DRAFT

STORMWATER MANAGEMENT PLAN

FOR

TOWN OF FREEPORT, MAINE

MS4 General Permit Effective July 1, 2022
Initial Submittal to Maine DEP on March 31, 2021

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APPENDICES

1 INTRODUCTION

1.1 Overview of Regulatory Program

The Town of Freeport (Town) is subject to the General Permit for the Discharge of Stormwater (General Permit) from Small Municipal Separate Storm Sewer Systems (MS4s), issued by the Maine Department of Environmental Protection (Maine DEP) with an effective date of July 1, 2022. This Clean Water Act permit duration is limited to a five (5) year period and expires on June 30, 2027. Should the Maine DEP not issue a new General Permit by June 30, 2027, the 2022 – 2027 General Permit will be administratively continued, and the Town may need to update this Stormwater Management Plan (SWMP) to show what activities it will complete during the continued period.

Communities are regulated under this program when and if they are identified as having "Urbanized Areas" in their municipal boundary. An Urbanized Area (UA) is a U.S. Census-defined term applied to a large area (50,000 people or more) with a high population density or a high percentage of impervious cover (e.g., hardscape surfaces like asphalt or building roofs). The population density and impervious cover criteria can cause an area to be at risk for adverse surface water quality impacts from polluted stormwater discharges.

The U.S. Environmental Protection Agency (US EPA) and Maine DEP began regulating communities for their stormwater discharges using the UA criteria in 2003. The Town of Freeport became regulated in 2003 based on the 2000 US Census Bureau UA delineation.

Once a community becomes regulated by the MS4 General Permit, only the Town's UA portions are regulated. As each US Census is published, if the UA changes based on population density or impervious cover, additional areas can be added to the current regulated area once a new MS4 General Permit is issued. An UA regulated by the MS4 General Permit cannot be removed even if a subsequent census identifies it is no longer classified as an UA. So, the area regulated by the MS4 General Permit can either grow larger or stay the same size, but it cannot become smaller. The UA Map provided in Appendix A shows the area regulated by the 2022 MS4 General Permit for the Town based on the cumulative 2000 and 2010 US Census UA delineations. The 2022 MS4 General Permit specifically does not include any areas identified by the 2020 US Census.

1.2 Cooperation Between Regulated Communities

There are 30 municipalities in the State of Maine that are subject to the 2022 MS4 General Permit. There are two transportation agencies subject to their own MS4 General Permit. There are also eight state and federal agencies subject to a third MS4 General Permit (which are called "nested" MS4s). The regulated MS4s (municipal, transportation, and state/federal) have a good history of cooperating on a state-wide basis to complete the General Permit activities. These cooperative relationships provide cost-saving measures by combining Public Education, Public Outreach, and Training Workshops that reach a wider audience, improve the quality of compliance, and apply consistent standards.

The Town is a member of the Casco Bay Interlocal Stormwater Working Group (ISWG), pronounced *izzy-wig.* The ISWG is a coalition of 14 MS4 municipalities in the greater Portland and Saco areas. The Southern Maine Community College and the University of Southern

Maine are nested MS4s, which are regulated under a separate General Permit. This coalition is under contract with the Cumberland County Soil and Water Conservation District (CCSWCD), which facilitates and helps complete some of the General Permit requirements.

Similarly, the Bangor area MS4s have formed the Bangor Area Stormwater Working Group (BASWG). The Lewiston-Auburn area MS4s have formed the Androscoggin Valley Stormwater Working Group (AVSWG). The southern-most regulated MS4s have formed the Southern Maine Stormwater Working Group (SMSWG). For some public education requirements, all stormwater groups work cooperatively, as identified in this SWMP.

The Town relies on the ISWG to complete regional and state-wide requirements and implements many other requirements using municipal staff. This SWMP describes which elements will be completed individually, regionally, or as a state-wide effort.

1.3 Stormwater Management Plan

Though the MS4 General Permit is a Clean Water Act Permit, it does not specify numeric effluent limitations (concentrations that a stormwater discharge must meet). Instead, the MS4 General Permit sets narrative effluent limitations, in the form of Minimum Control Measures (MCMs).

Each of the four previous MS4 General Permits issued in 2003, 2008, 2013, and 2022 required that the regulated MS4s develop and implement a SWMP to coincide with the General Permit's effective dates.

This SWMP describes how the Town will implement Best Management Practices (BMPs) to meet the six MCMs, outlined in Part IV(C) of the 2022 MS4 General Permit. The six MCMs that are required to be addressed in this SWMP are listed below.

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

The 2022 MS4 General Permit requires that for each MCM, the Town must: define appropriate BMPs; designate a person(s) responsible for implementing each BMP; define a date or timeline with milestones for implementation of each BMP; and define measurable goals for each BMP.

The prior MS4 General Permits also required that the SWMP address these six MCMs, but the specific requirements related to each MCM have changed with each permit. In many instances, the BMPs in this SWMP expand upon or continue BMPs that were developed under prior General Permits.

In addition to addressing the six (6) MCMs, the Town must address several impaired waters requirements. Sections 1.4 and 1.5 describe the Town's water quality status and how inspections within the watersheds are prioritized.

The Maine DEP will review this SWMP and determine if the Town controls pollutants to the

“Maximum Extent Practicable”. The term Maximum Extent Practicable is defined in the Clean Water Act. The term means available and feasible considering cost, existing technology, and logistics based on the project's overall purpose. Effectively, the Town is allowed to consider these concepts as they select Best Management Practices (BMPs) to meet permit requirements, but the Maine DEP decides if the Town meets the Maximum Extent Practicable standard.

