1(Permittee): The language in the draft order (italicized below) is potentially vague, which may lead to confusion about what steps are required for compliance.

“The permittee must fully implement all actions, schedules and milestones established in the March 31, 2021 initial SWMP and any revisions to the initial SWMP reflected in the final plan.”

Specifically, the permittee is concerned that in the SWMPs it may not always be clear what qualifies as mandatory “actions, schedules and milestones” and what does not. This is because the SWMPs were written broadly to, in addition to setting out specific and measurable actions, provide helpful context, educate officials and citizens about the Plan, and establish process, among other things. There is, therefore, significant text in the SWMPs that does not appear to be an action, schedule, or milestone, and thus would not be enforceable. The permittee is concerned that it will not always be clear exactly what is mandatory and what is not. Additionally, the permittee believes that the language about enforcing any additional revisions to the SWMP also may be somewhat unclear, given that SWMPs are living documents that are expected under the new MS4 general permit to evolve over time.

Response #1: The Department concurs with the permittee’s position on the purpose and enforceability of the SWMP as a stand-alone document. Part VI(E), *Relationship Between the SWMP and Permit Required Terms and Conditions* of the December 9, 2016 Federal Register states in relevant part “...under EPA small MS4 regulations, the details included the permittee’s SWMP document are not directly enforceable as effluent limitations of the permit. The SWMP document is intended to be a tool that describes the means by which the MS4 establishes its stormwater controls and engages in the adaptive management process during the term of the permit. While the requirement to develop a SWMP document is an enforceable condition of the permit (see §122.34(b) of the final rule) the contents of the stormwater management document itself are not enforceable as effluent limitations of the permit, unless the document or specific details within the SWMP are specifically incorporated by the permitting authority into the permit.”

Part VI(E), also states in relevant part "... the details of any part of the permittee's program that are described in the SWMP, unless specifically incorporated into the permit, are not enforceable under the permit, and because they are not terms of the permit, the MS4 may revise those parts of the SWMP if necessary to meet any permit requirements or to make improvements to stormwater controls during the permit term. As discussed in more detail below, the permitting authority has discretion to determine what elements, if any, of the SWMP are to be made enforceable, but in order to do so it must follow the procedural requirements for the second step under Sec. 122.28(d)(2).

The regulations envision that the MS4 permittee will develop a written SWMP document that provides a road map for how the permittee will comply with the permit. The SWMP document(s) can be changed based on adaptations made during the course of the permit, which enable the permittee to react to circumstances and experiences on the ground and to make adjustments to its program to better comply with the permit. The fact that the SWMP is an external tool and not required to be part of the permit is intended to enable the MS4 permittee to be able to modify and retool its approach during the course of the permit term in order to continually improve how it complies with the permit and to do this without requiring the permitting authority to review and approve each change as a permit modification."

Comment #2 (Permittee): The General Permit does require that the SWMPs be updated and sent out for public comment annually and lays out a process for any other needed revisions. Multiple versions of the SWMPs should not be enforceable. The only version that should be enforceable is the version that is in force at the time a Best Management Practice or Measurable Goal is due. Accordingly, we recommend clarifying this provision to eliminate any potential confusion.

This will, in turn, promote compliance and lead to better water quality. To accomplish that, we note that our SWMPs have Best Management Practices (BMPs) with Measurable Goals and believe the second step order would be more clear if it references that we will fully implement those BMPs. This approach is consistent with Part III.A.8 of the GP which provides: "Following the public comment period on the NOI, the Department will issue a permittee specific DEP Order that establishes additional terms and conditions, including but not limited to, a list of required actions and corresponding schedules of compliance for a limited number BMPs associated with the implementation of this GP." Thus, we suggest the following italicized text be incorporated into the final Order:

The permittee must fully implement the following Best Management Practices in accordance with their associated schedules of compliance, as established in the Modified Stormwater Management Plan that is in effect at the time any schedule for compliance is due

MCM 1: BMPs 1.1, 1.2, 1.3, and 1.4

MCM 2: BMPs 2.1 and 2.2

MCM 3: BMPs 3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 3.7, and 3.8

MCM 4: BMPs 4.1, 4.2, and 4.3

MCM 5: BMPs 5.1, 5.2, and 5.3

MCM 6: BMPs 6.1, 6.2, 6.3, 6.4, 6.5, and 6.6

Modifications to the Initial Stormwater Management Plan required as a result of this Order, if any, must be provided to the Department in accordance with Part IV.B of the MS4 GP, and the Department will notify the permittee if further changes are required in accordance with Part IV.B.2.

Impaired waters

To meet the standards of the MS4 GP for impaired waters, the permittee must also fully implement the following Best Management Practices in accordance with their associated schedules of compliance, as established in the Modified Stormwater Management Plan that is in effect at the time any schedule for compliance is due.

Capisic Brook and Capisic Pond Wetland: BMP 1, BMP 2, and BMP 3

Dole Brook and Dole Brook Wetland: BMP 1, BMP 2, and BMP 3

Nasons Brook and Nasons Brook Wetlands Complex: BMP 1, BMP 2, and BMP 3

Fall Brook: BMP 1, BMP 2, and BMP 3

Long Creek: As a Participating Landowner and permittee under the Long Creek General Permit, the permittee must continue to work with the LCWMD to implement the Long Creek Watershed Management Plan.

Response #2: The revisions cited above are acceptable to the Department and are consistent with Remand Rule in that “the permitting authority has discretion to determine what elements, if any, of the SWMP are to be made enforceable, but in order to do so it must follow the procedural requirements for the second step under Sec. 122.28(d)(2).” For clarity, the alpha-numeric references to the BMPs above are from Section 1.2, Impaired Waters, of the permittee’s SWMP.

Part IV.B of the GP states in relevant part “Modified Stormwater Management Plan (SWMP). The permittee must implement and enforce a written (hardcopy or electronic) SWMP. The initial SWMP must be updated within 60 days of permit authorization to include how the permittee will meet all requirements of the DEP Order. The modified SWMP must include a summary of the comments received during the MS4s public comment period and any corresponding changes to the SWMP made in response to the comments received. The permittee must perform all actions required by the permittee specific DEP Order in accordance with the timelines in the permittee specific DEP Order. Unless otherwise specified by the Department in writing, the permittee must submit the updated SWMP to the Department indicating how the permittee has modified their SWMP to be consistent with the GP and permittee specific DEP Order. To modify the schedule established in the permittee specific DEP Order, the permittee must file an application on a DEP form with the Department that includes a justification to formally modify the original permittee specific DEP Order.”

The final DEP permittee specific order has been modified accordingly.

Comment #3 (FOCB): From the outset, Friends of Casco Bay has advocated for a comprehensive general permit with all clear, specific, and measurable terms needed to comply with the Remand Rule. The rule, however, allows DEP to issue either a comprehensive general permit or a two-step general permit. A two-step general permit consists of a base general permit and a second permitting step that establishes additional permit terms and conditions. The two documents combined meet the MS4 permit standard. We request that future MS4 permits be issued as comprehensive general permits.

Response 3: The Department will take the FOCB’s comment into consideration during the renewal of the MS4 GP in calendar year 2027 and consider renewing the permit as a comprehensive permit.

Comment #4 (FOCB): Because SWMPs are now second step orders, would DEP please clarify when a SWMP modification will be considered a minor permit modification that does not require public process and when SWMP modifications will be posted for public comment and process? Although the code of federal regulations spells this out, there has been much confusion throughout the permit renewal process, and clear guidance would be helpful.

Response #4: Based on the Responses #1 and #2 above, the entire SWMP is not an enforceable document. Specific BMPs under each MCM and or impaired waters section of the SWMP have been cited in this DEP permittee specific order and are enforceable. The 2022 MS4 General Permit is clear that MS4s must provide an opportunity for annual public comment on any changes to their SWMPs in Part IV(B)(2), and must provide notice to the DEP for any changes to schedules in the SMWP including a rationale for why there is a change. The Modified Stormwater Management Plan is self-implementing as this DEP permittee specific order states:

The permittee must fully implement the following Best Management Practices in accordance with their associated schedules of compliance, as established in the Modified Stormwater Management Plan that is in effect at the time any schedule for compliance is due.

If a party, during its annual review of an updated SWMP, wishes to object to modifications to the SWMP proposed by the permittee, it can petition the Department to remedy said objections to ensure the terms and conditions proposed in SWMP are consistent with the Clean Water Act and MS4 regulations.

Comment #5 (FOCB): Second step orders incorporate initial SWMPs that were written before the Board of Environmental Protection issued an order remanding the base general permit to DEP. In response to the order, DEP issued a permit modification that requires municipalities to adopt an ordinance that mandates the use of LID for new and re-development. The initial SWMPs uniformly contain terms relating to MCM 5 that do not comply with the BEP Order and subsequent permit modification. DEP should revise SWMPs and add all terms and schedules of compliance to second step orders to fully implement MCM 5 as set forth in the permit modification.

Response #5: All permittee's seeking coverage under the MS4 GP are subject to both the October 15, 2020 base general permit and the November 23, 2021 permit modification that mandates the use of LID for new and re-development. All permittees were copied on the final permit modification and are aware of the following language:

A. Low Impact Development

5. *MCM5 - Post-Construction Stormwater Management in New Development and Redevelopment.*

Each permittee must implement and enforce a program to address post construction stormwater runoff to the maximum extent practicable from new development and redevelopment projects that disturb greater than or equal to one acre, including projects less than one acre that are part of a larger common plan of development that discharge into the MS4.

- a. *The permittee must implement strategies which include a combination of structural and/or non-structural BMPs appropriate to prevent or minimize water quality impacts as follows:*

On or before September 1, 2022, each permittee must develop a Model LID Ordinance for stormwater management on new and redevelopment sites which establishes performance standards for each of the LID Measures contained in Table 1 of Appendix F. The Model LID ordinance should, at a minimum, refer to Appendix F for guidance.

The Model LID Ordinance shall be submitted to the Maine DEP for review by September 1, 2022. DEP will post the model ordinance for public comments and approve it, with or without modifications, on or before November 1, 2022.

On or before July 1, 2024 each permittee shall adopt an ordinance or regulatory mechanism that is at least as stringent as the required elements of the Model LID Ordinance or incorporate all of its required elements into the permittee's code of ordinances or other enforceable regulatory mechanism.

Each permittee is aware these terms and terms are to be incorporated into the Modified Stormwater Management Plan to be submitted to the Department within 60 days of permit authorization. Therefore, this order remains unchanged.

Comment #6 (FOCB, USEPA) - To meet the measurable requirement, permittees must evaluate the effectiveness of actions to reduce stormwater pollution. Some of the second step orders contain terms that do not satisfy this standard. Our review focused on terms to reduce stormwater pollution to impaired waters. The BMPs that fail to satisfy the Remand Rule are BMPs that contain a budget caveat. BMPs to restore water quality to impaired waters must be implemented without reference to budget.

The modified base general permit requires permittees that discharge to an impaired water(s) to implement three clear, specific and measurable BMPs to restore water quality. Some second step orders condition the implementation of a BMP on the passage of a budget. If the permittee does not pass a budget to fund the BMP, then the permittee does not have to implement it. Recommending but not executing BMPs does not restore water quality. Nor does it meet the mandate that second step orders require municipalities to implement three BMPs for each impaired water. Finally, it is troubling policy to treat permittees inconsistently. DEP should remove the budget caveat from second step orders. If budget becomes an issue, permittees could propose alternate and equally effective BMPs to DEP that could be considered through a permit modification.

The proposed authorization letters for four permittees contain conditions that are only imposed on the permittee if the necessary funding is in place to complete such action through the passing or approval of a budget. Such conditions are inconsistent with the Clean Water Act (CWA) Section 402 and National Pollutant Discharge Elimination System (NPDES) implementing regulations, including MS4 permit requirements to “include permit terms and conditions to reduce the discharge of pollutants from the MS4 to the maximum extent practicable (MEP), to protect water quality, and to satisfy the appropriate water quality requirements of the Clean Water Act. Terms and conditions that satisfy the requirements of this section must be expressed in clear, specific, and measurable terms.” See 40 C.F.R. § 122.34(a). Permit conditions that are contingent upon budget approval are not clear, specific, and measurable and are otherwise inconsistent with the CWA and the MS4 regulations. EPA recommends re-wording these conditions to remove all references to budget or funding.

Response #6 – The language cited by the commenters has been removed from this final DEP permittee specific order. As stated by the FOCB, if budget becomes an issue in implementing a BMP, permittees could propose alternate and equally effective BMPs to the Department that could be considered through a permit modification.

Comment #7 (FOCB): To meet the measurable requirement, permittees must evaluate the effectiveness of actions to reduce stormwater pollution. Some of the second step orders contain terms that do not satisfy this standard. Our review focused on terms to reduce stormwater pollution to impaired waters. The BMPs that fail to satisfy the Remand Rule include the Long Creek BMP. Second step orders for MS4s that discharges to Long Creek must be modified to include clear, specific and measurable BMPs.

The Long Creek watershed is located in the MS4 municipalities of South Portland, Westbrook, Portland and Scarborough. Long Creek is impaired by urban development which has altered stream beds and flows, covered much of the landscape with impervious surfaces, and delivered slugs of pollution to Long Creek including excessive chlorides from winter application of road salt. Using residual designation authority under the CWA, the State issued a general permit regulating stormwater discharges in these municipalities from MS4, commercial and industrial sources. In relevant part, the existing Long Creek permit replaced requirements of the 2013 MS4 Permit. The Long Creek general permit expired April 15, 2020 and has been administratively continued.

Part of the delay in reissuing the Long Creek permit may stem from the fact that EPA has advised DEP that the permit must be renewed with clear, specific and measurable terms commensurate with the Remand Rule. As written, the Long Creek permit is a very general permit supported with non-enforceable management plans.

MS4 municipalities:

[M]ay rely upon another entity to satisfy its NPDES permit obligations to implement a minimum control measure if:

- (1) The other entity, in fact, implements the control measure;
- (2) The particular control measure, or component thereof, is at least as stringent as the corresponding NPDES permit requirement; and
- (3) The other entity agrees to implement the control measure on the permittee's behalf.

In this case, the 2015 Long Creek general permit is not as stringent as the requirements of the 2022 MS4 Permit because it contains no clear, specific and measurable actions. Therefore, MS4 communities cannot rely on the 2015 Long Creek general permit to comply with the 2022 MS4 Permit. This may be easy to cure. DEP could review the Long Creek Restoration Project Plans and select three clear, specific and measurable actions to include in the South Portland, Portland, Westbrook and Scarborough second step orders.

Response #7: Part I.B.6 of the October 15, 2020 MS4 GP states in relevant part “When an individual permit is issued to a discharger otherwise subject to this GP, or the discharger is authorized to discharge under an alternative GP, the applicability of this GP to the individual permittee and the permittee specific DEP Order are automatically terminated on the effective date of the individual permit or the date of authorization of coverage under the alternative GP, whichever the case may be.” Part V.D.1 of the Long Creek GP states “The requirements of this general permit replace the requirements of the following:

1. General Permits for the Discharge of Stormwater from Small Municipal Separate Storm Sewer Systems;”

Incorporating three clear, specific and measurable actions from the Long Creek Restoration Project Plan is redundant and not necessary as both the MS4 GP and the Long Creek GP defer to the requirements in the Long Creek GP. The four permittees cited by the commenter are Participating Landowners that contribute monies to the LCWMD to implement clear, specific and measurable structural and non-structural BMPs in the Long Creek watershed in accordance with the most current restoration plan. By pooling resources, the LCWMD has the advantage of evaluating, designing and installing structural BMPs and implementing non-structural BMPs that are the most cost effective and have the highest return (improvement in water quality) on the investment for the watershed as a whole, not individual municipalities. To accommodate the commenters concern, the following language has been added to the orders for the South Portland, Portland, Westbrook and Scarborough.

As a Participating Landowner and permittee under the Long Creek General Permit, the permittee must continue to work with the LCWMD to implement the Long Creek Watershed Management Plan.

Comment #8 (FOCB) - We had hoped that second step orders would encourage, where appropriate, the development and implementation of fertilizer ordinances to reduce nutrient pollution to urban impaired and threatened waters. For example, Portland seeks to implement a fertilizer ordinance under its pending Integrated Plan to reduce nutrient pollution. We had hoped this decision might be supported through the MS4 process.

Response #8: The Department agrees with the commenter that developing and implementing a fertilizer ordinance can be an effective BMP to reduce nutrient loading to surface water bodies. Short of formally adopting an ordinance, many of the permittees have developed BMPs in their SWMPs to address nutrient loading to surface water bodies by way of public education (MCM1 and MCM2), yard-scaping programs and watershed management plans.

Comment #9 (FOCB): To meet the measurable requirement, permittees must evaluate the effectiveness of actions to reduce stormwater pollution. Some of the second step orders contain terms that do not satisfy this standard. Our review focused on terms to reduce stormwater pollution to impaired waters. The BMPs that fail to satisfy the Remand Rule include the chlorides reduction BMP. The chlorides reduction BMP must be replaced with clear, specific and measurable actions that reduce chlorides pollution to the MEP.

Many urban impaired streams cannot be restored without reducing chlorides. To address this, some second step orders contain the following provision:

- a. At least one representative from the City must attend an annual regional training or roundtable to learn about new chloride reduction techniques coordinated by the ISWG or another organization.
- b. The permittee, solely or in combination with others, must;
 - Beginning July 1, 2022 and alternating years thereafter until it passes, provide educational outreach to legislators regarding limited liability legislation and at least two other organizations representing firms that conduct application of chloride on private property;
 - In years when limited liability legislation has not passed and is not active for procedural reasons, the City will provide winter maintenance education and outreach to the public using two tools from the City's Stormwater Management Plan.
 - The first year after legislation passes, the City must provide awareness of its passage in the form of a presentation to the Council.

- Beginning the second and subsequent years after passage, the City must educate property managers, private contractors, and/or the public on winter maintenance practices to maintain public safety and protect the environment using two tools from the City's Stormwater Management Plan.

While well intended, this BMP does not satisfy the tenets of the CWA and Remand Rule. It is not a clear, specific, and measurable term designed to actually reduce stormwater pollution to the maximum extent practicable. It does not include narrative, numeric, or other types of requirements designed to reduce pollutant loads. Once a year training for municipal officials might be important, but without more, does not reduce pollution. Similarly, educating legislators might be laudable but is not a BMP for purposes of a CWA permit. There is no chlorides reduction bill before the legislature, and education efforts alone will not pass and implement such a bill. The concept is simply too attenuated to satisfy the Remand Rule.

DEP should strike the above-referenced chlorides reduction BMP from second step orders and replace it with direct actions municipalities can take to reduce chlorides to urban impaired waters. We have attached Appendix F from the NH MS4 Permit as guidance for the types of BMPs that might be included.

Response #9: The permittee's SWMP states "Portland will collaborate with the City of Westbrook to develop a Salt Reduction Outreach Plan for commercial and potentially industrial and residential property owners in the Nasons Brook watershed." The City of Westbrook's SWMP contains language with direct actions municipalities can take to reduce chlorides to urban impaired waters such as the following:

- *Annual review of appropriate application rates with crew at beginning of winter season*
- *Use of Ground Speed Control and Annual Equipment Calibration to ensure proper application rates*
- *Recalibration of equipment whenever major repairs are made*
- *Use of pavement temperature gauges to determine application rates*
- *Use of multi-section blades that adhere to shape of roads (or other kind of blade)*
- *Pretreatment of roads with brine when appropriate*
- *Use of liquid (prewetting) to improve performance and to reduce "bounce and scatter" when applying sodium chloride, and*
- *Use of road weather information cameras/sensors, real time conditions.*

The City has already taken several actions over the past few years to minimize their chloride contributions during deicing, will continue to implement the following chloride reduction practices which are also specified in the Maine BMP Manual for Snow and Ice Control, 2015:

These BMPs are direct actions that are clear, specific and measurable and must be incorporated into the permittee's Modified Stormwater Management Plan. The final DEP permittee specific order has been modified to require the permittee to incorporate BMPs into the Modified Stormwater Management Plan or before December 31, 2022.



DEP INFORMATION SHEET

Appealing a Department Licensing Decision

Dated: August 2021

Contact: (207) 314-1458

SUMMARY

This document provides information regarding a person's rights and obligations in filing an administrative or judicial appeal of a licensing decision made by the Department of Environmental Protection's (DEP) Commissioner.

Except as provided below, there are two methods available to an aggrieved person seeking to appeal a licensing decision made by the DEP Commissioner: (1) an administrative process before the Board of Environmental Protection (Board); or (2) a judicial process before Maine's Superior Court. An aggrieved person seeking review of a licensing decision over which the Board had original jurisdiction may seek judicial review in Maine's Superior Court.

A judicial appeal of final action by the Commissioner or the Board regarding an application for an expedited wind energy development ([35-A M.R.S. § 3451\(4\)](#)) or a general permit for an offshore wind energy demonstration project ([38 M.R.S. § 480-HH\(1\)](#)) or a general permit for a tidal energy demonstration project ([38 M.R.S. § 636-A](#)) must be taken to the Supreme Judicial Court sitting as the Law Court.

I. ADMINISTRATIVE APPEALS TO THE BOARD

LEGAL REFERENCES

A person filing an appeal with the Board should review Organization and Powers, [38 M.R.S. §§ 341-D\(4\)](#) and [346](#); the Maine Administrative Procedure Act, 5 M.R.S. § [11001](#); and the DEP's [Rule Concerning the Processing of Applications and Other Administrative Matters \(Chapter 2\)](#), 06-096 C.M.R. ch. 2.

DEADLINE TO SUBMIT AN APPEAL TO THE BOARD

Not more than 30 days following the filing of a license decision by the Commissioner with the Board, an aggrieved person may appeal to the Board for review of the Commissioner's decision. The filing of an appeal with the Board, in care of the Board Clerk, is complete when the Board receives the submission by the close of business on the due date (5:00 p.m. on the 30th calendar day from which the Commissioner's decision was filed with the Board, as determined by the received time stamp on the document or electronic mail). Appeals filed after 5:00 p.m. on the 30th calendar day from which the Commissioner's decision was filed with the Board will be dismissed as untimely, absent a showing of good cause.

HOW TO SUBMIT AN APPEAL TO THE BOARD

An appeal to the Board may be submitted via postal mail or electronic mail and must contain all signatures and required appeal contents. An electronic filing must contain the scanned original signature of the appellant(s). The appeal documents must be sent to the following address.

Chair, Board of Environmental Protection
c/o Board Clerk
17 State House Station
Augusta, ME 04333-0017
ruth.a.burke@maine.gov

The DEP may also request the submittal of the original signed paper appeal documents when the appeal is filed electronically. The risk of material not being received in a timely manner is on the sender, regardless of the method used.

At the time an appeal is filed with the Board, the appellant must send a copy of the appeal to: (1) the Commissioner of the DEP (Maine Department of Environmental Protection, 17 State House Station, Augusta, Maine 04333-0017); (2) the licensee; and if a hearing was held on the application, (3) any intervenors in that hearing proceeding. **Please contact the DEP at 207-287-7688 with questions or for contact information regarding a specific licensing decision.**

REQUIRED APPEAL CONTENTS

A complete appeal must contain the following information at the time the appeal is submitted.

1. *Aggrieved status.* The appeal must explain how the appellant has standing to bring the appeal. This requires an explanation of how the appellant may suffer a particularized injury as a result of the Commissioner's decision.
2. *The findings, conclusions, or conditions objected to or believed to be in error.* The appeal must identify the specific findings of fact, conclusions of law, license conditions, or other aspects of the written license decision or of the license review process that the appellant objects to or believes to be in error.
3. *The basis of the objections or challenge.* For the objections identified in Item #2, the appeal must state why the appellant believes that the license decision is incorrect and should be modified or reversed. If possible, the appeal should cite specific evidence in the record or specific licensing criteria that the appellant believes were not properly considered or fully addressed.
4. *The remedy sought.* This can range from reversal of the Commissioner's decision on the license to changes in specific license conditions.
5. *All the matters to be contested.* The Board will limit its consideration to those matters specifically raised in the written notice of appeal.
6. *Request for hearing.* If the appellant wishes the Board to hold a public hearing on the appeal, a request for hearing must be filed as part of the notice of appeal, and it must include an offer of proof regarding the testimony and other evidence that would be presented at the hearing. The offer of proof must consist of a statement of the substance of the evidence, its relevance to the issues on appeal, and whether any witnesses would testify. The Board will hear the arguments in favor of and in opposition to a hearing on the appeal and the presentations on the merits of an appeal at a regularly scheduled meeting. If the Board decides to hold a public hearing on an appeal, that hearing will then be scheduled for a later date.
7. *New or additional evidence to be offered.* If an appellant wants to provide evidence not previously provided to DEP staff during the DEP's review of the application, the request and the proposed supplemental evidence must be submitted with the appeal. The Board may allow new or additional evidence to be considered in an appeal only under limited circumstances. The proposed supplemental evidence must be relevant and material, and (a) the person seeking to add information to the record must show due diligence in bringing the evidence to the DEP's attention at the earliest possible time in the licensing process; or (b) the evidence itself must be newly discovered and therefore unable to have been presented earlier in the process. Requirements for supplemental evidence are set forth in [Chapter 2 § 24](#).

OTHER CONSIDERATIONS IN APPEALING A DECISION TO THE BOARD

1. *Be familiar with all relevant material in the DEP record.* A license application file is public information, subject to any applicable statutory exceptions, and is made accessible by the DEP. Upon request, the DEP will make application materials available to review and photocopy during normal working hours. There may be a charge for copies or copying services.

2. *Be familiar with the regulations and laws under which the application was processed, and the procedural rules governing the appeal.* DEP staff will provide this information upon request and answer general questions regarding the appeal process.
3. *The filing of an appeal does not operate as a stay to any decision.* If a license has been granted and it has been appealed, the license normally remains in effect pending the processing of the appeal. Unless a stay of the decision is requested and granted, a licensee may proceed with a project pending the outcome of an appeal, but the licensee runs the risk of the decision being reversed or modified as a result of the appeal.

WHAT TO EXPECT ONCE YOU FILE A TIMELY APPEAL WITH THE BOARD

The Board will acknowledge receipt of an appeal, and it will provide the name of the DEP project manager assigned to the specific appeal. The notice of appeal, any materials admitted by the Board as supplementary evidence, any materials admitted in response to the appeal, relevant excerpts from the DEP's administrative record for the application, and the DEP staff's recommendation, in the form of a proposed Board Order, will be provided to Board members. The appellant, the licensee, and parties of record are notified in advance of the date set for the Board's consideration of an appeal or request for a hearing. The appellant and the licensee will have an opportunity to address the Board at the Board meeting. The Board will decide whether to hold a hearing on appeal when one is requested before deciding the merits of the appeal. The Board's decision on appeal may be to affirm all or part, affirm with conditions, order a hearing to be held as expeditiously as possible, reverse all or part of the decision of the Commissioner, or remand the matter to the Commissioner for further proceedings. The Board will notify the appellant, the licensee, and parties of record of its decision on appeal.

II. JUDICIAL APPEALS

Maine law generally allows aggrieved persons to appeal final Commissioner or Board licensing decisions to Maine's Superior Court (see [38 M.R.S. § 346\(1\)](#); 06-096 C.M.R. ch. 2; [5 M.R.S. § 11001](#); and M.R. Civ. P. 80C). A party's appeal must be filed with the Superior Court within 30 days of receipt of notice of the Board's or the Commissioner's decision. For any other person, an appeal must be filed within 40 days of the date the decision was rendered. An appeal to court of a license decision regarding an expedited wind energy development, a general permit for an offshore wind energy demonstration project, or a general permit for a tidal energy demonstration project may only be taken directly to the Maine Supreme Judicial Court. See 38 M.R.S. § 346(4).

Maine's Administrative Procedure Act, DEP statutes governing a particular matter, and the Maine Rules of Civil Procedure must be consulted for the substantive and procedural details applicable to judicial appeals.

ADDITIONAL INFORMATION

If you have questions or need additional information on the appeal process, for administrative appeals contact the Board Clerk at 207-287-2811 or the Board Executive Analyst at 207-314-1458 bill.hinkel@maine.gov, or for judicial appeals contact the court clerk's office in which the appeal will be filed.

Note: This information sheet, in conjunction with a review of the statutory and regulatory provisions referred to herein, is provided to help a person to understand their rights and obligations in filing an administrative or judicial appeal. The DEP provides this information sheet for general guidance only; it is not intended for use as a legal reference. Maine law governs an appellant's rights.



Illicit Discharge Detection & Elimination Program

City of Portland Maine

Department of Public Works

212 Canco Road | Portland ME 04103

www.portlandmaine.gov

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RECORD OF REVISIONS

Date	Description of Changes
July 2022	Updated to incorporate 2022 MS4GP requirements

1. DEFINITIONS

The terms listed below are defined for the purposes of this Program. Additional definitions are provided in the City's Stormwater Ordinance (Chapter 32 of the City Code of Ordinances); where conflict occurs, the more stringent definition shall apply.

Best Management Practice (BMP): Schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of waters of the State. BMPs also include treatment requirements, operating procedures, and practices to control site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.

Catch Basin: A chamber or well, usually built to the curb line of a street, which admits surface water for discharge into a stormwater drain.

Clean Water Act: The Federal Water Pollution Control Act (33 U.S.C. § 1251 et seq.) as hereafter amended.

Discharge of Pollutants: Any spilling, leaking, pumping, pouring, emptying, dumping, disposing or other addition of pollutants to the Waters of the State (for the purpose of this GP, located within the permittee's UA and not including groundwater.)

Dry weather Inspection: An inspection of an outfall that includes observations of sheen, discoloration, foaming, evidence of sanitary sewage, excessive algal growth, and similar visual indicators, as well as detection of odor. These inspections must be completed during a dry weather flow condition (when the storm sewer system is not impacted by current or recent precipitation) or when the outfall is not flowing even if it is within the 72 hours of precipitation greater than 1/4 of an inch, or ice or snow melt.

Groundwater: Water beneath the surface of the ground.

Illicit Connection: A surface or subsurface drain or conveyance, which allows an illicit discharge into the municipal storm drain system, including without limitation sewage, process wastewater, or wash water and any connections from indoor drains, sinks, or toilets, regardless of whether said connection was previously allowed, permitted, or approved before the effective date of ordinances enacted to prohibit such discharges.

Illicit Discharge: Any discharge to a regulated MS4 system that is not composed entirely of stormwater other than: discharges authorized pursuant to another permit issued pursuant to 38 M.R.S. §413; uncontaminated groundwater; water from a natural resource [such as a wetland]; or other Allowable Non-Stormwater Discharges as identified in the MS4 general permit.

Junction Manhole: Under the Permit, a junction manhole is a manhole or structure with two or more inlets accepting flow from two or more MS4 alignments. Manholes with inlets solely from private storm drains, individual catch basins, or both, are not considered junction manholes.

Manhole: Sewer system structure typically made out of brick, concrete block, or monolithic concrete sections. Manholes have solid covers that do not accept runoff like a catch basin. Manholes within a storm sewer system are installed typically at bends in pipe runs, every 300 feet to 400 feet within a storm sewer pipe run, intersections of two or more pipe runs, and at the ends of pipe runs. Manholes allow for the cleaning and inspection of storm sewer systems. Manholes are typically 'fed' stormwater by catch basins and upstream storm sewer pipes.

Municipal Separate Storm Sewer System (MS4): A conveyance or system of conveyances designed or used for collecting or conveying stormwater (other than a publicly owned treatment works (POTW), as defined at 40 CFR 122.2, or a combined sewer), including, but not limited to, roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, human-made channels or storm drains owned or operated by the City of Portland

National Pollutant Discharge Elimination System (NPDES) Stormwater Discharge Permit: A permit issued by United States Environmental Protection Agency or jointly with the Maine Department of Environmental Protection that authorizes the discharge of pollutants to waters of the United States.

Non-Stormwater Discharge: Discharge to the municipal storm drain system not composed entirely of stormwater.

Outfall: A point source where the MS4 discharges from a pipe, ditch or other discrete conveyance to the waters of the state other than groundwater, or to another entity's MS4, and does not include pipes, cross culverts, tunnels or other conveyances which connect segments of the same stream or other waters of the state and are used to convey waters of the state. For the purposes of this GP, a discharge to a location not defined as a water of the state is not considered an outfall.

Pollutant: Any element or property of sewage, agricultural, industrial or commercial waste, runoff, leachate, heated effluent, or other matter whether originating at a point or nonpoint source, that is or may be introduced into any sewage treatment works or waters of the United States. Pollutants shall include without limitation:

- 1) paints, varnishes, and solvents;
- 2) oil and other automotive fluids;
- 3) non-hazardous liquid and solid wastes and yard wastes;
- 4) refuse, rubbish, garbage, litter, or other discarded or abandoned objects, ordnances, accumulations and floatables;
- 5) pesticides, herbicides, and fertilizers;
- 6) hazardous materials and wastes; sewage, fecal coliform and pathogens;

- 7) dissolved and particulate metals;
- 8) animal wastes;
- 9) rock; sand; salt, soils;
- 10) construction wastes and residues; and
- 11) noxious or offensive matter of any kind.

Stormwater: The part of precipitation including runoff from rain or melting ice and snow that flows across the surface as sheet flow, shallow concentrated flow, or in drainage ways.

Storm Sewer: Also referred to as “Storm Drain”, a sewer that carries only surface runoff, street wash, and snow melt from the land. In a separate sewer system, storm sewers are completely separate from those that carry domestic and commercial wastewater (sanitary sewers).

Wastewater: Any sanitary waste, sludge, or septic tank or cesspool overflow, and water that during manufacturing, cleaning or processing, comes into direct contact with or results from the production or use of any raw material, intermediate product, finished product, byproduct or waste product.

Waters of the State: Any and all surface waters and subsurface waters that are contained within, flow through, or under or border upon this state or any portion of the state, including the marginal and high seas, except such waters as are confined and retained completely upon the property of one person and do not drain into or connect with any other waters of the state, but not excluding waters susceptible to use in interstate or foreign commerce, or whose use, degradation or destruction would affect interstate or foreign commerce.

2. INTRODUCTION

The Environmental Protection Agency (EPA) regulates the discharge of stormwater runoff from Municipal Separate Storm Sewer Systems (MS4s) that are located in Urbanized Areas (also known as “regulated areas”). The State of Maine has delegated authority for the administration of this program, and the City of Portland (City) is required to obtain a Maine Pollutant Discharge Elimination System (MEPDES) permit for stormwater discharges in the Urbanized Area from the Maine Department of Environmental Protection (DEP). Under the MEPDES General Permit for Stormwater Discharges from MS4s, also known as the MS4 General Permit, the City is authorized to discharge stormwater per their Stormwater Management Program (SWMP), which is developed to reduce the contamination of stormwater runoff and eliminate illicit discharges. In accordance with the MS4 General Permit, the SWMP consists of six components called *minimum control measures* which, when implemented, should result in a reduction in pollutants discharging into receiving waters. The minimum control measures are:

1. Public Education and Outreach;
2. Public Involvement and Participation;
3. Illicit Discharge Detection and Elimination;
4. Construction Site Stormwater Runoff Control;
5. Post-Construction Stormwater Management; and
6. Good Housekeeping and Pollution Prevention.



The Illicit Discharge Detection and Elimination (IDDE) Program described herein will partially satisfy the requirements of the third minimum control measure. The City is committed to working with residents and state and federal environmental agencies to achieve water quality goals and protect public health. The Department of Public Works (DPW) has established this IDDE Program Manual (Manual) to outline procedures, goals, Standard Operating Procedures (SOPs), and workflow processes. This Manual is a working document and will be revised as necessary.

The City of Portland’s IDDE Program is based on current Maine Pollutant Discharge Elimination System (MEPDES) regulatory requirements, but has also been informed by IDDE “best practices” outlined by EPA Region 1. The Manual includes and/or references mapping, legal authority, statement of responsibilities, assessment and priority ranking of investigation areas, stormwater

discharge outfall screening and sampling, confirmation and removal of illicit connections, follow-up screening, prevention procedures, and training. The Portland DPW manages the City's IDDE Program with support from the Permitting & Inspections Department, although other municipal departments also play a role in the program.

2.1 PURPOSE OF THIS PROGRAM MANUAL

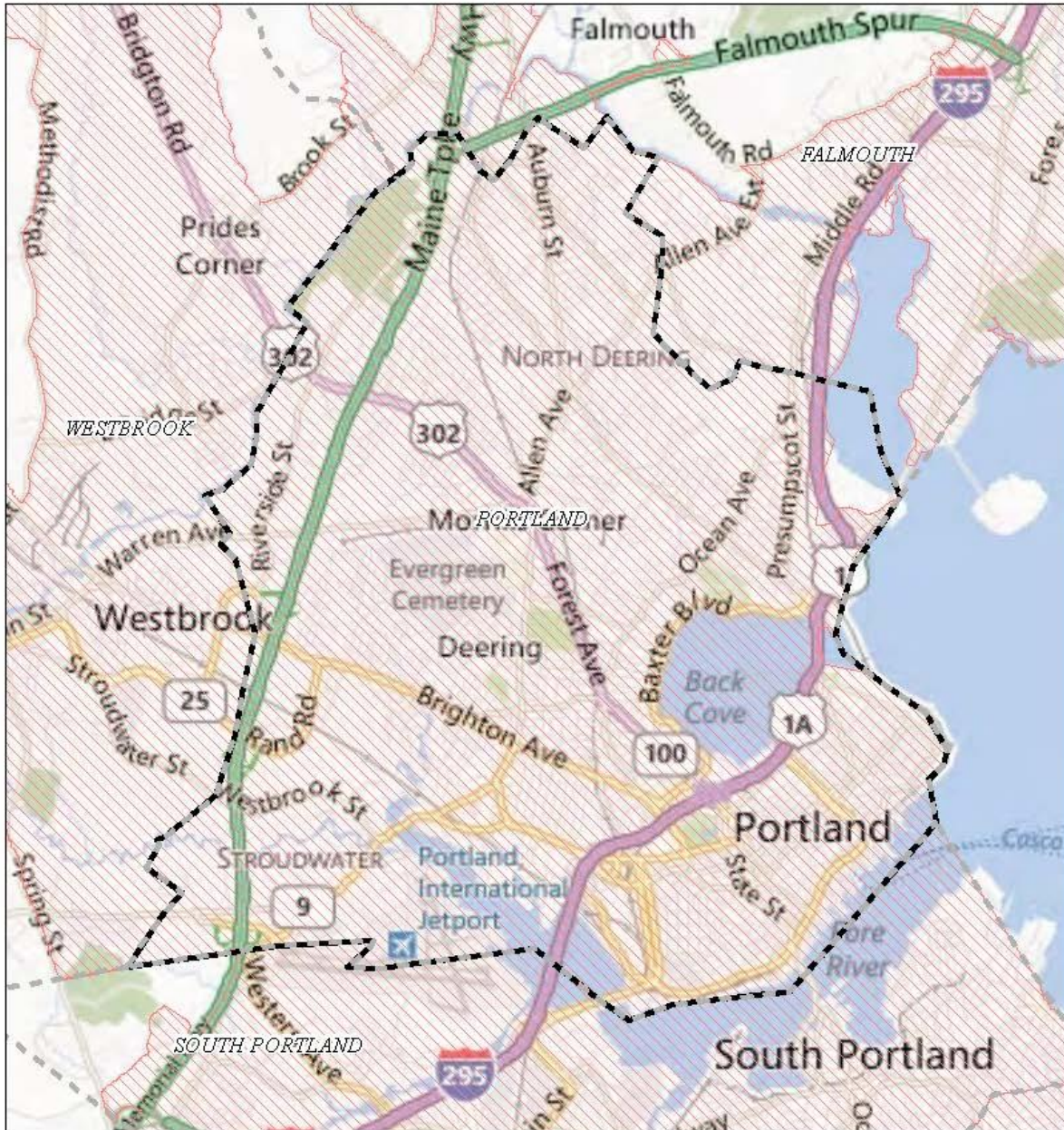
The purpose of this IDDE Program Manual is to establish a proactive, strategic, written program to address illicit discharges to the MS4 or to waters of the state in accordance with the requirements of the 2022 MS4 General Permit. The IDDE Program contained herein builds upon the City's IDDE activities conducted under the 2013 MS4 General Permit and incorporates a similar approach to address the 2022 permit requirements. The Program's implementation period is intended to align with the five-year span of the MS4 General Permit.

This IDDE Program Manual is also intended to assist the City of Portland in implementing the IDDE Program in a prioritized and strategic way to find and eliminate illicit discharges. The Manual establishes procedures for standardized documentation of potential illicit discharges through work orders and provides a basis for labor and capital improvement budgeting each year; it is to be used as a guide for IDDE activities and can also be used as a training tool for staff.

2.2 PROGRAM APPLICABILITY

This IDDE Program should be implemented in the City's Urbanized Area (Figure 1). Urbanized Area is defined by the latest United States decennial census as the land area that has a residential population of at least 50,000 and an overall population density of at least 1,000 people per square mile. In Portland, the entire non-island portion of the City is identified as Urbanized. Combined sewer areas are not regulated under the MS4 General Permit and are not included in the IDDE Program. While the IDDE Program is focused on the Urbanized Area, targeted and systematic investigations will be conducted in prioritized areas, as further described herein.

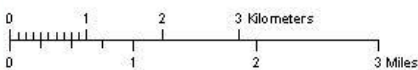
Figure 1: Portland Maine Urbanized Area



**NPDES Phase II Stormwater Program
Automatically Designated MS4 Areas**

Portland ME

 Regulated Area (2000 + 2010 Urbanized Area)



Town Population: **65606**
Regulated Population: **64581**
(Populations estimated from 2010 Census)



Urbanized Areas, Town Boundaries:
US Census (2000, 2010)
Base map © 2010 Microsoft Corporation
and its data suppliers

US EPA Region 1 GIS Center Map #8824, 11/19/2012

2.3 ILLICIT DISCHARGES

The EPA defines an illicit discharge as “*any discharge to an MS4 that is not composed entirely of stormwater.*” However, there are exceptions: 1) discharges regulated by a separate National Pollutant Discharge Elimination System (NPDES) permit and 2) allowable non-stormwater discharges as defined by the MS4 General Permit.

Illicit discharges can contribute elevated levels of pollutants to surface water bodies and can also contaminate groundwater. When these pollutants enter water bodies, they hinder recreational activities and harm wildlife habitats. Illicit discharges are not permitted under the MS4 general permit can result in violations and fines for MS4 operators.

Illicit discharges can enter the drainage system via direct connections or indirect discharges. A *direct* connection is any non-stormwater pipe connected to the storm drain system, such as pipe from a washing machine or floor drain, or a sewer service connection from a house. Often, these types of discharges are continuous. An *indirect* discharge may come from a wide variety of sources, such as sanitary sewer overflows, infiltration into the drainage system from failed septic systems or leaking sanitary collection systems, or hazardous waste spills. Grass clippings, leaf litter, and other solid material dumped or otherwise deposited in the storm drain system are also considered indirect illicit discharges, though these are commonly intermittent or transitory discharges.

2.4 ALLOWABLE NON-STORMWATER DISCHARGES

Examples of non-stormwater discharges considered allowable by the MS4 general permit include:

- landscape irrigation, irrigation water, lawn watering runoff
- diverted stream flows
- rising ground waters, uncontaminated ground water infiltration (as defined by 40 CFR 35.2005(20)), uncontaminated pumped ground water
- uncontaminated flows from foundation drains
- air conditioning and compressor condensate
- flows from uncontaminated springs
- uncontaminated water from crawl space pumps
- uncontaminated flows from footing drains
- flows from riparian habitats and wetlands
- residual street wash water (where spills/leaks of toxic or hazardous materials have not occurred, unless all spilled material has been removed and detergents are not used)
- hydrant flushing and firefighting activity runoff
- water line flushing and discharges from potable water sources

- individual residential car washing
- dechlorinated swimming pool discharges

2.5 IDDE PROGRAM REQUIREMENTS

The MS4 General Permit is issued for a 5-year permit term, but can be administratively extended by the DEP. The 2013 MS4 General Permit issued on July 1, 2013 was extended until June 30, 2022 while a new permit was under development.

In accordance with prior MS4 General Permit requirements, the City of Portland developed and is currently implementing and enforcing a program to detect and eliminate illicit discharges.

The Illicit Discharge Program, consists of:

- a storm sewer system map (Appendix A);
- an ordinance or other regulatory mechanism prohibiting non-stormwater discharges into the system (Refer to Section 2.7 and Appendix B);
- an opportunistic inspection program conducted during catch basin or pipe cleaning activities to detect and address non-stormwater discharges into the system (Refer to Section 3.2 and Appendix D);
- a dry weather outfall inspection program to detect and address non-stormwater discharges into the system (Refer to Section 3.5 and Appendix E);
- a strategy to detect illicit discharges based on the Standard Operating Procedures for Stormwater Phase II Communities in Maine; and
- an evaluation of non-stormwater discharges that are not considered significant contributors of pollutants (Refer to Section 2.4).

Under the current MS4 General Permit (effective between 2022-2027), the City will:

- refine its infrastructure data and revise the stormwater drainage map accordingly;
- continue to enforce its non-stormwater discharge ordinance;
- revise the dry weather outfall inspection plan, inspecting all outfalls within the five-year permit term; and
- perform a wet weather assessment to develop a list of outfalls to be sampled during wet weather events during the next permit term.

2.6 STORM SEWER SYSTEM MAP

The City maintains a map of all storm sewer system components in the Urbanized Area. This electronic map is based in ArcGIS and is linked to the City's asset management software, CityWorks, in which inspections findings and the conditions of system structures are noted.

CityWorks also allows for work orders to be created when any issues are observed requiring follow-up.

Each structure within the City's Storm Sewer System Map is given a unique identifier, which allows for rapid response to any urgent issues, trend analysis such as identifying hot spots for pet waste or excess accumulation in catch basins, and documentation of critical operations and maintenance data.

Water Resources staff, including field staff and the asset management team, continuously update the comprehensive GIS maps of all City stormwater infrastructure. Additionally, all static maps (PDFs or printed maps) are updated at least annually. Data maintained within the City's Storm Sewer System Map includes, but is not limited to:

- location of all stormwater catch basins;
- connecting surface and subsurface infrastructure with direction of in-flow and out-flow pipes;
- the locations of all discharges from all stormwater outfalls operated by the City; and
- the receiving waters or interconnected MS4s into which the City's system discharges.

The most recent Storm Sewer System Map can be found on the City's website and is included as Appendix A.

2.7 LEGAL AUTHORITY

The City of Portland has a Stormwater Ordinance: Chapter 32, which prohibits discharges of pollutants to the City's stormwater and sewer infrastructure. Appendix B includes a copy of the City's Stormwater Ordinance. Additionally, Chapter 24 regulates all sanitary sewer connections within the City. The City's Department of Public Works is designated to administer, implement, and enforce Chapters 24 and 32.

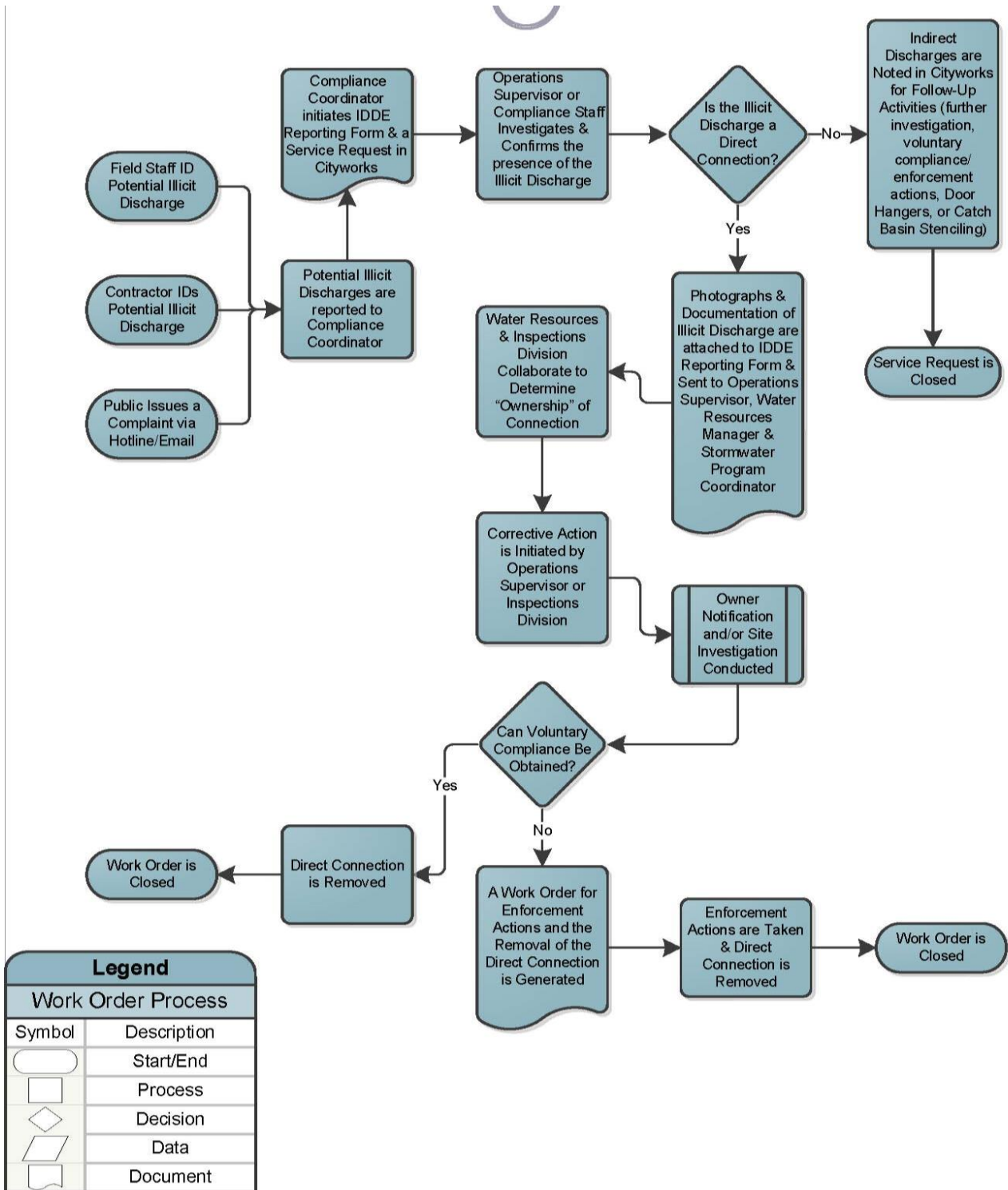
Additionally, through the Permitting & Inspections Department, the City ensures compliance with the State Plumbing Code MRSA Title 32 Section 3403-B regarding plumbing connections and the State of Maine Subsurface Wastewater Disposal Rules.

The City's Stormwater Program is a City-wide program and all municipal staff play a role in ensuring the City minimizes the potential for pollutants in stormwater. Specific parties responsible for implementing this IDDE program are listed in the table below.

Table 1: Responsible Parties for Implementing IDDE Program

Primary Responsible Party	Responsibilities
Public Works Director	<ul style="list-style-type: none"> - Oversees Water Resources Division and ultimate authority for enforcement of ordinances
Water Resources Manager	<ul style="list-style-type: none"> - Oversees Compliance, Engineering, and Operations and Maintenance Sections - Allocates staffing and resources when needed
Compliance Section Coordinator	<ul style="list-style-type: none"> - Oversees IDDE Program & reviews annual documentation - Coordinates with Permitting & Inspections Department - Coordinates with Portland Water District's Industrial Pretreatment Program - Coordinates enforcement activities - Provides coordination between Fats Oil & Grease program and IDDE Program - Administers Prohibited Discharges Article
Stormwater Program Coordinators	<ul style="list-style-type: none"> - Coordinates outfall investigation, screening and sampling activities - Reviews screening results and citizen complaints - Conducts employee training - Conducts public outreach - Compiles annual documentation
Operations Supervisor, Operations Staff and Compliance Team	<ul style="list-style-type: none"> - Conducts investigations, screening, and sampling - Conducts elimination activities - Conducts opportunistic inspections
Permitting & Inspections Department	<ul style="list-style-type: none"> - Manages building inspections and code enforcement - Alerts Department of Public Works of potential building/plumbing problems - Coordinates with Compliance Section Coordinator on elimination and enforcement activities as necessary
Asset Information Management Specialist	<ul style="list-style-type: none"> - Supports IDDE Program data management and provides data compilation for reporting purposes
Corporation Counsel	<ul style="list-style-type: none"> - Supports IDDE Program enforcement when necessary

Figure 2: IDDE Workflow Process



3. ILLICIT DISCHARGE DETECTION

The City of Portland Illicit Discharge Detection and Elimination Program is informed by historic IDDE efforts in Portland and incorporates the new requirements of the 2022 General Permit. The City's IDDE Program is focused on the elimination of direct illicit discharges into the MS4, and therefore the waters of the state, and will continue to address indirect illicit discharges as they are detected. This section formalizes the City's procedures including the steps taken to identify an illicit discharge, steps taken to immediately stop illicit discharges when discovered, details of storm sewer system operations and maintenance activities, and the dry weather outfall inspection program. The City will update this section to include details of the Wet Weather Assessment, once completed, which will result in a list of all outfalls with a higher potential for discharges during wet weather events and identified for wet weather monitoring.

The IDDE Program utilizes the following strategies for illicit discharge detection:

1. Voluntary reporting;
2. Opportunistic inspections;
3. Ditch inspections;
4. Private property inspections;
5. Outfall inspections; and
6. Outfall screenings.

When potential illicit discharges are identified via outfall screening, opportunistic inspections, or a verified public complaint, the workflow process shown in Figure 2 will be enacted. Sections 4 and 5 provide more details on the investigation and elimination processes.

A review and evaluation of investigations and elimination activities will be conducted annually and will be reported to DEP through the required annual report. The intent of this review and evaluation is to evaluate the effectiveness of these procedures and to identify any necessary updates to this Manual.

3.1 VOLUNTARY REPORTING

The City of Portland's online reporting service, called See Click Fix, allows residents and outside agencies to file complaints, which can be used to report illicit discharges to the Department of Public Works. The Department of Public Works also has a general Customer Service phone line. These services encourage residents to participate in the reporting process and help the Department receive timely information about problems like illegal dumping, spills, or strong odors associated with sewer system failures.

3.2 OPPORTUNISTIC INSPECTIONS

The DPW’s ongoing drainage system maintenance activities (e.g. catch basin cleaning, ditch cleaning and maintenance, pipe flushing, etc.) provide the best screening opportunity to document and identify potential illicit discharges on an ongoing basis. The DPW currently performs (through Public Works staff and contractors) catch basin cleaning throughout the year. Catch basin cleaning allows trained DPW staff to visually inspect hundreds of drainage structures for illicit connections each year. Additionally, the DPW conducts periodic storm drain repair, flushing/jetting, and CCTV work, creating other opportunities for opportunistic inspection.

When identified for follow-up, DPW staff will utilize the SOP for Illicit Discharge Opportunistic Inspections in Appendix D and conduct olfactory (odor), visual inspections (color, turbidity, floatables, staining, and pipe benthic growth), in-situ (temperature, conductivity) and field and/or laboratory analysis (ammonia, total residual chlorine, surfactants, and bacteria) consistent with Chapter 11 of the Center for Watershed Protection’s *Illicit Discharge Detection and Elimination: A Guidance Manual for Program Development and Technical Assessments (2004)* and the Stormwater Monitoring Quality Assurance Project Plan (QAPP) included in Appendix I. Training related to illicit discharge detection procedures shall be provided as outlined in Section 7.

3.3 DITCH INSPECTIONS

Dry weather open ditch inspections may be conducted by City staff with the assistance of a third-party contractor (as needed). Inspections will take place in the late fall/early winter or in the early spring of each permit year, when snow and vegetation do not impede access/visibility.



City staff will continue to inspect for illicit discharges in the open ditch system as part of the general maintenance of municipal infrastructure. The City will follow the same SOP for opportunistic IDDE inspection activities while conducting mapping activities and maintenance on the open ditch system. Septic system failures will be investigated for otherwise undetermined illicit discharges to the open ditch system.

3.4 PRIVATE PROPERTY INVESTIGATIONS

Sewer or septic malfunctions, which are reported to and investigated by the City, may also lead to the discovery of illicit discharges. Illicit discharges will continue to be investigated and documented as part of the sewer or septic malfunction reporting process. The City of Portland Permitting and Inspections Department is the primary regulatory authority for building and plumbing code compliance and supports the DPW staff when an illicit discharge is found on private property.

3.5 OUTFALL SCREENING / INSPECTION

In previous permit cycles, the City of Portland focused dry weather outfall inspections within the priority watershed of Capisic Brook, but also completed dry weather outfall inspections in other Urban Impaired Stream watersheds including Fall Brook and Dole Brook, as well as in the Smith's Creek watershed. The City identified the sub-watersheds of the Bishop Street and Warren Avenue outfalls as the highest priority. Beginning in 2022, outfall screening will begin to be conducted for all outfalls. Outfall screening will provide the basis for further investigation and for quantifying the level of illicit discharge abatement effectiveness.

The City has based its inspection procedures on Volume 2 of the *GUIDELINES AND STANDARD OPERATING PROCEDURES for Stormwater Phase II Communities in Maine* and Chapter 11 of the Center for Watershed Protection's *Illicit Discharge Detection and Elimination: A Guidance Manual for Program Development and Technical Assessments (2004)*.

Screening includes a rapid visual and olfactory inspection made during dry weather. For the purposes of this Program, dry-weather conditions consist of no more than 0.25 inches of rainfall in the previous 72-hour period and no significant snowmelt.

The Dry Weather Outfall Inspection Form used by staff conducting outfall inspections is included in Appendix E.

3.6 OUTFALL SAMPLING / TESTING

With the issuance of the 2022 MS4 General Permit, permittees must now also include a sampling component for any flow observed at an outfall during dry weather. If flow is not observed during screening, the non-flowing condition is noted on the Outfall Inspection Form and no sample is collected.

Sampling includes collection and laboratory analysis of outfall samples when dry weather flow is observed during screening. Outfall screening will be conducted by City staff with the assistance of a third-party contractor as necessary. Inspections will take place when possible but preferably when snow and vegetation do not impede access/visibility.



If flow is observed during screening, samples will be collected from the outfall (or if the outfall is inaccessible, the nearest accessible upstream drainage structure). Samples will be analyzed for pollutants identified in the Stormwater Monitoring Quality Assurance Project Plan (QAPP) either in the field or through laboratory analysis. This suite of parameters has been established in accordance with EPAs *Draft Bacterial Source Tracking Protocol (2012)*, which is included for reference in Appendix H. All sampling shall be conducted under the QAPP, which

details sample collection, preservation, and quality control requirements. The QAPP is included in Appendix I.

3.7 WET WEATHER ASSESSMENT

Previously, drainage areas discharging within the City’s prioritized watershed were delineated as the basis for City-wide prioritization under this IDDE Program. These drainage areas have a unique ID consistent with the City of Portland MS4 outfall ID (i.e. stormwater discharge point). These drainage areas have been evaluated using the following available data to identify potential drain system vulnerability to cross contamination from illicit connections:

- Drainage area land use;
- Development age;
- Drainage area size;
- Parcel density;
- Sanitary sewer pipe age;
- Sanitary sewer collection system density; and
- Sanitary sewer crossings of drainage system.

Additionally, an “environmental and public health” risk factor was included for each discharge location based on proximity to public water access (i.e. primary or secondary contact) and water body classification. Each of the above factors were utilized for planning-level prioritization of the primary MS4 discharges within the Urbanized Area. The prioritization results and risk factor matrix will inform the process of wet weather assessment and is shown in Appendix F.

Prior to the end of the permit cycle, the City will perform a wet weather assessment to determine which stormwater outfalls have the potential to discharge pollutants during wet weather events. Wet-weather conditions should consist of at least 0.25 inches of rainfall within the preceding 24-hour period; however, precipitation events sufficient to produce any flow in outfalls to be sampled will also be acceptable for this Program. Coordination with the Portland Water District will be necessary to confirm that flows present are not the result of hydrant flushing or water line bleeders.

The City will utilize data from existing studies to identify high-risk factors including (but not limited to):

- Areas within the MS4 that have combined sewer systems;
- Sanitary sewer systems located in a common trench with stormwater infrastructure, particularly those with known infiltration;
- Subsurface wastewater disposal systems that are 20 years old or more, or those in areas known to have experienced recent malfunctions or failures;
- Municipally-owned dog parks;

- Complaints of sewage odor at a stormwater outfall during wet weather events;
- Direct discharge from the stormwater system to any of the following:
 - A public beach or recreational area;
 - A water body impaired for bacteria;
 - A shellfish bed; and/or
 - A drinking water supply.

Using this list of high-risk outfalls, the DPW will devise a plan for monitoring the outfalls during the next permit cycle, which includes the type of monitoring and the specific frequency and conditions under which monitoring will occur for each outfall. This IDDE Manual will be updated to include the list of outfalls that will be monitored based on the EPA New England bacterial source tracking protocol or other acceptable protocols or methodologies. The updated Manual will specify the timing and frequency of wet weather monitoring to be completed during the term of the next permit cycle.

4. ILLICIT DISCHARGE INVESTIGATION / SOURCE TRACING

The following Section focuses on investigating and eliminating the source(s) of illicit discharges into the City's MS4. Investigation procedures may vary depending on the nature of the illicit discharge, but the following outlines the general components of investigation within the City. When a direct connection, spill, or environmental hazard is conclusively verified and attributed to a specific discharger or property during opportunistic inspection, several investigation steps will be bypassed to quickly eliminate the discharge.

Summaries of routine outfall sampling and inspection results will be submitted to the Compliance Section Coordinator for review. If an obvious illicit discharge is identified, the contractor or staff will notify the Compliance Section Coordinator who will immediately coordinate elimination of the discharge. If a suspected or potential illicit discharge is identified, the Compliance Section Coordinator will complete a service request for further investigation. If a direct connection is discovered, a work order will be created and when the work is done, it will include a description of how the discharge was eliminated and the work completed.

Once an illicit discharge has been verified by the Compliance Section Coordinator or Operations Supervisor, the Compliance Section Coordinator, Operations Supervisor, Archivist, and/or the Permitting & Inspections Department will determine the "ownership" of the illicit discharge. Once the ownership has been established, the appropriate resolution process will begin.

Additional field investigation may be required and may include private property site entry procedures (if needed), notifying the property owner or operator of the problem, and providing the appropriate educational materials and/or a copy of the IDDE ordinance to the property owner. Once a violation determination is made, the Permitting & Inspections Department and/or Public Works can then begin pursuing voluntary compliance or take enforcement actions, as discussed in greater detail in the following sections. If no Code violations are identified, then the investigation is closed. Illicit discharges should be eliminated within 60 days of verification. If it is not possible to eliminate the illicit discharge within 60 days, efforts will be taken to minimize the impacts and an expeditious schedule for elimination will be arranged.

4.1 INVESTIGATION PROCEDURE

The DPW will implement the following Investigation Procedure at outfalls with dry weather flow where sampling analysis showed exceedances of benchmark parameters or when potential illicit discharges are identified based on visual, olfactory or in-situ field evidence. The potential for an illicit connection is based on olfactory/visual evidence and/or sampling results (e.g. sampling results where ammonia ≥ 0.5 mg/l, surfactants ≥ 0.25 mg/l, AND chlorine ≥ 0.05 mg/l).

The investigation procedure is initiated by the Compliance Section Coordinator and is conducted by trained DPW staff with the assistance of a third-party contractor as needed. A public

complaint or concern may also initiate an illicit discharge investigation. The investigation procedure includes the following implementation steps:

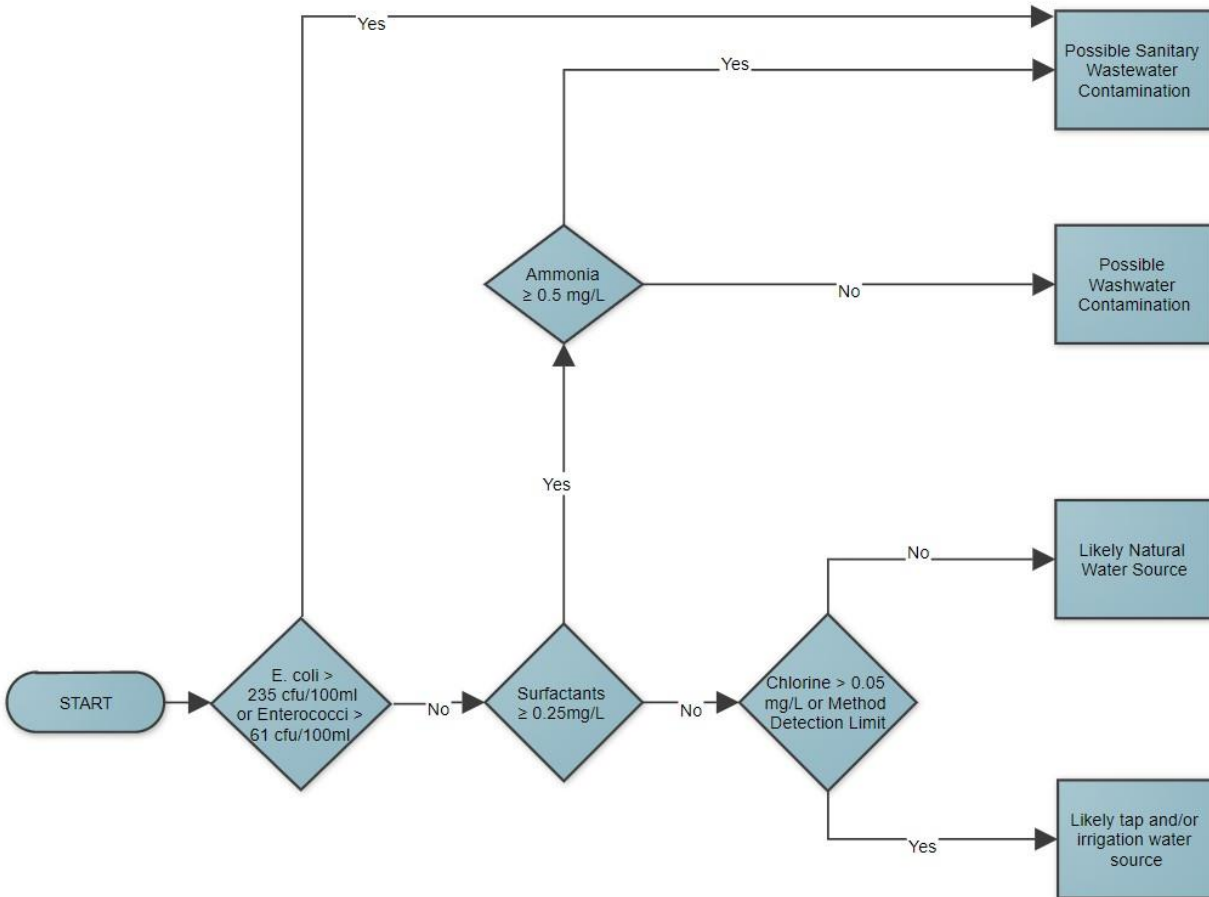
1. Conduct a preliminary review of catchment drainage plans, GIS mapping, and record drawings. Identify key junction manholes in the catchment that will require investigation outlined in Step 4. Review sewer system evaluation results to identify any problem segments of sanitary sewer, recent sanitary sewer repair and replacement projects or other indicators of historic interconnections between the sanitary and storm drain systems.
2. As needed, distribute notifications to residents and property owners within the investigation area to inform them of the potential need to gain access to private property to inspect drainage systems, internal plumbing and/or conduct dye testing.
3. Conduct field investigations during dry weather to reduce the effect of stormwater base flows on the investigation procedure. Conduct a rapid visual and olfactory inspection of key junction manholes in the catchment to attempt to identify obvious visual source(s) of illicit cross-connection and dry-weather flows. Typically, the investigation should progress from upstream to downstream locations to systematically rule out “clean” and dry segments of pipe. If visual evidence of a direct illicit discharge is identified and the segment of pipe can be isolated, skip to Step 5.
4. Isolate the pipe or open drainage segment that contains dry-weather flow by sampling at the downstream junction manhole for ammonia, chlorine, surfactants, temperature, conductivity, and/or bacteria.
 - When flow is observed in a junction manhole, obtain a sample of the dry-weather flow and use field kits or laboratory analysis to analyze samples and record results. Compare field results with the sampling thresholds shown in Figure 2 to identify the likely source of potential illicit connection(s). Junction manholes with obvious signs of contamination (e.g. toilet paper) do not need to be sampled.
 - When flow is not observed in a key junction manhole, DPW staff or a third-party contractor will partially block each inlet of the manhole using sandbags or other barriers for a 48-hour dry period (i.e. when no precipitation or significant snowmelt is expected). Re-inspect the junction manhole after 48 hours for intermittent flows, and then sample any captured flow for ammonia, chlorine, surfactants, temperature, conductivity, and/or bacteria.
5. Additional investigation procedures may be required before or after bracketed sampling to attempt to isolate the source of pollutants. These could include laboratory water quality testing (e.g. E. coli or Enterococcus), wet-weather (and/or high groundwater) investigation monitoring, CCTV pipe inspections, and targeted internal plumbing inspections including dye testing. Often verification of the source of the illicit discharge requires some form of internal TV inspection coordinated with dye flushing. This work would be completed by DPW staff or a third-party contractor.
6. When illicit discharge locations are verified in association with a physical address or interconnection with the sanitary sewer, field staff will photograph the problem area at ground level, identify any other indicators of location, summarize the likely remedy to the

problem and forward this information, including any sampling results, to the Compliance Section Coordinator and Stormwater Program Coordinator via e-mail for initiation of the corrective action process. The Compliance Section Coordinator will document the issue using the IDDE Incident Reporting Form, which will include the description of the probable resolution.

7. Identification of Illicit Discharges in pipe segments may preclude further investigation in “downstream” segments of the catchment as upstream contamination will impact sampling results in downstream locations. Once an illicit discharge is eliminated, further investigation can commence. This may require several investigation efforts to run concurrently to meet MS4 permit deadlines.

Figure 3: Flow Chart to Identify Likely Source of Illicit Discharge

Adapted from Chapter 12 of the Center for Watershed Protection’s Illicit Discharge Detection and Elimination: A Guidance Manual for Program Development and Technical Assessments (2004): Figure 47, pg. 131.



5. ILLICIT DISCHARGE ELIMINATION

5.1 VOLUNTARY COMPLIANCE

The preferred approach to address illicit discharges is to pursue voluntary compliance from the property owner or responsible party using education. With voluntary compliance, the City will work with a landowner or discharger to understand the nature of the discharge, to remove or discontinue it and to complete clean up as appropriate. Outreach will typically begin with a phone call or letter and then moves to an in-person site visit and investigation.

Often, business operators and property owners are unaware of the existence of illicit connections or activities on their properties that may constitute an illicit discharge. In these cases, providing the responsible party with information about the connection or operation, the environmental consequences, and suggestions on how to remedy the problem may be enough to secure voluntary compliance. See sample outreach letter for indirect illicit discharges in Appendix J.

Education begins during the site investigation when the operation or connection is first verified. Property owners and operators should be notified that the problem(s) must be corrected in a timely manner and that the City will be conducting a follow-up site visit to verify compliance.

5.2 ENFORCEMENT ACTIONS

If voluntary compliance is not obtained, City staff will respond with increasingly severe enforcement actions. The City employs formal letters of warning, notices of violation, and fines as necessary to ensure any illicit discharges are removed.

All enforcement actions will be the responsibility of the City of Portland Public Works unless determined to be a sanitary sewer or septic code violation and hence the jurisdiction of the MEDEP or Permitting & Inspections Department. More serious violations or continued non-compliance may warrant a more aggressive enforcement approach, such as suspending access to the storm drain, if an “imminent and substantial danger” exists.

5.2.1 Operational Problems

Property owners are responsible for correcting operational problems that result in illicit discharges to the stormwater drainage system. This could include moving washing activities indoor or undercover, covering material storage areas, cleaning sewer laterals, locating an appropriate discharge location for liquid wastes, or other operational modifications. Through site visits and education, the City can provide technical assistance to aid property owners in identifying and addressing the operational problems.

5.2.2 Structural Problems

Many illicit direct connection problems will require a structural modification to correct the problem. Structural repairs are used to address failing sanitary sewer laterals,

collection system pipes or to redirect discharges from sewer laterals to an approved sanitary wastewater collection system. Correcting structural problems is the responsibility of the property owner or the City depending on the nature of the problem and infrastructure involved. The DPW may provide general guidance for private landowners through an outreach handout or personal communication.

5.2.3 Enforcement Timeline

The timeline of corrective action procedures is highly dependent on the nature of the violation and the responsiveness and cooperation from the person(s) responsible, but is typically not longer than 60 days. Where elimination of an illicit discharge within 60 calendar days of its identification and verification as an illicit discharge is not possible, the permittee and responsible person(s) must establish an expeditious schedule for its elimination and track progress. The urgency of addressing identified problems will be based on the nature of the pollutant in question and potential impacts to downstream waters. Efforts will be taken to minimize the impacts of the illicit discharge until corrective actions are taken (e.g.: discontinuation of use and/or disconnection of source such as a washing machine or toilet; installation of temporary ESC measures; cleaning a structure that is the source of frequent illegal dumping to prevent further migration of pollutants). Compliance dates will be included in all violation notices.

If property owners are not addressing problems in a timely manner, the City may step in and perform the repairs necessary to remove an illicit connection, eliminate an illicit discharge, and/or clean-up a dumping incident. Property owners will be held responsible for reimbursing the City for any costs incurred in correcting IDDE problems in accordance with the City's legal authority.

5.3 CONFIRMING ELIMINATION

After elimination, dry-weather confirmatory screening must be conducted just "downstream" in nearest manhole to the eliminated illicit discharge to confirm removal. Field sample collection may be necessary and includes ammonia, chlorine, and surfactants and similar procedures for outfall screening. The results of the sampling must confirm the illicit discharge has been eliminated. If sampling results indicate additional illicit discharges may still remain, then the process must continue until sampling results clearly demonstrate complete removal.

5.4 EDUCATION AND OUTREACH FOLLOW-UP

Problem areas for indirect illicit discharges or dumping will be identified during inspection activities and noted using catch basin cleaning forms or the IDDE Incident Reporting Form. Problem areas will be targeted for further investigation, and potential enforcement activities, as needed. Problem areas will receive education and outreach materials.

Surveys in Portland conducted during Capisic Brook watershed outreach planning indicated that storm drain stencil street markings are one of the most visible reminders to citizens about stormwater runoff. Catch basin stenciling, mailings, and/or door hangers shall be conducted in areas where indirect illicit discharges, such as dumping, have been identified.

5.5 NESTED AND INTERCONNECTED PERMITTEES

The following facilities are regulated for stormwater discharges under their own MEPDES permits and the specified enforcement authority will be responsible for any enforcement actions taken. The City of Portland will notify DEP and the discharger if City staff observe/discover a potential illicit discharge within the facilities’ jurisdiction.

Table 2: Nested MEPDES Permittees

Exempt Facility	Alternate Regulation They Are Subject To	Enforcement Authority
Maine Turnpike Authority	Transportation MS4GP	Maine DEP
Maine DOT	Transportation MS4GP	Maine DEP
University of Southern Maine	State of Federally-owned MS4GP	Maine DEP
Industrial Facilities	Multi-Sector General Permit for Industrial Activities	Maine DEP

6. RECORD KEEPING

Throughout the investigation and enforcement action activities, all information related to the incident or property in question should be well documented. Along with monitoring and investigation activities, summaries of corrective action will be included in each MS4 Annual Report. Records for each verified illicit discharge removed from the City's MS4 should include:

- location of discharge and source;
- description of discharge;
- method/date of discovery;
- date of elimination;
- mitigation action;
- estimated volume of flow removed; and
- cost, when available.

Additional records should be maintained for each illicit discharge that is not removed within 60 days of verification, including:

- justification for delayed corrective action;
- actions taken to minimize the impact of the illicit discharge until it is resolved;
- schedule for removal of illicit discharge;
- explanation of why schedule is as expeditious as possible; and
- description of legal actions against landowner (if applicable).

The City's computerized maintenance management software, City Works, will be used to create service requests and work orders for illicit discharges. City Works will allow for all work to be recorded so that an asset (outfall or catch basin where discharge was found) can be traceable.



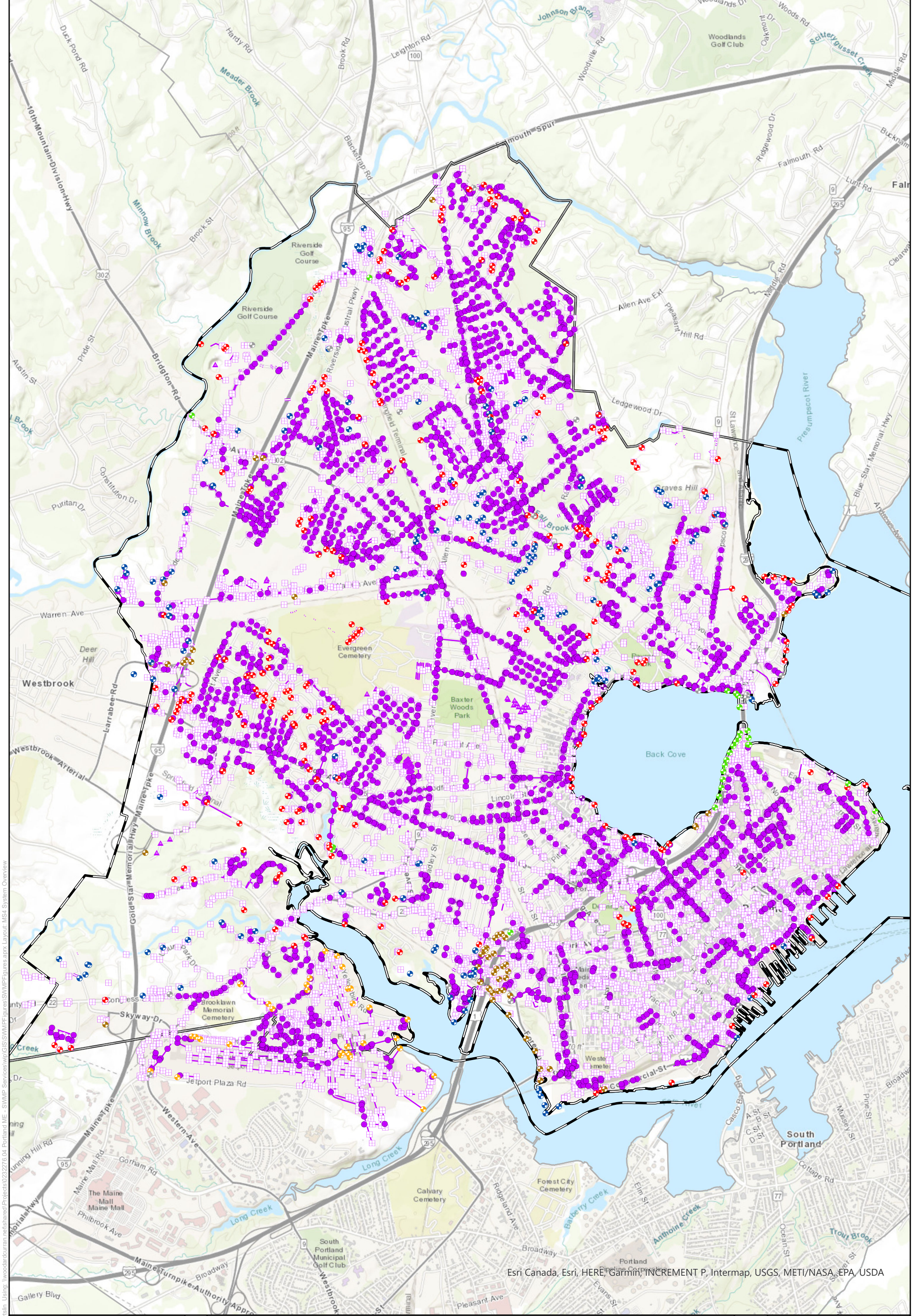
7. EMPLOYEE TRAINING

DPW staff are trained in Opportunistic Inspection SOPs via the training module in Appendix G and other supplemental materials as needed. City staff involved with the IDDE investigation procedures shall be able to properly utilize sampling equipment used to identify illicit discharges. The Water Resources Division Compliance Section may implement a series of trainings on outfall screening and investigation procedures using sampling equipment and use of field equipment for investigation and data collection, including the following:

- Extension pole cameras or hand-held video units for field staff to view inside drainage structures;
- Field data collection tools that can be synchronized with working GIS infrastructure maps and CMMS software; and
- Water quality test kits and instruments used to sample for the parameters listed in the QAPP.