The SWMP is not an enforceable document. Some flexibility is built into the BMPs to allow communities to engage in an adaptive management approach to mitigating or eliminating pollutants' discharge to and from its regulated small MS4. This approach enables the Town to adjust BMPs throughout the Permit Cycle if needed based on evaluations of their effectiveness, changing conditions, specific local concerns, or changes in other factors. Some SWMP Modifications require DEP review and approval and public notice. Section 1.6 Obtaining Coverage to Discharge and Section 1.8 SWMP Modifications describe the requirements associated with modifying the SWMP. Section 1.9 describes the annual reporting requirements.

1.4 Water Quality and Discharges to Impaired Waters

The 2022 MS4 General Permit contains the following requirements for discharges to waters that are not meeting their fishable and swimmable standards (a.k.a. impaired waters):

(1) If the waterbody to which a point source discharge drains is impaired and has an U.S. EPA-approved total maximum daily load (TMDL), then the SWMP must address compliance with the TMDL waste load allocation (WLA) and any implementation plan. The General Permit does not authorize a direct discharge that is inconsistent with the WLA of an approved TMDL. This requirement applies only to TMDLs that EPA approved as of 10/15/2020.
(2) If a TMDL is approved or modified by EPA after 10/15/2020, the Maine DEP will notify the permittee if any changes are needed to the SWMP, and may take other actions regarding the approved TMDL as identified in the 2022 MS4 General Permit.
(3) If an MS4 has a discharge to an Urban Impaired Stream, it must develop and implement three (3) BMPs to address the water’s impairment, unless the DEP has determined the MS4 discharge is not causing or contributing to the impairment.

The Fact Sheet issued with the 2022 MS4 General Permit also contained a strongly worded recommendation for MS4s to consult with the Maine DEP Division of Environmental Assessment regarding impaired waters that do not have approved TMDLs. The consult would focus on identifying the root cause of impairments and develop a strategy to reduce the discharge of pollutants of concern if the permittee is causing or contributing to the impairment.

Section 1.4.1 generally describes how the State evaluates surface waters and describes TMDL documents and Urban Impaired Streams. Section 1.4.2 describes the status of the waters that receive discharges from the Town’s MS4. If applicable, Section 1.4.3 describes recent progress by the Town on addressing any impairments that have MS4 requirements and provides the rationale for how the BMPs in this SWMP address these 2022 MS4 General Permit requirements.

1.4.1 State Water Quality Assessments

The State of Maine is required by the Clean Water Act to identify water quality classifications for each surface water in the State and assess whether each of those waters meets its designated classification standards. Maine has four classifications for freshwater rivers, three classes for marine and estuarine waters, and one class for lakes and ponds. Each classification identifies a use and set of water quality standards for the water. The classifications, uses, and standards are described and assigned to the Maine Statutes' various waters (Title 38, Sections 464 through 469).

Assessments about whether each water is achieving its designated classification are based on data obtained from several sources depending on the type of water being assessed.

- Lake and ponds are assessed primarily through data obtained by the Maine DEP and regional entities and lake associations. The regional and lake association data is coordinated through the Lake Stewards of Maine (Volunteer Lake Monitoring Program).

- Marine and Estuarine waters are assessed by evaluating data obtained from the Maine DEP, Maine Healthy Beaches, Department of Marine Resources, Marine Environment's Gulf Watch, Gulf of Maine Council, and several other academic and non-profit organizations.

- Wetlands are assessed primarily using data obtained from the Maine DEP Biomonitoring Program.

- Rivers and Streams are assessed using data from the Maine DEP Biomonitoring Program, Surface Water Ambient Toxics (SWAT) Monitoring Program, the Atlantic Salmon Recovery Plan, Volunteer River Monitoring Program (VRMP) and through many other government agencies such as the Department of Inland Fisheries and Wildlife, U.S. EPA, and the United States Geologic Survey.

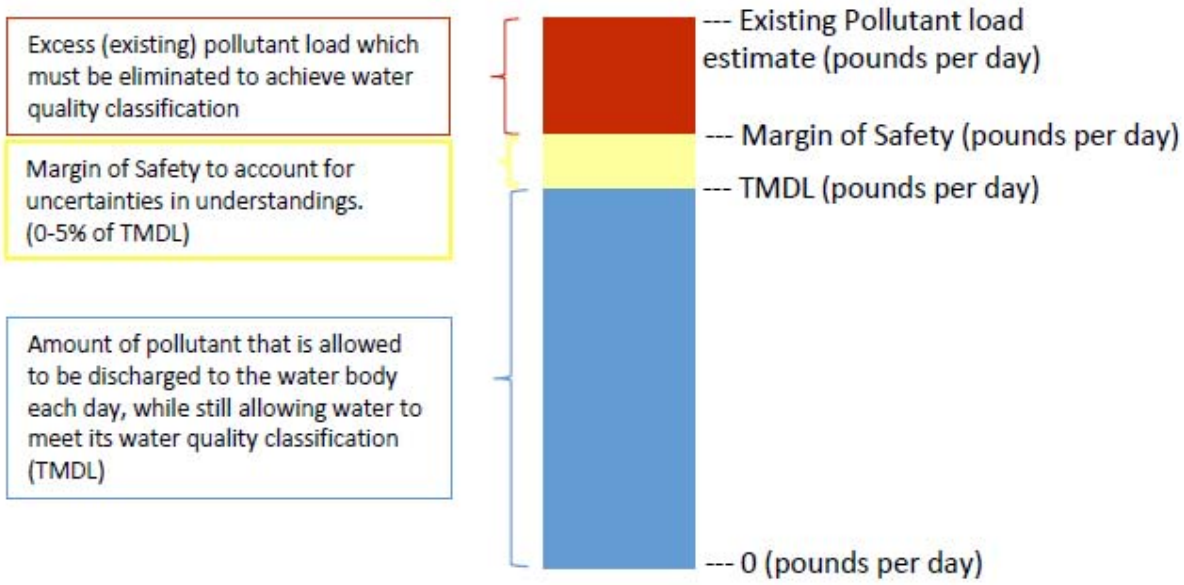
Every two years, the Maine DEP publishes a report and list documenting the assessments' results, and identifies which waters are meeting their designated classifications and which are considered impaired. The report and list are called the Integrated Water Quality Report and are generally referred to by the Section of the Clean Water Act, as the 305(b) report and the 303(d) list, respectively. There are five general status categories available for assignment to each water.