APPENDIX A: STORM SEWER SYSTEM MAP



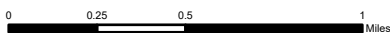
Esri Canada, Esri, HERE, Garmin, INCREMENT P, Intermap, USGS, METI/NASA, EPA, USDA

Stormwater Collection System Overview

Portland, ME

Legend

- | | | | | | | | | | | |
|---|--|--|--|--|---|---|---|--|--|---|
| ● StormManholes | Catchbasin | ▲ Stormwater BMP | — Storm Drain Pipe | - - - Underdrain | ● Private | ● State | ● PWD | Culverts | Portland Boundary | Town Boundaries |
| ● Unknown | ● City | ● Jetport | ● MDOT | ● Outfalls | ● Private | ● State | ● PWD | | | |



Project #: 0232276.04
Map Created: March 2021

Figure Exported: 3/11/2021 11:21:21 AM. User: woodardcurran.net\shared\Projects\0232276.04_Portland_ME_-_SWMP_Services\wp\GIS\SWMP\Figures\SWMP\Figures.aprx. Layout: MS4_System_Overview

Third Party GIS Disclaimer: This map is for reference and graphical purposes only and should not be relied upon by third parties for any legal decisions. Any reliance upon the map or data contained herein shall be at the users' sole risk. **Data Sources:**

APPENDIX B: STORMWATER ORDINANCE

CHAPTER 32 STORM WATER

Art. I. Prohibited Discharges, §§ 32-1--32-15

Art. II. Prohibited Discharges, §§ 32-16--32-35

Art. III. Post-Construction Stormwater Management, §§32-36--32-40

ARTICLE I. IN GENERAL

Sec. 32-1. Definitions.

For the purposes of this article, the terms listed below are defined as follows:

Applicant. "Applicant" means a person with requisite right, title or interest or an agent for such person who has filed an application for a development project that requires a post-construction stormwater management plan under this article.

Best management practices ("BMP"). "Best management practices" or "BMPs" means schedules or activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of waters of the state. BMPs also include treatment requirements, operating procedures, and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.

Clean Water Act. "Clean Water Act" means the federal Water Pollution Control Act (33 U.S.C. § 1251 *et seq.*, also known as the "Clean Water Act"), and any subsequent amendments thereto.

Discharge. "Discharge" means any spilling, leaking, pumping, pouring, emptying, dumping, disposing or other addition of pollutants to "waters of the state." "Direct discharge" or "point source" means any discernable, confined and discrete conveyance, including, but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation or vessel or other floating craft, from which pollutants are or may be discharged.

Enforcement authority. "Enforcement authority" means the person(s) or department authorized under section 32-3 of this article to administer and enforce this article.

Exempt person or discharge. "Exempt person or discharge" means any person who is subject to a multi-sector general permit for industrial activities, a general permit for construction activity, a general permit for the discharge of storm water from the Maine

department of transportation and the Maine turnpike authority municipal separate storm sewer systems, or a general permit for the discharge of storm water from state or federally owned authority municipal separate storm sewer system facilities; and any non-storm water discharge permitted under a NPDES permit, waiver, or waste discharge license or order issued to the discharger and administered under the authority of the U.S. environmental protection agency ("EPA") or the Maine department of environmental protection ("DEP").City of Portland

Municipality. "Municipality" means the city of Portland.

Municipal separate storm sewer system, or MS4. "Municipal separate storm sewer system" or "MS4," means conveyances for storm water, including, but not limited to, roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, human-made channels or storm drains (other than publicly owned treatment works and combined sewers) owned or operated by any municipality, sewer or sewage district, fire district, state agency or federal agency or other public entity that discharges directly to surface waters of the state.

National pollutant discharge elimination system (NPDES) storm water discharge permit. "National pollutant discharge elimination system (NPDES) storm water discharge permit" means a permit issued by the EPA or by the DEP that authorizes the discharge of pollutants to waters of the United States, whether the permit is applicable on an individual, group, or general area-wide basis.

Non-storm water discharge. "Non-storm water discharge" means any discharge to an MS4 that is not composed entirely of storm water.

Person. "Person" means any individual, firm, corporation, municipality, quasi-municipal corporation, state agency or federal agency or other legal entity which creates, initiates, originates or maintains a discharge of storm water or a non-storm water discharge.

Pollutant. "Pollutant" means dredged spoil, solid waste, junk, incinerator residue, sewage, refuse, effluent, garbage, sewage sludge, munitions, chemicals, biological or radiological materials, oil, petroleum products or by-products, heat, wrecked or discarded equipment, rock, sand, dirt and industrial, municipal, domestic, commercial or agricultural wastes of any kind.

Post-construction stormwater management plan. "Post-construction stormwater management plan" means BMPs employed by a development project to meet the stormwater standards of Section V of the department of planning and urban development's Technical and

Premises. "Premises" means any building, lot, parcel of land, or portion of land, whether improved or unimproved, including adjacent sidewalks and parking strips, located within the municipality from which discharges into the storm drainage system are or may be created, initiated, originated or maintained.

Qualified post-construction stormwater inspector. "Qualified post-construction stormwater inspector" means a person who conducts post-construction stormwater best management practice inspections for compensation and who has received the appropriate training for the same from DEP or otherwise meets DEP requirements to perform said inspections.

Regulated small MS4. "Regulated small MS4" means any small MS4 regulated by the State of Maine "general permit for the discharge of storm water from small municipal separate storm sewer systems" dated July 1, 2008 ("general permit") or the general permits for the discharge of storm water from the Maine department of transportation and Maine turnpike authority small MS4s or state or federally owned or operated small MS4s, including all those located partially or entirely within an urbanized area (UA).

Small municipal separate storm sewer system, or small MS4. "Small municipal separate storm sewer system", or "small MS4," means any MS4 that is not already covered by the phase I MS4 storm water program including municipally owned or operated storm sewer systems, state or federally-owned systems, such as colleges, universities, prisons, Maine department of transportation and Maine turnpike authority road systems and facilities, and military bases and facilities.

Storm drainage system. "Storm drainage system" means the City of Portland's regulated small MS4 and other conveyances for storm water located in areas outside the UA that drain into the regulated small MS4.

Storm water. "Storm water" means any storm water runoff, snowmelt runoff, and surface runoff and drainage; "Stormwater" has the same meaning as "storm water".

Urbanized area ("UA"). "Urbanized area" or "UA" means the areas of the State of Maine so defined by the latest decennial (2000) census by the U.S. Bureau of Census.
(Ord. No. 85-08/09, 10-20-08; Ord. No. 35-09/10, 8-17-09)

Sec. 32-2. Reserved.
Sec. 32-3. Reserved.

- Sec. 32-4. Reserved.
- Sec. 32-5. Reserved.
- Sec. 32-6. Reserved.
- Sec. 32-7. Reserved.
- Sec. 32-8. Reserved.
- Sec. 32-9. Reserved.
- Sec. 32-10. Reserved.
- Sec. 32-11. Reserved.
- Sec. 32-12. Reserved.
- Sec. 32-13. Reserved.
- Sec. 32-14. Reserved.
- Sec. 32-15. Reserved.

ARTICLE II. PROHIBITED DISCHARGES

Sec. 32-16. Applicability.

This Article shall apply to all persons discharging storm water and/or non-storm water discharges from any premises into the storm drainage system.

(Ord. No. 85-08/09, 10-20-08; Ord. No. 35-09/10, 8-17-09)

Sec. 32-17. Responsibility for administration.

The department of public works is the enforcement authority who shall administer, implement, and enforce the provisions of this article.

(Ord. No. 85-08/09, 10-20-08; Ord. No. 35-09/10; 8-17-09; Ord. 108-15/16, 11/16/2015)

Sec. 32-18. Prohibition of non-storm water discharges.

(a) *General prohibition.* Except as allowed or exempted herein, no person shall create, initiate, originate or maintain a non-storm water discharge to the storm drainage system. Such non-storm water discharges are prohibited notwithstanding the fact that the city may have approved the connections, drains or conveyances by which a person discharges un-allowed non-storm water discharges to the storm drainage system.

(b) *Allowed non-storm water discharges.* The creation, initiation, origination and maintenance of the following non-storm water discharges to the storm drainage system is allowed:

- (1) Landscape irrigation; diverted stream flows; rising ground waters; uncontaminated flows from foundation drains; air conditioning and compressor condensate; irrigation water; flows from uncontaminated springs; uncontaminated water from crawl space pumps; uncontaminated flows from footing

drains; lawn watering runoff; flows from riparian habitats and wetlands; residual street wash water (where spills/leaks of toxic or hazardous materials have not occurred, unless all spilled material has been removed and detergents are not used); hydrant flushing and fire fighting activity runoff; water line flushing and discharges from potable water sources; individual residential car washing; and de-chlorinated swimming pool discharges.

- (2) Discharges specified in writing by the enforcement authority as being necessary to protect public health and safety.
- (3) Dye testing, with verbal notification to the enforcement authority prior to the time of the test.

(c) *Exempt person or discharge.* This article shall not apply to an exempt person or discharge, except that the enforcement authority may request from exempt persons and persons with exempt discharges copies of permits, notices of intent, licenses and orders from the EPA or DEP that authorize the discharge(s).

(Ord. No. 85-08/09, 10-20-08; Ord. No. 35-09/10, 8-17-09)

Sec. 32-19. Suspension of access to the city's small MS4.

The enforcement authority may, without prior notice, physically suspend discharge access to the storm drainage system to a person when such suspension is necessary to stop an actual or threatened non-storm water discharge to the storm drainage system which presents or may present imminent and substantial danger to the environment, or to the health or welfare of persons, or to the storm drainage system, or which may cause the city to violate the terms of its environmental permits. Such suspension may include, but is not limited to, blocking pipes, constructing dams or taking other measures, on public ways or public property, to physically block the discharge to prevent or minimize a non-storm water discharge to the storm drainage system. If a person fails to comply with a suspension order issued in an emergency, the enforcement authority may take such steps as deemed necessary to prevent or minimize damage to the storm drainage system, or to minimize danger to persons.

(Ord. No. 85-08/09, 10-20-08; Ord. No. 35-09/10, 8-17-09)

Sec. 32-20. Monitoring of discharges.

In order to determine compliance with this article, the enforcement authority may enter upon and inspect premises subject to this article at reasonable hours to inspect the premises and connections thereon to the storm drainage system; and to conduct monitoring, sampling and testing of the discharge to the storm

drainage system.

(Ord. No. 85-08/09, 10-20-08; Ord. No. 35-09/10, 8-17-09)

Sec. 32-21. Enforcement.

It shall be unlawful for any person to violate any provision of or to fail to comply with any of the requirements of this article. Whenever the enforcement authority believes that a person has violated this article, the enforcement authority may enforce this article in accordance with 30-A M.R.S.A. § 4452.

- (a) *Notice of violation.* Whenever the enforcement authority believes that a person has violated this article, the enforcement authority may order compliance with this article by written notice of violation to that person indicating the nature of the violation and ordering the action necessary to correct it, including, without limitation:
- (1) The elimination of non-storm water discharges to the storm drainage system, including, but not limited to, disconnection of the premises from the MS4.
 - (2) The cessation of discharges, practices, or operations in violation of this article.
 - (3) At the Person's expense, the abatement or remediation (in accordance with best management practices in DEP rules and regulations) of non-storm water discharges to the storm drainage system and the restoration of any affected property; and/or
 - (4) The payment of fines, of the city's remediation costs and of the city's reasonable administrative costs and attorneys' fees and costs. If abatement of a violation and/or restoration of affected property is required, the notice shall set forth a deadline within which such abatement or restoration must be completed.
- (b) *Penalties/fines/injunctive relief.* In addition to the imposition of any other costs or penalties provided for herein, any person who violates this section shall be subject to fines, penalties and orders for injunctive relief and shall be responsible for the city's attorney's fees and costs, all in accordance with 30-A M.R.S.A. § 4452. Each day such violation continues shall constitute a separate violation. Moreover, any person who violates this section also shall be responsible for any and all fines,

penalties, damages and costs, including, but not limited to attorneys' fees and costs, incurred by the city for violation of federal and State environmental laws and regulations caused by or related to that person's violation of this article; this responsibility shall be in addition to any penalties, fines or injunctive relief imposed under this section.

- (c) *Consent agreement.* The enforcement authority may, with the approval of the city manager, enter into a written consent agreement with the violator to address timely abatement of the violation(s) of this article for the purposes of eliminating violations of this article and of recovering fines, costs and fees without court action.
- (d) *Appeal of notice of violation.* Any person receiving a notice of violation or suspension notice may appeal the determination of the enforcement authority to the city manager or his or her designee. The notice of appeal must be received within 30 days from the date of receipt of the notice of violation. The city manager shall hold a hearing on the appeal within 30 days from the date of receipt of the notice of appeal, except that such hearing may be delayed by agreement of the city manager and the appellant. The city manager may affirm, reverse or modify the decision of the enforcement authority. A suspension under Section 32-5 of this article remains in place unless or until lifted by the city manager or by a reviewing court. A party aggrieved by the decision of the city manager may appeal that decision to the Maine superior court within 45 days of the date of the city manager's decision pursuant to Rule 80B of the Maine Rules of Civil Procedure.
- (e) *Enforcement measures.* If the violation has not been corrected pursuant to the requirements set forth in the notice of violation, or, in the event of an appeal to the city manager, within 45 days of a decision of the city manager affirming the enforcement authority's decision, then the enforcement authority may recommend that the corporation counsel's office file an enforcement action in a Maine court of competent jurisdiction under Rule 80K of the Maine Rules of Civil Procedure.
- (f) *Ultimate responsibility of discharger.* The standards set forth herein are minimum standards; therefore this article does not intend nor imply that compliance by any person will ensure that there will be no contamination, pollution, nor unauthorized discharge of pollutants into

waters of the U.S. caused by said person. This article shall not create liability on the part of the city, or any officer agent or employee thereof for any damages that result from any person's reliance on this article or any administrative decision lawfully made hereunder.

(Ord. No. 85-08/09, 10-20-08; Ord. No. 35-09/10, 8-17-09)

Sec. 32-22. Severability.

The provisions of this article are hereby declared to be severable. If any provision, clause, sentence, or paragraph of this article or the application thereof to any person, establishment, or circumstances shall be held invalid, such invalidity shall not affect the other provisions, clauses, sentences, or paragraphs or application of this article.

(Ord. No. 85-08/09, 10-20-08; Ord. No. 35-09/10, 8-17-09)

- Sec. 32-23. Reserved.**
- Sec. 32-24. Reserved.**
- Sec. 32-25. Reserved.**
- Sec. 32-26. Reserved.**
- Sec. 32-27. Reserved.**
- Sec. 32-28. Reserved.**
- Sec. 32-29. Reserved.**
- Sec. 32-30. Reserved.**
- Sec. 32-31. Reserved.**
- Sec. 32-32. Reserved.**
- Sec. 32-33. Reserved.**
- Sec. 32-34. Reserved.**
- Sec. 32-35. Reserved.**

ARTICLE III. POST-CONSTRUCTION STORMWATER MANAGEMENT.

Sec. 32-36. Applicability.

This article applies to all development projects that require a stormwater management plan pursuant to section V of the department of planning and urban development's Technical and Design Standards and Guidelines.

(Ord. No. 35-09/10, 8-17-09)

Sec. 32-37. Post-construction stormwater management plan approval.

Notwithstanding any ordinance provision to the contrary, no applicant for a development project to which this article is applicable shall receive approval for that development project unless the applicant also receives approval for its post-construction stormwater management plan and for the best management

practices ("BMPs") for that development project.
(Ord. No. 35-09/10, 9-17-09)

Sec. 32-38. Post-construction stormwater management plan compliance.

Any person owning, operating, or otherwise having control over a BMP required by a post construction stormwater management plan shall maintain the BMPs in accordance with the approved plan and shall demonstrate compliance with that plan as follows:

- (a) *Inspections.* The owner or operator of a BMP shall hire a qualified post-construction stormwater inspector to at least annually, inspect the BMPs, including but not limited to any parking areas, catch basins, drainage swales, detention basins and ponds, pipes and related structures, in accordance with all municipal and state inspection, cleaning and maintenance requirements of the approved post-construction stormwater management plan.
- (b) *Maintenance and repair.* If the BMP requires maintenance, repair or replacement to function as intended by the approved post-construction stormwater management plan, the owner or operator of the BMP shall take corrective action(s) to address the deficiency or deficiencies as soon as possible after the deficiency is discovered and shall provide a record of the deficiency and corrective action(s) to the department of public works ("DPW") in the annual report.
- (c) *Annual report.* The owner or operator of a BMP or a qualified post-construction stormwater inspector hired by that person, shall, on or by June 30 of each year, provide a completed and signed certification to DPW in a form provided by DPW, certifying that the person has inspected the BMP(s) and that they are adequately maintained and functioning as intended by the approved post-construction stormwater management plan, or that they require maintenance or repair, including the record of the deficiency and corrective action(s) taken.
- (d) *Filing fee.* Any persons required to file an annual certification under this section shall include with the annual certification a filing fee established by DPW to pay the administrative and technical costs of review of the annual certification.
- (e) *Right of entry.* In order to determine compliance with this article and with the post-construction stormwater

management plan, DPW may enter upon property at reasonable hours with the consent of the owner, occupant or agent to inspect the BMPs.

(Ord. No. 35-09/10, 8-17-09; Ord. 108-15/16, 11-16-2015)

Sec. 32-39. Enforcement.

It shall be unlawful for any person to violate any provision of or to fail to comply with any of the requirements of this article or of the post-construction stormwater management plan. Whenever the enforcement authority believes that a person has violated this article, DPW may enforce this article in accordance with 30-A M.R.S.A. § 4452. Each day on which a violation exists shall constitute a separate violation for purposes of this section.

- (a) *Notice of violation.* Whenever DPW believes that a person has violated this article or the post-construction stormwater management plan, DPW may order compliance by written notice of violation to that person indicating the nature of the violation and ordering the action necessary to correct it, including, without limitation:
- (1) The abatement of violations, and the cessation of practices or operations in violation of this article or of the post-construction stormwater management plan;
 - (2) At the person's expense, compliance with BMPs required as a condition of approval of the development project, the repair of BMPs and/or the restoration of any affected property; and/or
 - (3) The payment of fines, of the City's remediation costs and of the City's reasonable administrative costs and attorneys' fees and costs.
 - (4) If abatement of a violation, compliance with BMPs, repair of BMPs and/or restoration of affected property is required, the notice shall set forth a deadline within which such abatement, compliance, repair and/or restoration must be completed.
- (b) *Penalties/fines/injunctive relief.* In addition to the imposition of any other costs or penalties provided for herein, any person who violates this section shall be subject to fines, penalties and orders for injunctive relief and shall be responsible for the city's attorney's fees and costs, all in accordance with 30-A M.R.S.A. § 4452. Each day such violation continues shall constitute a

separate violation. Moreover, any person who violates this section also shall be responsible for any and all fines, penalties, damages and costs, including, but not limited to attorneys' fees and costs, incurred by the city for violation of federal and state environmental laws and regulations caused by or related to that person's violation of this article; this responsibility shall be in addition to any penalties, fines or injunctive relief imposed under this section.

- (c) *Consent agreement.* The enforcement authority may, without approval of the city manager, enter into a written consent agreement with the violator to address timely abatement of the violation(s) of this article for the purposes of eliminating violations of this article and of recovering fines, costs and fees without court action.
- (d) *Appeal of notice of violation.* Any person receiving a notice of violation or suspension notice may appeal the determination of the enforcement authority to the city manager or his or her designee. The notice of appeal must be received within 30 days from the date of receipt of the notice of violation. The city manager shall hold a hearing on the appeal within 30 days from the date of receipt of the notice of appeal, except that such hearing may be delayed by agreement of the city manager and the appellant. The city manager may affirm, reverse or modify the decision of the DPW. A party aggrieved by the decision of the city manager may appeal that decision to the Maine superior court within forty-five (45) days of the date of the city manager's decision pursuant to Rule 80B of the Maine Rules of Civil Procedure.
- (e) *Enforcement measures.* If the violation has not been corrected pursuant to the requirements set forth in the notice of violation, or , in the event of an appeal to the city manager, within forty-five (45) days of a decision of the city manager affirming the enforcement authority's decision, then the enforcement authority may recommend that the corporation counsel's office file an enforcement action in a Maine court of competent jurisdiction under Rule 80K of the Maine Rules of Civil Procedure.

(Ord. No. 35-09/10, 8-17-09; Ord. 108-15/16, 11-16-2015)

Sec. 32-40. Severability.

The provisions of this article are hereby declared to be severable. If any provision, clause, sentence, or paragraph of this article or the application thereof to any person, establishment, or

circumstances shall be held invalid, such invalidity shall not affect the other provisions, clauses, sentences, or paragraphs or application of this article.
(Ord. No. 35-09/10, 8-17-09)

APPENDIX C: APPLICABLE SECTIONS FROM GENERAL PERMIT FOR THE DISCHARGE OF
STORMWATER FROM SMALL MUNICIPAL SEPARATE STORM SEWER
SYSTEMS

Part IV. Requirements (cont'd)**3. MCM3 - Illicit Discharge Detection and Elimination (IDDE) Program**

Each permittee must implement and enforce a program to detect and eliminate illicit discharges and non-stormwater discharges, as defined in 06-096 CMR 521(9)(b)(2), except as provided in paragraph h of this section. The program must address illicit discharges in the following four components: 1) Procedures for prioritizing watersheds, 2) procedures for tracing the source of an illicit discharge, 3) procedures for removing the source of the discharges, and 4) procedures for program evaluation and assessment. The period between identification and elimination of an illicit discharge is not a grace period. Discharges from an MS4 that are mixed with an illicit discharge are not authorized by this GP and remain unlawful until eliminated.

- a. The permittee must continue to implement a non-stormwater discharge ordinance that prohibits the discharge of non-stormwater discharges and provides for the implementation of appropriate enforcement procedures and actions.
- b. The IDDE program must include a written IDDE Plan to address any discharge that is not uncontaminated groundwater, water from a natural resource or an allowable non-stormwater discharge. The plan must address dumping that results in illicit discharges to the MS4. The IDDE plan must set forth all written procedures developed in accordance with the requirements listed in this section including:
 - i. A reference or citation of the authority the permittee will use to implement all aspects of the IDDE program.
 - ii. Clearly identify in the written IDDE Plan the responsibilities with regard to eliminating illicit discharges. The written IDDE Plan must identify the lead municipal agency(ies) or department(s) responsible for implementing the IDDE Program as well as any other agencies or departments that may have responsibilities for aspects of the program (e.g., board of health responsibilities for overseeing septic system construction; sanitary sewer system staff; inspectional services for enforcing plumbing codes; town counsel responsibilities in enforcement actions, etc.). Where multiple departments and agencies have responsibilities with respect to the IDDE program, specific areas of responsibility must be defined and processes for coordination and data must be established and documented.
 - iii. Written procedures for dry weather outfall inspections and wet weather assessments which must be consistent with Part IV(3)(e) and Part IV(3)(f) respectively, of this GP.

Part IV. Requirements (cont'd)

- iv. Steps that must be taken when a potential illicit discharge is identified (whether during dry weather inspections, during routine work, during opportunistic inspection of other infrastructure or through other methods) to perform an initial investigation to identify the source(s) of discharge, including but not limited to: efforts to identify the nature of the discharge; source investigation; reporting; clean up; corrective actions/elimination; and enforcement.
- v. Steps that must be taken, upon verification of the source of the illicit discharge, to notify all responsible parties for any such discharge and require immediate cessation of improper disposal practices in accordance with its legal authorities. Where elimination of an illicit discharge within 60 calendar days of its identification and verification as an illicit discharge is not possible, the permittee must establish an expeditious schedule for its elimination and report the dates of identification and schedules for removal in the permittee's annual reports. The permittee must immediately commence and continue actions identified in the schedule as necessary for elimination. The permittee must diligently pursue actions identified in the schedule to be consistent with the intent of this GP. In the interim, the permittee must take all reasonable and prudent measures to minimize the discharge of pollutants to and from the MS4, including follow-up screening and inspection to confirm permanent elimination of the discharge.
- vi. A Quality Assurance Project Plan (QAPP) describing the procedures to be used during the investigation and monitoring of those outfalls identified as flowing during outfall inspections.
- c. Permittees that can demonstrate compliance with an individual Maine Pollutant Discharge Elimination System (MEPDES) permit and or Maine Waste Discharge License (WDL) conditions within their Urbanized Areas and which result in Sanitary Sewer Evaluation Surveys (SSES) and/or written Capacity, Management, Operations and Maintenance (CMOM) plans may utilize these programs to support the IDDE requirements of this GP at the discretion of the Department, provided the sanitary sewer conveyance and/or treatment provider supports this finding.
- d. Permittees must maintain a map(s) of their municipally-owned or operated storm sewer system. The map(s) must show the location of all stormwater catch basins, connecting surface and subsurface infrastructure and depict the direction of in-flow and out-flow pipes, and the locations of all discharges from all stormwater outfalls operated by the regulated small MS4 to receiving waters or to an interconnected MS4 and the name of the receiving water for each outfall. Each catch basin must be uniquely identified to facilitate control of potential illicit discharges, and proper operation and maintenance of these structures.

Permittees must continue to keep their map(s) current and ensure that maps are reviewed for any updates at least annually. Permittees may choose to utilize paper or electronic maps for their storm sewer system. The permittee is not required to maintain maps of their sanitary sewer system for compliance with this GP.

Part IV. Requirements (cont'd)

- e. Permittees must implement a dry weather outfall inspection program. This inspection program-must include:
 - i. For each outfall, the following information must be included: type (e.g. pipe or ditch), material, size of conveyance, the name and location of the nearest named waterbody to which the outfall eventually discharges. Each outfall must have a unique identifier.
 - ii Conducting visual dry weather inspections on 100% of their identified outfalls during the five-year term of this GP.
 - iii. Outfalls that are inaccessible due to safety concerns are not required to be inspected but a substitute inspection must be conducted of the first (i.e., closest) accessible inspection location within the stormwater system (e.g., catch basin, manhole, pipe, etc.) that drains to the inaccessible outfall.
 - iv. Where dry weather flow is present the permittee must sample the discharge to determine if the discharge is an illicit discharge and then must investigate until either a source is identified, or it has been determined that the evidence of the illicit discharge is due to naturally occurring source(s).
 - 1. Sampling and analysis must include, but is not limited to:
 - a. *E.coli*, enterococci, total fecal coliform or human bacteroides;
 - b. Ammonia, total residual chlorine, temperature and conductivity; and
 - c. Optical enhancers or surfactants.

All analyses can be performed with field test kits or field instrumentation and are not subject to 40 CFR Part 136 requirements given the sampling is for investigative purposes and not to determine compliance with this GP. Sampling for ammonia and surfactants must use sufficient sensitive methods to detect said parameters at or below the minimum reporting concentrations as follows: ammonia (0.5 mg/L), surfactants (0.25 mg/L), total residual chlorine (0.05 mg/L), *E. coli* bacteria (4 cfu/100 ml), enterococcus (10 cfu/100 ml).

Final Permit

General Permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer Systems

Part IV. Requirements (cont'd)

- v. Where dry weather flow at an outfall does not exhibit evidence of an illicit discharge, the permittee must take steps to determine and confirm that flow during dry weather conditions is only uncontaminated groundwater, water from a natural resource, or an allowable non-stormwater discharge that has entered the system and collect at least one (1) sample per the 5-year permit term in accordance with the protocols set forth in the approved QAPP and analyzed for the parameters listed in Part IV(C)(3)(e)(iv)(1).
- vi. Outfalls that are flowing during dry weather are exempt from the dry weather investigation required in Part IV(C)(3)(e)(iv) under any of the following conditions:
 1. The outfall is associated with roadway drainage in undeveloped areas with no dwellings and no sanitary sewers,
 2. The outfall is associated with only subsurface drainage for any of the following: an athletic field, a park or undeveloped green space and associated parking without services,
 3. The outfall is from cross-country drainage that neither cross nor are in proximity to sanitary sewer alignments through undeveloped land,
 4. The contributing pipes to the outfall have been televised in a previous permit cycle and determined to be structurally sound with no illicit connections or connections from structures that could contribute an illicit discharge, and no new construction or redevelopment has occurred in the outfall drainage area since the screening, or
 5. The outfall was screened in accordance with Part IV(C)(3)(e)(iv) in a previous permit cycle and no new construction or redevelopment has occurred in the outfall drainage area since the screening.
- vii. The permittee may rely on screening conducted under previous permits to the extent it meets the requirements in Part IV(C)(3)(e)(iv) and no new construction or redevelopment has occurred in the outfall drainage area since the screening.
- viii. Steps that must be taken upon verification of the source of the illicit discharge to locate, identify and eliminate the illicit discharge within the UA as expeditiously as possible.

Part IV. Requirements (cont'd)

- f. Prior to the expiration date of this GP, permittees must perform a wet weather assessment for the potential for illicit discharges during wet weather events. The assessment will vary by permittee and utilize data from existing studies, including (but is not limited to):
 - i. Areas within the MS4 that have combined sewer systems;
 - ii. Sanitary sewer systems located in a common trench with stormwater infrastructure, particularly those with known infiltration;
 - iii. Subsurface wastewater disposal systems that are 20 years old or more, or those in areas known to have experienced recent malfunctions or failures;
 - iv. Municipally-owned dog parks;
 - v. Complaints of sewage odor at a stormwater outfall during wet weather events;
 - vi. Direct discharge from the stormwater system to any of the following:
 - a. A public beach or recreational area;
 - b. A water body impaired for bacteria;
 - c. A shellfish bed; and/or
 - d. A drinking water supply.

The outcome of the assessment will be a list of outfalls identified for wet weather monitoring and testing if applicable, by the permittee in the next permit cycle and the rationale for including these outfalls.

On or before the expiration date of this GP, the permittee must identify these wet weather outfalls in its written IDDE plan and identify the wet weather outfalls targeted for wet weather monitoring based on the EPA New England bacterial source tracking protocol or other acceptable protocols or methodologies and specify the timing and frequency of wet weather monitoring to be completed during the term of the next permit cycle. Should the permittee complete the IDDE plan prior to the expiration date of the GP and permittee specific DEP Order, the permittee must implement the wet weather monitoring upon completion of the update IDDE plan update.

Part IV. Requirements (cont'd)

- g. Permittees are not required to report individual Sanitary Sewer Overflows (SSOs) separately from the sanitary sewer conveyance and/or treatment provider, however, permittees are required to summarize the SSO events that discharge to the MS4 in their annual reports. Permittees must work cooperatively with that provider to identify any potential source of pollution to the MS4 from an SSO.
- h. Allowable Non-Stormwater Discharges. This GP authorizes the following non-stormwater discharges. If the permittee identifies any of these sources as significant contributors of pollutants to the MS4, then the permittee must implement measures and/or cooperate with responsible dischargers to control these sources so they are no longer significant contributors of pollutants. The permittee must identify in its SWMP if it has identified any of these sources as a significant contributor of pollutants to the MS4.
- landscape irrigation
 - diverted stream flows
 - rising ground waters
 - uncontaminated ground water infiltration (as defined at 40 CFR 35.2005(20))
 - uncontaminated pumped ground water
 - uncontaminated flows from foundation drains
 - air conditioning and compressor condensate
 - irrigation water
 - flows from uncontaminated springs
 - uncontaminated water from crawl space pumps
 - uncontaminated flows from footing drains
 - lawn watering runoff
 - flows from riparian habitats and wetlands
 - residual street wash water (where spills/leaks of toxic or hazardous materials have not occurred, unless all spilled material has been removed and detergents are not used), and
 - hydrant flushing and firefighting activity runoff
 - water line flushing and discharges from potable water sources
 - individual residential car washing
 - dechlorinated swimming pool discharges

APPENDIX D: OPPORTUNISTIC INSPECTION SOP



CITY OF PORTLAND
WATER RESOURCES DIVISION

Standard Operating Procedure for
Illicit Discharge Opportunistic Inspection Program

Revised March 2021

Definitions:

An *Illicit Discharge* is a direct or indirect discharge to the municipal separate storm sewer system that is not composed entirely of storm water. The term does not include a discharge in compliance with an NPDES Storm Water Discharge Permit or a Surface Water Discharge Permit, or resulting from firefighting or other public safety activities exempted pursuant to Chapter 32 of the City of Portland Code of Ordinances.

Purpose: Illicit discharges may include sewage or other toxics that can cause or contribute to public health problems and water quality violations. The purpose of this Standard Operating Procedure (SOP) is to provide guidance for identification and elimination of illicit discharges to Portland's storm drain system and ultimately the receiving waters in the City as required by the City's MS4 General Permit and Stormwater Program Management Plan.

Scope: This SOP applies in the performance of Opportunistic IDDE inspections as required by Minimum Control Measure 3 Illicit Discharge Detection and Elimination, Best Management Practice (BMP) of the Stormwater Program Management Plan.

References:

Guidelines and Standard Operating Procedures for Stormwater Phase II Communities in Maine, Volume 1: Information for Program Managers; and

Guidelines and Standard Operating Procedures for Stormwater Phase II Communities in Maine Volume 2: Standard Operating Procedures and Forms.



Primary Responsible Party	Responsibilities
Public Works Director	<ul style="list-style-type: none"> - Oversees Water Resources Division and ultimate authority for enforcement of ordinances
Water Resources Manager	<ul style="list-style-type: none"> - Oversees Compliance Section - Allocates staffing and resources when needed
Compliance Section Coordinator	<ul style="list-style-type: none"> - Oversees IDDE Program & reviews annual documentation - Coordinates program goals with the Planning - Inspections Divisions - Coordinates with Portland Water District's Industrial Pretreatment Program - Coordinates enforcement activities - Provides coordination between Fats Oil and Grease program and IDDE Program - Administers Prohibited Discharges Article
Stormwater Program Coordinator	<ul style="list-style-type: none"> - Coordinates outfall investigation, screening and sampling activities - Reviews screening results and citizen complaints - Conducts employee training - Conducts public outreach - Compiles annual documentation
Operations Supervisor, Operations Staff and Compliance Team	<ul style="list-style-type: none"> - Conducts investigations, screening, and sampling - Conducts elimination activities - Conducts opportunistic inspections
Planning & Urban Development Inspections Division	<ul style="list-style-type: none"> - Manages building inspections and code enforcement - Alerts Department of Public Works of potential building/plumbing problems - Coordinates with Compliance Section Coordinator on elimination and enforcement activities (as necessary)
Asset Information Management Specialist	<ul style="list-style-type: none"> - Supports IDDE Program Data Management and provides data compilation for reporting purposes.
Corporation Counsel	<ul style="list-style-type: none"> - Supports IDDE Program enforcement when necessary



Standard Operating Procedures:

- Inspections shall be conducted in a safe manner and all required Personal Protective Equipment (PPE) shall be used.
- Suspected direct connection of an illicit discharge via visual indicators shall be noted in the Catch Basin Cleaning Form (when applicable) and followed by a call by a notification to Compliance Section Coordinator who will fill in the IDDE Incident Reporting Form and create a service request in City Works.
- Compliance Section staff and/or operations staff shall conduct investigation procedure in the area of suspected direct connection in accordance with the City of Portland IDDE Program Manual and within five (5) calendar days of receiving notification.
- Compliance Section staff and/or operations staff conducting the investigation shall complete the IDDE Incident Reporting Form and attach digital photographs of the area of suspected illicit discharge direct connection.
- If a direct connection is verified, the form and photographs shall be forwarded the Water Resources Manager, Stormwater Program Coordinator and Supervisor for elimination procedure.
- All indirect illicit discharges (i.e. oil/grease, dog waste bags, needles or other dumped material, etc.) locations shall be noted in the Catch Basin Cleaning Form (when applicable) or an IDDE Incident Reporting Form. Excessive dumping compromising the function of the stormwater drainage system or posing immediate public health threat shall be reported to Dispatch for service request development. Department employees shall attempt to remove and dispose of known material according to state laws; otherwise contaminated sediments shall not be removed by vactor truck or other mechanical means without approval of the Operations Supervisor.
- Sanitary Sewer Overflows that discharge into the MS4 shall be treated as an indirect illicit discharge and the Compliance Section Coordinator shall maintain SSO Reports for tracking and annual reporting.
- Upon completion of the catch basin cleaning season, the Compliance Section Coordinator and Operations Supervisor shall compile and review the results of indirect illicit discharges noted within Catch Basin Cleaning Forms for compilation. These locations shall be reviewed with Asset Information Management Specialist and the Stormwater Program Coordinator for development of targeted catch basin stenciling, outreach letters, door hangers or other compliance education options or investigation follow-up.
- Completed forms, emails and field notes on illicit discharges shall be reviewed



and compiled by May 1 of each year by the Stormwater Program Coordinator for inclusion in MS4 General Permit Annual Report.

Corrective Action:

When investigation confirms an illicit discharge, the Compliance Section Coordinator shall notify the Stormwater Program Coordinator, Operations Supervisor, the Water Resources Manager, the Public Works Director, and Planning and Economic Development Department – Inspections Division (when applicable) via email with Incident Reporting Form and photographs of the illicit discharge or illicit discharge general location. Elimination procedures shall follow those outlined in the IDDE Program Manual.

Record Keeping and Program Evaluation:

The Compliance Section Coordinator shall:

- Maintain all inspection records in paper and/or digital form.
- Take appropriate action (i.e. outreach letters, doorhangers, targeted catchbasin cleaning) in areas of consistent indirect illicit discharges.
- At least annually review all field forms, IDDE Incident Reporting Forms and emails for accuracy and conformance with the SOPs and the IDDE Program Manual.
- Annually tabulate field notes and emails and include a summary for submission in the MS4 General Permit Annual Report

The Compliance Section Coordinator shall review annually an enforcement summary for submission within the MS4 General Permit Annual Report.

APPENDIX E: DRY WEATHER OUTFALL INSPECTION FORM

DRY WEATHER OUTFALL INSPECTION FORM

Section 1: Background Data

Subwatershed:		Outfall ID:	
Today's date:		Time (Military):	
Investigators:		Form completed by:	
Temperature (°F):	Rainfall (in.):	Last 24 hours:	Last 48 hours:
Latitude:	Longitude:	GPS Unit:	GPS LMK #:
Camera:		Photo #s:	
Land Use in Drainage Area (Check all that apply):			
<input type="checkbox"/> Industrial		<input type="checkbox"/> Open Space	
<input type="checkbox"/> Ultra-Urban Residential		<input type="checkbox"/> Institutional	
<input type="checkbox"/> Suburban Residential		Other: _____	
<input type="checkbox"/> Commercial		Known Industries: _____	
Notes (e.g., origin of outfall, if known):			

Section 2: Outfall Description

LOCATION	MATERIAL	SHAPE	DIMENSIONS (IN.)	SUBMERGED
<input type="checkbox"/> Closed Pipe	<input type="checkbox"/> RCP <input type="checkbox"/> CMP <input type="checkbox"/> PVC <input type="checkbox"/> HDPE <input type="checkbox"/> Steel <input type="checkbox"/> Other: _____	<input type="checkbox"/> Circular <input type="checkbox"/> Single <input type="checkbox"/> Elliptical <input type="checkbox"/> Double <input type="checkbox"/> Box <input type="checkbox"/> Triple <input type="checkbox"/> Other: _____ <input type="checkbox"/> Other: _____	Diameter/Dimensions: _____	In Water: <input type="checkbox"/> No <input type="checkbox"/> Partially <input type="checkbox"/> Fully With Sediment: <input type="checkbox"/> No <input type="checkbox"/> Partially <input type="checkbox"/> Fully
<input type="checkbox"/> Open drainage	<input type="checkbox"/> Concrete <input type="checkbox"/> Earthen <input type="checkbox"/> rip-rap <input type="checkbox"/> Other: _____	<input type="checkbox"/> Trapezoid <input type="checkbox"/> Parabolic <input type="checkbox"/> Other: _____	Depth: _____ Top Width: _____ Bottom Width: _____	
<input type="checkbox"/> In-Stream	(applicable when collecting samples)			
Flow Present?	<input type="checkbox"/> Yes <input type="checkbox"/> No <i>If No, note if there is Seepage Flow then skip to Section 5</i>			
Flow Description (If present)	<input type="checkbox"/> Trickle <input type="checkbox"/> Moderate <input type="checkbox"/> Substantial Seepage Flow Around Pipe (Possible Pipe Break?) <input type="checkbox"/> Yes <input type="checkbox"/> No			

Section 3: Quantitative Characterization

FIELD DATA FOR FLOWING OUTFALLS				
PARAMETER	RESULT	UNIT	EQUIPMENT	
<input type="checkbox"/> Flow #1	Volume	Liter	Bottle	
	Time to fill	Sec		
Temperature		°F	Probe	
Conductivity		µS/cm	Probe	
Salinity (as Applicable)		ppt	Probe	
Ammonia		mg/L	Field test kit	
Surfactants		mg/L	Field test kit	
Chlorine		mg/L	Field test kit	

Outfall Reconnaissance Inventory Field Sheet

Section 4: Physical Indicators for Flowing Outfalls Only

Are Any Physical Indicators Present in the flow? Yes No (If No, Skip to Section 5)

INDICATOR	CHECK if Present	DESCRIPTION	RELATIVE SEVERITY INDEX (1-3)		
Odor	<input type="checkbox"/>	<input type="checkbox"/> Sewage <input type="checkbox"/> Rancid/sour <input type="checkbox"/> Petroleum/gas <input type="checkbox"/> Sulfide <input type="checkbox"/> Other:	<input type="checkbox"/> 1 – Faint	<input type="checkbox"/> 2 – Easily detected	<input type="checkbox"/> 3 – Noticeable from a distance
Color	<input type="checkbox"/>	<input type="checkbox"/> Clear <input type="checkbox"/> Brown <input type="checkbox"/> Gray <input type="checkbox"/> Yellow <input type="checkbox"/> Green <input type="checkbox"/> Orange <input type="checkbox"/> Red <input type="checkbox"/> Other:	<input type="checkbox"/> 1 – Faint colors in sample bottle	<input type="checkbox"/> 2 – Clearly visible in sample bottle	<input type="checkbox"/> 3 – Clearly visible in outfall flow
Turbidity	<input type="checkbox"/>	See severity	<input type="checkbox"/> 1 – Slight cloudiness	<input type="checkbox"/> 2 – Cloudy	<input type="checkbox"/> 3 – Opaque
Floatables -Does Not Include Trash!!	<input type="checkbox"/>	<input type="checkbox"/> Sewage (Toilet Paper, etc.) <input type="checkbox"/> Suds <input type="checkbox"/> Petroleum (oil sheen) <input type="checkbox"/> Other:	<input type="checkbox"/> 1 – Few/slight; origin not obvious	<input type="checkbox"/> 2 – Some; indications of origin (e.g., possible suds or oil sheen)	<input type="checkbox"/> 3 – Some; origin clear (e.g., obvious oil sheen, suds, or floating sanitary materials)

Section 5: Physical Indicators for Both Flowing and Non-Flowing Outfalls

Are physical indicators that are not related to flow present? Yes No (If No, Skip to Section 6)

INDICATOR	CHECK if Present	DESCRIPTION	COMMENTS
Outfall Damage	<input type="checkbox"/>	<input type="checkbox"/> Spalling, Cracking or Chipping <input type="checkbox"/> Peeling Paint <input type="checkbox"/> Corrosion	
Deposits/Stains	<input type="checkbox"/>	<input type="checkbox"/> Oily <input type="checkbox"/> Flow Line <input type="checkbox"/> Paint <input type="checkbox"/> Other:	
Abnormal Vegetation	<input type="checkbox"/>	<input type="checkbox"/> Excessive <input type="checkbox"/> Inhibited	
Poor pool quality	<input type="checkbox"/>	<input type="checkbox"/> Odors <input type="checkbox"/> Colors <input type="checkbox"/> Floatables <input type="checkbox"/> Oil Sheen <input type="checkbox"/> Suds <input type="checkbox"/> Excessive Algae <input type="checkbox"/> Other:	
Pipe benthic growth	<input type="checkbox"/>	<input type="checkbox"/> Brown <input type="checkbox"/> Orange <input type="checkbox"/> Green <input type="checkbox"/> Other:	

Section 6: Overall Outfall Characterization

<input type="checkbox"/> Unlikely <input type="checkbox"/> Potential (presence of two or more indicators) <input type="checkbox"/> Suspect (one or more indicators with a severity of 3) <input type="checkbox"/> Obvious

Section 7: Data Collection

1. Sample for the lab?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
2. If yes, collected from:	<input type="checkbox"/> Flow	<input type="checkbox"/> Pool	
3. Intermittent flow trap set?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	If Yes, type: <input type="checkbox"/> OBM <input type="checkbox"/> Caulk dam

Section 8: Any Non-Illicit Discharge Concerns (e.g., trash or needed infrastructure repairs)?

APPENDIX F: OUTFALL PRIORITIZATION

**RISK SCORES FOR STORMWATER SYSTEM DISCHARGE LOCATIONS (RE: Illicit Discharges)
CITY OF PORTLAND, MAINE**

LIKELIHOOD OF FAILURE RISK	5 VERY HIGH	4 HIGH	3 MODERATE	2 LOW	1 VERY LOW	SCORING SPECIAL NOTES
LAND USE	N/A	Industrial/Commercial % >50 of catchment	Residential >50% of catchment	All Others	N/A	---
MEAN AGE OF DEVELOPMENT WITHIN CATCHMENT	>50 YEARS OLD	N/A	25-50 YEARS OLD	N/A	<25 YEARS OLD	---
CATCHMENT SIZE	>100 ACRES	50-100 ACRES	25-50 ACRES	10-25 ACRES	<10 ACRES	---
MEAN AGE OF SEWER PIPE WITHIN CATCHMENT	> 80 YEARS OLD	60-80 YEARS OLD	40-60 YEARS OLD	20-40 YEARS OLD	< 20 YEARS OLD	* Scoring based on frequency distribution and a mean age of 44 years
SEWER PIPE DENSITY WITHIN CATCHMENT	300-375 FEET PER ACRE	225-300 FEET PER ACRE	150-225 FEET PER ACRE	75 -150 FEET PER ACRE	0 -75 FEET PER ACRE	* Scoring based on frequency distribution and a mean of 160 ft/acre
SEWER PIPE - STORMWATER PIPE CROSSINGS	>32	24-32	16-24	8-16	<8	* Scoring based on frequency distribution and a mean of 18 crossings
CONSEQUENCE OF FAILURE RISK	5 VERY HIGH	4 HIGH	3 MODERATE	2 LOW	1 VERY LOW	SCORING SPECIAL NOTES
ENVIRONMENTAL HEALTH	Discharge to Class B Waterbody (Dole Brook)	N/A	Discharge to Lower Presumpscot, Capisic Brook, Fall Brook, or Nasons Brook	N/A	Discharge to All Other Waters	---
PUBLIC HEALTH	Discharge point within approximately 250' of identified primary contact water access location	N/A	Discharge point within approximately 500' of primary or secondary contact water access location	N/A	Discharge to All Other Waters	---
RISK FACTOR	PRIORITY	HIGH	MODERATE	LOW		
Risk Total	>8.25	2.5-8.25	2.75-5	<2.75		

Summary of Priority MS4 Outfalls (2015)

Unique_ID	Latitude (WGS 84)	Longitude (WGS 84)	Pipe_Size	Pipe_Material
SWDP-1006	43.66813	-70.30591	60"	Reinforced Concrete
SWDP-0962	43.70101	-70.29617	30"	Reinforced Concrete
SWDP-0554	43.70066	-70.30301	12"	Corrugated Metal
SWDP-0393	43.70319	-70.32436	No pipe connectivity to determine	Vitrified Clay
SWDP-0394	43.70540	-70.30769	15"	PVC
SWDP-0620	43.70566	-70.30945	12"	Reinforced Concrete
SWDP-1020	43.71510	-70.30849	No pipe connectivity to determine	No pipe connectivity to determine
SWDP-0666	43.70453	-70.30117	15"	PVC
SWDP-0968	43.69923	-70.29840	12"	No Data
SWDP-0711	43.67140	-70.32048	54"	Corrugated Metal
SWDP-0237	43.70317	-70.30368	42"	Reinforced Concrete
SWDP-0634	43.70972	-70.30340	42"	Reinforced Concrete
DA_124	43.67082	-70.30879	60"	No Data
SWDP-0736	43.67866	-70.26242	60"	Reinforced Concrete
SWDP-1082	43.66978	-70.27731	No pipe connectivity to determine	No pipe connectivity to determine
SWDP-0623	43.66639	-70.26233	72"	Reinforced Concrete
SWDP-0975	43.69055	-70.30589	Egg-shaped	Reinforced Concrete
DA_129	43.69427	-70.28210	8'x5' box culvert	No Data
SWDP-0976	43.67992	-70.31754	No Data	No Data
SWDP-0901	43.70435	-70.30109	18"	Reinforced Concrete

Notes: Outfall IDs with DA_ in the ID have not been identified as outfalls within the DPW GIS and will need to be confirmed in the field.

Drainage ID	Former ID	Drainage Acres	Size Rank	Commercial/Industrial Acres	Commercial/Industrial % of Drainage	Residential Acres	Residential % of Drainage	Other Use Acres	Other Use % of Drainage	No Analysis Acres	No Analysis % of Drainage	Land Use Rank	Sanitary Sewer Pipe Mean Age	Sanitary Sewer Pipe Mean Age Rank	Sanitary Sewer Pipe Density (/ft-acre)	Sanitary Sewer Pipe Density Rank	Sewer Crossings	Sewer Crossings Rank	Development Mean Age	Development Rank	EH Rank	PH Rank	Consequence Score	Likelihood Score	Risk Total	
SWDP-1006	DA_125	169.4	5	18.0	10.6	88.5	52.3	20.8	12.3	42.1	24.8	3	74.3	4	178.7	3	150	5	84.1	5	3	3	4.2	4.2	12.5	
SWDP-0962	DA_128	137.7	5	22.5	16.8	71.4	53.4	23.5	17.6	16.3	12.2	3	45.1	3	292.5	1	43	5	64.2	5	5	1	3.7	3.7	11.0	
SWDP-0554	DA_156	68.5	4	1.8	2.6	41.3	60.2	9.5	13.9	15.9	23.2	3	37.5	2	161.9	1	40	5	60.2	5	5	1	3	3	11.0	
SWDP-0393	DA_46	14.2	2	10.6	74.2	0.4	2.8	1.1	7.4	2.2	15.5	4	23.4	2	103.9	2	6	1	64.9	5	5	4	2.7	10.7	10.7	
SWDP-0394	DA_127	46.2	3	0.5	1.2	34.7	75.2	3.4	7.4	7.5	16.3	3	22.4	2	130.4	2	34	5	54.8	5	5	1	3	3	10.0	
SWDP-0620	DA_130	31.7	3	1.2	3.8	17.1	54.0	2.6	8.1	10.8	34.0	3	40.2	3	220.0	3	15	2	62.7	5	5	1	3	3	9.5	
SWDP-1020	DA_01	10.2	2	5.5	53.7	0.1	0.8	2.6	25.2	2.1	20.3	4	48.0	3	181.1	1	6	1	58.5	5	5	1	3	3	9.0	
SWDP-0666	DA_38	25.2	3	0.3	25.2	20.3	80.3	0.0	0.1	20.3	46.9	3	54.5	3	153.6	3	16	3	46.2	5	3	5	1	2	9.0	
SWDP-0968	DA_79	11.4	2	0.2	6.3	6.3	54.7	1.0	8.3	4.1	35.6	3	52.6	3	176.3	3	9	2	64.7	5	5	1	3	3	9.0	
SWDP-0711	DA_94	107.4	5	74.8	69.6	3.7	3.4	21.7	20.2	7.3	6.8	4	39.8	2	40.4	1	5	1	58.5	5	3	3	3	3	9.0	
SWDP-0237	DA_154	35.5	3	1.9	5.4	18.9	53.3	7.2	20.3	7.4	20.9	3	23.7	2	114.0	2	12	2	55.8	5	1	12	3	3	2.8	8.5
SWDP-0634	DA_06	33.9	3	0.1	0.3	27.7	81.9	0.3	1.0	5.7	16.7	3	28.7	2	119.3	2	19	3	33.8	3	5	1	3	2.7	8.0	
DA_124	DA_124	138.5	5	18.5	13.8	75.2	2.0	3.0	99.9	7.2	26.2	3	54.5	3	181.6	3	3	5	71.6	5	5	1	2	4	8.0	
SWDP-0736	DA_136	53.1	4	8.9	16.8	21.4	40.3	9.1	17.1	13.7	25.8	2	60.2	4	248.4	4	40	5	82.1	5	3	1	2	2	4.0	8.0
SWDP-1082	DA_141	69.5	4	6.3	9.0	39.6	57.0	7.9	11.4	15.7	22.6	3	68.3	4	211.0	3	66	5	92.5	5	1	3	2	2	4.0	8.0
SWDP-0623	DA_118	19.3	2	9.8	50.7	0.4	2.1	4.9	25.7	4.1	21.5	4	66.1	4	271.5	4	28	4	57.9	5	1	3	2	2	3.8	7.7
SWDP-0975	DA_126	155.2	5	12.4	8.0	18.1	105.7	9.1	5.8	28.1	18.1	3	50.7	3	146.6	2	100	5	61.8	5	3	1	2	2	3.8	7.7
DA_129	DA_129	405.2	5	80.6	19.9	225.7	55.7	44.9	11.1	54.1	13.3	3	45.0	3	146.3	2	281	5	63.1	5	3	1	2	2	3.8	7.7
SWDP-0976	DA_83	51.0	4	26.3	51.6	4.6	9.0	11.2	22.8	8.9	17.4	4	38.5	2	163.0	3	35	5	62.9	5	3	1	2	2	3.8	7.7
SWDP-0901	DA_39	9.9	1	0.0	0.0	7.2	72.3	0.3	3.1	2.4	24.6	3	31.9	2	226.5	4	9	2	35.7	3	5	1	3	3	2.5	7.5
SWDP-1080	DA_107	39.3	3	2.6	24.7	62.9	1.5	3.7	10.5	26.7	3	66.5	4	3.7	218.6	3	27	4	82.9	5	1	3	2	2	3.7	7.3
SWDP-1090	DA_113	33.2	3	9.9	29.7	12.4	37.4	1.3	3.8	9.7	29.1	2	81.4	5	220.0	3	30	4	106.2	5	1	3	2	2	3.7	7.3
SWDP-0359	DA_123	106.0	5	17.4	16.4	46.6	21.9	20.6	17.4	16.4	2	2	56.9	3	146.7	2	52	5	74.8	5	1	3	2	2	3.7	7.3
SWDP-0992	DA_142	61.4	4	5.2	61.4	36.3	59.1	2.1	3.4	36.3	17.9	3	92.7	5	219.5	3	2	2	90.9	5	1	3	2	2	3.7	7.3
SWDP-0236	DA_05	231.8	5	78.7	33.9	71.4	30.8	43.7	18.9	38.1	16.4	2	51.1	2	29.5	3	116	5	70.9	5	3	1	2	2	3.7	7.3
SWDP-0631	DA_139	39.4	3	0.0	0.1	29.4	74.8	0.4	1.0	9.5	24.2	3	56.7	3	201.5	3	26	2	74.4	5	1	3	2	2	3.5	7.0
SWDP-0630	DA_158	28.4	3	3.0	10.7	19.2	67.7	0.4	1.4	5.7	20.2	3	47.6	3	153.9	3	27	4	71.7	5	1	3	2	2	3.5	7.0
SWDP-1064	DA_64	48.1	3	26.6	55.3	4.5	9.4	8.6	17.9	8.4	4	4	61.8	4	126.2	2	21	3	68.5	5	3	1	2	2	3.5	7.0
SWDP-0633	DA_07	12.1	2	0.0	0.2	9.9	82.4	0.0	0.0	2.1	0.2	3	42.6	3	119.2	2	6	1	47.7	3	5	1	3	3	2.3	7.0
SWDP-0897	DA_08	0.1	1	11.5	0.8	8.4	73.0	0.6	5.5	2.4	20.7	3	51.4	2	106.4	1	3	1	51.4	0.8	3	1	2	2	2.3	6.5
SWDP-1024	DA_55	58.1	4	37.7	64.8	3.5	6.0	7.1	12.2	9.8	17.9	4	57.6	3	85.3	2	15	2	62.9	5	3	1	2	2	3.3	6.7
SWDP-1041	DA_73	58.2	4	1.1	1.9	27.8	47.7	18.3	31.4	11.1	19.0	2	48.1	3	117.0	2	28	4	59.9	5	3	1	2	2	3.3	6.7
SWDP-0985	DA_86	13.0	2	0.0	0.0	8.3	63.9	1.1	8.7	3.6	27.3	3	50.8	3	234.1	4	17	3	62.9	5	3	1	2	2	3.3	6.7
SWDP-0694	DA_90	3.2	1	0.0	0.0	0.0	54.8	0.0	1.7	1.4	45.2	3	93.0	5	302.8	5	3	1	73.0	5	3	1	2	2	3.3	6.7
SWDP-0998	DA_12	16.4	2	0.0	0.0	11.6	71.2	2.4	14.8	2.3	0.0	1	29.4	2	119.9	2	7	1	39.3	3	5	1	3	3	2.2	6.5
SWDP-0260	DA_120	4.5	1	4.5	0.0	0.0	0.0	0.0	0.0	7.2	0.0	4	0.0	1	0.0	1	0	1	66.0	5	3	1	2	2	2.2	6.5
SWDP-0607	DA_44	8.0	1	7.6	94.6	0.0	0.0	0.0	0.0	0.4	5.4	4	No Data	2	No Data	2	1	1	38.6	3	5	1	3	3	2.2	6.5
SWDP-1072	DA_45	13.3	2	8.6	65.0	0.2	1.3	0.0	0.0	4.5	33.7	4	28.8	2	74.4	1	3	1	48.5	3	5	1	3	3	2.2	6.5
SWDP-0993	DA_106	53.5	4	42.5	79.3	15.6	6.3	0.1	0.2	2.5	79.5	4	64.3	4	33.8	1	4	1	58.3	5	3	1	2	2	3.2	6.3
SWDP-0915	DA_23	38.2	3	0.0	0.9	2.5	26.9	1.5	3.9	8.8	23.1	3	47.9	3	143.7	3	20	3	62.1	5	3	1	2	2	3.2	6.3
DA_42	DA_02	16.0	2	0.0	0.0	16.1	111.8	0.0	0.3	1.8	62.3	4	11.8	4	240.7	3	18	2	59.8	5	3	1	2	2	3.2	6.3
SWDP-0869	DA_77	37.3	3	3.2	8.7	25.5	68.3	1.4	3.7	3.2	19.3	3	21.0	2	182.6	3	22	3	63.3	5	3	1	2	2	3.2	6.3
SWDP-0628	DA_119	44.9	3	22.3	49.5	1.3	3.0	12.9	3.7	8.5	18.8	2	45.9	3	79.4	2	17	3	57.3	5	1	3	2	2	3.0	6.0
SWDP-0974	DA_61	16.9	2	0.0	0.0	9.8	58.0	2.9	17.0	4.2	25.0	3	59.5	3	161.8	3	10	2	64.8	5	3	1	2	2	3.0	6.0
SWDP-1070	DA_69	19.4	2	1.2	6.4	8.2	42.3	4.3	22.0	5.7	29.3	2	89.8	5	167.8	3	4	1	75.9	5	3	1	2	2	3.0	6.0
SWDP-0983	DA_84	3.3	1	0.0	0.0	2.2	67.0	0.0	0.0	1.1	0.0	3	62.6	4	269.5	4	6	1	61.4	5	3	1	2	2	3.0	6.0
SWDP-0987	DA_99	0.0	0	0.0	0.0	0.0	41.7	0.0	0.0	2.4	53.9	6.0	41.7	6.0	53.9	6.0	3	3	66.7	5	3	1	2	2	3.0	6.0
SWDP-0706	DA_105	44.2	3	38.3	86.6	4.6	10.5	0.0	0.0	1.3	4.7	4	47.3	3	144.1	1	4	1	50.2	5	3	1	2	2	2.8	5.7
SWDP-0687	DA_133	18.8	2	0.4	2.0	9.1	48.6	4.5	24.1	4.8	25.4	2	65.7	4	124.2	2	9	2	57.4	5	3	1	2	2	2.8	5.7
SWDP-0893	DA_16	58.7	4	19.9	33.8	24.1	40.9	6.6	11.3	8.2	14.0	2	34.5	2	105.5	2	11	2	52.0	5	3	1	2	2	2.8	5.7
SWDP-0742	DA_71	1.8	1	0.0	0.0	0.9	53.2	0.5	27.2	0.4	19.7	3	61.6	4	220.5	3	1	1	65.7	5	3	1	2	2	2.8	5.7
SWDP-1045	DA_97	3.9	1	0.0	0.0	2.6	67.3	0.0	0.3	0.0	54.0	3	54.0	3	289.5	4	5	1	52.3	5	3	1	2	2	2.8	5.7
SWDP-0909	DA_21	3.5	1	0.2	4.5	2.1	59.8	0.0	0.4	1.2	35.3	3	25.3	2	146.6	1	5	2	74.6	5	3	1	2	2	2.8	5.7
SWDP-0902	DA_58	8.9	1	0.0	0.0	8.9	100.0	0.0	0.0	0.0	0.0	3	No Data	1	102.9	2	1	1	36.1	3	5	1	3	3	1.8	5.5
SWDP-0944	DA_04	21.6	2	1.3	0.0	6.1	72.7	4.6	21.2	0.0	0.0	3	24.0	2	84.8	2	9	2	76.8	5	3	1	2	2	2.7	5.3
SWDP-0921	DA_24	10.0	2	0.0	0.0	6.7	68.7	0.3	3.0	2.8	27.8	3	37.5	2	234.8	4	10	2	46.9	3	3	1	2	2	2.7	5.3
SWDP-0926	DA_35	41.9	3	0.9	2.1	31.8	76.0	0.3	0.6	8.9	21.3	3	36.7	2	140.3	2	23	3	45.2	3	3	1	2	2	2.7	

APPENDIX G: TRAINING MATERIALS

Dry Weather Stormwater Outfall Inspections



DPW Water Resources Division
Training Guide
2020



Dry Weather Outfall (DWO) Inspection Training Topics

- **Stormwater Program: Elements of the MS4 General Permit**
- **Why DWO Inspections Are Important**
- **When To Conduct DWO Inspections**
- **What To Look For During DWO Inspections**
- **How To Enter Inspection Data Using Cityworks Mobile**

Stormwater Program Elements

Pollution Prevention & Good Housekeeping



Public Education & Outreach



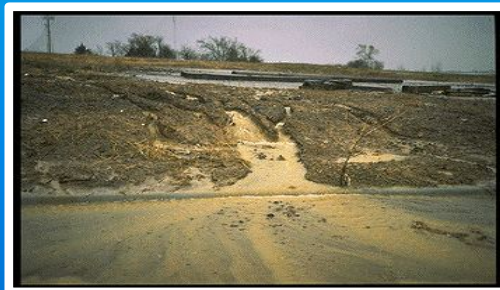
Public Involvement & Participation



Post-Construction Stormwater Management



Construction Site Stormwater Runoff Control



Illicit Discharge Detection & Elimination



MS4 = Municipal Separate Storm Sewer System

Why Conduct Dry Weather Outfall Inspections?

Opportunistic Illicit Discharge Detection:

- If a storm drain or open drainage channel is still flowing several days after the last rain event there *might* be a sewer-storm drain cross-connection
- Look for Evidence of:
 - Sewage Contamination
 - Spills or Leaks of Petroleum Product or Other Hazardous Chemicals
 - Illegal Dumping
 - High Concentrations of Fertilizer/Nutrients
 - Sediment Discharges
 - Other Sources of Water Pollution
- Opportunity to Identify Storm Drain or Open Drainage Maintenance Needs:
 - Brush Clearing
 - Sediment Removal
 - Pipe or Open Ditch Cleaning
 - Outfall, ditch or Pipe Repairs
 - Erosion Below the Outfall

When To Conduct Dry Weather Outfall Inspections

- ***Dry Weather*** is defined as a 72 hour period with less than 1/10-inch rainfall and *no snow melt*
- **Best Time to Conduct Dry Weather Outfall Inspections:**
 - **Before the First Snow Fall or Several Weeks After Final Snow Melt to Avoid Runoff or Groundwater Discharge Situations**
 - **When the Vegetation is Low and the Outfalls Are Easier to Locate and Access**

What To Look For During A Dry Weather Outfall Inspection

➤ Visible Signs of Water Pollution

- Pipe or Ditch Flow/Seepage Flow*
- Water Color
- Water Clarity & Turbidity
- Foam/Suds
- Oil, Grease, Paint, Other Chemicals
- Sewage
- Algae/Bacterial Growth
- Pet Waste Bags
- Trash/Floatables

➤ Odors

- Sewage/Septic
- Oil, Gasoline, Petroleum
- Musty

➤ Maintenance Needs:

- Illegal Trash/Yard Waste Disposal
- Outfall Overgrown By Vegetation
- Pipe or Open Ditch Needs Cleaning
- Outfall Needs Repairs

Pipe or Open Drainage Flow: Might Indicate A Sewer-Storm Drain Cross-Connection



Dry Weather Flow: Is this a Cross-Connection, Ground Water/Brook Flow or Allowable/Non-Allowable Input to Catch Basin?

**Dry Weather Flow
Requires
Follow-up
Investigation**



Dry Weather Flow With Suds: Sink, Dishwasher, Washing Machine Sewer Cross-Connection or Car/Truck Washing (Homeowner or Professional)???

Sewage Indicators



Visible Sewage
Human Waste
Toilet Paper
Hygiene Products
“Flushable” Wipes



Other Indicators
Gray, Cloudy Color
Stringy Gray “Sewage” Algae
Sewage/Septic Odor
Suds/Foam



Pipe or Open Ditch Flow With Sediment Discharge

➤ **Indicates Ongoing or Recent Construction or Repair Activity:**

- Water Line Break
- Utility Site Dewatering
- Construction Site Dewatering

➤ **Requires *Immediate* Investigation to Identify & Eliminate the Source of the Pollutant**

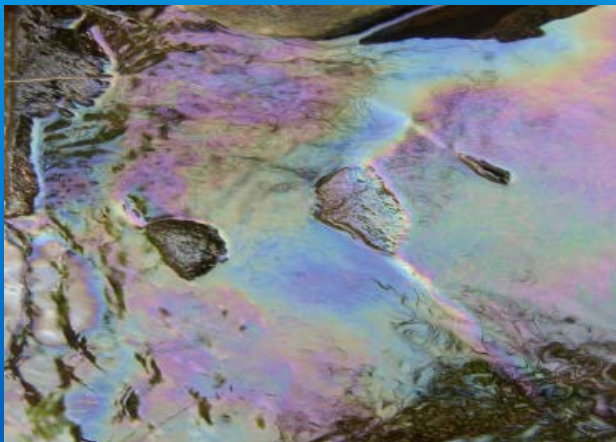
➤ **No Entity Has the Right to Pollute or Impact the City's MS4 & Should Have an ESC Plan to Prevent Such Illicit Discharges**



Oil Sheen: Petroleum Products, Cooking Oil or Bacterial Activity?



- Oil, diesel, gasoline & hydraulic fluid have a distinctive odor
- When stirred, the slick will cling & recombine
- The stronger the odor, the larger the spill



- Cooking oil or grease appears to be more tan/brown & has a rancid odor



- Iron bacteria produce a slight oily sheen that has no petroleum smell
- The slick breaks up when stirred
- Orange, granular appearance
- Commonly found in standing water



Benthic/Algae (Non-Sewage)

➤ Indicates Nutrient Loading:

- Fertilizers/Compost (Nitrogen, Phosphorus)
- Animal Waste (Dogs, Waterfowl, etc.)
- Metals (Iron, Manganese, etc.)
- Human Waste – Less likely unless close to septic system

➤ Additional Investigation Needed to Identify Obvious Sources



Green, Blue-Green & Brown Algae:

- Might be stringy, hair-like along the channel bottom
- Might form clumps or dense mats on the water surface
- High N and/or P discharges



Bright Red or Reddish-brown Bacteria (Iron Floc):

- High iron and/or manganese concentrations
- Not typically associated with illicit discharges; Usually natural

Other Illicit Discharges

There is no limit to the kinds of things that can be spilled or dumped into the storm drain system



Tile Cutting Dust & Grit



Paint Wash Water

Coolant or Dye Test?



Brew Mash: P.U.!!!

Cool, No "Eye" Test Required!!!



Pet Waste



➤ Poor Pet Waste Disposal Practices Are A Growing Problem Near Trails & Popular Dog-walking Routes

- Clog Up Catch Basins & Outfall Areas
- Bacteria, Excess Nutrients, Odor & Plastic Waste
- Tracking Will Help Education/Outreach & Waste Management Efforts – Targeted Signage



Illegal Trash or Yard Waste Dumping

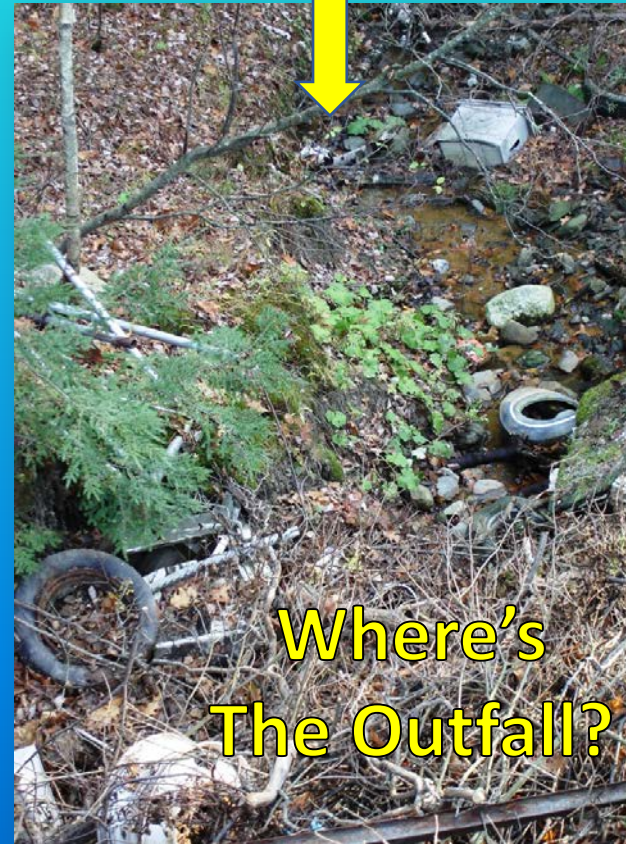
➤ Illegal Dumping:

- Residential Appliances, Debris & Trash
- Commercial Construction Debris & Yard Waste
- Residential Yard Waste

➤ Challenges of Illegal Dumping:

- Makes it difficult to find, inspect & maintain a stormwater outfall
- Safety hazard for WR personnel
- Expensive & hard to clean up
- Difficult to identify the offender & prevent in the future

Illegal Dumping



Illegal Commercial Dumping



Outfall Overgrown

- Sometimes It's Difficult to Locate Outfalls After Only One Season's Growth
- It's Important to Document When Brush & Vegetation Are Becoming An Inspection & Maintenance Issue



Where's
The Outfall?



Ummm . . .
Houston,
we have a
problem . . .

Outfall Maintenance/Repair Required



- When Conducting an Inspection Be Sure to Identify Repair & Maintenance Needs
- The Sooner Problems are Identified, the Sooner They Can Be Addressed
- This Saves Time, Money, Prevents Water Pollution and Reduces the City's Property Damage Liability
- Be Specific When Describing the Problem & Take a Photo



These Are Just A Few Examples of Maintenance & Repair Needs:

- Pipe Joint Failure/Segment Disconnected
 - Erosion Around or Below Outfall
- Pipe/Ditch Clogged by Sediment or Debris
 - Corroded or Broken Pipe
- Hanging Pipe (Caused by progressive slope erosion)
 - Headwall Failure
- Plunge Pool Repair or Sediment Removal



Using Cityworks Mobile for Inspection Data Entry in the Field

- There's an SOP for that!!!
- iPad passcode: XXXX(xx)
- Cityworks login: user-specific
- Any questions?

City of Portland, Department of Public Works Water Resources Division			
Department	Water Resources	Document #	WR-000-11
Prepared by:	Allison Fisher	Date:	5/5/2017
Supersedes:		Date Issued:	
Checked by:	Supervisor	Date:	

Standard Operating Procedure (SOP) Title: Cityworks Mobile for DWO Inspections

Document Owner:
Asset Management Team/City of Portland

Affected Parties:
Asset Management Team, Stormwater Program Coordinator, Water Resources O&M

Purpose:
This SOP outlines how to use Cityworks mobile app in the field to enter inspections performed on dry weather outfalls.

Scope: (Activities and Responsibilities)
The user must be able to navigate the iPad. It is geared toward operators and staff that perform inspections on dry weather outfalls in the field.

Resources and training:
DWO Inspector must attend training offered by Stormwater Program Coordinator prior to performing inspections. For digital inspections, Cityworks login (password and username), Cityworks Mobile (Cityworks 4 app), connection to wifi or data (MiFi, 3G, 4G LTE, etc.), and iPad are required.

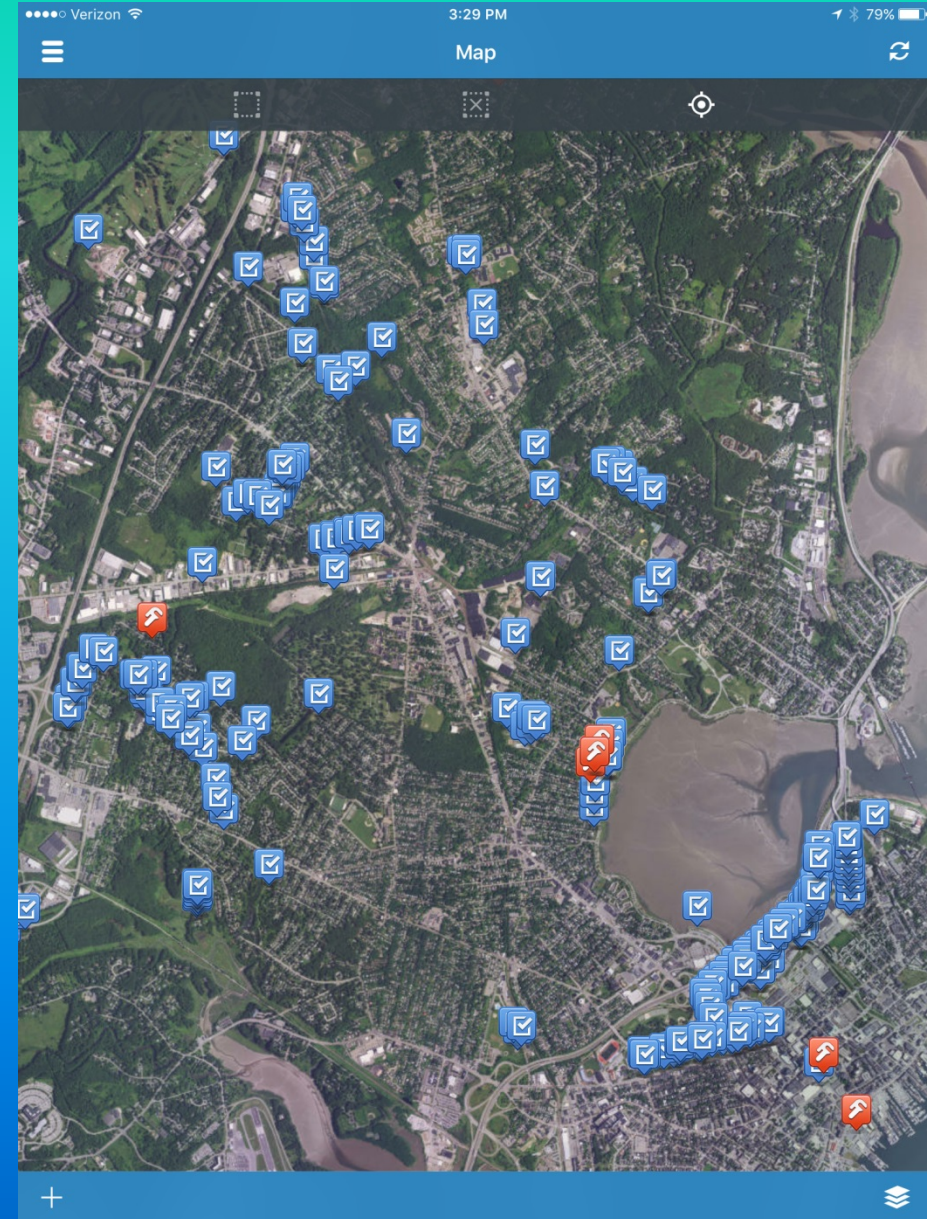
Definitions:
This section will include definitions in a table format for any uncommon words, phrases and abbreviations used in this document.

DWO	Dry weather outfall
IDDE	Illicit Discharge Detection & Elimination

Appendix:
Appendix Items

Inspections and Work Orders

- **Inspections are created by SW Coordinator or Asset Management Team**
 - Then they are visible in Cityworks Mobile
- **Work Orders are created by SW Coordinator, Asset Management Team and sometimes WR team**
 - Then they are visible in Cityworks Mobile
 - They can be for any of the maintenance needs discussed previously
 - They can be for IDDE investigation or follow-up



Now...Less talking, more exploring the iPads!



Questions?