- Category 1: Attains all designated uses and water quality standards, and no use is threatened.
- Category 2: Attains some of the designated uses; no use is threatened; and, insufficient data or no data and information is available to determine if the remaining uses are attained or threatened (with the presumption that all uses are attained).
- Category 3: Insufficient data and information to determine if designated uses are attained (with the presumption that one or more uses may be impaired).
- Category 4: Impaired or threatened for one or more designated uses but does not require the development of a TMDL report.
    - 4A means a TMDL has already been completed.
    - 4B means other pollution control measures will address impairment.
    - 4C means a pollutant does not cause the impairment.

- Category 5: Waters impaired or threatened for one or more designated uses by a pollutant(s).
    - 5A classifies waters not classified in 5B through 5D – generally, a TMDL is required for these waters.
    - 5B classifies waters that are impaired only for Bacteria.
    - 5C classifies Rivers and Streams impaired by atmospheric Deposition of Mercury (no wetlands, lakes, or estuarine waters are impaired in this category).
    - 5D classifies waters that are impaired by legacy pollutants (such as DDT or PCBs).

In Maine, the most current 303(d) list approved by the US EPA is from the 2016 data. The Maine DEP has indicated they will issue a combined 2018/2020/2022 303(d) list sometime in 2022.

A TMDL document identifies the source(s) of the impairments and recommendations to correct the impairments. In particular, a TMDL document identifies how much of a pollutant a water body can receive and still meet its water quality classification. Typically, the units are identified as pounds per day, which is the basis for the term “Total Maximum Daily Load”. TMDLs typically include a Margin of Safety between 2 and 5% of the TMDL to account for uncertainties or lack of knowledge about the relationship between pollutant loading and water quality.



Total Maximum Daily Load (TMDL) Components

In addition to the Maine 305(b) report and 303(d) list, Maine has developed a special rule, Chapter 502, which has restrictions related to Direct Watersheds of Lakes Most at Risk from New Development and Urban Impaired Streams. This rule became effective in 1997 and has been modified several times over the years. The rule defines an Urban Impaired Stream as a stream that fails to meet its water quality standards because of the effects of stormwater runoff

from developed land. The rule imposes additional stormwater treatment controls on development in the watersheds of Urban Impaired Streams.

1.4.2 Freeport Water Quality Status

This section summarizes the waters in the Town's UA that receive point source discharges from the Town's MS4 and each waterbody's TMDL and impairment status. Table 1 shows the waters where the Town has MS4 discharges and their impairment status relative to the 2022 MS4 General Permit.

The following documents were reviewed in developing Table 1.

- Statewide Bacteria TMDL (September 2009 and 2013 Addendum)
- Statewide Impervious Cover TMDL (September 2012)
- Statewide Non-Point Source TMDL (2015)
- Final 2016 Maine Integrated Water Quality Report and Appendices (a.k.a. Maine 305(b) Report and 303(d) list). Note that the Maine DEP has indicated they will not issue a 2018 303(d) report, instead they will issue a combined 2018/2020/2022 303(d) report.
- US EPA and Maine DEP approved TMDL lists
- Chapter 502 Direct Watersheds of Lakes Most at Risk from New Development and Urban Impaired Streams

Figure 1 shows the fresh waters' locations and their status according to the 2016 303(d) list (from https://maine.maps.arcgis.com/apps/webappviewer/index.html?id=dffb3d2b85904b18978d02fc9d913b5f). The Figure shows Frost Gully Brook as Category 4A (TMDL completed) and Concord Gully Brook as Category 5 (TMDL needed).

Figures 2 and 3 show the status of marine waters according to the Department of Marine Resources (from https://www.maine.gov/dmr/shellfish-sanitation-management/closures/index.html). Because DMR updated its designations and naming structure on 3/1/2021, the Figures reflect the new designations and naming structure. Table 1 shows the new designation and the old DMR designation in effect when the 2022 MS4 General Permit was finalized on 10/15/2020. The Maine DEP does not otherwise show graphic representation of impaired marine and estuarine waters, so these graphics are used.

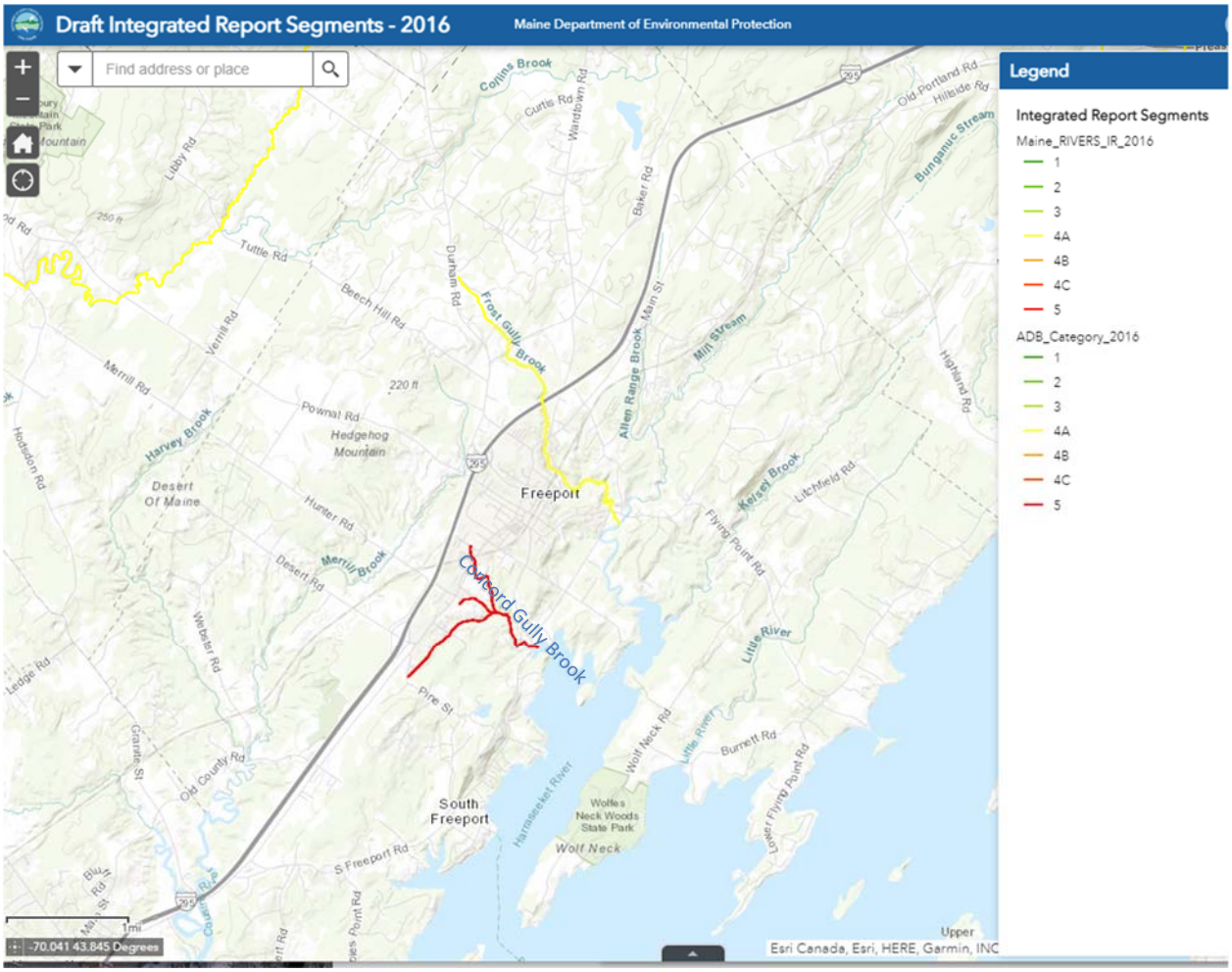


Figure 1 Freeport Freshwater Impairments

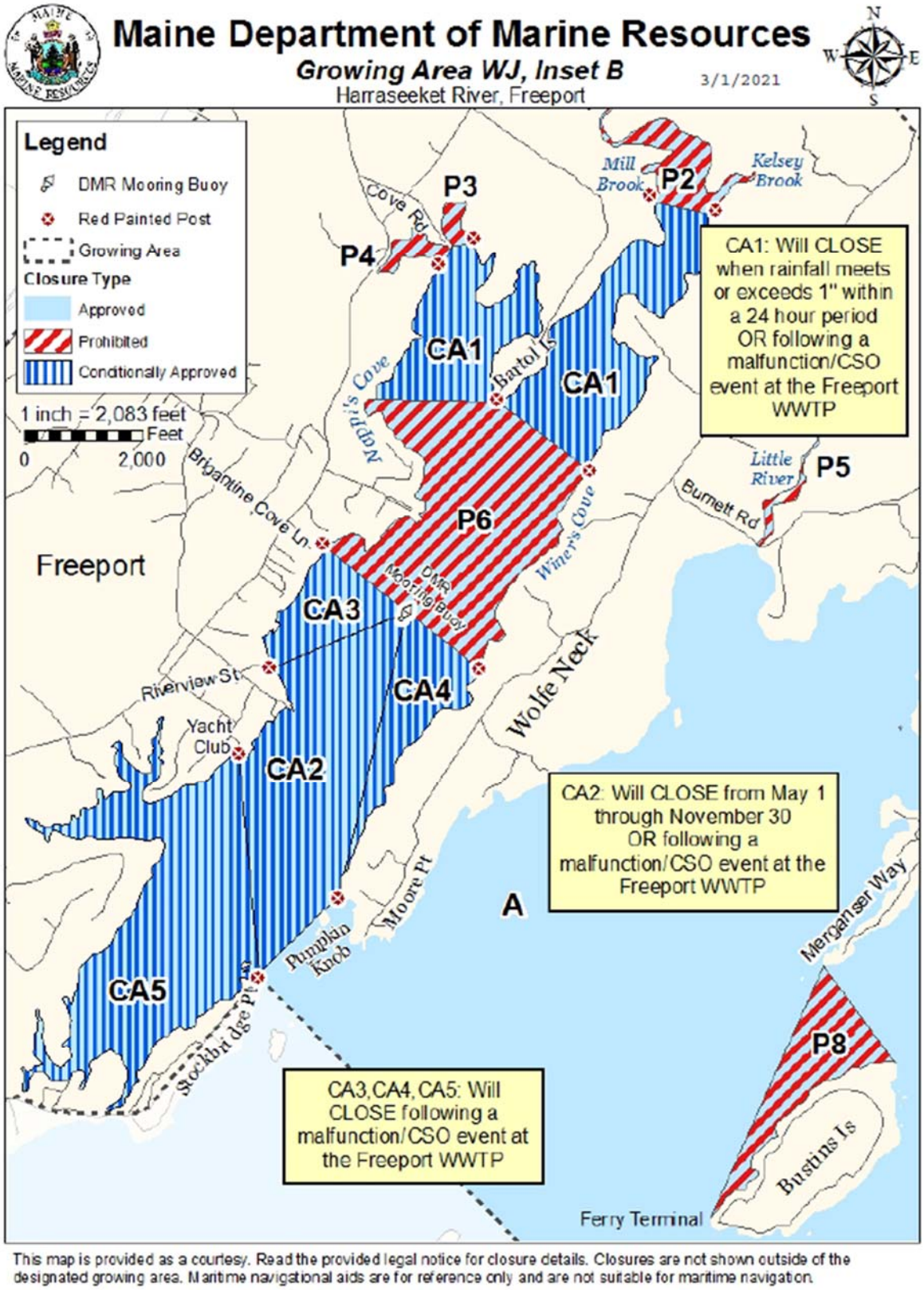


Figure 2 Harraseeket River Shellfish Closure Schedule

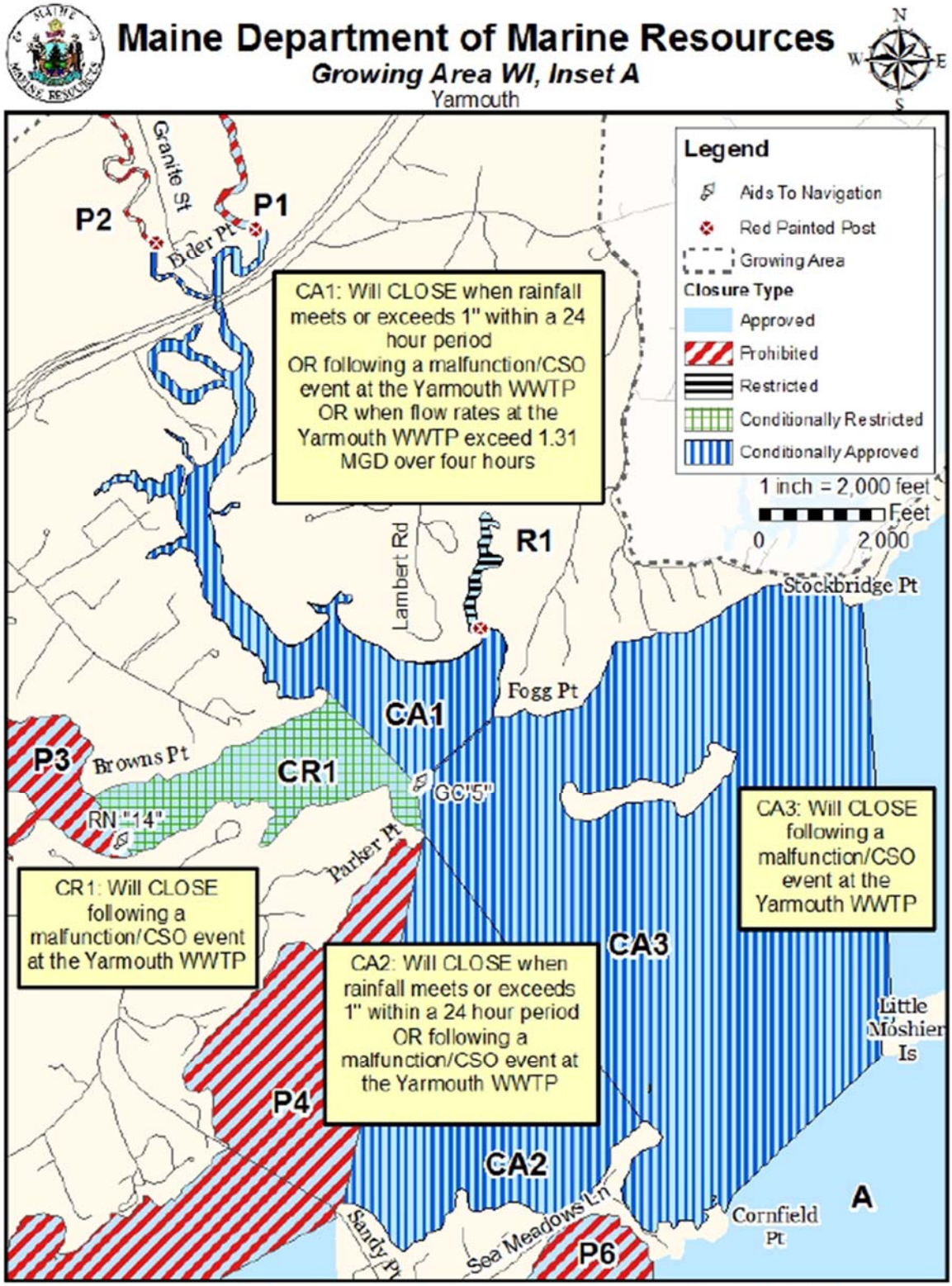


Figure 3 Cousins River Shellfish Closure Schedule

Table 1 Status of Waterbodies Receiving MS4 Discharges – Freeport, Maine						
Water bodies with MS4 discharges	**Maine DEP classification and numeric designation**	**DMR Area**	**Completed TMDLs**	**Urban Impaired Streams (Chapter 502)**	**Non-TMDL listing in 2016 303(d) list**	**Watershed Management Plan / Other Water Quality Document**
Atlantic Ocean - Cousins River Estuary and Redding Creek	802 Class SB	WI (formerly Area14)	None	None	Category 5-B-1(a) for bacteria – TMDL required	
Atlantic Ocean Harraseeket River and tributaries including Mill Stream	802 Class SB	WJ (formerly Area 15)		None	Category 5-B-1(a) for bacteria – TMDL required	
Frost Gully Brook	ME0106000106-602R01 Class A	N/A	Bacteria TMDL and Impervious Cover TMDL	Yes		2017 Geomorphic Study of Frost Gully Brook
Concord Gully Brook	ME0106000106-602R03 Class B	N/A	Impervious Cover TMDL	Yes	5-A TMDL required for Bacteria impairment (was not included in Bacteria TMDL)	2015 Watershed Management Plan
Allen Range Brook	Class B	N/A	None	No	None	None

1.4.2.1 Discharges to Waters with TMDLs

Frost Gully Brook and Concord Gully Brook are the only waters with U.S. EPA-Approved TMDLs that receive stormwater discharges from the Town's MS4 area. Because these waters are also Urban Impaired Streams, the Maine DEP has stated that the 2022 MS4 General permit requirements for Urban Impaired Streams are sufficient to address the TMDL requirements.

1.4.2.2 Discharges to Urban Impaired Streams

Frost Gully Brook and Concord Gully Brook are the Town's only Urban Impaired Streams, and these streams do receive discharges from the MS4 system. As such, the Town will implement three (3) BMPs to address the impairments, as described in Section 2.7 of this SWMP. Progress on addressing these impairments is described in Section 1.4.3, which provides the rationale for the BMPs that will be implemented.