APPENDIX H: EPA REGION 1 PROTOCOLS

EPA New England Bacterial Source Tracking Protocol

Draft – January 2012

Purpose

This document provides a common framework for EPA New England (“EPA-NE”) staff to develop and implement bacterial source tracking sample events, and provides a recommended approach to watershed association, municipal, and State personnel. Adopted from Boston Water and Sewer Commission (“BWSC”) (2004), Pitt (2004), and based upon fieldwork conducted and data collected by EPA-NE, the protocol relies primarily on visual observations and the use of field test kits and portable instrumentation during dry and wet weather to complete a screening-level investigation of stormwater outfall discharges or flows within the drainage system. When necessary, the addition of more conclusive chemical markers may be included. The protocol is applicable to most typical Municipal Separate Storm Sewer Systems (“MS4s”) and smaller tributary streams. The smaller the upstream catchment area and/or more concentrated the flow, the greater the likelihood of identifying an upstream wastewater source.

Introduction

The protocol is structured into several phases of work that progress through investigation planning and design, laboratory coordination, sample collection, and data evaluation. The protocol involves the concurrent collection and analyses of water samples for surfactants, ammonia, total chlorine, and bacteria. When more precise confirmation regarding the presence or absence of human sanitary sewage is necessary, and laboratory capacity is available, the additional concurrent collection of samples for select Pharmaceutical and Personal Care Product (“PPCP”) analysis is advised. When presented with a medium to large watershed or numerous stormwater outfalls, the recommended protocol is the screening of all outfalls using the surfactant, ammonia, total chlorine, and bacterial analyses, in addition to a thorough visual assessment. The resulting data and information should then be used to prioritize and sample a subset of outfalls for all parameters, including PPCP compounds and additional analyses as appropriate. Ideally, screening-level analyses can be conducted by state, municipal, or local watershed association personnel, and a prioritized sub-set of outfalls can be sampled through a commercial laboratory or by EPA-NE using more advanced confirmatory techniques.

Step I – Reconnaissance and Investigation Design

Each sample event should be designed to answer a specific problem statement and work to identify the source of contamination. Any relevant data or reports from State, municipal, or local watershed associations should be reviewed when selecting sample locations. Aerial photography, mapping services, or satellite imagery resources are available free to the public through the internet, and offer an ideal way to pre-select locations for either field verification or sampling.

Sample locations should be selected to segregate outfall sub-catchment areas or surface waters into meaningful sections. A common investigative approach would be the identification of a

specific reach of a surface water body that is known to be impaired for bacteria. Within this specific reach, stormwater outfalls and smaller tributary streams would be identified by desktop reconnaissance, municipal outfall mapping, and field investigation when necessary. Priority outfalls or areas to field verify the presence of outfalls should be selected based on a number of factors, including but not limited to the following: those areas with direct discharges to critical or impaired waters (e.g. water supplies, swimming beaches); areas served by common/twin-invert manholes or underdrains; areas with inadequate levels of sanitary sewer service, Sanitary Sewer Overflows (“SSOs”) or the subject of numerous/chronic sanitary sewer customer complaints; formerly combined sewer areas that have been separated; culverted streams, and; outfalls in densely populated areas with older infrastructure. Pitt (2004) provides additional detailed guidance.

When investigating an area for the first time, the examination of outfalls in dry-weather is recommended to identify those with dry-weather flow, odor, and the presence of white or gray filamentous bacterial growth that is common (but not exclusively present) in outfalls contaminated with sanitary. For those outfalls with dry-weather flow and no obvious signs of contamination, one should never assume the discharge is uncontaminated. Sampling by EPA-NE staff has identified a number of outfalls with clear, odorless discharges that upon sampling and analyses were quite contaminated. Local physical and chemical conditions, in addition to the numerous causes of illicit discharges, create outfall discharges that can be quite variable in appearance. Outfalls with no dry-weather flow should be documented, and examined for staining or the presence of any obvious signs of past wastewater discharges downstream of the outfall.

As discussed in BWSC (2004), the protocol may be used to sample discreet portions of an MS4 sub-catchment area by collecting samples from selected junction manholes within the stormwater system. This protocol expands on the BWSC process and recommends the concurrent collection of bacteria, surfactant, ammonia, and chlorine samples at each location to better identify and prioritize contributing sources of illicit discharges, and the collection of PPCP compounds when more conclusive source identification is necessary.

Finally, as discussed further in Step IV, application of this sampling protocol in wet-weather is recommended for most outfalls, as wet-weather sampling data may indicate a number of illicit discharge situations that may not be identified in dry weather.

Step II – Laboratory Coordination

All sampling should be conducted in accordance with a Quality Assurance Project Plan (“QAPP”). A model QAPP is included as Attachment 1. While the QAPP details sample collection, preservation, and quality control requirements, detailed coordination with the appropriate laboratory staff will be necessary. Often sample events will need to be scheduled well in advance. In addition, the sampling team must be aware of the strict holding time requirements for bacterial samples – typically samples analysis must begin within 6 hours of sample collection. For sample analyses conducted by a commercial laboratory, appropriate coordination must occur to determine each facilities respective procedures and requirements.

The recommendations in this protocol are based on the use of a currently unpublished EPA-NE modification to *EPA Method 1694 – Pharmaceuticals and Personal Care Products in Water, Soil, Sediment, and Biosolids by HPLC/MS/MS*. Several commercial laboratories may offer Method 1694 capability. EPA-NE recommends those entities wishing to utilize a contract laboratory for PPCP analyses ensure that the laboratory will provide quantitative analyses for acetaminophen, caffeine, cotinine, carbamazepine, and 1,7-dimethylexanthine, at Reporting Limits similar to those used by EPA-NE (See Attachment 2). Currently, the EPA-NE laboratory has limited capacity for PPCP sampling, and any proposed EPA-NE PPCP sample events must be coordinated well in advance with the appropriate staff.

Step III – Sample Collection

Once a targeted set of outfalls has been selected, concurrent sampling and analyses for surfactants, ammonia, and total chlorine (which can all be done through the use of field kits), in addition to bacteria (via laboratory analysis) should be conducted. When numerous outfalls with dry-weather flow exist, sample locations should be prioritized according to the criteria mentioned above. In addition, field screening using only the field kits may occur during the field reconnaissance. However, it must be emphasized that the concurrent sampling and analyses of bacteria, surfactant, ammonia, and total chlorine parameters is the most efficient and cost-effective screening method.

When first observed, the physical attributes of each outfall or sampling location should be noted for construction materials, size, flow volume, odor, and all other characteristics listed on the data collection form (Attachment 3). In addition, GPS coordinates should be collected and a photograph of the sample location taken. Whenever possible, the sampling of storm drain outfalls should be conducted as close to the outfall opening as possible. Bacterial samples should be collected first, with care to not disturb sediment materials or collect surface debris/scum as best possible. A separate bottle is used to collect a single water sample from which aliquots will be analyzed for surfactants, ammonia, and total chlorine. A sample for PPCP analysis is recommended to be collected last, as the larger volume required and larger bottle size may cause some sediment disturbance in smaller outfalls or streams. If necessary, a second smaller, sterile and pre-cleaned sampling bottle may be used to collect the surface water which can then be poured into the larger PPCP bottle. Last, a properly calibrated temperature/specific conductance/salinity meter should be used to record all three parameters directly from the stream or outfall. When flow volume or depth is insufficient to immerse the meter probe, a clean sample bottle may be utilized to collect a sufficient volume of water to immerse the probe. In such instances, meter readings should be taken immediately.

As soon as reasonably possible, sample aliquots from the field kit bottle should be analyzed. When concurrent analyses are not possible, ammonia and chlorine samples should be processed first, followed by surfactant analysis, according to each respective Standard Operating Procedure as appropriate based on the particular brand and type of field test kit being used. All waste from the field test kits should be retained and disposed of according to manufacture instructions. Where waste disposal issues would otherwise limit the use of field kits, EPA-NE recommends

that, at a minimum, ammonia test strips with a Reporting Limit below 0.5 mg/L be utilized. Such test strips typically are inexpensive and have no liquid reagents associated with their use. Results should be recorded, samples placed in a cooler on ice, and staff should proceed to the next sample location.

Upon completion of sampling and return to the laboratory, all samples will be turned over to the appropriate sample custodian(s) and accompanied by an appropriate Chain-of-Custody (“COC”) form.

Step IV – Data Evaluation

Bacterial results should be compared to the applicable water quality standards. Surfactant and ammonia concentrations should be compared to the thresholds listed in Table 1. Evaluation of the data should include a review for potential positive results due to sources other than human wastewater, and for false negative results due to chemical action or interferences. In the EPA-NE region, field sampling has indicated that the biological breakdown of organic material in historically filled tidal wetlands may cause elevated ammonia readings, as can the discharge from many landfills. In addition, salinity levels greater than 1 part per thousand may cause elevated surfactant readings, the presence of oil may likewise indicate elevated levels, and fine suspended particulate matter may cause inconclusive surfactant readings (for example, the indicator ampule may turn green instead of a shade of blue). Finally, elevated chlorine from leaking drinking water infrastructure or contained in the illicit wastewater discharge may inhibit bacterial growth and cause very low bacterial concentrations. Any detection of total chlorine above the instrument Reporting Limit should be noted.

Table 1 – Freshwater Water Quality Criteria, Threshold Levels, and Example Instrumentation¹

Analyte/ Indicator	Threshold Levels/ Single Sample ³	Instrumentation
E. coli ²	235 cfu/100ml	Laboratory via approved method
Enterococci ²	61 cfu/100ml	Laboratory via approved method
Surfactants (as MBAS)	≥ 0.25 mg/l	MBAS Test Kit (e.g. CHEMetrics K-9400)
Ammonia (NH ₃)	≥ 0.5 mg/l	Ammonia Test Strips (e.g. Hach brand)
Chlorine	> Reporting Limit	Field Meter (e.g. Hach Pocket Colorimeter II)
Temperature	See Respective State Regulations	Temperature/Conductivity/Salinity Meter (e.g. YSI Model 30)

¹ The mention of trade names or commercial products does not constitute endorsement or recommendation for use by the U.S. EPA

² 314 CMR 4.00 MA - Surface Water Quality Standards - Class B Waters.

³ Levels that may be indicative of potential wastewater or washwater contamination

Once dry-weather data has been examined and compared to the appropriate threshold values, outfalls or more discreet reaches of surface water can be selected for sampling or further investigation. Wet-weather sampling is also recommended for all outfalls, in particular for those that did not have flow in dry weather or those with dry-weather flow that passed screening thresholds. Wet-weather sampling will identify a number of situations that would otherwise pass unnoticed in dry weather. These wet-weather situations include, but are not limited to the following: elevated groundwater that can now cause an exchange of wastewater between cracked or broken sanitary sewers, failed septic systems, underdrains, and storm drains; increased sewer volume that can exfiltrate through cracks in the sanitary piping; increased sewer volume that can enter the storm drain system in common manholes or directly-piped connections to storm drains; areas subject to capacity-related SSO discharges, and; illicit connections that are not carried through the storm drain system in dry-weather.

Step V – Costs

Use of field test kits and field instruments for a majority of the analytical parameters allows for a significantly reduced analytical cost. Estimated instrument costs and pro-rated costs per 100 samples are included in Table 2. The cost per 100 samples metric allows averaged costs to account for reagent refills that are typically less expensive as they do not include the instrument cost, and to average out the initial capital cost for an instrument such as a temperature/ conductivity/salinity meter. For such capital costs as the meters, the cost over time will continue to decrease.

Table 2 – Estimated Field Screening Analytical Costs ¹

Analyte/ Indicator	Instrument or Meter ²	Instrument or Meter Cost/No. of Samples	Cost per Sample (Based on 100 Samples) ³
Surfactants (as MBAS)	Chemetrics K- 9400	\$77.35/20 samples ((\$58.08/20 sample refill))	\$3.09
Ammonia (NH ₃)	Hach brand 0 – 6 mg/l	\$18.59/25 samples	\$0.74
Total Chlorine	Hach Pocket Colorimeter II	\$389/100 samples ((\$21.89 per 100 sample refill))	\$3.89
Temperature/ Conductivity/ Salinity	YSI	\$490 (meter and cable probe)	\$4.90

¹ Estimated costs as of February 2011

² The mention of trade names or commercial products does not constitute endorsement or recommendation for use by the U.S. EPA

³ One-time meter costs and/or refill kits will reduce sample costs over time

From Table 2, the field analytical cost is approximately \$13 per outfall. Typical bacterial analyses costs can vary depending on the analyte, method, and total number of samples to be

performed by the laboratory. These bacterial analyses costs can range from \$20 to \$60. Therefore, the analytical cost for a single outfall, based on the cost per 100 samples, ranges from \$33 to \$73. As indicated above, these costs will decrease slightly over time due to one-time capitals costs for the chlorine and temperature/conductivity/salinity meters.

Step VI – Follow-Up

Once all laboratory data has been reviewed and determined final in accordance with appropriate quality assurance controls, results should be reviewed with appropriate stakeholders to determine next steps. Those outfalls or surface water segments that fail to meet the appropriate water quality standard, and meet or exceed the surfactant and ammonia threshold values, in the absence of potential interferences mentioned in Step IV, indicate a high likelihood for the presence of illicit connections upstream in the drainage system or surface water. Whereas illicit discharges are quite variable in nature, the exceedance of the applicable water quality standard and only the ammonia or surfactant threshold value may well indicate the presence of an illicit connection. When available, the concurrent collection and analyses of PPCP data can greatly assist in confirming the presence of human wastewater. However, such data will not be available in all instances, and the collective data set and information regarding the physical characteristics of each sub-catchment or surface water reach should be used to prioritize outfalls for further investigation. As warranted, data may be released to the appropriate stakeholders, and should be accompanied by an explanation of preliminary findings. Release of EPA data should be fully discussed with the case team or other appropriate EPA staff.

References Cited

Boston Water & Sewer Commission, 2004, *A systematic Methodology for the Identification and Remediation of Illegal Connections*. 2003 Stormwater Management Report, chap. 2.1.

Pitt, R. 2004 *Methods for Detection of Inappropriate Discharge to Storm Drain Systems*. Internal Project Files. Tuscaloosa, AL, in The Center for Watershed Protection and Pitt, R., *Illicit Discharge Detection and Elimination: A Guidance Manual for Program Development and Technical Assessments*: Cooperative Agreement X82907801-0, U.S. Environmental Protection Agency, variously paged. Available at: <http://www.cwp.org>.

Instrumentation Cited (Manufacturer URLs)

MBAS Test Kit - CHEMetrics K-9400: <http://www.chemetrics.com/Products/Deterg.htm>

Portable Colorimeter – Hach Pocket Colorimeter II: <http://www.hach.com/>

Ammonia (Nitrogen) Test Strips: <http://www.hach.com/>

Portable Temperature/Conductivity/Salinity Meter: YSI Model 30:
<http://www.ysi.com/productsdetail.php?30-28>

Disclaimer: The mention of trade names or commercial products in this protocol does not constitute endorsement or recommendation for use by the U.S. EPA.

Attachment 1

Stormwater Monitoring Program QAPP
5/17/12
Revision 1
Page 1 of 7

**Stormwater Monitoring Quality Assurance Project Plan
2012-2017**

RFA #

Sampling Plan Acceptance

EPA OES Enforcement and Project Manager/Coordinator Signature:	 Date:
EPA OEME Project Managers/Coordinator Signature:	 Date:
EPA OEME QA Officer Signature:	 Date:
EPA Chemistry Team Lead Signature:	 Date:

Attachment 1

Stormwater Monitoring Program QAPP

5/17/12

Revision 1

Page 2 of 7

1.0 Background

U.S. EPA Administrative Order 5360.1 requires that “all projects involving environmental monitoring performed by or for the U.S. EPA shall not be undertaken without an adequate Quality Assurance Project Plan (QAPP).” The purpose of this document is to describe the process used to develop, select, manage, and finalize stormwater monitoring projects. In describing this process, quality assurance goals and methods will be established, thus ensuring that the overall program and each monitoring project will meet or exceed EPA requirements for quality assurance.

The objective of these projects will be to collect data that is usable by EPA OES enforcement staff for enforcement actions and information requests. The primary focus of this project will be on urban water stormwater outfalls in the New England Region watersheds.

2.0 Sampling overview

Monitoring will be conducted on pre-scheduled days with the Laboratory. Samples will be retrieved from surface water, in stream or outfalls at suspected hotspots or areas that need further delineation. Sample sites will be located using GPS, with an accuracy goal of ± 1 meter and PDOP less than 6. Less accurate GPS reading or coordinates from maps will be accepted when site or other conditions do not allow ± 1 meter accuracy.

The primary focus of this sampling will be used to identify illegal discharges. Results from the sampling will be used by EPA enforcement staff for enforcement purposes. For this project, sampling will be conducted according to EPA’s Ambient Water Sampling SOP (Table 3). Volunteers and watershed association staff may assist in sampling. All procedures will be followed that are specified in Table 3. Parameter to be sampled will be predetermined by enforcement (OES) and OEME staff, based on data needs.

A. Locations

Site locations will be determined from field or desktop reconnaissance by project staff. Sample analyses will be predetermined based on conditions known about the sampling location prior to sampling. These may include data from previous sampling or from data collected from Mass DEP or local watershed associations. Any of the parameters listed in table 2 may be analyzed.

B. Analytical Methods and Reporting limits

Sample analyses will be conducted by EPA Laboratories.

This effort will test and compare the most appropriate analytical methods including, but not limited to; laboratory analysis, test kits and field analysis to determine the most effective and cost-efficient outfall and in-stream sampling approach.

Multiple and repeated testing will occur at each location to compare different method for identifying sewage contamination.

PPCPs, E.coli and enterococcus will be analyzed by EPA’s Laboratory. Surfactants, ammonia, total chlorine will be analyzed with field test kits. Potential additional laboratory analyses include nitrogen (nitrate/nitrite), TSS, BOD, surfactants, ammonia and TPH. The Laboratory used

Attachment 1

Stormwater Monitoring Program QAPP
5/17/12
Revision 1
Page 3 of 7

for each sampling event will be determined prior to sampling by the OEME Project Manager based on required analyses Laboratory availability and contract funds available.

Where available, a known concentration sample will be used to evaluate the performance of each test method. The known concentration sample will be processed in the field and Laboratory as a routine sample. The analyst or field technician will not know the concentration of the sample prior to analyzing and reporting the sample result. Sampling for PPCP testing will be done using extreme care not to contaminate the sample. No caffeine products should be consumed prior to sampling.

Table 1: Parameter specifications

Parameter (lab - equipment)	Preservation	Holding time
PH	None	Immediate
Temperature	None	Immediate
Sp Cond	None	Immediate
DO	None	Immediate
Total Phosphorus (EPA)	H ₂ SO ₄ (pH <2) + Ice	28 days
TSS (EPA)	Ice	7 days
TSS (Alpha)	Ice	7 days
BOD (Alpha)	Ice	48 hours
Surfactants (Alpha)	Ice	48 hours
Surfactants (field kit – Chemetrics)	None	Immediate
Ammonia (alpha)	H ₂ SO ₄ (pH <2) + Ice	28 days
Ammonia (test strips)	None	Immediate
TPH Petroleum ID (alpha)	Ice	7 Days to extraction 40 days after extraction
E. Coli (EPA)	Ice	6 hrs to lab
Enterococcus (EPA)	Ice	6 hrs to lab
PPCP	Ice (acidified in Lab)	7 day to extraction 40 days after extraction
Chlorine (Field kit – Hach)	None	Immediate

Attachment 1

Stormwater Monitoring Program QAPP
5/17/12
Revision 1
Page 4 of 7

Table 2: Analytical References and Quality Control Goals

		Water Quality Criteria or Guidelines (MA or EPA)	Quality Assurance Goals		
Parameter (lab- equipment)	Reporting Limits		Precision	Accuracy	Completeness
PH	4 to 10 units	6.5 - 8.3	0.02 unit	± 0.3 units	90%
Temperature	0 to +40°C	28.3°C	0.1 °C	± 0.15°C	90%
Sp Cond	0 to 100 mS/cm	NA	5 uS/cm	±10% cal std (uS/cm)	90%
DO	0.5mg/l to Sat	≥5 mg/l , ≥60% saturation	0.02mg/l	± .5 mg/l	90%
Total Phosphorus (EPA)	5.0 ug/l	NA	Field dup 30% RPD	MS 70-130%	90%
TSS (EPA)	5mg/L	NA	Field dup 30% RPD	See SOP	
TSS (Alpha)	5 mg/L	NA	Field dup 30% RPD	See SOP	90%
BOD (Alpha)	2 mg/L	NA	Field dup 30% RPD	See SOP	90%
Surfactants (field kit – Chemetrics)	0.25 mg/L ¹	0.25 mg/L	Field dup 30% RPD	TBD	90%
Ammonia (test strips)	0.25 mg/L ¹	1.0 mg/L	Field dup 30% RPD	TBD	90%
TPH Petroleum ID (alpha)	Variable	NA	Field dup 30% RPD	See SOP	
E. Coli (EPA)	4 col./ 100 ml	<=126 col./100 ml* <= 235 col./100 ml	±100 col/100ml or 30% RPD	N/A	90%
Enterococcus (EPA)	1 col/100ml	<=33 col./100 ml* <= 61 col./100 ml	±100 col/100ml or 30% RPD	See SOP	90%
PPCP	TBD	NA	Field dup 50% RPD	TBD	90%
Chlorine (Field kit – Hach)	0.02 mg/l	NA	Field dup 30% RPD	TBD	90%

Note

*Geometric mean Criteria

TBD = To be determined, Field methods and some colorimeter methods do not have accuracy criteria determined.

¹ Needs field verification to confirm

Attachment 1

Stormwater Monitoring Program QAPP
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Table 3: Field and Laboratory References

Parameter	Analytical Method Reference	SOP reference
	Field References- 5/2005	
pH		
Conductivity		
Temperature		
dissolved oxygen	n/a	ECASOP-YSISondes9
Ambient water samples	n/a	ECASop-Ambient Water Sampling2
Chain of custody of samples	n/a	EIASOP-CHAINOFCUST
Sample login, tracking, disposition	n/a	EIASOP-ADMLOG14
	Lab. References- 5/2005	
Total Phosphorus (EPA)	EPA 365.3	EIASOP-INGTP8
TSS (EPA)	EPA 160.2	EIASOP-INGTSS-TDS-VRES5
TSS (Alpha)	EPA 160.2,SM2540D	SOP/07-29
BOD (Alpha)	EPA 405.1,SM5210B	SOP/07-13
Surfactants (field kit – Chemetrics)	Chemetrics	Draft
Ammonia (test strips)	Hach	Draft
TPH Petroleum ID (alpha)	8015B (M)	0-017
E. Coli (EPA)	SM9230	ECASOP- TC/EC Colilert2
Enterococcus (EPA)	SM9230	ECASOP-Enterolert1
PPCP	EPA 1694	TBD
Chlorine (Field kit – Hach)	Hach	TBD

*Specific conductance is the only parameter identified as non critical

Bottle list

Table 4: Bottle Sampling List

Parameter (lab - equipment)	Bottle	Preservation
Primary analyses		
E. Coli (EPA)	(2) 120ml or 250ml sterile	Ice
Enterococcus (EPA)		Ice
PPCP	1 Liter Amber	Ice (acidified in Lab)
Optional analyses		
Chlorine (Alpha)	500 ml	Ice
Total Phosphorus (EPA)	125 ml	H ₂ SO ₄ (pH <2) + Ice
TSS (EPA)	1 liter	Ice
TSS (Alpha)	1 liter	Ice
BOD (Alpha)	1 Liter	Ice
TPH Petroleum ID (alpha)	2 -1 Liter Amber Glass teflon lined	Ice
E. Coli (Alpha)	120 ml sterile	Ice
Enterococcus (Alpha)	120 ml sterile	Ice

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C. Quality Control

- Calibration: EPA will calibrate its sondes according to the EPA sonde calibration SOP.
- Field duplicate: One duplicate sample will be collected per sampling event or approximately for every ten samples.
- Trip Blank: OEME Chemist will run appropriate QA samples for PPCP's. One blank sample will be collected for approximately every ten bacteria samples. Reported data that is less than 5 times the trip (field) blank concentration will be flagged.
- QC Criteria: Are specified in table 2, data not meeting this criteria will be reviewed by the Project Manager. Data that does not meet laboratory QA/QC criteria will be flagged by the laboratory.

D. Chain of Custody

Chain of custody procedures will follow the OEME/Investigations Office SOP (Table 3)

3.0 Data Review

EPA Microbiology data will be reviewed by the Biology QAO. Alpha generated microbiology samples will be reviewed by the OEME Project Manager. All field data and draft data reports will be reviewed by the OEME Project manager. Laboratory generated data (from Alpha and EPA) will be reviewed by the Chemistry Team Leader.

4.0 Data reports

Data reports will be reviewed by the Project Coordinator and the OEME Project Manager before a final report is release to the Enforcement Coordinator. Draft reports may be released without a complete review.

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5.0 Attachments

- 1) Standard Operating Procedure Enterococcus (SM9230B), Multiple Tube Technique. SOP/07-01 *Alpha Analytical, Inc. May 28, 2005*
- 2) Standard Operating Procedure E. Coli (SM9213D). SOP/07-41 *Alpha Analytical, Inc. May 28, 2005*
- 3) Standard Operating Procedure MBAS, Ionic Surfactants. Draft SOP *EPA Laboratory. January 28, 2010*
- 4) Standard Operating Procedure Nitrogen Ammonia. Draft SOP *EPA Laboratory. February 10, 2011*
- 5) Standard Operating Procedure Total Chlorine. Draft SOP *EPA Laboratory. February 12, 2010*
- 6) Standard Operating Procedure TSS/ TVSS (SM2540 D, EPA 160.2). SOP/07-29 *Alpha Analytical, Inc. September 29, 2007*
- 7) Standard Operating Procedure BOD-5day, SBOD-5day, and cBOD-5day (SM 5210B, and EPA 405.1). SOP/07-13 *Alpha Analytical, Inc. September 29, 2007*
- 8) Standard Operating Procedure TPH 8015D – Modified 0-017 (EPA 8015D Modified) *Alpha Analytical, Inc. March 04, 2008*
- 9) Standard Operating Procedure determination of Trace Elements in Water and Wastes by Inductively Coupled Plasma- Mass Spectrometry (200.8). SOP/06-11 *Alpha Analytical, Inc. July 13, 200*
- 10) Standard Operating Procedure Inductively Coupled Plasma – Mass Spectrometry (6020). SOP/06-10 *Alpha Analytical, Inc. October 25, 2007*

Target Compounds, Uses, and Reporting Limits

Target Compound	Major Use	RL (ng/L)	Daily Dose (ng)
Caffeine	Natural Stimulant	5.0	200,000,000
1,7-DMX	Metabolite of caffeine	2.5	N/A
Acetaminophen	Pain Reliever	2.5	650,000,000
Carbamazepine	Anti- depressant / bi-polar Anti-convulsant (epilepsy)	0.5	100,000,000
Primidone	Anti- epilepsy drug (AED)	5.0	100,000,000
Atenolol	Beta Blocker High Blood Pressure	2.5	50,000,000
Cotinine	Metabolite of Nicotine	0.5	3,500-7,200 (ng/mL)
Urobilin	By-product of hemoglobin breakdown (mammals)	5.0	1,300,000 ng/g in feces
Azithromycin	Antibiotic	1.6	200,000,000 ⁹⁴

STORMWATER MONITORING

Field Collection Requirements (To be recorded at each site)

Sample-

Site Name _____

Time collected _____

Date collected _____

Inspection-

****Take picture at site****

Outfall diameter _____ ('na' if open stream)

Flow estimate _____ ('na' if open stream)

Odor _____

Color _____

Turbidity _____

Floatables _____

Other observations _____

YSI Meter (calibrate in lab)-

Salinity _____

Temp _____

Conductivity (give both #'s)

Location information-

Short description of where sample was collected at site _____

GPS _____

Field Kits listed in the order they should be conducted in, include any applicable notes-

NH3 strip _____

Cl2 kit _____

Hach meter – (3 min wait)

Surfactant _____

Chemetrics K-9400 Blue box/detergent test kit

Additional Notes:

(Note any changes in weather conditions) _____

STORMWATER MONITORING (PAGE 2)

Field Equipment List

Waste Containers (2 total – clearly labeled):

- 1 liter amber plastic for surfactants/detergents kit waste
- 1 liter amber plastic for Cl2 kit waste

Sample Bottles (3 total for each sample location)-

- 120ml sterile – E.coli/entero
- 1 Liter amber glass: PPCP, EPA (Peter Philbrook)
- 120ml-250ml plastic – Field Kit Bottle – to be used on site for kits listed above

***Fill out chain of custody

In Carboy Container

- Log book
- COC forms
- Extra sample bottles
- Colored tape
- Sharpies
- Write-On-Rain Pens
- Paper towels
- GPS
- Sampling plan & GPS locations
- Regular length Powder Free Gloves
- Squirt bottle of DI Water
- Coolers with Ice
- Waders/Boots
- YSI multi parameter Meter

APPENDIX I: STORMWATER MONITORING QUALITY ASSURANCE PROJECT PLAN (QAPP)



QAPP

Quality Assurance Project Plan

City of Portland Maine

Department of Public Works
212 Canco Road | Portland ME 04103
www.portlandmaine.gov



City of Portland, Maine
Stormwater Monitoring Quality Assurance Project Plan (QAPP)

Revisions

1. Original document prepared for 2022 MS4 General Permit Submission to Maine DEP

Addenda

1. Example Field Data Collection Sheet and labels
2. Procedural References:
 - a. E-mail on Surfactant field kit handling of residuals from DEP staff
 - b. E-mail on Fecal Coliform thresholds from the DMR listed in Table 3
3. Example Chains of Custody

1.0 Background and Scope

Portland is regulated by the 2022 Maine General Permit for Stormwater Discharges from Municipal Separate Storm Sewer Systems (MS4 General Permit). The MS4 General Permit requires that Portland conduct dry weather inspections on 100% of City owned outfalls during the 5-year term of the MS4 General Permit.

Under most conditions, if an outfall is observed to have dry weather flow, monitoring must be conducted to assess whether there is an illicit discharge associated with the flow.

The objective of the monitoring is to collect data that can be used to determine if there is an illicit discharge present in the flow, or if the flow is from uncontaminated groundwater, water from a natural resource, or an allowable non-stormwater discharge.

The purpose of this Quality Assurance Project Plan (QAPP) is to provide sampling personnel information that will assist in collecting samples and analyzing the samples using field equipment/test kit(s) and/or laboratories in a manner that ensures sufficient accuracy and precision so that sampling personnel and regulators can be confident there is or is not an illicit discharge present in dry weather flow from an outfall. This QAPP provides information on several field equipment/test kit(s) and analytical methods available to permittees that can be used to comply with the requirements for Dry Weather Outfall Monitoring.

Portland has a written Illicit Discharge Detection and Elimination Plan (IDDE) as required by the MS4 General Permit. This QAPP has been developed with the help of the Interlocal Stormwater Working Group (ISWG) and is included in the City's IDDE Plan as Appendix I. While conducting outfall inspections, if there is evidence of an illicit discharge, the City will conduct additional investigations to identify the source and work with responsible parties to remove the source. The IDDE Plan describes the processes and procedures for the subsequent investigations.

Illicit Discharge means any discharge to a regulated MS4 system that is not composed entirely of stormwater other than:

- discharges authorized pursuant to another permit issued pursuant to 38 M.R.S. §413;
- uncontaminated groundwater;
- water from a natural resource such as a wetland; or
- other Allowable Non-Stormwater Discharges identified in Part IV(C)(3)(h) of the MS4 General Permit.

2.0 Sampling Procedures

Samples are required to be collected at outfalls that exhibit dry weather flow (defined as flow after there has been no precipitation greater than ¼ inch for 72 hours, and no melt water from snow or ice).

Personnel should be prepared to collect samples during any outfall inspection, because dry weather

flow is sometimes intermittent, and if personnel need to return to the site later in the same day, or several days later, the dry weather flow may no longer be present.

Samples will be collected from a flowing source only (not from stagnant water), and where the pipe outlet has at least 1 or 2 inches of free-flowing drop before any standing water or pool below it. Stagnant water should not be sampled unless the municipality deems it necessary for some reason.

For each outfall sampled, a Field Data Sheet will be used to document the date, time, and location of sample(s) collected, weather conditions, any general observations related to the tests being performed, and results of any parameters analyzed using field equipment or test kits. Note that the Field Data Sheet has a place to document sample observations including odor, color, turbidity, presence of algae, etc. The observations can be documented in this location instead of, or in addition to the observations made during the normal outfall inspection.

Sample bottles that will be taken away from the sampling site for analysis will be labelled with the date, time and sample location as well as the name of the sampler. Example labels are provided in Addendum 1 along with an example field data collection sheet.

When using a third-party laboratory for any off-site analysis, sample bottles should be obtained before the sampling event. Coordination with the laboratory is also recommended to ensure that sample hold times and preservation requirements are being met. Analytical methods, hold times and other pertinent information is described in Section 3 of this QAPP.

After sampling events, any reusable sample collection containers will be cleaned with soap (such as Alconox or equivalent) and water or trisodium phosphate and water. If any equipment is reused during a sampling event, the procedures outlined in section 4.2 will be followed. Once a sampling event is completed, cleaning will be completed in a location where wash water can be discharged to internal plumbing.

3.0 Analyses and Reporting limits

The MS4 General Permit does not require samples to be analyzed using Clean Water Act (CWA) Methods published in 40 Code of Federal Regulations Chapter 136. The use of field equipment/ test kit(s) and laboratories are both allowed. The MS4 General Permit does not require samples to be analyzed by a laboratory that is certified by the Maine DEP. However, this QAPP specifies that when a commercial laboratory is used for a CWA method, it will be certified by the Maine DEP for the CWA method specified.

This QAPP does not specify CWA methods or Maine DEP certification for use of field equipment/test kit(s). The IDDE Plan does include possible methods and equipment for sampling.

Table 1 provides information related to sampling parameters, analysis methods, and sample preservation and holding times that may be used during dry weather outfall monitoring. Analysis methods specified in Table 1 include CWA methods, field equipment, and test kits, where applicable.

Table 1 also provides information on when a given CWA Method, Field Equipment, or Test Kit might be preferable if there are multiple options for a given parameter.

Prior to sampling, the sampler and Stormwater Manager or Coordinator will determine what analysis method (CWA Method, Field Equipment, or Test Kit) will be used. Considerations will be made with regards to waste products from the sampling event.

User manual(s) and safety data sheets (SDS) for field equipment and/or test kit(s) that will be utilized for dry weather monitoring are kept in a separate electronic or paper location as long as they are easily accessible to the field personnel who will be conducting the monitoring.

Table 1: Sampling Parameters, Analysis Methods, and Sample Preservation and Holding Times

Bacteria - select one or more based on discharge environment	CWA Method, Field Equipment, or Test Kit	Preservation	Holding time	Bottle needed	Notes on Use
Bacteria - E. coli	SM 9223 B (IDEXX Colilert Quanti-Tray) EPA 1603 (membrane filtration, MF) Or SM 9221 B (Most probable number, MPN)	Ice	To lab within 6 hours Analyze within 2 hours of receipt	120 ml or 250 ml plastic sterile bottle with lid from lab	Use for discharges to freshwater (with ammonia and either optical enhancers or surfactants)
Bacteria - enterococcus	SM 9230 B, C or D, (MPN including IDEXX Enterolert, or MF) EPA 1600 (MF)	Ice	To lab within 6 hours Analyze within 2 hours of receipt	120 ml or 250 ml plastic sterile bottle with lid from lab	Use for discharges to salt water (with ammonia and either optical enhancers or surfactants)
Bacteria – Fecal Coliform	SM 9222 D (MF CFU/100ml) Or SM 9221 C, E (Multitube MPN/100ml)	Ice	To lab within 6 hours Analyze within 2 hours of receipt	120 ml or 250 ml plastic sterile bottle with lid from lab	Use for discharges to salt or freshwater (with ammonia and either optical enhancers or surfactants)
Bacteria – Human Bacteroides	Labs: EMSL (NJ), Microbial Insights (TN) or Source Molecular (FL) Or Dr. Steve Jones, UNH	Ice	To lab within 24 hours Analyze within 48 hours	1000 ml plastic bottle with sodium thiosulfate from lab (with insulated shipping box)	Use for discharges to salt or freshwater (with ammonia and either optical enhancers or surfactants). Not a CWA method, so Maine Laboratory certification not required.
Ammonia (select one method)	CWA Method, Field Equipment, or Test Kit	Preservation	Holding time	Bottle needed	Notes on Use
Ammonia	Hach Ammonia Test Strips or equivalent alternative	None	Immediate (w/in 15 minutes) in Field	Field jar or beaker	
Ammonia	Laboratory Method EPA 350.1/350.2	H ₂ SO ₄ (pH <2) + Ice	28 days	250 ml plastic bottle from lab	

Table 1: Sampling Parameters, Analysis Methods, and Sample Preservation and Holding Times

Ammonia	Hach DR300 Pocket Colorimeter Ammonia Nitrogen or LaMotte 3680-01 DC1200 Colorimeter test kit	None	Immediate (within 15 minutes) in Field	Field jar or beaker	Reagent contains Mercury, Generates a Toxic Hazardous Waste (D009) instructional video (10 minutes): https://www.youtube.com/watch?v=hFIEEAmWFo_
Total Residual Chlorine (select one method)	CWA Method, Field Equipment, or Test Kit	Preservation	Holding time	Bottle needed	Notes on Use
Chlorine	Field kit – Hach Colorimeter II low range	None	Immediate (within 15 minutes) in Field	Field jar or beaker	Instructional video available at: https://www.youtube.com/watch?v=WTTUDOHq1Vw
Chlorine	Industrial Test Systems Ultra-Low Total Chlorine Test Strips and other mid-range chlorine test strips	None	Immediate (within 15 minutes) in Field	Field jar or beaker	As of 6/2020, USEPA had not used Ultra low chlorine test strips (0.2 to 0.5 mg/L). Informal review shows these should be used simultaneously with a mid-range (0.5 to 10 mg/l) test strips to double check range.
Temperature and Conductivity (use both)	CWA Method, Field Equipment, or Test Kit	Preservation	Holding time	Bottle needed	Notes on Use
Temperature	Temperature/ Conductivity probe	None	Immediate (within 15 minutes) in Field	Field jar or beaker	Use to distinguish between groundwater and surface water.
Conductivity	Temperature/ Conductivity probe	None	Immediate (within 15 minutes) in Field	Field jar or beaker	Use to distinguish between salt water and fresh water.
Optical Enhancers or Surfactants (select one)	CWA Method, Field Equipment, or Test Kit	Preservation	Holding time	Bottle needed	Notes on Use
Surfactants	SM5540C	Ice	To lab within 24 hours Analyze within 48 hours	500 ml plastic bottle from lab	Works on most soaps (laundry detergent, personal care products, dish soap)

Table 1: Sampling Parameters, Analysis Methods, and Sample Preservation and Holding Times

Surfactants	CheMetrics K-9400 field test kit (see Maine DEP guidance on handling and disposal in Addendum 2)	None	Immediate (within 15 minutes) in Field	Field jar or beaker	Works on most soaps (laundry detergent, personal care products, dish soap). Contains alcohol and chloroform. Generates a Flammable (D001) and Toxic (D022) Hazardous Waste. Do not use test kit in the field unless licensed to transport hazardous wastes. Instructional Video available at: https://www.youtube.com/watch?v=6vwiZgWqa04
Optical brighteners	VWR handheld UV lamp: UV-A: 360-365 nm, model number 89131-488	None	Analyze within 7 days	Unbleached cotton pad wetted with sample placed in sealed baggie	Works only on water with high to moderate laundry detergent. Provides only presence/absence.
Optical brighteners	Maine Healthy Beaches Fluorometer (\$15,000 unit)	None	Keep in a dark container, provide to MHB in 1-2 days, analyze within 7 days	Whirl bag or 100 ml plastic bottle.	Provides semi-quantitative numeric fluorescence of sample. Need to provide sample to MHB in bottle or whirl bag (in a box or cooler). One week hold time. Provide advanced notice to coordinate delivery to office. Organic matter or tannins, or color will interfere.

4.0 Quality Control

The following are the reporting limits required by the MS4 General Permit:

Ammonia: 0.5 mg/L

Surfactants: 0.25 mg/L

Total Residual Chlorine: 0.05 mg/L

E. coli bacteria: 4 cfu/100 ml

Enterococcus: 10 cfu/100 ml

To ensure the data collected meets the required reporting limits, the City will use either a Maine Certified Laboratory or one of the field equipment/test kit methods listed in Table 1 to assess dry weather flow.

Each of the test kits listed in Table 1 has a use range that is appropriate for the work being conducted, and which meets the MS4 required reporting limits.

Test kit reagents that have expired will not be used. Test kit and temperature/conductivity probes that have useful life limits will be replaced when they have reached the end of their useful lives.

Maine Certified Laboratories have standard reporting limits for the parameters that conform to the MS4 General Permit required reporting limits.

4.1 Duplicate Samples (Optional)

To assess the precision of the dry weather flow monitoring, the municipality MAY choose to collect one duplicate sample for every 10 samples collected. Precision reflects the reproducibility of a given parameter by calculating the Relative Percent Difference (RPD) of the samples. RPD is calculated as follows:

$$RPD = \frac{(X1 - X2) \times 100}{(X1 + X2) \div 2}$$

Where X1 is the concentration of one sample and X2 is the concentration of the duplicate sample.

Table 2 provides information on the use of duplicate samples and troubleshooting information in the event the duplicate samples results are outside acceptable precision limits. The Precision and Target Relative Percent Differences shown were taken primarily from the Draft USEPA Bacteria Source Tracking Protocol. It is not possible to cover all possible reasons a set of duplicate samples may be outside the precision or Relative Percent Difference targets but the last column of the table lists a few considerations. If RPDs are not met on a day when samples were collected from multiple sites, the sampler should consider carefully the conditions that may have led to the issue and whether those conditions would cause all the sample results to be unreliable.

Table 2: Sample Precision Goals for Duplicate Samples

Parameter	Precision/ Target Relative Percent Difference	Use of Data when it meets the Precision or RPD	Comments/Troubleshooting if outside Precision or RPD
Temperature	0.1 °C or 0.2 °F	Retain both sets of data.	Because there are no thresholds for additional investigations for this parameter, just retain both sets of data and provide any comments that may have affected discrepancy such as age and condition of meter, or if exposure to ambient temperature could have affected temperature of sample.
Specific Conductance	5 uS/cm	Retain both sets of data.	Because there are no thresholds for additional investigations for this parameter, just retain both sets of data and provide any comments that may have affected discrepancy such as age and condition of meter.
Bacteria (E-Coli, Enterococci, or Fecal Coliform)	+/- 100 col/100ml or 30% RPD	Retain both sets of data, use an average of the samples to compare to the investigation thresholds.	Assess cleanliness of equipment used to collect sample. Review Laboratory quality control reports for any errors or issues. Review visual observations of sample collected to assess if there were any differences in color, clarity, odor, or volume of discharge that could account for discrepancy. Consider resampling site.
Dissolved Oxygen	0.02 mg/L	Retain both sets of data.	Assess cleanliness of equipment used to collect sample. Consider resampling site.
All other parameters	30% RPD	Retain both sets of data, use an average of the samples to compare to any investigation thresholds.	Assess cleanliness of equipment used to collect sample. Consider resampling site.

4.2 Equipment or Rinsate Blanks.

For most instances, dedicated equipment and containers are used to collect samples, so that equipment and rinsate blanks are not required to be collected and analyzed. However, if equipment or collection containers are being used multiple times in the field for different sample locations, they should be cleaned in between samples, wash water should be collected in the field and disposed of when returning to office or lab spaces, and equipment or rinsate blanks should be collected and assessed. The USEPA Volunteer Monitor's Guide to Quality Assurance Project Plans has additional guidance on how to complete these tasks (EPA Document 841-B-96-003).

5.0 Field Data Sheets and Chain of Custody

As described in Sampling Procedures, Field Data Sheets will be used to document sample collection. Field Data sheets will document the type of field equipment or test kit(s) used and results of any in-situ analysis. Example Field Data Sheets are provided in Addendum 1 to this QAPP.

Whenever samples will be sent to a laboratory for analysis, a Chain of Custody will be used to document sample collection dates, times, analytical methods requested, and custody of the sample from the time it was collected, until the time it was analyzed. Example Chains of Custody are provided in Addendum 3 to this QAPP.

6.0 Data Reports

Field data collection sheets shall constitute data reports for analyses using field equipment or test kits.

Whenever samples are sent to a laboratory for analysis, data reports are provided by the laboratory showing the sample location, date and time of collection, results of the analysis, the reporting limit, the person who conducted the analysis, the analytical method used.

7.0 Data Review and Follow up

Once all data has been received, it will be reviewed by a Stormwater Manager or Coordinator. Data shall also be stored electronically or in paper format for at least 3 years following the expiration date of the MS4 General Permit, as required by the MS4 General Permit.

If the person collecting the sample is the Stormwater Manager or Coordinator, they may opt to have another municipal staff person review the data, or a Stormwater Manager or Coordinator from another municipality if they deem it necessary to assist in the overall investigation. Data should be reviewed within 2 weeks of receipt and additional investigations should be scheduled or implemented to identify the source of any potential illicit discharge if any of the thresholds in Table 3 are exceeded.

Table 3: Thresholds for Additional Investigation

Parameter	Threshold Level for Additional Investigation	Notes/Discussion
E. coli	236 cfu/100 ml – discharges into freshwater rivers or streams	All classifications of flowing fresh surface water in Maine (AA, A, B and C) have a standard that no more than 10% of the samples may exceed this concentration in any 90-day interval. A fresh surface water is at risk of impairment if it is receiving significant discharges from human sources above this concentration.
E. coli	194 cfu/100 ml – discharges into freshwater ponds	Great Ponds and lakes less than 10 acres have a standard that no more than 10% of the samples may exceed this concentration in any 90-day interval. A water of this type is at risk of impairment if it is receiving significant discharges from human sources above this concentration.
Enterococci	54 CFU/100 ml – discharges into saline/estuarine Class SA or SB	These waters have a standard that no more than 10% of the samples may exceed this concentration in any 90-day interval. A water is at risk of impairment if it is receiving significant discharges from human sources above this concentration. (Note Maine Healthy Beaches threshold is 104 MPN/100 ml)
Enterococci	94 CFU/100 ml – discharges into saline/estuarine Class SC	These waters have a standard that no more than 10% of the samples may exceed this concentration in any 90-day interval. A water is at risk of impairment if it is receiving significant discharges from human sources above this concentration. (Note Maine Healthy Beaches threshold is 104 MPN/100 ml)
Fecal Coliform	61 cfu/100 ml (2 times 31 cfu/100 ml for MF) to 100 cfu/100ml	The low end of this threshold is two times the 90 th percentile standards that the Maine Dept. of Marine Resources (DMR) applies for approved (open) shellfish harvesting areas and is very conservative (90% of the samples collected from the area must be above these concentrations for the harvesting area to remain open and completely unrestricted for shellfish harvesting. See Addendum 2 for additional info from DMR)
Human Bacteroides	Any concentration of human source of sewage should be investigated.	Any concentration may be indicative of human sewage, but MHB considers 4,200 col/100ml HB to be equivalent to the level of contamination that exceeds the EPA acceptable risk of gastrointestinal illness to swimmers. (Rothenburger and Jones, 2018 and Boehm, Soller and Shanks 2015)
Ammonia	≥ 0.50 mg/L	This is the effective reporting limit of the Ammonia test strips and was taken from USEPA Draft 2012 Bacteria Source Tracking Protocol.
Chlorine	≥ 0.05 mg/L	Limit of test kit and was taken from USEPA Draft 2012 Bacteria Source Tracking Protocol.
Surfactants	≥ 0.25 mg/L	Taken from USEPA Draft 2012 Bacteria Source Tracking Protocol.
Optical Brighteners	≥ 100 ug/L (≥ 0.10 mg/L)	This is used by Maine Healthy Beaches as an actionable threshold. If using a handheld fluorometer, conduct further investigation if presence of optical brighteners is detected.

The City may use the thresholds listed in Table 3 and the following general guidance to make determinations whether an outfall requires additional investigation for illicit discharges.

- Outfalls that have some visual evidence of an illicit discharge and exceed at least one of the above thresholds and should be investigated further using techniques described in the City's IDDE Plan.
- Outfalls that do not have any visual evidence of an illicit discharge but exceed more than one of the above thresholds should be investigated further using techniques described in the City's IDDE Plan.

As described in Section 1 of this QAPP, if the above thresholds are not exceeded, the MS4 may make the determination that the flow is from uncontaminated groundwater, water from a natural resource, or an allowable non-stormwater discharge.

References

Rothenheber and Jones 2018. *Enterococci Concentrations in a Coastal Ecosystem are a function of fecal source input*. Published in Applied Environmental Microbiology, July 13, 2018.

Boehm, Soller and Shanks 2015. *Human-Associated Fecal Quantitative Polymerase Chain Reaction Measurements and Simulated Risk of Gastrointestinal Illness in Recreational Waters Contaminated with Raw Sewage*. Published in Environmental Science and Technology Letters 2015, 2, 270-275.

Addendum 1
Example Field Data Collection Sheet and Labels

Field Data Collection Sheet for Dry Weather Outfall Monitoring

Date _____	Project Name _____		
Time _____			
Sampler's Name _____	Project Location _____		
Weather: _____			
Sample Type: _____			
Facility ID Location: _____			
Sample Notes: _____			
Field Parameters to Monitor			
Parameter	Result (units)	Equipment Used	Threshold triggering additional investigation (see QAPP)
Temperature (all flows)	C/F		No threshold. FYI: Temp. is dependent on season. Groundwater is typically 40-55 F. Surface water can be hotter or colder.
Conductivity (all flows)	µs		No threshold. FYI: Groundwater is typ. Less than 1000 µs. Freshwater can be as high as 2000 µs. Saltwater can be as high as 55,000 µs.
Ammonia (potential bacteria sources)	mg/L	Hach Test Strips	≥ 0.50 mg/L
Surfactants			Surfactants ≥ 0.25 mg/L
Chlorine (potential chlorine sources)	mg/l	Hach Colorimeter II low range	≥ 0.05 mg/L (test kit limit)
Observations (unless already documented as part of outfall inspection: odor, color, turbidity, algae, etc): _____			
Laboratory Analyses (see QAPP for thresholds)			
Parameter	Method/ Lab Code	Comments	
E. coli	SM 9223 B, EPA 1603, or SM 9221 B	For freshwaters	
Enterococci	SM 9230 or EPA 1600	For marine/estuarine waters	
Comments/Field Notes			

This set of labels was designed to be used with Avery 5366 labels, but you can use any labels.

Sampler: _____ Date: _____
Time: _____ Field ID: _____

Sampler: _____ Date: _____
Time: _____ Field ID: _____

Sampler: _____ Date: _____
Time: _____ Field ID: _____

Sampler: _____ Date: _____
Time: _____ Field ID: _____

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Addendum 2
Procedural Reference E-mails

Kristie Rabasca

From: Lewis, Bryant J <Bryant.J.Lewis@maine.gov>
Sent: Thursday, October 31, 2019 4:46 PM
To: Kristie Rabasca; Wahle, Benjamin
Subject: RE: simple summary of Fecal concentrations for open vs seasonal vs restricted vs prohibited?

Kristie,

I did misunderstand the question. Unless there is a specific area of concern where we are collaborating on a special study with a town, we typically provide a yearly update for each station's geomean and P90 incorporating the most recent 30 sample scores. That annual trend is provided to towns so we are not usually contacting a town based on any one score to tell them that there might be a problem.

However- if trying to determine a trigger on a single sample, there is some subjectivity to the answer. I would suggest a value between 50-100 as a high value trigger. There is merit to your suggestion of using twice the 31 value as well since that is within that range. Often, our Scientists would use 100 as the high score value as their own flag to watch a station since an area that is already at risk of exceeding the approved standard based on the last 30 samples would likely go over a P90 of 31 with a 100 added. I think you would likely accomplish your goal by using any of the three values; 50, 62, or 100. I would recommend starting with 62 then re-evaluating after some data is built up to determine if that should be increased or decreased based on program needs.

Bryant Lewis
ME Department of Marine Resources
Growing Area West Program Supervisor
194 McKown Point Road
West Boothbay Harbor, ME 04575
Tel: 207-633-9401
Cell: 207-215-4107

From: Kristie Rabasca <krabasca@integratedenv.com>
Sent: Thursday, October 31, 2019 2:42 PM
To: Lewis, Bryant J <Bryant.J.Lewis@maine.gov>; Wahle, Benjamin <Benjamin.Wahle@maine.gov>
Subject: RE: simple summary of Fecal concentrations for open vs seasonal vs restricted vs prohibited?

EXTERNAL: This email originated from outside of the State of Maine Mail System. Do not click links or open attachments unless you recognize the sender and know the content is safe.

H Bryant,

I do a lot of illicit discharge investigations with and for the municipalities. Maybe I did not phrase my question properly.

For a single sample, at what concentration would DMR say to a municipality: "we think there might be a problem here". Is that concentration the 90th percentile number? 31? Or twice that?

Or do you wait until you see the GM or P90 number get close to its threshold for multiple samples?

Kristie L. Rabasca, P.E.
207-415-5830 (cell)

From: Lewis, Bryant J <Bryant.J.Lewis@maine.gov>
Sent: Thursday, October 31, 2019 2:33 PM

To: Kristie Rabasca <krabasca@integratedenv.com>; Wahle, Benjamin <Benjamin.Wahle@maine.gov>

Subject: RE: simple summary of Fecal concentrations for open vs seasonal vs restricted vs prohibited?

Kristie,

I would suspect DEP and possibly the municipality should be contacted for possible illicit discharges.

We use DMR water quality stations to classify growing area waters. As part of our program, we also conduct surveys of the shoreline where we look for malfunctioning septic systems and other pollution sources and sample the mouths of streams entering growing area waters; however, we do not conduct investigations to determine the sources of contamination. Generally, it is up to the municipality to investigate degrading water quality while sometimes DEP can provide some additional assistance. If there is an area where water quality was degrading we would provide the municipality the information we have if they wished to investigate. The municipality would likely need to do additional work to locate the source of contamination but the information you are describing would likely be valuable in their effort.

Bryant Lewis

ME Department of Marine Resources
Growing Area West Program Supervisor
194 McKown Point Road
West Boothbay Harbor, ME 04575
Tel: 207-633-9401
Cell: 207-215-4107

From: Kristie Rabasca <krabasca@integratedenv.com>

Sent: Wednesday, October 30, 2019 9:00 AM

To: Lewis, Bryant J <Bryant.J.Lewis@maine.gov>; Wahle, Benjamin <Benjamin.Wahle@maine.gov>

Subject: RE: simple summary of Fecal concentrations for open vs seasonal vs restricted vs prohibited?

EXTERNAL: This email originated from outside of the State of Maine Mail System. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Thanks so much for this. We are using it because some communities will be sampling outfalls that are discharging into marine environments for fecal coliform as a screening tool when looking for illicit discharges. The MS4 General Permit requires that the communities regulated for their stormwater discharges do sampling whenever an outfall is flowing after three days of dry weather. We are telling them to notify DMR of the results, and wanted to have some guidelines for when they should be concerned. I know that your scores are very conservative because they are all about the FDA and ingestion of shellfish.

I have attached a QAPP that we are using and you will see the table in the back has a "threshold" for additional investigation if the town is monitoring for fecal coliform. Please note that the samples they are collecting are discharges from outfalls into the water body – not from the water body.

Would you investigate further if the thresholds for 90th percentile for open areas were exceeded? Or would you use 2x that? Or some other number.

Hopefully you understand my question....

Kristie L. Rabasca, P.E.
207-415-5830 (cell)

From: Lewis, Bryant J <Bryant.J.Lewis@maine.gov>

Sent: Monday, October 28, 2019 10:16 AM

To: Wahle, Benjamin <Benjamin.Wahle@maine.gov>; Kristie Rabasca <krabasca@integratedenv.com>

Subject: RE: simple summary of Fecal concentrations for open vs seasonal vs restricted vs prohibited?

Kristie,

This webpage explains the classifications.

<https://www.maine.gov/dmr/shellfish-sanitation-management/programs/growingareas/howclassified.html>

The NSSP Model Ordinance dictates how we calculate water quality scores. A 90th percentile based on the most recent 30 samples providing a score of 31 or less is Approved, 32-163 is Restricted and above 163 is Prohibited. There is a link to the Model Ordinance on our website, if needed. It describes how to calculate scores for systematic random sampling using membrane filtration.

<https://www.maine.gov/dmr/shellfish-sanitation-management/programs/growingareas/index.html>

I have also attached a document summarizing what is in the Model Ordinance for calculating water quality station scores.

Bryant Lewis
ME Department of Marine Resources
Growing Area West Program Supervisor
194 McKown Point Road
West Boothbay Harbor, ME 04575
Tel: 207-633-9401
Cell: 207-215-4107

From: Wahle, Benjamin
Sent: Monday, October 28, 2019 9:28 AM
To: Kristie Rabasca <krabasca@integratedenv.com>
Cc: Lewis, Bryant J <Bryant.J.Lewis@maine.gov>
Subject: RE: simple summary of Fecal concentrations for open vs seasonal vs restricted vs prohibited?

Hi Kristie,

I'm actually going to refer you to Bryant Lewis, who is the Western Region Growing Area Supervisor. He'll be better able to explain DMR's classification system.

-Ben

From: Kristie Rabasca <krabasca@integratedenv.com>
Sent: Monday, October 28, 2019 8:03 AM
To: Wahle, Benjamin <Benjamin.Wahle@maine.gov>
Subject: simple summary of Fecal concentrations for open vs seasonal vs restricted vs prohibited?

EXTERNAL: This email originated from outside of the State of Maine Mail System. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Good Morning Ben,

I worked with you in Eliot and Cape – and am looking on your website for a simple summary of the P90 concentrations that trigger the various restrictions on shellfishing.

Does such an animal exist? If so, could you share it?

I am working on a QAPP for the stormwater folks and want to provide them with a reference that is accurate and truthed by DMR for when they are sampling outfalls near shellfishing areas.

Thanks for any help you can provide.

DMR uses a membrane filtration (MF) method for fecal coliform analysis using mTEC agar with a two-hour resuscitation step. The geometric mean and the 90th percentile are calculated on a minimum of the most recent 30 data points.

Geometric Mean (Geomean):

The geometric mean, or geomean, is a type of averaging calculation. Unlike a simple average or arithmetic mean, the geomean takes into account the way bacteria grow. During bacterial growth, each bacterium doubles and reproduces itself i.e. one bacterium becomes two, two bacteria become four, four become eight and so on. There are low values at first and the rate of growth increases as the number of colonies increases. This is called exponential growth (Figure 1). This growth pattern means a fecal coliform dataset may have a few high scores and many low scores. The calculation for the geometric mean takes exponential growth into account by transforming the data into logarithms, taking the mean and then converting the number back to a log base 10 number. For example, the arithmetic mean of a fecal coliform score of 300, 150, 23 and 2 CFU/100ml is 119 CFU/100ml. Calculating the geomean, the result is 38 CFU/100ml.

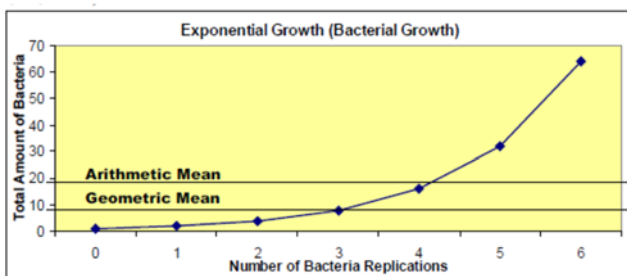
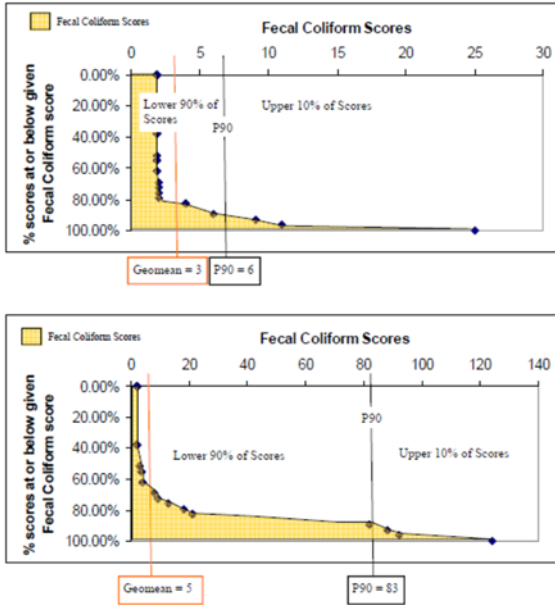


Figure 1. The graph illustrates exponential growth. The arithmetic mean for the scores is 18.1 while the geomean is 8.

90th Percentile (P90)

The other calculation used for shellfish growing area classification is the 90th percentile (P90). The P90 is the variability standard, meaning this value takes into account the variability of test readings. In any test measurement, successive readings of the same sample would produce slightly different scores each time due to precision of the equipment, human error, etc. This type of variability is a factor of the test method and equipment used and is true of all testing methods.

To account for the variability in the fecal coliform test, a standard has been established. Here again, since bacteria grows exponentially, the calculations are performed on a logarithmic scale. The P90 is based on the distribution of fecal coliform scores and means that 90% of scores are at are below the P90 and 10% scores are above (Figures 2a and 2b). As long as most of the other scores are low, a few high scores will not have a large impact on the P90 value. The P90 standard is the acknowledgment by the NSSP that a few high scores in data set may be due to the variability of the test method. If the area shows high fecal coliform scores intermittently due to pollution events such as rainfall, this may cause water quality to exceed the P90 standards because the shellfish are intermittently subject to polluted waters. For classification determinations, P90s are rounded to the nearest whole number. 0.1-0.49 are rounded down and 0.5-0.9 are rounded up to the next whole number.



Figures 2a and b. The lower 90% of the scores fall to the left of the P90 line and 10% of the scores fall to the right. 2a has a low P90 because there are many low scores and a few high scores. 2b has a larger number of high fecal coliform scores, so the P90 is shifted to the right. Although the geomean of 2b passes the approved standard, the area would not be classified as approved because the P90 score is above the threshold.

Fecal Coliform Standards by Shellfish Growing Area Classification Category

Shellfish Growing Area Classification	Activity Allowed	Geometric mean FC/100ml	90 th Percentile (P90) FC/100ml
Approved	Harvesting allowed	≤ 14	≤ 31
Conditionally Approved	Harvesting allowed except during specified conditions	≤ 14 in open status	≤ 31 in open status
Restricted	Depuration harvesting or relay only	≤ 88 and >15	≤ 163 and >31
Conditionally Restricted	Depuration harvesting or relay allowed except during specified conditions	≤ 88 in open status	≤ 163 in open status
Prohibited	Aquaculture seed production only	>88	>163

Kristie Rabasca

From: Hudson, Michael S <Michael.S.Hudson@maine.gov>
Sent: Monday, October 7, 2019 11:51 AM
To: Kristie Rabasca
Cc: Plummer, Cherrie F; Poirier, Rhonda
Subject: FW: Proper handling and disposal of CheMetrics Surfactant field test kit residuals
Attachments: surfactants_CHEMetrics_k9400instructs.pdf; surfactants_CHEMetrics_k9400_SDSs.pdf; EIASOP-SWTestKits_REV1.pdf

Importance: High

In response to the questions posed regarding proper handling and disposal of CheMetrics Surfactant field test kit residuals:

1. Can the Towns mix the liquids from a. and b. in a single container for disposal as D001 and D022 waste? Or do they need to keep them separate to dispose of them?
Answer: Chloroform is miscible in alcohols such as n-propanol and is compatible. The Hazardous Waste Management Rules, 06-096 C.M.R. ch. 850 through 858, do not prohibit the mixing of compatible wastes. If mixed, the waste mixture should be coded as both D001 and D022. The town/generator could check with the licensed hazardous waste transporter it intends to use for the hazardous waste pick-up and disposal to determine if it is advisable or more cost effective to keep the wastes separate.
2. The n-propanol waste is super tough to get out of the vial – we pretty much just dispose of the whole vial. Is that okay? Or can we break the vial? And dispose of the empty glass as solid waste (as long as it is RCRA empty).
Answer: The whole vials containing n-propanol can be disposed of as hazardous waste. If the generator chooses to break the vial to dispose of the n-propanol as hazardous waste and the glass as a solid waste, then the generator must ensure the broken vials are RCRA-empty. Again, the town/generator could check with the licensed hazardous waste transporter it intends to use for the hazardous waste pick-up and disposal to determine if it is advisable or more cost effective to break and empty the vials to dispose of the glass and n-propanol separately. Of course, care and safety measures should be employed if breaking and handling glass vials.
3. Most of these towns are going to be SQGs (Maine Definition), and are going to be generating this waste while they are out in the field over a period of months. Then after each event, they are going to drive it back to the public works facility and set up a SQG haz waste storage area until they can get rid of it (either at HHWD collection, or have a specific pick up). They have 1 year to dispose of it. Have I missed any exemptions or special conditions for this? Is it okay that they are driving it around? Or should they be bringing the water samples back to public works and running the surfactant analysis on it at public works so they don't have to transport it. (its easier for them to run the sample right there while they are at the site).
Answer: It is preferable for the town/generator to bring samples back from field sites to its Public Works to do the test so that hazardous waste generated by the tests does not have to be transported from field sites. Under the rules, the town/generator would need hazardous waste licenses to transport or accept the hazardous wastes from off-site. Towns should set up a hazardous waste collection container for the hazardous wastes from the tests, with an appropriate size container, labeled as "Hazardous Waste" with an accumulation start date. If the town's Public Works is a Small Quantity Generator (SQG), i.e. it generates for all its hazardous wastes in aggregate no more than 27 gallons/month and accumulates no more than 55 gallon of all of its hazardous waste in aggregate, then the town/generator could accumulate the waste indefinitely until the container of hazardous waste from tests is full at which point the town/generator would have 180 days to ship

via licensed hazardous waste transporter. Town/ Public Works should not dispose of these waste through the Household HW collection programs because they are not household exempt wastes.

4. We are going to do a training of the use of this kit on 10/17 in Portland. I would really like for attendees to be able to practice use of the kit at that training. Do I need to schedule with NRCC or Clean Harbors to come pick up the waste that day (as a licensed transporter), or could one of the communities transport it back to their public works facility for storage until later disposal (during HHWD)?

Answer: Under the rules, the generator should arrange for waste pick-up at the site of generation. These hazardous wastes are not exempt under the household waste exclusion and are not acceptable at Household Hazardous Waste collections events.

The guidance above is based on the information provided below and the applicable rules, Hazardous Waste Management Rules, 06-096 C.M.R. ch. 850 through 858, without information on the number of test kits expected to be used, frequency of testing and volumes of anticipated waste accumulation. If you have questions or would like to discuss the specifics, please feel free to contact me at Michael.s.hudson@maine.gov or 207-287-7884, or Cherrie Plummer of the Hazardous Waste Management Unit. Cherrie's contact is Cherrie.F.Plummer@maine.gov and 207-287-7882.

Michael S. Hudson, Supervisor, Hazardous Waste Management Unit
Maine Department of Environmental Protection
17 State House Station, Augusta, ME 04333-0017
Tel. 207-287-7884
www.maine.gov/dep

From: Poirier, Rhonda
Sent: Monday, October 07, 2019 9:37 AM
To: Hudson, Michael S <Michael.S.Hudson@maine.gov>
Subject: Proper handling and disposal of CheMetrics Surfactant field test kit residuals
Importance: High

Hi Mike,

The sampling she's describing is required by one of the permits in my stormwater program. She is giving a workshop on it on 10/17 and would like to talk to the proper DEP person before that, for planning purposes. Can you help her?

Thank you,
Rhonda

Rhonda Poirier
MEPDES Stormwater Program Manager
Bureau of Water Quality
Maine Department of Environmental Protection
207-592-6233
www.maine.gov/dep

From: Kristie Rabasca <krabasca@integratedenv.com>
Sent: Tuesday, October 01, 2019 4:02 PM
To: Poirier, Rhonda <Rhonda.Poirier@maine.gov>
Cc: Aimee Mountain (Aimee.Mountain@gza.com) <Aimee.Mountain@gza.com>; Damon Yakovleff <dyakovleff@cumberlandswcd.org>
Subject: Proper handling and disposal of CheMetrics Surfactant field test kit residuals

Hi Rhonda,

Thanks for taking my call.

I am developing a dry weather monitoring training session for the ISWG and SMSWG MS4s, and am developing a QAPP and some checklists.

We will need to use the CheMetrics K-9400 field test kit for surfactants. I have attached the instructions for the kit, and the Safety Data Sheets for the two reagents. Generally for each sample we will do the following:

1. Add 5 ml of water to a small plastic vial
2. Add 4ml of the double tipped reagent (SDS attached and it is flammable and contains 71% chloroform)
3. Shake
4. Use the 0.25 ml sealed glass ampule (which is 98% N-propanol) to draw the organic phase out of the plastic vial with the water and the first reagent.
5. Use colorimeter to check detergent concentration of sample.

So the two wastes we have when done are:

- a. The mixture of the 5 ml water and the 4 ml 71% chloroform (which is still flammable) in the plastic vial (minus about 1 ml extracted into the n-propanol vial)
- b. About 1 ml of the n-propanol and the chloroform organic phase in a very small glass ampule.

I am requesting the EPA SOP on this – but I do not think it has the detail I want.

When I have used this in the past, I have given it to the municipality where it was generated and told them it was a **D001 Flammable and D022 Tox-chloroform waste**, and they hand it to clean harbors during household hazardous waste day.

We are going to have a lot more people generating this waste – using these kits, and we need to handle it properly. As we provide them with guidance, we want to make sure it is right.

My questions are:

1. Can the Towns mix the liquids from a. and b. in a single container for disposal as D001 and D022 waste? Or do they need to keep them separate to dispose of them?
2. The n-propanol waste is super tough to get out of the vial – we pretty much just dispose of the whole vial. Is that okay? Or can we break the vial? And dispose of the empty glass as solid waste (as long as it is RCRA empty)
3. Most of these towns are going to be SQGs (Maine Definition), and are going to be generating this waste while they are out in the field over a period of months. Then after each event, they are going to drive it back to the public works facility and set up a SQG haz waste storage area until they can get rid of it (either at HHWD collection, or have a specific pick up). They have 1 year to dispose of it. Have I missed any exemptions or special conditions for this? Is it okay that they are driving it around? Or should they be bringing the water samples back to public works and running the surfactant analysis on it at public works so they don't have to transport it. (its easier for them to run the sample right there while they are at the site).
4. We are going to do a training of the use of this kit on 10/17 in Portland. I would really like for attendees to be able to practice use of the kit at that training. Do I need to schedule with NRCC or Clean Harbors to come pick up the waste that day (as a licensed transporter), or could one of the communities transport it back to their public works facility for storage until later disposal (during HHWD)?

So many questions.... Perhaps I could talk with someone at Haz waste.... Thanks for any help you can provide.



Kristie L. Rabasca, P.E

Integrated Environmental Engineering, Inc.

12 Farms Edge Road

Cape Elizabeth, ME 04170

207-415-5830

Addendum 3
Example Chains of Custody

Laboratory Sample Chain of Custody

Client:		Contact:		Phone #:		Email							
Address:		City:		State:		Zip Code:							
Purchase Order #:		Proj. Name/No.:		Quote #:									
Bill (if different than above):				Address:									
Sampler (Print/Sign):				Copies To:									
LAB USE ONLY		Work Order #:		Analysis and Container Type Preservatives									
Remarks:				Filt.	Filt.	Filt.	Filt.	Filt.	Filt.	Filt.	Filt.	Filt.	Filt.
Shipping Info:				Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N
Airbill No:													
Temp C													
		FEDEX	UPS	CLIENT									
		Temp Blank	Intact	Not Intact									
*	Sample Description	Date/Time Collected	Matrix water/soil /other	No. of Containers									
COMMENTS:													
Relinquished By:		Date/Time	Received By:		Relinquished By:			Date/Time	Received By:				
Relinquished By:		Date/Time	Received By:		Relinquished By:			Date/Time	Received By:				

APPENDIX J: SAMPLE OUTREACH LETTER



CITY OF PORTLAND
Department of Public Works
Christopher C. Branch, P.E., Director

DATE

ABUTTER'S NAME
ABUTTER'S ADDRESS

Dear Resident:

Your neighborhood has a drainage system in place to ensure that homes and streets do not flood. The City of Portland maintains this drainage system through its Department of Public Works and provides regular drainage system cleaning services to its residents in an effort to keep our City and our environment clean and safe. **During recent cleaning activities, dog waste bags were found in your neighborhood's drainage system.** Please note that the catch basins in your streets do not lead to a wastewater treatment plant; these basins discharge to our beaches, streams and rivers.

Dumping dog waste into the City's drainage system is prohibited in accordance with state and federal law and Chapter 32 of the Portland City Code of Ordinances. Illegal dumping contributes to pollution of water bodies and can pose a hazard to public health.



Catch basins help to drain roadways and neighborhoods. The drain does not lead to a treatment facility.

If you have questions or wish to provide information about this issue, please contact your City's Water Resources Compliance Section Coordinator, Benjamin Pearson, at bnp@portlandmaine.gov or (207) 874-8843.

Sincerely,

Christopher Branch,
City of Portland
Department of Public Works



**CITY OF
PORTLAND
LAND
DEVELOPMENT
PROGRAM
MANUAL**

41 Hutchins Drive
Portland, ME 04102
207-774-2112

woodardcurran.com

232276.04
City of Portland, ME
May 2022

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1. INTRODUCTION

1.1 BACKGROUND

The U.S. Environmental Protection Agency (EPA) established the National Pollutant Discharge Elimination System (NPDES) program as part of the Clean Water Act (CWA) to regulate discharges to surface water. In Maine, the Maine Department of Environmental Protection (MaineDEP) has delegated authority to regulate stormwater runoff that enters local water bodies through Municipal Separate Storm Sewer Systems (MS4s) in “Urbanized Areas”, also known as “Regulated Area”, which is based on the population density estimated from latest U.S. census.

The City of Portland is required to obtain a permit for stormwater discharges from the MaineDEP and is currently covered under a Maine Pollutant Discharge Elimination System (MEPDES) General Permit. The MEPDES General Permit for the Discharge of Stormwater from Small MS4s (MS4 Permit) authorizes the City to discharge stormwater per their Stormwater Management Program (SWMP) plan. In accordance with part IV of the MS4 Permit, the SWMP consists of six components called *minimum control measures* which, when implemented, should result in a reduction of pollutants discharging into receiving waters. The minimum control measures are:

1. Education/Outreach Program
2. Public Involvement and Participation
3. Illicit Discharge Detection and Elimination (IDDE) Program
4. Construction Site Stormwater Runoff Control
5. Post Construction Stormwater Management in New Development and Redevelopment
6. Pollution Prevention/Good Housekeeping for Municipal Operations

The Land Development Program described herein will partially satisfy the requirements of the fourth and fifth minimum control measures. The importance of these two minimum control measures is described as follows.

1.2 WHY IS CONSTRUCTION SITE EROSION AND SEDIMENT CONTROL IMPORTANT?

When vegetation and topsoil are stripped from a construction site, erosion of unprotected land typically follows. *Erosion* is the process by which soil particles are displaced by the forces of water that falls as rainfall or flows over land, or by the force of wind blowing across the ground. Eroded soil particles can travel to nearby waterways, where these particles eventually fall out of suspension and settle to the bottom of waterways as *sediment*.

Although erosion is a natural process, the rate of erosion on most construction sites is as much as 500 times greater than on undisturbed, vegetated sites. Accelerated erosion accounts for the

majority of deposited sediment, which degrades water quality and natural habitat by clouding waters, smothering fish eggs and shellfish spawning grounds, preventing growth of natural vegetation, clogging stormdrain pipes, and interfering with navigation and recreational use.

Erosion and sediment control management procedures (generally referred to as “Best Management Practices” or BMPs) are important for protecting local waterways from environmental damage caused by sediment pollution. Erosion controls are used to prevent soil displacement by dissipating energy from water and wind over disturbed areas, while sediment controls are used to allow sediment to fall out of stormwater runoff while still on the construction site.

1.3 WHY IS POST CONSTRUCTION STORMWATER RUNOFF CONTROL IMPORTANT?

Post construction stormwater management in areas undergoing new development or redevelopment is necessary because increases in stormwater runoff volumes or peak rates of runoff from these areas can impact municipal drainage system capacity and can significantly impact receiving waterbodies. Effective planning and design for the minimization of pollutants in post construction stormwater discharges can be one of the most cost-effective approaches to long-term stormwater quality management. Stormwater management facilities designed to control stormwater runoff and reduce pollutants in stormwater should be incorporated into proposed development and redevelopment projects to reduce the impacts of stormwater. These are referred to as post construction BMPs.

There are generally two forms of impacts of post construction runoff. The first is caused by an increase in the type and quantity of pollutants in stormwater runoff conveyed to receiving waters through drainage systems. As runoff flows over areas altered by development, it picks up harmful sediment and chemicals such as oil and grease, pesticides, heavy metals, and nutrients (e.g., nitrogen and phosphorus). These pollutants often become suspended in runoff and are carried to receiving waters such as lakes, ponds, and streams. Once deposited, these pollutants can enter the food chain through small aquatic life, eventually entering the tissues of fish and humans and can pose a human health threat for recreational uses of water.

The second kind of post construction runoff impact occurs by increasing the quantity of water delivered to the municipal stormwater drainage system and eventually the receiving waterbody during storms. Increased impervious surfaces (e.g., parking lots, driveways, and rooftops) interrupt the natural cycle of gradual infiltration of water through vegetation and soil. Instead, water is collected from surfaces such as asphalt and concrete and routed to stormwater drainage systems where large volumes of runoff quickly flow to the nearest receiving water. The effects of this process include reduced stormwater drainage capacity and flooding leading to downstream streambank scouring and channel alteration, which can lead to habitat degradation, loss of aquatic life, and damage to property.

1.4 REQUIREMENTS FOR MUNICIPALITIES

Municipalities covered under the MS4 Permit are required to develop, implement, and enforce a program to reduce pollutants from stormwater runoff from construction activities that result in a land disturbance of greater than or equal to one acre. (Note: Disturbances less than one acre are included if part of a larger common plan.) The permit therefore directs the City to develop and implement a program that includes the following:

- Construction Site Runoff Control
 - Develop, or review and update as necessary, an ordinance or other regulatory mechanism that requires the use of erosion and sediment control BMPs at construction sites consistent with the minimum standards in the General Permit;
 - Develop procedures for site plan review with consideration for construction site stormwater runoff control;
 - Develop procedures for notifying construction site developers and operators of the requirements for registration under the Maine Construction General Permit and Chapter 500, Stormwater Management;
 - Develop procedures for construction site operations to control waste that may cause adverse impacts to water quality; and
 - Document construction activity that disturbs one or more acres within urbanized areas, including documentation of site inspections and enforcement actions.
- Post construction Stormwater Management
 - Ensure adequate long-term operation and maintenance of post construction BMPs through a post construction discharge ordinance or other regulatory mechanism that includes provisions for annual reports on post construction BMPs and records on corrective actions taken when required;
 - Promote strategies that include a combination of structural and/or non-structural BMPs appropriate to prevent or minimize water quality impacts, including low impact development; and
 - Track and record the number of post construction BMPs, annual inspection reports submitted for each, and documentation of any required maintenance and subsequent corrective action.