1.4.2.3 Discharges to Impaired Waters without TMDLs

As required by the Fact Sheet to the 2022 MS4 General Permit, the Town consulted with the Maine DEP to assess what actions must be taken to address discharges to waters that do not have TMDLs but are impaired. Table 1 showed several marine/estuarine waters fall into this category because of bacteria impairments that affect shellfishing. These waters are located in the Department of Marine Resources Growing Areas WI and WJ (formerly 14 and 15).

These waters were initially listed in the Statewide Bacteria TMDL, but in 2016, the Maine DEP moved the estuarine/marine waters to the 303(d) non-TMDL category until they can update the Bacteria TMDL to provide more specific spatial data on which areas are included. Therefore, the 2022 MS4 General Permit requirements do not apply to these 303(d) non-TMDL waters, but the Statewide Bacteria TMDL does provide some guidance on how MS4s should handle impairments in these areas.

The Statewide Bacteria TMDL document does not specifically identify the sources of the bacteria impairments. Still, it encourages communities to pursue an action plan based on an investigation of the source. MS4s are already required to conduct investigations of potential illicit discharges under MCM 3 IDDE.

The Statewide Bacteria TMDL document also requires that all sources of bacteria that are prohibited (such as failed septic systems or illicit discharges) be removed. It also requires that any sources of bacteria from allowed discharges (such as this MS4 permitting program) be restricted to concentrations equal to the water quality criteria. MS4s are already required to complete these activities under MCM 3.

In considering MCM 3 requirements, consultation with the Maine DEP on these non-TMDL waters revealed the following outcomes.

1. The DEP has not fully specified the root cause of the impairment but suspects that stormwater is a contributing factor.
2. Implementation of the IDDE elements (e.g. conducting outfall inspections, sampling outfalls during dry weather flow, and completing IDDE investigations to eliminate any bacterial sources) are sufficient to address the impairment until the Bacteria TMDL document can be updated.

1.4.3 Restoration Progress and Approach to BMP Development

This section describes the historical activities that have been completed and the current status of proposed and planned projects for the Town's two Urban Impaired Streams: Frost Gully Brook and Concord Gully Brook. The information provided in this section is not a thorough discussion of all activities completed but is intended to provide the rationale for selecting the three (3) BMPs and their Measurable Goals described in Section 2.7 of this SWMP.

1.4.3.1 CFUP for Frost Gully and Concord Gully Brooks

Maine DEP Standards require that projects in an UIS watershed that need a Site Law permit, or a Chapter 500 permit modification must either pay a compensation fee or mitigate the project's impacts by reducing or eliminating an offsite or onsite pre-development impervious stormwater source. Maine DEP Rule Chapters 500, 501, and 502 describe the details of this process. Effectively a municipality must create a Compensation Fee Utilization Plan (CFUP) for the UIS,

which describes projects that can be implemented to mitigate new impervious cover to receive the compensation fee from a developer. The Town may then construct a project in the CFUP once sufficient funds have been collected.

The Town of Freeport prepared a CFUP in 2007 for the Concord Gully Brook Watershed but has not constructed any projects since no projects have triggered the CFUP rule.

1.4.3.2 Watershed Work in Concord Gully Brook

A Watershed Survey was completed in 2012 and 2013 for Concord Gully Brook. Forty-five impact sites were identified in the survey, and additional water quality monitoring was conducted along with a Fluvial Geomorphic Assessment on a portion of the stream's tributaries. Of the 45 impact sites, two were identified as high impact, 24 were identified as medium impact, and 19 were identified as low impact.