1.5 PURPOSE OF THIS PROGRAM

In order for the City to comply with the requirements of Minimum Control Measures 4 and 5, interdepartmental integration of this Land Development Program is paramount. The City of Portland has a number of processes and documents that help fulfil the requirements of minimum control measures 4 and 5. The purpose of this Land Development manual is to compile the processes associated with these permit requirements and to document the City's procedures for

controlling erosion and sediment from construction and managing post construction stormwater discharges. This manual provides guidance to City of Portland staff for implementing the Land Development Program procedures and can be used as a training tool for staff.

2. LEGAL AUTHORITY

2.1 PERMIT AUTHORITY & NOTIFICATION OF PERMIT REQUIREMENTS

The City of Portland has municipal capacity from the State of Maine to administer and enforce the stormwater management regulations under 38 MRSA § 420-D and delegated authority to administer and enforce the Site Location of Development (SLOD) regulations under 38 MRSA § 481-490. Applicants are notified of their requirement to comply with these stormwater management regulations through the City of Portland's Development Review process which will be described in more detail later in this report. In the case where conflict of interest may exist or projects that are undertaken by the Department of Transportation or the Maine Turnpike Authority (regulated specifically under 38 MRSA § 486), the MaineDEP is consulted and will perform the review and issue the permit from the State.

The City notifies construction site developers and operators of the requirements for registration under the MCGP or Chapter 500 for the discharge of stormwater associated with construction activities as part of the development review process. Site plan applications require applicants to acknowledge MCGP and Chapter 500 requirements with their submission.

2.2 EXISTING MUNICIPAL DOCUMENTS & PROGRAMS

The City of Portland currently has Ordinances and Technical Manual documents that provide much of the guidance associated with post construction stormwater management and construction site erosion and sedimentation control. These documents generally reference MaineDEP stormwater regulations as outlined in Chapter 500. Please see Appendix A for links to each of these reference documents.

- Chapter 14 of the City of Portland Code of Ordinances: Land Use Code – This comprehensive document includes zoning and development standards for the City of Portland and outlines the development review process for site plans. This includes site plan review standards of Article 14, and specifically Section 14.6.2 D., the environmental quality standards for water quality, stormwater management, and erosion control. All projects brought through the development review process are required to document compliance with these standards.
- Chapter 24 of the City of Portland Code of Ordinances: Sewers – This document addresses both sanitary sewer and stormwater ordinance requirements. This document includes the requirements for stormwater service charges required for all developed properties based on impervious surface areas. Proposed development projects are reviewed for compliance with these standards during the development review process and the permitting process.
- Chapter 32 of the City of Portland Code of Ordinances: Storm Water – This document establishes prohibitions for the discharge of pollutants to the MS4, outlines enforcement for illicit discharges to the MS4, and includes post construction stormwater management requirements. The City's Illicit Discharge Detection and Elimination (IDDE) Program Manual

details the inspection and enforcement process for illicit discharges. Proposed development projects are reviewed for compliance with post-construction stormwater standards during the development review process.

- Section 2 of the City of Portland Technical Manual: Sanitary Sewer and Storm Drain Design Standards – This document provides design standards that must be followed for sanitary sewer and stormwater installations in the City of Portland. The standards are generally applicable to work completed within the City of Portland Right of Way but may also apply to work on private property connecting to City of Portland Infrastructure. Proposed development projects are reviewed for compliance with these standards during the development review process and the permitting process.
- Section 5 of Portland Technical Manual: Portland Stormwater Management Standards and Maine DEP Chapter 500 Stormwater Management – This document outlines the standards for design of post construction stormwater management systems on projects within the City of Portland. The City has adopted MaineDEP Chapter 500 requirements for development and redevelopment projects, with additional City-specific requirements with lower area thresholds than have been set by the MaineDEP. These standards are reviewed during the Development Review process.
- Section 6 of Portland Technical Manual: Erosion and Sedimentation Control Standards for Single and Two Family Homes – This document includes specific erosion control requirements associated with the Level I Minor Residential projects that are not subject to the Chapter 500 standards.
- Section 14 of the City of Portland Technical Manual: Standards for Local Site Location of Development Review – This document specifically outlines the City of Portland’s authority for review of Site Law projects, including requirements for stormwater management and erosion and sedimentation control.
- Section 16 of the City of Portland Technical Manual – Application Submission Requirements – This document details the submittal requirements for site plan review including stormwater management plans and calculations, erosion and sedimentation control plans, construction management plans, preservation of natural resources and landscape buffers, pollutant control measures, etc.
- Dewatering Program – This program requires a dewatering application and detailed dewatering plan from any project that needs to dewater their site. The program is part of the Rules and Regulations for Use of the Sewer System but also includes requirement for discharge to separated systems.
- Stormwater Service Charge & Stormwater Credit Program – In 2016, the City implemented a Stormwater Service Charge which charges landowners a service charge based on the amount of impervious surface on their property. The Stormwater Credit Program provides incentive and a mechanism through which landowners can receive credit for implementing

approved stormwater BMPs, which promotes the use of Low Impact Development planning and green infrastructure to manage stormwater.

2.3 RESPONSIBLE PARTIES

The City of Portland includes staff in multiple departments who assist with the implementation of the program.

Table 2-1: Responsible Parties for Implementing the City of Portland Stormwater Management and Erosion and Sedimentation Control Processes

Primary Responsible Party	Responsibilities
Planning & Urban Development	<ul style="list-style-type: none"> - Facilitates the Development Review Process from pre-application through approval - Coordinates with Public Works, Permitting & Inspections, and other departments during the Development Review Process - Manages the Planning Board process for Major Site Plan projects - Provides staff-level approval for Minor Site Plan Projects - Provides construction site inspections for sites that have received development review approvals, including inspection of post construction BMPs - Manages consulting engineers for traffic and stormwater review
Public Works – Water Resources	<ul style="list-style-type: none"> - Conducts technical review of development applications - Facilitates the stormwater service charge program and reviews stormwater credit applications - Facilitates the post construction stormwater management program, receiving and reviewing documentation from development owners - Attends Pre-Application and Development Review Meetings - Attends Pre-Construction Meetings - Reviews and approves Dewatering Plans - Conducts construction site inspections during land disturbance phase for Erosion and Sediment Control and Chapter 24/32 compliance - Manages enforcement actions
Permitting & Inspections	<ul style="list-style-type: none"> - Manages code enforcement - Attends Pre-Application Meetings

Primary Responsible Party	Responsibilities
	<ul style="list-style-type: none"> - Conducts construction site inspections during building and plumbing inspections - Notifies Public Works and Planning of construction site issues - Manages enforcement actions
Public Works - Engineering	<ul style="list-style-type: none"> - Conducts technical review of development applications - Reviews and issues Street opening permits and occupancy permits associated with construction site development - Reviews development proposals for compliance with the City's Technical Standards - Reviews development proposals for coordination and alignment with City projects and priorities
Public Works – Survey	<ul style="list-style-type: none"> - Reviews subdivision plans for compliance with the City's plat requirements - Reviews as-built drawings for compliance with the City's standards for submittal to City archives - Manages street acceptance process, including final City inspections and sign off on infrastructure to be turned over to the City

3. DEVELOPMENT REVIEW PROCESS

The City of Portland has a comprehensive development review process as specified within the Land Use Code. Site Plan approval is required prior to commencing any work or undertaking any alteration or improvement of a site in the City that trigger the review thresholds as shown in Figure 3-1 below. All Site Plan applications, building permit applications, and street opening permit applications are filed online through the Citizen Self Service Portal.

3.1 PERMIT APPLICABILITY

The City of Portland’s Land Use Code establishes two site plan classifications for a majority of projects within the City of Portland: Minor and Major. Figure 3-1 below includes a snapshot from the Land Use Code with the site plan classification. All projects outlined in this table are required to go through the Development Review process.

Figure 3-1: Site Plan Classifications from City of Portland Land Use Code

TABLE 14-A: SITE PLAN CLASSIFICATIONS

	Minor ¹	Major
New construction or additions²	Single- or two-family structures 500 – 10,000 SF 500 – 20,000 SF in industrial zones 500 – 50,000 SF in IS-FBC zone	Multi-family development of 3 or more units ^{3,4} > 10,000 SF > 20,000 SF in industrial zones > 50,000 SF in IS-FBC zone
Stripping, grading, grubbing, filling, or excavation	1,000 SF - 3 ac.	> 3 ac.
Site alterations	Alteration of watercourse or wetland	
Creation of impervious surface	1,000 SF – 1 ac.	> 1 ac.
Construction or paving of existing parking	5 – 75 parking spaces	> 75 vehicles
Construction of structures⁵ in the Shoreland Zone	Rehabilitation, reconstruction or new construction	
Change of use⁶	10,000 – 20,000 SF	> 20,000 SF
Other	Auto service station	Development with drive-through facilities

¹ For purposes of fee assignment and submission requirements, the minor application includes two exceptions: “minor residential” and “low-impact site development.” See Section 16 of the *Technical Manual* for more information.

² Includes cumulative expansion of building floor area within a three-year period.

³ Includes any division of a new or existing structure into 3 or more dwelling units whether the division is accomplished by sale, lease, development, or otherwise.

⁴ Addition of one or two units to any residential development shall trigger minor site plan review.

⁵ Includes piers, docks, wharves, bridges, retaining walls, and other structures

⁶ Includes any change in use of an existing building, whether or not alterations are involved, from any use in the following list to any other uses on the list:

- A. Industrial
- B. Residential
- C. Institutional
- D. Commercial/Service
- E. Water-dependent use and marine use

3.2 DEVELOPMENT REVIEW PROCESS

The Development Review process is managed by the Planning and Urban Development Department, who engages other departments as applicable through the process. The following steps are taken through the Development Review process, and the relevance of each step in the Land Disturbance Program relative to erosion and sedimentation control and post construction stormwater management is included below. The workflow process is outlined in the diagram included at the end of this section in Figure 3-2.

3.2.1 Pre-Application Meeting

Applicants for development in the City of Portland are encouraged, but not required, to request a pre-application meeting with the Planning and Urban Development Department. Staff from Planning, Public Works, Zoning, Historic Preservation, Parks & Recreation, Life Safety, and Permitting and Inspections are invited to these meetings, as well as other departments as may be applicable to the specific project. During this meeting, applicants present their proposed project to staff who have the opportunity to comment and provide guidance on permitting requirements, including post construction stormwater management and construction erosion and sedimentation control requirements. It is also an opportunity to notify applicants of and encourage them to explore the City's stormwater service charge credit program, which provides incentives for installing stormwater management systems that meet City standards. As noted, these meetings are not mandatory, and the level of completeness of the project concept at the time of the meeting greatly varies – some applicants are considering purchase of property and want to understand what they may be able to do with the land while others have completed detailed design and are ready for submission of site plan application after the meeting. This meeting serves as an initial notification of the permit requirements.

3.2.2 Site Plan Application

Applicants for Minor and Major Site Plan are required to submit applications that outline compliance with the Site Plan Review Standards outlined in the Land Use Code. As part of the application process, an applicant submits basic project information through an online application form that includes the project location, a project summary, a site plan, and general project areas that establish the project's permit level. Once the application has been accepted, Applicants must then submit supporting materials that outline the project's compliance with the Site Plan Review Standards outlined in the Land Use Code.

A Site Plan Application is required to include the following materials relative to post construction stormwater management and construction erosion and sedimentation control:

- Plan set that includes all proposed development. These plans include proposed development or redevelopment conditions including any stormwater management facilities. The plans should include details for any specific facilities that are proposed as part of the project.

- Stormwater management plan that addresses the standards outlined in Maine DEP Chapter 500 and the City of Portland Technical Manual Section 5. This plan will address the project's development or redevelopment areas and will establish the need for compliance with the General Standards for stormwater treatment and the Flooding Standards for stormwater flow quantity control.
- Erosion and sedimentation control plan and details that establishes the project's compliance with the Maine DEP Basic Standards for erosion and sedimentation control.
- Construction management plan that includes general construction requirements, including dewatering and erosion and sedimentation control. In some cases, a graphical plan for construction management and erosion and sedimentation control may be combined.

Once all application documents have been submitted, a completeness check is conducted with the materials to ensure that the project is ready for review. The project is assigned to a Planner who begins the review process.

3.2.3 Site Plan Application Review

The review process for a project includes all aspects of the development. One specific focus during the review is on compliance with the stormwater management and erosion control standards. These components of the project are reviewed by the Water Resources Staff from Public Works as well as by the City of Portland's third-party peer review engineers.

Submitted materials are reviewed for the following:

- Compliance with the applicable stormwater standards relative to the level of impact that is proposed. This review ensures that post construction stormwater management facilities have been proposed as required for the amount of impervious surface, development area, or redevelopment area as applicable.
- Technical stormwater design review. The proposed stormwater management approach, including any stormwater BMPs, stormwater conveyance systems, and site grading, is reviewed for engineering design. This includes a review of the plans as well as any backup documentation for design provided by the applicant.
- Construction management review. The review of proposed construction management practices includes consideration for erosion and sedimentation control practices and dewatering.

3.2.4 Site Plan Review Process

The review process could include multiple rounds of review and revision to the application materials and can take anywhere from one month up to several months, depending on the nature of the application. All projects are assigned to a Planner; that individual serves as the project manager for the application during planning review. For Minor Site Plan applications, the process

stays at the staff level. For Major Site Plan applications, the staff review process is paired with a public review process in which the Planning Board approves or disapproves the project. After the project has completed initial review and revisions, the Planner will present the project to the Planning Board at a workshop; the Board then has the opportunity to review the project. Projects are typically first seen by the Planning Board at a Workshop where initial public comment and Planning Board comments are provided to the applicant and staff. Depending on the complexity of the project, multiple workshops may be held on the project before it is scheduled for a Planning Board meeting. Approved projects frequently include ad-hoc conditions attached to the approval as well as a list of standard conditions that all projects must adhere to.

Following the completion of the review process, if a project has been found to be in compliance with all applicable standards and regulations, site plan approval is issued. Minor Site Plan applications are granted approval by Planning staff. Major Site Plan applications are granted approval by the Planning Board at a Public Hearing.

Project approvals include any waivers that may have been granted through the review process as well as any conditions of approval that must be met. Project-specific waivers and conditions of approval related to stormwater management or erosion control may be included on a case-by-case basis. Several of the standard conditions that exist on all project approvals specifically apply to post construction stormwater management and erosion and sedimentation control.

- Stormwater Maintenance Agreement – All projects with stormwater management facilities must provide a stormwater maintenance agreement that outlines their future compliance with the City of Portland’s Post construction Stormwater requirements. This document is reviewed by Planning and Water Resources staff as well as Corporation Counsel. Following review, the Applicant records the agreement along with the site plan, stormwater management plan, and associated details at the Registry of Deeds. The goal is to ensure that property owners are aware of the stormwater management system, maintenance and reporting requirements associated with the property and to strengthen the City’s legal ability to gain compliance.
- Construction Erosion & Sedimentation Control Inspection – All projects with one acre or more of disturbance are required to provide third-party erosion and sedimentation control inspection during project construction.
- Pre-construction Meeting – All projects are required to schedule a pre-construction meeting with City staff, coordinated by the Development Review Coordinator, at which time erosion and sedimentation controls, dewatering, construction management, and proposed stormwater treatment and utility connections are reviewed.

Planning staff will monitor the project for compliance with the conditions of approval that may be tied to issuance of Building Permits or Certificates of Occupancy. The Development Review Coordinator is required to sign off on building permit issuance and certificate of occupancy issuance for any project that has undergone site plan review and will not sign off if any of the conditions are outstanding.

3.2.5 Building Permit

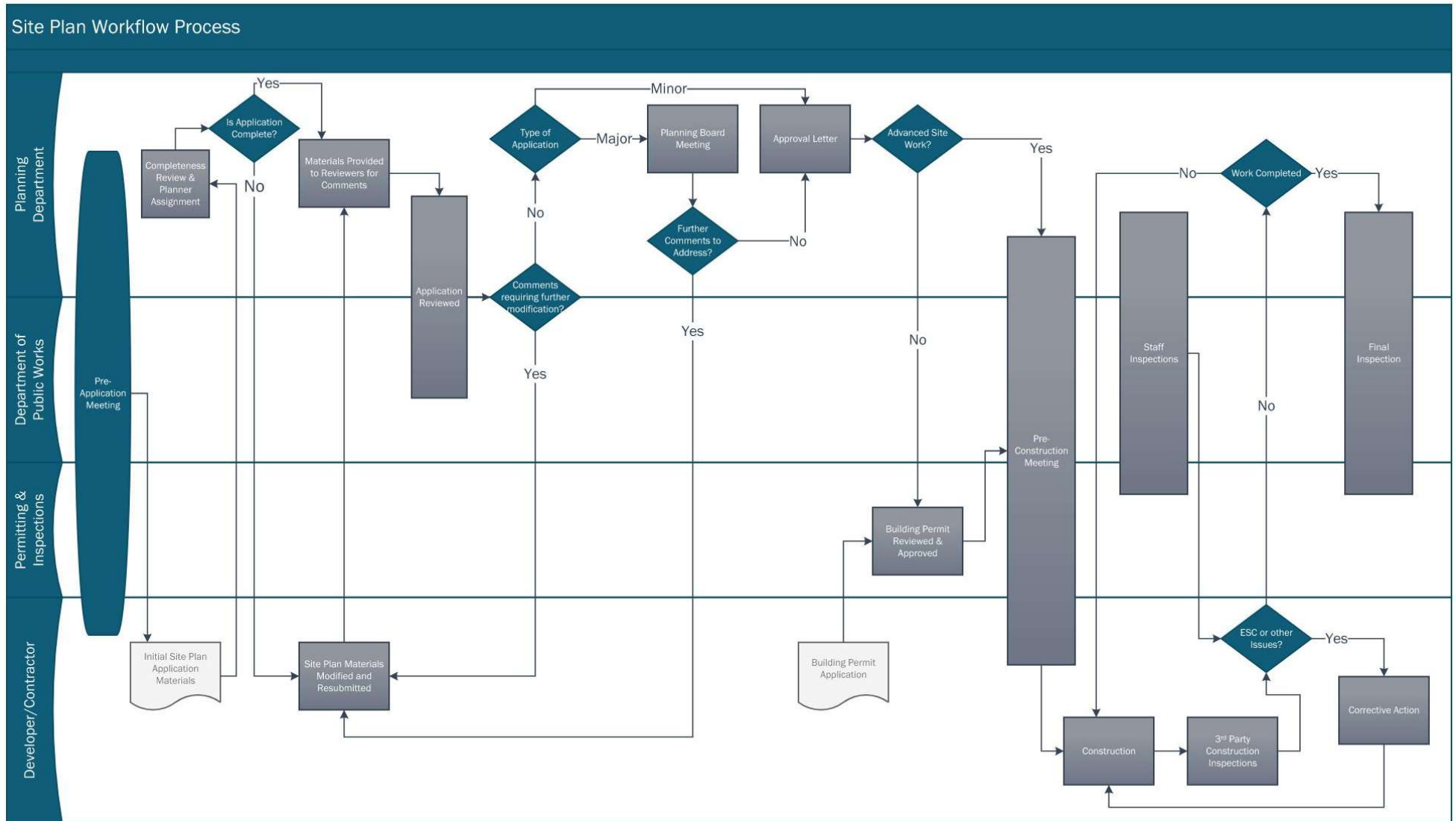
Following site plan approval, projects requiring a Building Permit will submit applications to the Permitting and Inspections Department. If there are any changes resulting from the building permit review that may impact the Site Plan, including stormwater management or construction management that could impact erosion and sedimentation control, the applicant must notify the Planning Department of those changes. Additionally, the City's permitting software prompts Permitting staff to notify Planning of any changes to the Site Plan.

Typically, a Building Permit is required prior to the start of work, but the City of Portland may also issue an approval for the start of site work prior to issuance of a Building Permit. This advanced site work approval is issued by Planning and is intended for extenuating circumstances when a construction timeline requires a limited amount of site work, such as tree clearing or utility connections, to be completed before issuance of the Building Permit due to significant time constraints.

3.2.6 Pre-Construction Meeting

A pre-construction meeting is required for all approved Minor and Major Site Plan applications. This meeting must occur prior to the start of construction and the earth work contractor is required to be in attendance. City staff in attendance typically includes Planning, Public Works, and Permitting and Inspections representatives. During this meeting the expectations for erosion and sedimentation control and dewatering are reviewed with the contractor, and any potential changes from the previously reviewed construction management plans may be discussed.

Figure 3-2: Development Review Application Workflow Process



4. CONSTRUCTION SITE INSPECTIONS

Any project disturbing an acre or more is required to provide third-party inspections compliant with the Maine DEP 3pi program. The inspection reports generated by the third-party inspections are emailed to Water Resources and Planning staff for review.

Additionally, the City conducts periodic inspections of construction sites to ensure projects are in compliance with the regulations for erosion & sedimentation control. Water resources staff look specifically at erosion and sedimentation controls and general stormwater pollution prevention efforts including solid waste handling, dewatering, and materials storage. Additionally, field staff from Public Works, Planning, and Permitting & Inspections are aware of erosion and sedimentation control requirements and common issues found on construction sites. All field staff are expected to make note of any erosion and sedimentation issues and to report back to Water Resources and Planning if any issues are observed.

4.1 THIRD-PARTY INSPECTIONS

Beginning in July 2021, all projects that disturb an acre or more of land are required to hire a third-party inspector for the duration of active construction as specified in the following standard condition of approval:

For all sites with one acre or greater of disturbance, the applicant shall retain the services of a third-party inspector for the duration of construction until final site stabilization is in place. The inspection is required in order to ensure that all construction and stabilization activities comply with the approved drawings and specifications; that field decisions regarding erosion control implementation, stormwater system installation, and natural resource protection are based on sound engineering and environmental considerations; and that any changes to the development's erosion control plan, stormwater management plan, or final stabilization plan is communicated to the City of Portland for additional review and approval.

The inspector will submit weekly written reports to the Stormwater Coordinator(s) in the Water Resources Division of Public Works. Reports must include: project ID, project address, the date(s) and time(s) of inspection(s), site photographs of areas under construction, and the date(s) and approximate duration(s) of any rainfall events. The report will identify and describe any erosion problems or discharge of pollutants and what actions will be taken to address these issues and repair any damage to other properties or natural resources, actions to eliminate the erosion source, and actions to prevent future sediment discharges from the area.

4.2 WATER RESOURCES STAFF INSPECTIONS

For any project with an acre or more of disturbance approved prior to July 2021, Water Resources staff conduct comprehensive site inspections for active construction sites. These inspections include a thorough inspection of erosion and sedimentation control.

4.2.1 Pre-Inspection Procedures

Prior to conducting a construction site inspection, City staff review available records, such as the approved Permit(s) and Plans submitted for the project. If applicable, review recent inspection reports in order to verify past problems have been corrected.

4.2.2 Inspection Procedures

Before entering the construction site or staging areas, City staff observe the exterior of the site and note the various stages of construction. This is a good time to look at the condition of construction vehicle exit locations, perimeter controls (e.g., silt fence), and inlet protection in storm drains that could potentially receive runoff from the construction site.

Upon entering the site, staff ask to speak with the construction site operator (typically the site superintendent). If this person is not available, City staff will speak with someone familiar with the ESC Plan. City staff may request to see documentation of the completed inspections and corrective actions (i.e., reports from the weekly self-inspections, inspections before and after storm events, and the final inspection prior to completing permanent stabilization measures). If the necessary records are not available, staff will inform the individual of the requirement to maintain copies of completed inspection reports onsite for inspection by the City and MaineDEP. The records should contain the following information:

- The name(s) and qualifications of the person making the inspections;
- The date(s) of the inspections and major observations about the operation and maintenance of erosion and sedimentation controls, materials storage areas, and vehicles access points to the parcel;
- BMPs that need maintenance;
- BMPs that failed to operate as designed or proved inadequate for a particular location and location(s) where additional BMPs are needed; and
- Notes on the corrective action taken and when it was taken for each BMP requiring maintenance, needing replacement, and locations needing additional BMPs.

Staff will discuss the project with the construction site operator and review the available records. Questions that may be asked of the construction site operator include:

- How long has construction been underway? What is the sequence of construction activities?
- Does this project involve concrete pouring at the site? If so, how do you handle concrete washout?
- Is there any dewatering occurring, and if so, is it contained on-site or discharge off-site?
- How do you track rainfall? What procedures are in place to prepare the site for a forecasted rain event?
- Are toxic or hazardous materials (paints, solvents, acids, etc.) stored onsite?
- Do you refuel vehicles or equipment onsite?
- Where does the construction site runoff discharge?

- Have there been any changes or amendments to the ESC Plan?

After discussing the work, staff will then proceed with the site inspection; inspect disturbed and impervious areas, erosion control measures, materials storage areas exposed to precipitation, and locations where vehicles enter or exit the site. Staff make note of the location and condition of BMPs, discharge locations, and inlets, and document any concerns or violations. Typically, while on site, staff will also:

1. *Inspect discharge points and downstream, off-site areas.*

Staff look for locations around the perimeter of the project where sediment could migrate off-site (typically through construction vehicle exits). If sediment appears to be leaving the site, staff will follow its path downstream to determine the extent of travel and impacts to receiving drains and waterways. Staff will inspect downstream catch basins to ensure proper sediment control and decide if additional BMPs are needed. Evidence of sedimentation includes visible gully erosion, discoloration of water by suspended particles, and slumping of banks.

2. *Compare construction site conditions with BMPs described in the ESC Plan.*

Staff will determine if all BMPs described in the ESC Plan (e.g., perimeter controls, sediment barriers, etc.) have been properly installed and maintained at the site; all measures should be maintained in effective operating condition until areas are permanently stabilized. As necessary, staff evaluate locations where additional BMPs may be required and are not included in the ESC Plan. If BMPs need to be maintained or modified, additional BMPs are necessary, or other corrective action is needed, implementation must be completed within seven calendar days and prior to any storm event.

3. *Inspect disturbed areas where construction activity has stopped.*

Exposed soil must be stabilized with vegetative or non-vegetative controls no later than seven calendar days after earth-disturbing activities in that portion of the site have temporarily or permanently ceased. Permanent re-vegetation of all disturbed areas, using native plant material wherever possible, shall occur within 30 days from the time the areas were last actively worked, or, for fall and winter activities, by June 15th, except where precluded by the type of activity (e.g., riprap, road surfaces, etc.). The vegetative cover shall be maintained.

4. *Inspections at project completion.*

When a project is complete and a Certificate of Occupancy is requested, City staff inspect the site for stabilization and to ensure that all post construction BMPs were properly installed. A Certificate of Occupancy will not be issued until the site is stabilized. The City requires a complete set of as-built plans showing all stormwater infrastructure as installed and requires that the installation and function of the stormwater system be certified by a professional engineer. If any of the stabilization measures are temporary, or if the as-built

drawings and stormwater certification have not yet been submitted, a portion of the performance guarantee will be held until those issues are addressed.

4.3 OPPORTUNISTIC INSPECTIONS BY FIELD STAFF

City staff from Public Works, Planning, and Permitting & Inspections who are frequently on active construction sites throughout construction play a critical role in the City's Land Disturbance Program. Field staff make note of any erosion control issues observed during routine inspections and alert the Water Resources and Planning staff, who are able to follow up to ensure issues are addressed.

City field staff, through frequent collaboration and communication with Water Resources staff, are trained to identify common erosion control issues they may encounter on active construction sites. Compliance issues commonly found at construction sites include, but are not limited to, those listed in Table 4-1: *Common Compliance Issues at Construction Sites*.

Table 4-1: Common Compliance Issues at Construction Sites

Common Compliance Issue	Description
No perimeter controls onsite	Silt fence or other perimeter controls must be installed at the site before the start of earth-disturbing activities.
No inlet protection	Before earthwork begins, inlet protection must be installed in storm drains that may receive untreated runoff from the site. Storm drain inlet protection is often in the form of “silt sacks” and curb inlet barriers that capture sediment before it can enter the drainage system. Silt sacks need to be cleaned, or removed and replaced, when they become clogged with accumulated sediment or debris. <i>(Note: Inlet protection can be removed in the event of flood conditions or other specific safety concern.)</i>
No erosion or sediment controls for temporary stockpiles	Temporary stockpiles must be surrounded by a silt fence or other temporary perimeter barrier and cannot be placed within natural buffer areas. Wherever feasible, stockpiles should be covered to protect against erosion and prevent sediment discharge.
Vehicle tracking of sediment onto nearby roadways	Construction sites should have designated construction vehicle exit locations with sediment controls such as stone pads to prevent sediment from being tracked onto paved roadways. If sediment has accumulated on the roadway, construction exits should be repaired and street sweeping may be necessary. Also, check that construction vehicles are leaving the site only from designated exit locations.
Improper concrete washout	Concrete washout water must be contained in a leak-proof container or leak-proof pit that is designed so that no overflows can occur due to rainfall or inadequate sizing. Washout should be done in designated areas as far away as possible from surface waters and storm drains.
Improper solid waste or hazardous waste management	Designated dumpsters or other trash containers must be provided to contain and properly dispose of solid waste. Overflowing trash containers should be cleaned up immediately. Brick, stone, and mortar dust and slurry from cutting activities must be contained. Hazardous waste must be stored separately from solid waste in sealed containers with secondary containment (e.g., spill berms or contaminant pallets). Spill kits should be readily available.

Common Compliance Issue	Description
Dewatering at the construction site	Dewatering typically occurs during deep excavations to construct building footing or install underground utilities. Dewatering water that has visible suspended solids or petroleum contamination must be treated to remove sediment prior to discharge. Off-site dewatering operations require the submittal of a Dewatering Plan application and approval.

4.4 ENFORCEMENT

Any noncompliance with erosion and sedimentation control during construction is considered a violation of Maine’s water quality laws and the federal Clean Water Act and may result in enforcement action by the City, State, or both. Noncompliance issues discovered during inspections (e.g., missing BMPs, sediment tracked offsite, etc.) are the responsibility of the construction site operator to resolve in a timely manner. Erosion and sedimentation control violations are jointly enforced by Water Resources, Permitting and Inspections, and Planning staff.

4.4.1 Voluntary Compliance

The preferred approach to address compliance problems is to pursue voluntary compliance from the construction site operator. Often, operators are not aware of the existence of activities on their sites that may constitute a permit violation. In these cases, providing the operator with information on the area of concern, reference to any relevant permit sections, potential environmental consequences, and suggestions on how to implement corrective actions may be enough to secure voluntary compliance.

4.4.2 Enforcement Actions

When voluntary compliance does not occur, specific enforcement actions are required. For erosion and sedimentation control issues that do not include an illicit discharge, a Letter of Warning is typically sent by the Water Resources division with a deadline for corrective action. If an illicit discharge to the MS4 occurs as the result of an erosion and sedimentation control issue, a Notice of Violation is provided with a deadline for corrective action and fines are included when appropriate.

Violations resulting in the discharge of pollutants to the MS4 (i.e., illicit discharges) are enforced pursuant to Chapter 32, the non-SW discharge ordinance. Illicit discharges can include discharges of sediment to the City’s stormwater drainage system as well as any other pollutant discharges. Construction sites that violate the requirements or conditions of the MCGP constitute a violation of Maine’s water quality laws and the federal Clean Water Act and subject the discharger to penalties under 38 M.R.S.A. § 349, and § 309 of the Clean Water Act.

Upon project completion, City staff will inspect the site for stabilization and to ensure that all post construction BMPs were properly installed. The City also requires a complete set of as-built plans and a certification by a professional engineer that all stormwater management components were installed according to the approved plans and are functioning as designed. The City will not issue a Certificate of Occupancy if a site is not stabilized and will not release the performance guarantee if the as-built plans and stormwater certification are not submitted.

5. POST CONSTRUCTION STORMWATER MANAGEMENT

After construction has been completed, inspections and maintenance of the installed post construction stormwater controls must continue for the BMPs to function properly. The owner of the property on which work has been done, or any other person or agent in control of such property, shall maintain in good condition and promptly repair and restore all stormwater management facilities. Such repairs or restoration and maintenance shall be in accordance with the approved O&M plan. The City of Portland requires that all projects approved with post construction stormwater management systems provide Stormwater Maintenance Agreements that are recorded with the registry of deeds. These Agreements are tied to the stormwater O&M plan that is also required as part of the site plan application.

5.1 POST CONSTRUCTION STORMWATER MANAGEMENT REPORTING REQUIREMENTS

In the City of Portland, the requirements associated with post construction stormwater management that continue following completion of construction and the issuance of a certificate of occupancy are outlined in Chapter 32 of the City's Code of Ordinances. All sites with approved post construction stormwater management features are required to follow these procedures as outlined in the ordinance

- Inspections – Inspection by a qualified inspector is required at least annually.
- Maintenance and Repair – Proper maintenance and repair of stormwater features shall be completed to ensure they function as approved. A record of this work shall be provided to the City.
- Annual Report – A completed certification that adequate inspection and maintenance of post construction stormwater management features must be submitted to the City by June 30 of each year. This annual report also includes an annual fee.

The City of Portland will also maintain right of entry, with owner approval, to sites to inspect the stormwater features and confirm compliance with the post construction requirements. In the event that there are violations of these requirements, the City of Portland will enforce the regulations through the use of notices of violation, penalties or fines, consent agreements, or other enforcement measures as appropriate.

5.2 STORMWATER SERVICE CHARGE & CREDITS

The City of Portland assesses a stormwater service charge, as outlined in Chapter 24 of the City's Code of Ordinances. This fee is calculated based on the amount of impervious surface on a property. As a means to encourage stormwater management on all development sites, including those not subject to site plan review and the associated stormwater standards, the City of Portland provides an opportunity for landowners to apply for credits based on the use of post construction stormwater management systems on their site. Some of these systems are designed and included

in projects due to the fact that the State's or the City's stormwater regulations require them, but on smaller projects that may not trigger the threshold for requiring treatment or flooding control, developers may choose to include stormwater management systems to receive credit against their stormwater service charge.

6. TRAINING AND VOLUNTARY REPORTING

6.1 ANNUAL EMPLOYEE TRAINING

Employee training is an important component of the City of Portland's Program. City staff are trained in various stormwater management items throughout the MS4 Permit term. City staff responsible for implementing the Construction Site ESC Program, including those that review plans and permit applications, conduct site visits and inspections, maintain tracking database(s), and enforce any of the Program components, will be trained to conduct these activities and identify erosion and sediment control problems, recognize permit violations, and document findings.

Training will be conducted annually and/or as needed for staff turnover. Topics may vary each year based on staffing education needs.

7. CONCLUSION

The City of Portland through its current ordinances and programs as outlined in this Land Disturbance Manual is working to meet minimum control measures 4 and 5 of the MEPDES General Permit. Developers in the City of Portland are all encouraged, and in many cases are required to provide for post construction stormwater management systems that will help to reduce the impact of contaminated runoff from developed areas within the municipality. These same projects are required to manage disturbed areas during construction, providing for adequate erosion and sedimentation control to manage and eliminate contaminated runoff. The City of Portland works to educate developers about these requirements from the start of the development review process and remains engaged through the completion of construction and beyond, ensuring that post construction stormwater management is a priority for landowners.

APPENDIX A – REFERENCE LINKS

The following links to references included in the Land Development Program Manual are current as of May 2022:

- Chapter 14 of the City of Portland Code of Ordinances: Land Use Code
 - <https://content.civicplus.com/api/assets/e27b9933-d54c-4988-ba26-db4df8eb9954>
- Chapter 24 of the City of Portland Code of Ordinances: Sewers
 - <https://content.civicplus.com/api/assets/6887128e-9818-4658-80ce-743ab103e63c?cache=1800>
- Chapter 32 of the City of Portland Code of Ordinances: Storm Water
 - <https://content.civicplus.com/api/assets/8ad4c98b-d810-469b-ae06-3392e8c0c771?cache=1800>
- Section 2 of the City of Portland Technical Manual: Sanitary Sewer and Storm Drain Design Standards
 - <https://content.civicplus.com/api/assets/a94d0c85-0c63-44bf-b60d-d1f7264cdb92?cache=1800>
- Section 5 of Portland Technical Manual: Portland Stormwater Management Standards and Maine DEP Chapter 500 Stormwater Management
 - <https://content.civicplus.com/api/assets/cd52c7f8-7359-4876-b426-f6cbc5436098?cache=1800>
- Section 6 of Portland Technical Manual: Erosion and Sedimentation Control Standards for Single and Two Family Homes
 - <https://content.civicplus.com/api/assets/6583bbdf-98cd-4331-a83f-a955344c36f9?cache=1800>
- Section 14 of the City of Portland Technical Manual: Standards for Local Site Location of Development Review
 - <https://content.civicplus.com/api/assets/15ce9f76-59ec-4b41-82d6-b8ad67a2b485?cache=1800>
- Section 16 of the City of Portland Technical Manual: Application Submission Requirements
 - <https://content.civicplus.com/api/assets/34cb6792-dc01-4897-aa30-8fc411f7dbda?cache=1800>
- Dewatering Program
 - <https://www.portlandmaine.gov/562/Dewatering-Program>
- Stormwater Service Charge & Stormwater Credit Program
 - <https://www.portlandmaine.gov/590/Stormwater-Service-Charge>



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QAPP

Quality Assurance Project Plan

City of Portland Maine

Department of Public Works
212 Canco Road | Portland ME 04103
www.portlandmaine.gov



City of Portland, Maine
Stormwater Monitoring Quality Assurance Project Plan (QAPP)

Revisions

1. Original document prepared for 2022 MS4 General Permit Submission to Maine DEP

Addenda

1. Example Field Data Collection Sheet and labels
2. Procedural References:
 - a. E-mail on Surfactant field kit handling of residuals from DEP staff
 - b. E-mail on Fecal Coliform thresholds from the DMR listed in Table 3
3. Example Chains of Custody

1.0 Background and Scope

Portland is regulated by the 2022 Maine General Permit for Stormwater Discharges from Municipal Separate Storm Sewer Systems (MS4 General Permit). The MS4 General Permit requires that Portland conduct dry weather inspections on 100% of City owned outfalls during the 5-year term of the MS4 General Permit.

Under most conditions, if an outfall is observed to have dry weather flow, monitoring must be conducted to assess whether there is an illicit discharge associated with the flow.

The objective of the monitoring is to collect data that can be used to determine if there is an illicit discharge present in the flow, or if the flow is from uncontaminated groundwater, water from a natural resource, or an allowable non-stormwater discharge.

The purpose of this Quality Assurance Project Plan (QAPP) is to provide sampling personnel information that will assist in collecting samples and analyzing the samples using field equipment/test kit(s) and/or laboratories in a manner that ensures sufficient accuracy and precision so that sampling personnel and regulators can be confident there is or is not an illicit discharge present in dry weather flow from an outfall. This QAPP provides information on several field equipment/test kit(s) and analytical methods available to permittees that can be used to comply with the requirements for Dry Weather Outfall Monitoring.

Portland has a written Illicit Discharge Detection and Elimination Plan (IDDE) as required by the MS4 General Permit. This QAPP has been developed with the help of the Interlocal Stormwater Working Group (ISWG) and is included in the City's IDDE Plan as Appendix I. While conducting outfall inspections, if there is evidence of an illicit discharge, the City will conduct additional investigations to identify the source and work with responsible parties to remove the source. The IDDE Plan describes the processes and procedures for the subsequent investigations.

Illicit Discharge means any discharge to a regulated MS4 system that is not composed entirely of stormwater other than:

- discharges authorized pursuant to another permit issued pursuant to 38 M.R.S. §413;
- uncontaminated groundwater;
- water from a natural resource such as a wetland; or
- other Allowable Non-Stormwater Discharges identified in Part IV(C)(3)(h) of the MS4 General Permit.