Based on the Watershed Survey, a Watershed Management Plan was created in 2015 and approved by the Maine DEP. A Section 319 Grant, titled Concord Gully Brook Watershed Restoration Project, Phase I was obtained in 2016 and completed in 2018. The restoration project mitigated two medium impact sites (Project ID S-4 at Site 5-13, Concord Road Conveyance Stabilization and Treatment) and one in-stream stabilization site (Project ID IS-9, Sewer Right of Way Stabilization at the end of Casco Street in Freeport on Tributary C). These two sites are close to one another and lent themselves to combined restoration. Approximately 800 feet of eroded stream bank was stabilized at these two sites using pools and cascade structures, riffles, and rock vanes.

Under the Phase I Restoration project, the Town Engineer reviewed and provided three options to address stream and channel erosion at the West Street Culvert outlet (Project ID IS-4 at Site 3-1, an undersized and perched 36-inch culvert causing significant stream channel erosion). This evaluation led to grant applications and a stream restoration design consistent with the Watershed Management Plan's Geomorphic Study.

A Section 319 Grant titled Concord Gully Brook Watershed Restoration Project, Phase II, was obtained in 2018. Design and construction were completed in 2020, which restored the West Street Road Crossing to the historic stream channel width and elevation. This site was one of the two high-priority sites identified for the Watershed.

The second high-priority site, Project ID S-3 at Site 3-7, was mitigated in 2020. The Town worked with L.L. Bean during the permitting and design phases by rehabilitating the outfall behind their Corporate Building.

In addition to in-stream and structural issues, the Concord Gully Brook Watershed Management Plan identified that chloride is a stressor to macroinvertebrates within the stream and would benefit from chloride reduction activities. The Town and ISWG have developed a regional BMP that will be implemented for this UIS related to chloride reduction. That BMP is presented in Section 2.7 of this SWMP.

The Watershed Management Plan also identified implementing the YardScaping program in residential areas as an action item. The Town and ISWG have developed a regional BMP implemented for this UIS related to YardScaping in residential areas. That BMP is presented in Section 2.7 of this SWMP.

Figure 4 provides an overview of recent projects in Concord Gully Brook that are discussed in this section.

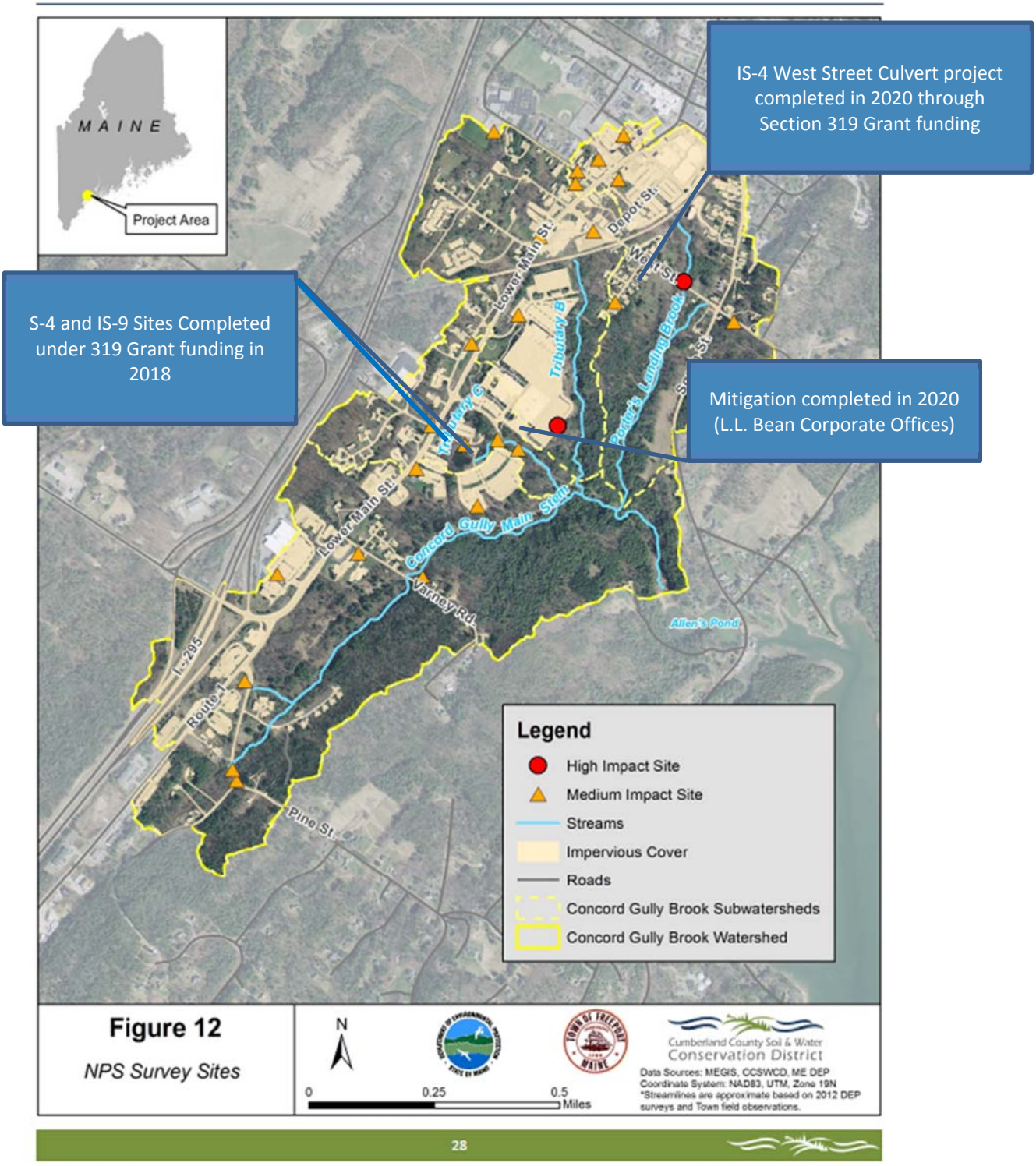


Figure 4 Concord Gully Brook Watershed Projects

1.4.3.3 Watershed Work in Frost Gully Brook

No Watershed Management Plan has been prepared for Frost Gully Brook, but the Town has been proactively addressing impairments whenever work has been completed in the Watershed. The following is a list of projects that have been completed to date in this Watershed that have benefitted water quality.