2.0 Sampling Procedures

Samples are required to be collected at outfalls that exhibit dry weather flow (defined as flow after there has been no precipitation greater than ¼ inch for 72 hours, and no melt water from snow or ice).

Personnel should be prepared to collect samples during any outfall inspection, because dry weather

flow is sometimes intermittent, and if personnel need to return to the site later in the same day, or several days later, the dry weather flow may no longer be present.

Samples will be collected from a flowing source only (not from stagnant water), and where the pipe outlet has at least 1 or 2 inches of free-flowing drop before any standing water or pool below it. Stagnant water should not be sampled unless the municipality deems it necessary for some reason.

For each outfall sampled, a Field Data Sheet will be used to document the date, time, and location of sample(s) collected, weather conditions, any general observations related to the tests being performed, and results of any parameters analyzed using field equipment or test kits. Note that the Field Data Sheet has a place to document sample observations including odor, color, turbidity, presence of algae, etc. The observations can be documented in this location instead of, or in addition to the observations made during the normal outfall inspection.

Sample bottles that will be taken away from the sampling site for analysis will be labelled with the date, time and sample location as well as the name of the sampler. Example labels are provided in Addendum 1 along with an example field data collection sheet.

When using a third-party laboratory for any off-site analysis, sample bottles should be obtained before the sampling event. Coordination with the laboratory is also recommended to ensure that sample hold times and preservation requirements are being met. Analytical methods, hold times and other pertinent information is described in Section 3 of this QAPP.

After sampling events, any reusable sample collection containers will be cleaned with soap (such as Alconox or equivalent) and water or trisodium phosphate and water. If any equipment is reused during a sampling event, the procedures outlined in section 4.2 will be followed. Once a sampling event is completed, cleaning will be completed in a location where wash water can be discharged to internal plumbing.

3.0 Analyses and Reporting limits

The MS4 General Permit does not require samples to be analyzed using Clean Water Act (CWA) Methods published in 40 Code of Federal Regulations Chapter 136. The use of field equipment/ test kit(s) and laboratories are both allowed. The MS4 General Permit does not require samples to be analyzed by a laboratory that is certified by the Maine DEP. However, this QAPP specifies that when a commercial laboratory is used for a CWA method, it will be certified by the Maine DEP for the CWA method specified.

This QAPP does not specify CWA methods or Maine DEP certification for use of field equipment/test kit(s). The IDDE Plan does include possible methods and equipment for sampling.

Table 1 provides information related to sampling parameters, analysis methods, and sample preservation and holding times that may be used during dry weather outfall monitoring. Analysis methods specified in Table 1 include CWA methods, field equipment, and test kits, where applicable.

Table 1 also provides information on when a given CWA Method, Field Equipment, or Test Kit might be preferable if there are multiple options for a given parameter.

Prior to sampling, the sampler and Stormwater Manager or Coordinator will determine what analysis method (CWA Method, Field Equipment, or Test Kit) will be used. Considerations will be made with regards to waste products from the sampling event.

User manual(s) and safety data sheets (SDS) for field equipment and/or test kit(s) that will be utilized for dry weather monitoring are kept in a separate electronic or paper location as long as they are easily accessible to the field personnel who will be conducting the monitoring.

Table 1: Sampling Parameters, Analysis Methods, and Sample Preservation and Holding Times

Bacteria - select one or more based on discharge environment	CWA Method, Field Equipment, or Test Kit	Preservation	Holding time	Bottle needed	Notes on Use
Bacteria - E. coli	SM 9223 B (IDEXX Colilert Quanti-Tray) EPA 1603 (membrane filtration, MF) Or SM 9221 B (Most probable number, MPN)	Ice	To lab within 6 hours Analyze within 2 hours of receipt	120 ml or 250 ml plastic sterile bottle with lid from lab	Use for discharges to freshwater (with ammonia and either optical enhancers or surfactants)
Bacteria - enterococcus	SM 9230 B, C or D, (MPN including IDEXX Enterolert, or MF) EPA 1600 (MF)	Ice	To lab within 6 hours Analyze within 2 hours of receipt	120 ml or 250 ml plastic sterile bottle with lid from lab	Use for discharges to salt water (with ammonia and either optical enhancers or surfactants)
Bacteria – Fecal Coliform	SM 9222 D (MF CFU/100ml) Or SM 9221 C, E (Multitube MPN/100ml)	Ice	To lab within 6 hours Analyze within 2 hours of receipt	120 ml or 250 ml plastic sterile bottle with lid from lab	Use for discharges to salt or freshwater (with ammonia and either optical enhancers or surfactants)
Bacteria – Human Bacteroides	Labs: EMSL (NJ), Microbial Insights (TN) or Source Molecular (FL) Or Dr. Steve Jones, UNH	Ice	To lab within 24 hours Analyze within 48 hours	1000 ml plastic bottle with sodium thiosulfate from lab (with insulated shipping box)	Use for discharges to salt or freshwater (with ammonia and either optical enhancers or surfactants). Not a CWA method, so Maine Laboratory certification not required.
Ammonia (select one method)	CWA Method, Field Equipment, or Test Kit	Preservation	Holding time	Bottle needed	Notes on Use
Ammonia	Hach Ammonia Test Strips or equivalent alternative	None	Immediate (w/in 15 minutes) in Field	Field jar or beaker	
Ammonia	Laboratory Method EPA 350.1/350.2	H ₂ SO ₄ (pH <2) + Ice	28 days	250 ml plastic bottle from lab	

Table 1: Sampling Parameters, Analysis Methods, and Sample Preservation and Holding Times

Ammonia	Hach DR300 Pocket Colorimeter Ammonia Nitrogen or LaMotte 3680-01 DC1200 Colorimeter test kit	None	Immediate (within 15 minutes) in Field	Field jar or beaker	Reagent contains Mercury, Generates a Toxic Hazardous Waste (D009) instructional video (10 minutes): https://www.youtube.com/watch?v=hFIEEAmWFo_
Total Residual Chlorine (select one method)	CWA Method, Field Equipment, or Test Kit	Preservation	Holding time	Bottle needed	Notes on Use
Chlorine	Field kit – Hach Colorimeter II low range	None	Immediate (within 15 minutes) in Field	Field jar or beaker	Instructional video available at: https://www.youtube.com/watch?v=WTTUDOHq1Vw
Chlorine	Industrial Test Systems Ultra-Low Total Chlorine Test Strips and other mid-range chlorine test strips	None	Immediate (within 15 minutes) in Field	Field jar or beaker	As of 6/2020, USEPA had not used Ultra low chlorine test strips (0.2 to 0.5 mg/L). Informal review shows these should be used simultaneously with a mid-range (0.5 to 10 mg/l) test strips to double check range.
Temperature and Conductivity (use both)	CWA Method, Field Equipment, or Test Kit	Preservation	Holding time	Bottle needed	Notes on Use
Temperature	Temperature/ Conductivity probe	None	Immediate (within 15 minutes) in Field	Field jar or beaker	Use to distinguish between groundwater and surface water.
Conductivity	Temperature/ Conductivity probe	None	Immediate (within 15 minutes) in Field	Field jar or beaker	Use to distinguish between salt water and fresh water.
Optical Enhancers or Surfactants (select one)	CWA Method, Field Equipment, or Test Kit	Preservation	Holding time	Bottle needed	Notes on Use
Surfactants	SM5540C	Ice	To lab within 24 hours Analyze within 48 hours	500 ml plastic bottle from lab	Works on most soaps (laundry detergent, personal care products, dish soap)

Table 1: Sampling Parameters, Analysis Methods, and Sample Preservation and Holding Times

Surfactants	CheMetrics K-9400 field test kit (see Maine DEP guidance on handling and disposal in Addendum 2)	None	Immediate (within 15 minutes) in Field	Field jar or beaker	Works on most soaps (laundry detergent, personal care products, dish soap). Contains alcohol and chloroform. Generates a Flammable (D001) and Toxic (D022) Hazardous Waste. Do not use test kit in the field unless licensed to transport hazardous wastes. Instructional Video available at: https://www.youtube.com/watch?v=6vwiZgWqa04
Optical brighteners	VWR handheld UV lamp: UV-A: 360-365 nm, model number 89131-488	None	Analyze within 7 days	Unbleached cotton pad wetted with sample placed in sealed baggie	Works only on water with high to moderate laundry detergent. Provides only presence/absence.
Optical brighteners	Maine Healthy Beaches Fluorometer (\$15,000 unit)	None	Keep in a dark container, provide to MHB in 1-2 days, analyze within 7 days	Whirl bag or 100 ml plastic bottle.	Provides semi-quantitative numeric fluorescence of sample. Need to provide sample to MHB in bottle or whirl bag (in a box or cooler). One week hold time. Provide advanced notice to coordinate delivery to office. Organic matter or tannins, or color will interfere.

4.0 Quality Control

The following are the reporting limits required by the MS4 General Permit:

Ammonia: 0.5 mg/L

Surfactants: 0.25 mg/L

Total Residual Chlorine: 0.05 mg/L

E. coli bacteria: 4 cfu/100 ml

Enterococcus: 10 cfu/100 ml

To ensure the data collected meets the required reporting limits, the City will use either a Maine Certified Laboratory or one of the field equipment/test kit methods listed in Table 1 to assess dry weather flow.

Each of the test kits listed in Table 1 has a use range that is appropriate for the work being conducted, and which meets the MS4 required reporting limits.

Test kit reagents that have expired will not be used. Test kit and temperature/conductivity probes that have useful life limits will be replaced when they have reached the end of their useful lives.

Maine Certified Laboratories have standard reporting limits for the parameters that conform to the MS4 General Permit required reporting limits.

4.1 Duplicate Samples (Optional)

To assess the precision of the dry weather flow monitoring, the municipality MAY choose to collect one duplicate sample for every 10 samples collected. Precision reflects the reproducibility of a given parameter by calculating the Relative Percent Difference (RPD) of the samples. RPD is calculated as follows:

$$RPD = \frac{(X1 - X2) \times 100}{(X1 + X2) \div 2}$$

Where X1 is the concentration of one sample and X2 is the concentration of the duplicate sample.

Table 2 provides information on the use of duplicate samples and troubleshooting information in the event the duplicate samples results are outside acceptable precision limits. The Precision and Target Relative Percent Differences shown were taken primarily from the Draft USEPA Bacteria Source Tracking Protocol. It is not possible to cover all possible reasons a set of duplicate samples may be outside the precision or Relative Percent Difference targets but the last column of the table lists a few considerations. If RPDs are not met on a day when samples were collected from multiple sites, the sampler should consider carefully the conditions that may have led to the issue and whether those conditions would cause all the sample results to be unreliable.

Table 2: Sample Precision Goals for Duplicate Samples

Parameter	Precision/ Target Relative Percent Difference	Use of Data when it meets the Precision or RPD	Comments/Troubleshooting if outside Precision or RPD
Temperature	0.1 °C or 0.2 °F	Retain both sets of data.	Because there are no thresholds for additional investigations for this parameter, just retain both sets of data and provide any comments that may have affected discrepancy such as age and condition of meter, or if exposure to ambient temperature could have affected temperature of sample.
Specific Conductance	5 uS/cm	Retain both sets of data.	Because there are no thresholds for additional investigations for this parameter, just retain both sets of data and provide any comments that may have affected discrepancy such as age and condition of meter.
Bacteria (E-Coli, Enterococci, or Fecal Coliform)	+/- 100 col/100ml or 30% RPD	Retain both sets of data, use an average of the samples to compare to the investigation thresholds.	Assess cleanliness of equipment used to collect sample. Review Laboratory quality control reports for any errors or issues. Review visual observations of sample collected to assess if there were any differences in color, clarity, odor, or volume of discharge that could account for discrepancy. Consider resampling site.
Dissolved Oxygen	0.02 mg/L	Retain both sets of data.	Assess cleanliness of equipment used to collect sample. Consider resampling site.
All other parameters	30% RPD	Retain both sets of data, use an average of the samples to compare to any investigation thresholds.	Assess cleanliness of equipment used to collect sample. Consider resampling site.

4.2 Equipment or Rinsate Blanks.

For most instances, dedicated equipment and containers are used to collect samples, so that equipment and rinsate blanks are not required to be collected and analyzed. However, if equipment or collection containers are being used multiple times in the field for different sample locations, they should be cleaned in between samples, wash water should be collected in the field and disposed of when returning to office or lab spaces, and equipment or rinsate blanks should be collected and assessed. The USEPA Volunteer Monitor's Guide to Quality Assurance Project Plans has additional guidance on how to complete these tasks (EPA Document 841-B-96-003).

5.0 Field Data Sheets and Chain of Custody

As described in Sampling Procedures, Field Data Sheets will be used to document sample collection. Field Data sheets will document the type of field equipment or test kit(s) used and results of any in-situ analysis. Example Field Data Sheets are provided in Addendum 1 to this QAPP.

Whenever samples will be sent to a laboratory for analysis, a Chain of Custody will be used to document sample collection dates, times, analytical methods requested, and custody of the sample from the time it was collected, until the time it was analyzed. Example Chains of Custody are provided in Addendum 3 to this QAPP.

6.0 Data Reports

Field data collection sheets shall constitute data reports for analyses using field equipment or test kits.

Whenever samples are sent to a laboratory for analysis, data reports are provided by the laboratory showing the sample location, date and time of collection, results of the analysis, the reporting limit, the person who conducted the analysis, the analytical method used.

7.0 Data Review and Follow up

Once all data has been received, it will be reviewed by a Stormwater Manager or Coordinator. Data shall also be stored electronically or in paper format for at least 3 years following the expiration date of the MS4 General Permit, as required by the MS4 General Permit.

If the person collecting the sample is the Stormwater Manager or Coordinator, they may opt to have another municipal staff person review the data, or a Stormwater Manager or Coordinator from another municipality if they deem it necessary to assist in the overall investigation. Data should be reviewed within 2 weeks of receipt and additional investigations should be scheduled or implemented to identify the source of any potential illicit discharge if any of the thresholds in Table 3 are exceeded.

Table 3: Thresholds for Additional Investigation

Parameter	Threshold Level for Additional Investigation	Notes/Discussion
E. coli	236 cfu/100 ml – discharges into freshwater rivers or streams	All classifications of flowing fresh surface water in Maine (AA, A, B and C) have a standard that no more than 10% of the samples may exceed this concentration in any 90-day interval. A fresh surface water is at risk of impairment if it is receiving significant discharges from human sources above this concentration.
E. coli	194 cfu/100 ml – discharges into freshwater ponds	Great Ponds and lakes less than 10 acres have a standard that no more than 10% of the samples may exceed this concentration in any 90-day interval. A water of this type is at risk of impairment if it is receiving significant discharges from human sources above this concentration.
Enterococci	54 CFU/100 ml – discharges into saline/estuarine Class SA or SB	These waters have a standard that no more than 10% of the samples may exceed this concentration in any 90-day interval. A water is at risk of impairment if it is receiving significant discharges from human sources above this concentration. (Note Maine Healthy Beaches threshold is 104 MPN/100 ml)
Enterococci	94 CFU/100 ml – discharges into saline/estuarine Class SC	These waters have a standard that no more than 10% of the samples may exceed this concentration in any 90-day interval. A water is at risk of impairment if it is receiving significant discharges from human sources above this concentration. (Note Maine Healthy Beaches threshold is 104 MPN/100 ml)
Fecal Coliform	61 cfu/100 ml (2 times 31 cfu/100 ml for MF) to 100 cfu/100ml	The low end of this threshold is two times the 90 th percentile standards that the Maine Dept. of Marine Resources (DMR) applies for approved (open) shellfish harvesting areas and is very conservative (90% of the samples collected from the area must be above these concentrations for the harvesting area to remain open and completely unrestricted for shellfish harvesting. See Addendum 2 for additional info from DMR)
Human Bacteroides	Any concentration of human source of sewage should be investigated.	Any concentration may be indicative of human sewage, but MHB considers 4,200 col/100ml HB to be equivalent to the level of contamination that exceeds the EPA acceptable risk of gastrointestinal illness to swimmers. (Rothenburger and Jones, 2018 and Boehm, Soller and Shanks 2015)
Ammonia	≥ 0.50 mg/L	This is the effective reporting limit of the Ammonia test strips and was taken from USEPA Draft 2012 Bacteria Source Tracking Protocol.
Chlorine	≥ 0.05 mg/L	Limit of test kit and was taken from USEPA Draft 2012 Bacteria Source Tracking Protocol.
Surfactants	≥ 0.25 mg/L	Taken from USEPA Draft 2012 Bacteria Source Tracking Protocol.
Optical Brighteners	≥ 100 ug/L (≥ 0.10 mg/L)	This is used by Maine Healthy Beaches as an actionable threshold. If using a handheld fluorometer, conduct further investigation if presence of optical brighteners is detected.

The City may use the thresholds listed in Table 3 and the following general guidance to make determinations whether an outfall requires additional investigation for illicit discharges.

- Outfalls that have some visual evidence of an illicit discharge and exceed at least one of the above thresholds and should be investigated further using techniques described in the City's IDDE Plan.
- Outfalls that do not have any visual evidence of an illicit discharge but exceed more than one of the above thresholds should be investigated further using techniques described in the City's IDDE Plan.

As described in Section 1 of this QAPP, if the above thresholds are not exceeded, the MS4 may make the determination that the flow is from uncontaminated groundwater, water from a natural resource, or an allowable non-stormwater discharge.

References

Rothenheber and Jones 2018. *Enterococci Concentrations in a Coastal Ecosystem are a function of fecal source input*. Published in Applied Environmental Microbiology, July 13, 2018.

Boehm, Soller and Shanks 2015. *Human-Associated Fecal Quantitative Polymerase Chain Reaction Measurements and Simulated Risk of Gastrointestinal Illness in Recreational Waters Contaminated with Raw Sewage*. Published in Environmental Science and Technology Letters 2015, 2, 270-275.

Addendum 1
Example Field Data Collection Sheet and Labels

Field Data Collection Sheet for Dry Weather Outfall Monitoring

Date _____	Project Name _____		
Time _____			
Sampler's Name _____	Project Location _____		
Weather: _____			
Sample Type: _____			
Facility ID Location: _____			
Sample Notes: _____			
Field Parameters to Monitor			
Parameter	Result (units)	Equipment Used	Threshold triggering additional investigation (see QAPP)
Temperature (all flows)	C/F		No threshold. FYI: Temp. is dependent on season. Groundwater is typically 40-55 F. Surface water can be hotter or colder.
Conductivity (all flows)	µs		No threshold. FYI: Groundwater is typ. Less than 1000 µs. Freshwater can be as high as 2000 µs. Saltwater can be as high as 55,000 µs.
Ammonia (potential bacteria sources)	mg/L	Hach Test Strips	≥ 0.50 mg/L
Surfactants			Surfactants ≥ 0.25 mg/L
Chlorine (potential chlorine sources)	mg/l	Hach Colorimeter II low range	≥ 0.05 mg/L (test kit limit)
Observations (unless already documented as part of outfall inspection: odor, color, turbidity, algae, etc): _____			
Laboratory Analyses (see QAPP for thresholds)			
Parameter	Method/ Lab Code	Comments	
E. coli	SM 9223 B, EPA 1603, or SM 9221 B	For freshwaters	
Enterococci	SM 9230 or EPA 1600	For marine/estuarine waters	
Comments/Field Notes			

This set of labels was designed to be used with Avery 5366 labels, but you can use any labels.

Sampler: _____ Date: _____
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Addendum 2
Procedural Reference E-mails

Kristie Rabasca

From: Lewis, Bryant J <Bryant.J.Lewis@maine.gov>
Sent: Thursday, October 31, 2019 4:46 PM
To: Kristie Rabasca; Wahle, Benjamin
Subject: RE: simple summary of Fecal concentrations for open vs seasonal vs restricted vs prohibited?

Kristie,

I did misunderstand the question. Unless there is a specific area of concern where we are collaborating on a special study with a town, we typically provide a yearly update for each station's geomean and P90 incorporating the most recent 30 sample scores. That annual trend is provided to towns so we are not usually contacting a town based on any one score to tell them that there might be a problem.

However- if trying to determine a trigger on a single sample, there is some subjectivity to the answer. I would suggest a value between 50-100 as a high value trigger. There is merit to your suggestion of using twice the 31 value as well since that is within that range. Often, our Scientists would use 100 as the high score value as their own flag to watch a station since an area that is already at risk of exceeding the approved standard based on the last 30 samples would likely go over a P90 of 31 with a 100 added. I think you would likely accomplish your goal by using any of the three values; 50, 62, or 100. I would recommend starting with 62 then re-evaluating after some data is built up to determine if that should be increased or decreased based on program needs.

Bryant Lewis
ME Department of Marine Resources
Growing Area West Program Supervisor
194 McKown Point Road
West Boothbay Harbor, ME 04575
Tel: 207-633-9401
Cell: 207-215-4107

From: Kristie Rabasca <krabasca@integratedenv.com>
Sent: Thursday, October 31, 2019 2:42 PM
To: Lewis, Bryant J <Bryant.J.Lewis@maine.gov>; Wahle, Benjamin <Benjamin.Wahle@maine.gov>
Subject: RE: simple summary of Fecal concentrations for open vs seasonal vs restricted vs prohibited?

EXTERNAL: This email originated from outside of the State of Maine Mail System. Do not click links or open attachments unless you recognize the sender and know the content is safe.

H Bryant,

I do a lot of illicit discharge investigations with and for the municipalities. Maybe I did not phrase my question properly.

For a single sample, at what concentration would DMR say to a municipality: "we think there might be a problem here". Is that concentration the 90th percentile number? 31? Or twice that?

Or do you wait until you see the GM or P90 number get close to its threshold for multiple samples?

Kristie L. Rabasca, P.E.
207-415-5830 (cell)

From: Lewis, Bryant J <Bryant.J.Lewis@maine.gov>
Sent: Thursday, October 31, 2019 2:33 PM

To: Kristie Rabasca <krabasca@integratedenv.com>; Wahle, Benjamin <Benjamin.Wahle@maine.gov>

Subject: RE: simple summary of Fecal concentrations for open vs seasonal vs restricted vs prohibited?

Kristie,

I would suspect DEP and possibly the municipality should be contacted for possible illicit discharges.

We use DMR water quality stations to classify growing area waters. As part of our program, we also conduct surveys of the shoreline where we look for malfunctioning septic systems and other pollution sources and sample the mouths of streams entering growing area waters; however, we do not conduct investigations to determine the sources of contamination. Generally, it is up to the municipality to investigate degrading water quality while sometimes DEP can provide some additional assistance. If there is an area where water quality was degrading we would provide the municipality the information we have if they wished to investigate. The municipality would likely need to do additional work to locate the source of contamination but the information you are describing would likely be valuable in their effort.

Bryant Lewis

ME Department of Marine Resources
Growing Area West Program Supervisor
194 McKown Point Road
West Boothbay Harbor, ME 04575
Tel: 207-633-9401
Cell: 207-215-4107

From: Kristie Rabasca <krabasca@integratedenv.com>

Sent: Wednesday, October 30, 2019 9:00 AM

To: Lewis, Bryant J <Bryant.J.Lewis@maine.gov>; Wahle, Benjamin <Benjamin.Wahle@maine.gov>

Subject: RE: simple summary of Fecal concentrations for open vs seasonal vs restricted vs prohibited?

EXTERNAL: This email originated from outside of the State of Maine Mail System. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Thanks so much for this. We are using it because some communities will be sampling outfalls that are discharging into marine environments for fecal coliform as a screening tool when looking for illicit discharges. The MS4 General Permit requires that the communities regulated for their stormwater discharges do sampling whenever an outfall is flowing after three days of dry weather. We are telling them to notify DMR of the results, and wanted to have some guidelines for when they should be concerned. I know that your scores are very conservative because they are all about the FDA and ingestion of shellfish.

I have attached a QAPP that we are using and you will see the table in the back has a "threshold" for additional investigation if the town is monitoring for fecal coliform. Please note that the samples they are collecting are discharges from outfalls into the water body – not from the water body.

Would you investigate further if the thresholds for 90th percentile for open areas were exceeded? Or would you use 2x that? Or some other number.

Hopefully you understand my question....

Kristie L. Rabasca, P.E.
207-415-5830 (cell)

From: Lewis, Bryant J <Bryant.J.Lewis@maine.gov>

Sent: Monday, October 28, 2019 10:16 AM

To: Wahle, Benjamin <Benjamin.Wahle@maine.gov>; Kristie Rabasca <krabasca@integratedenv.com>

Subject: RE: simple summary of Fecal concentrations for open vs seasonal vs restricted vs prohibited?

Kristie,

This webpage explains the classifications.

<https://www.maine.gov/dmr/shellfish-sanitation-management/programs/growingareas/howclassified.html>

The NSSP Model Ordinance dictates how we calculate water quality scores. A 90th percentile based on the most recent 30 samples providing a score of 31 or less is Approved, 32-163 is Restricted and above 163 is Prohibited. There is a link to the Model Ordinance on our website, if needed. It describes how to calculate scores for systematic random sampling using membrane filtration.

<https://www.maine.gov/dmr/shellfish-sanitation-management/programs/growingareas/index.html>

I have also attached a document summarizing what is in the Model Ordinance for calculating water quality station scores.

Bryant Lewis
ME Department of Marine Resources
Growing Area West Program Supervisor
194 McKown Point Road
West Boothbay Harbor, ME 04575
Tel: 207-633-9401
Cell: 207-215-4107

From: Wahle, Benjamin
Sent: Monday, October 28, 2019 9:28 AM
To: Kristie Rabasca <krabasca@integratedenv.com>
Cc: Lewis, Bryant J <Bryant.J.Lewis@maine.gov>
Subject: RE: simple summary of Fecal concentrations for open vs seasonal vs restricted vs prohibited?

Hi Kristie,

I'm actually going to refer you to Bryant Lewis, who is the Western Region Growing Area Supervisor. He'll be better able to explain DMR's classification system.

-Ben

From: Kristie Rabasca <krabasca@integratedenv.com>
Sent: Monday, October 28, 2019 8:03 AM
To: Wahle, Benjamin <Benjamin.Wahle@maine.gov>
Subject: simple summary of Fecal concentrations for open vs seasonal vs restricted vs prohibited?

EXTERNAL: This email originated from outside of the State of Maine Mail System. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Good Morning Ben,

I worked with you in Eliot and Cape – and am looking on your website for a simple summary of the P90 concentrations that trigger the various restrictions on shellfishing.

Does such an animal exist? If so, could you share it?

I am working on a QAPP for the stormwater folks and want to provide them with a reference that is accurate and truthed by DMR for when they are sampling outfalls near shellfishing areas.

Thanks for any help you can provide.

DMR uses a membrane filtration (MF) method for fecal coliform analysis using mTEC agar with a two-hour resuscitation step. The geometric mean and the 90th percentile are calculated on a minimum of the most recent 30 data points.

Geometric Mean (Geomean):

The geometric mean, or geomean, is a type of averaging calculation. Unlike a simple average or arithmetic mean, the geomean takes into account the way bacteria grow. During bacterial growth, each bacterium doubles and reproduces itself i.e. one bacterium becomes two, two bacteria become four, four become eight and so on. There are low values at first and the rate of growth increases as the number of colonies increases. This is called exponential growth (Figure 1). This growth pattern means a fecal coliform dataset may have a few high scores and many low scores. The calculation for the geometric mean takes exponential growth into account by transforming the data into logarithms, taking the mean and then converting the number back to a log base 10 number. For example, the arithmetic mean of a fecal coliform score of 300, 150, 23 and 2 CFU/100ml is 119 CFU/100ml. Calculating the geomean, the result is 38 CFU/100ml.

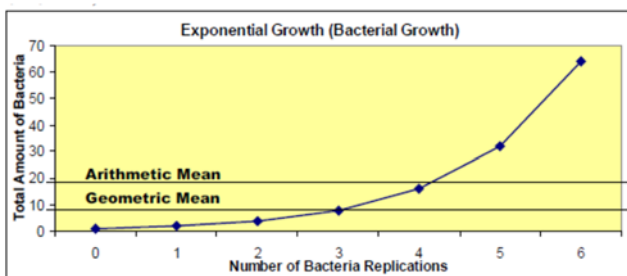
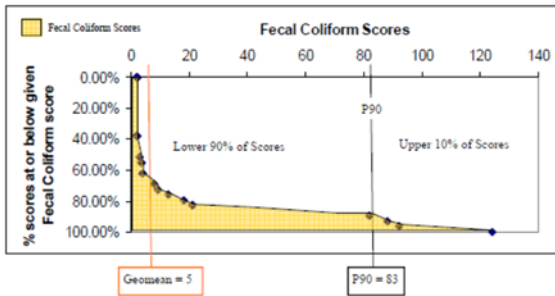
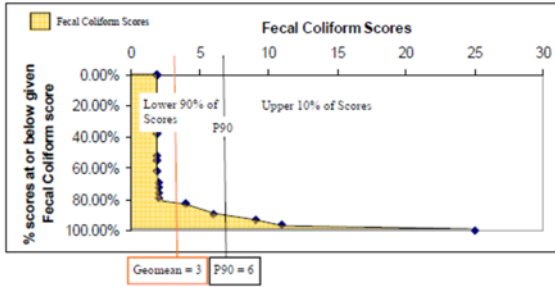


Figure 1. The graph illustrates exponential growth. The arithmetic mean for the scores is 18.1 while the geomean is 8.

90th Percentile (P90)

The other calculation used for shellfish growing area classification is the 90th percentile (P90). The P90 is the variability standard, meaning this value takes into account the variability of test readings. In any test measurement, successive readings of the same sample would produce slightly different scores each time due to precision of the equipment, human error, etc. This type of variability is a factor of the test method and equipment used and is true of all testing methods.

To account for the variability in the fecal coliform test, a standard has been established. Here again, since bacteria grows exponentially, the calculations are performed on a logarithmic scale. The P90 is based on the distribution of fecal coliform scores and means that 90% of scores are at are below the P90 and 10% scores are above (Figures 2a and 2b). As long as most of the other scores are low, a few high scores will not have a large impact on the P90 value. The P90 standard is the acknowledgment by the NSSP that a few high scores in data set may be due to the variability of the test method. If the area shows high fecal coliform scores intermittently due to pollution events such as rainfall, this may cause water quality to exceed the P90 standards because the shellfish are intermittently subject to polluted waters. For classification determinations, P90s are rounded to the nearest whole number. 0.1-0.49 are rounded down and 0.5-0.9 are rounded up to the next whole number.



Figures 2a and b. The lower 90% of the scores fall to the left of the P90 line and 10% of the scores fall to the right. 2a has a low P90 because there are many low scores and a few high scores. 2b has a larger number of high fecal coliform scores, so the P90 is shifted to the right. Although the geomean of 2b passes the approved standard, the area would not be classified as approved because the P90 score is above the threshold.

Fecal Coliform Standards by Shellfish Growing Area Classification Category

Shellfish Growing Area Classification	Activity Allowed	Geometric mean FC/100ml	90 th Percentile (P90) FC/100ml
Approved	Harvesting allowed	≤ 14	≤ 31
Conditionally Approved	Harvesting allowed except during specified conditions	≤ 14 in open status	≤ 31 in open status
Restricted	Depuration harvesting or relay only	≤ 88 and >15	≤ 163 and >31
Conditionally Restricted	Depuration harvesting or relay allowed except during specified conditions	≤ 88 in open status	≤ 163 in open status
Prohibited	Aquaculture seed production only	>88	>163

Kristie Rabasca

From: Hudson, Michael S <Michael.S.Hudson@maine.gov>
Sent: Monday, October 7, 2019 11:51 AM
To: Kristie Rabasca
Cc: Plummer, Cherrie F; Poirier, Rhonda
Subject: FW: Proper handling and disposal of CheMetrics Surfactant field test kit residuals
Attachments: surfactants_CHEMetrics_k9400instructs.pdf; surfactants_CHEMetrics_k9400_SDSs.pdf; EIASOP-SWTestKits_REV1.pdf

Importance: High

In response to the questions posed regarding proper handling and disposal of CheMetrics Surfactant field test kit residuals:

1. Can the Towns mix the liquids from a. and b. in a single container for disposal as D001 and D022 waste? Or do they need to keep them separate to dispose of them?
Answer: Chloroform is miscible in alcohols such as n-propanol and is compatible. The Hazardous Waste Management Rules, 06-096 C.M.R. ch. 850 through 858, do not prohibit the mixing of compatible wastes. If mixed, the waste mixture should be coded as both D001 and D022. The town/generator could check with the licensed hazardous waste transporter it intends to use for the hazardous waste pick-up and disposal to determine if it is advisable or more cost effective to keep the wastes separate.
2. The n-propanol waste is super tough to get out of the vial – we pretty much just dispose of the whole vial. Is that okay? Or can we break the vial? And dispose of the empty glass as solid waste (as long as it is RCRA empty).
Answer: The whole vials containing n-propanol can be disposed of as hazardous waste. If the generator chooses to break the vial to dispose of the n-propanol as hazardous waste and the glass as a solid waste, then the generator must ensure the broken vials are RCRA-empty. Again, the town/generator could check with the licensed hazardous waste transporter it intends to use for the hazardous waste pick-up and disposal to determine if it is advisable or more cost effective to break and empty the vials to dispose of the glass and n-propanol separately. Of course, care and safety measures should be employed if breaking and handling glass vials.
3. Most of these towns are going to be SQGs (Maine Definition), and are going to be generating this waste while they are out in the field over a period of months. Then after each event, they are going to drive it back to the public works facility and set up a SQG haz waste storage area until they can get rid of it (either at HHWD collection, or have a specific pick up). They have 1 year to dispose of it. Have I missed any exemptions or special conditions for this? Is it okay that they are driving it around? Or should they be bringing the water samples back to public works and running the surfactant analysis on it at public works so they don't have to transport it. (its easier for them to run the sample right there while they are at the site).
Answer: It is preferable for the town/generator to bring samples back from field sites to its Public Works to do the test so that hazardous waste generated by the tests does not have to be transported from field sites. Under the rules, the town/generator would need hazardous waste licenses to transport or accept the hazardous wastes from off-site. Towns should set up a hazardous waste collection container for the hazardous wastes from the tests, with an appropriate size container, labeled as "Hazardous Waste" with an accumulation start date. If the town's Public Works is a Small Quantity Generator (SQG), i.e. it generates for all its hazardous wastes in aggregate no more than 27 gallons/month and accumulates no more than 55 gallon of all of its hazardous waste in aggregate, then the town/generator could accumulate the waste indefinitely until the container of hazardous waste from tests is full at which point the town/generator would have 180 days to ship

via licensed hazardous waste transporter. Town/ Public Works should not dispose of these waste through the Household HW collection programs because they are not household exempt wastes.

4. We are going to do a training of the use of this kit on 10/17 in Portland. I would really like for attendees to be able to practice use of the kit at that training. Do I need to schedule with NRCC or Clean Harbors to come pick up the waste that day (as a licensed transporter), or could one of the communities transport it back to their public works facility for storage until later disposal (during HHWD)?

Answer: Under the rules, the generator should arrange for waste pick-up at the site of generation. These hazardous wastes are not exempt under the household waste exclusion and are not acceptable at Household Hazardous Waste collections events.

The guidance above is based on the information provided below and the applicable rules, Hazardous Waste Management Rules, 06-096 C.M.R. ch. 850 through 858, without information on the number of test kits expected to be used, frequency of testing and volumes of anticipated waste accumulation. If you have questions or would like to discuss the specifics, please feel free to contact me at Michael.s.hudson@maine.gov or 207-287-7884, or Cherrie Plummer of the Hazardous Waste Management Unit. Cherrie's contact is Cherrie.F.Plummer@maine.gov and 207-287-7882.

Michael S. Hudson, Supervisor, Hazardous Waste Management Unit
Maine Department of Environmental Protection
17 State House Station, Augusta, ME 04333-0017
Tel. 207-287-7884
www.maine.gov/dep

From: Poirier, Rhonda
Sent: Monday, October 07, 2019 9:37 AM
To: Hudson, Michael S <Michael.S.Hudson@maine.gov>
Subject: Proper handling and disposal of CheMetrics Surfactant field test kit residuals
Importance: High

Hi Mike,

The sampling she's describing is required by one of the permits in my stormwater program. She is giving a workshop on it on 10/17 and would like to talk to the proper DEP person before that, for planning purposes. Can you help her?

Thank you,
Rhonda

Rhonda Poirier
MEPDES Stormwater Program Manager
Bureau of Water Quality
Maine Department of Environmental Protection
207-592-6233
www.maine.gov/dep

From: Kristie Rabasca <krabasca@integratedenv.com>
Sent: Tuesday, October 01, 2019 4:02 PM
To: Poirier, Rhonda <Rhonda.Poirier@maine.gov>
Cc: Aimee Mountain (Aimee.Mountain@gza.com) <Aimee.Mountain@gza.com>; Damon Yakovleff <dyakovleff@cumberlandswcd.org>
Subject: Proper handling and disposal of CheMetrics Surfactant field test kit residuals

Hi Rhonda,

Thanks for taking my call.

I am developing a dry weather monitoring training session for the ISWG and SMSWG MS4s, and am developing a QAPP and some checklists.

We will need to use the CheMetrics K-9400 field test kit for surfactants. I have attached the instructions for the kit, and the Safety Data Sheets for the two reagents. Generally for each sample we will do the following:

1. Add 5 ml of water to a small plastic vial
2. Add 4ml of the double tipped reagent (SDS attached and it is flammable and contains 71% chloroform)
3. Shake
4. Use the 0.25 ml sealed glass ampule (which is 98% N-propanol) to draw the organic phase out of the plastic vial with the water and the first reagent.
5. Use colorimeter to check detergent concentration of sample.

So the two wastes we have when done are:

- a. The mixture of the 5 ml water and the 4 ml 71% chloroform (which is still flammable) in the plastic vial (minus about 1 ml extracted into the n-propanol vial)
- b. About 1 ml of the n-propanol and the chloroform organic phase in a very small glass ampule.

I am requesting the EPA SOP on this – but I do not think it has the detail I want.

When I have used this in the past, I have given it to the municipality where it was generated and told them it was a **Doo1 Flammable and D022 Tox-chloroform waste**, and they hand it to clean harbors during household hazardous waste day.

We are going to have a lot more people generating this waste – using these kits, and we need to handle it properly. As we provide them with guidance, we want to make sure it is right.

My questions are:

1. Can the Towns mix the liquids from a. and b. in a single container for disposal as Doo1 and Do22 waste? Or do they need to keep them separate to dispose of them?
2. The n-propanol waste is super tough to get out of the vial – we pretty much just dispose of the whole vial. Is that okay? Or can we break the vial? And dispose of the empty glass as solid waste (as long as it is RCRA empty)
3. Most of these towns are going to be SQGs (Maine Definition), and are going to be generating this waste while they are out in the field over a period of months. Then after each event, they are going to drive it back to the public works facility and set up a SQG haz waste storage area until they can get rid of it (either at HHWD collection, or have a specific pick up). They have 1 year to dispose of it. Have I missed any exemptions or special conditions for this? Is it okay that they are driving it around? Or should they be bringing the water samples back to public works and running the surfactant analysis on it at public works so they don't have to transport it. (its easier for them to run the sample right there while they are at the site).
4. We are going to do a training of the use of this kit on 10/17 in Portland. I would really like for attendees to be able to practice use of the kit at that training. Do I need to schedule with NRCC or Clean Harbors to come pick up the waste that day (as a licensed transporter), or could one of the communities transport it back to their public works facility for storage until later disposal (during HHWD)?

So many questions.... Perhaps I could talk with someone at Haz waste.... Thanks for any help you can provide.



Kristie L. Rabasca, P.E

Integrated Environmental Engineering, Inc.

12 Farms Edge Road

Cape Elizabeth, ME 04170

207-415-5830

Addendum 3
Example Chains of Custody