Repair Work on Cross Country Sanitary Sewer Line

A sanitary force main runs under the Brook for several hundred feet. The Town worked with the Sanitary Sewer District to abandon 3,500 feet of gravity main from Leon Gorman Park to the Mast Landing Pump Station.

2001-2005 Riparian Buffer planning and Installation of 3 BMPs

Project highlights included:

- A wet pond was created at 43 Bow Street with an emergency spillway for overflow of high flow events.
- The Town and CCSWCD worked with Freeport High School students to plant 100 trees in the riparian buffer and around the wet pond installed at 43 Bow Street.
- The Town acquired a property on Park Street, and a dry pond was constructed with an outlet to a constructed/enhanced wetland.
- A cap was installed on the parking lot culvert of the Harraseeket Inn to allow the site's settling basin to treat low flow storm events better.

The Town's work in Frost Gully Brook identified that chloride reduction practices and the YardScaping program's implementation in residential areas would benefit the Brook. The Regional BMPs for these topics will also be applied to Frost Gully Brook as presented in Section 2.7 of this SWMP as well as a BMP to identify and implement a structural BMP retrofit to either disconnect impervious cover or treat stormwater runoff in the Watershed in the form of enhanced street sweeping is also presented in Section 2.7.

1.5 Priority Watersheds

The three previous MS4 General Permits required that regulated MS4s identify a Priority Watershed, and several permit requirements applied to the Priority Watershed. The 2022 MS4 General Permit does not have any specific requirements related to Priority Watersheds. However, it does require that an MS4 have a procedure in place to prioritize watersheds when addressing illicit discharges.

The Town of Freeport uses this prioritization to identify where illicit discharge inspections are conducted first. The Town may also use the prioritization for illicit discharge investigations if there were insufficient resources to address all potential illicit discharges simultaneously. The IDDE Plan under in MCM3 describes in more detail how the prioritization is applied.

The Maine DEP maintains a list of waters that are vulnerable to non-point source pollution. These waters then become available to receive grant funding under Sections 308(b) and 319 of the Clean Water Act as long as the funding is not used to satisfy the conditions of a Clean Water Act Permit (such as the 2022 MS4 General Permit). The list includes the MS4's Priority Watershed.

MS4s should keep in mind that they may not use 319 grant funding to implement any BMPs

required by the MS4 General Permit.

The Town's highest priority watershed is Concord Gully Brook because its stream is classified as an UIS and has the highest percentage of impervious cover. All commercial projects located in this Watershed must include measures that manage stormwater quantity and quality to the pre-development condition. All new projects built over the past 10 years have improved stormwater quality by attenuating post development flow rates below the pre-development condition and by treating the one-inch storm event.

The Frost Gully Brook Watershed is the second priority watershed. The stream is also classified as an UIS. The land area is relatively rural, with all development projects required to comply with Maine DEP and the Town's Stormwater permitting regulations. Water quality within the Watershed is believed to be improving based on projects completed within the past 20 years.

1.6 Obtaining Coverage to Discharge

As required, a Notice of Intent (NOI) to comply with the 2022 MS4 General Permit was submitted to the Maine DEP with this SWMP. A copy of the Town's NOI is provided in Appendix B.

A 30-day Public Notice was provided by both the Maine DEP and the Town to allow the public to comment on the SWMP. A copy of the Public Notice provided by the Town is contained in Appendix B.

Following the review of the SWMP and NOI, and receipt of any public comments, the Maine DEP issues a permittee-specific Maine DEP Order, establishing terms and conditions that are enforceable in addition to the language in the 2022 MS4 General Permit, which is also enforceable. The DEP Order is also referred to as a Second Step Permit.

The permittee-specific DEP Order is also subject to a 30-day public comment period, but only the DEP provides this public notice. The Maine DEP provides any updated information to the Town at the end of the public comment period.

If no comments are received, the Maine DEP provides notice to the Town that they are authorized to discharge under the 2022 MS4 General Permit and the permittee-specific Maine DEP Order.

Once the Maine DEP issues an authorization to discharge, the Town has 60 days to update the SWMP to reflect any new or changed requirements based on the Maine DEP Order and any comments. At that time, the permittee-specific Maine DEP Order will be included in Appendix B. In addition, the permittee will include all comments received in Appendix C along with any notes on how the comments were addressed in the SWMP. The SWMP needs to be resubmitted to the DEP after revision along with a narrative indicating how the SWMP has been modified to be consistent with the 2022 MS4 General Permit and permittee specific Maine DEP Order unless the Department indicates in writing that resubmittal is not required. The new permit conditions do not take effect until 7/1/2022.

1.7 SWMP Availability

The SWMP must be made available to the public by publishing it on the Town Website. A copy

must also be made available to the public at Town Hall. If any of the following entities request a copy, one must be made immediately available to them.

a) US EPA or Maine DEP,
b) Any interconnected or adjacent MS4,
c) Any owner or operator of a water supply company where the MS4 discharges to a water supply watershed, or
d) Members of the public.

1.8 SWMP Modifications during the Permit Cycle

During the 2022 to 2027 permit term, the SWMP must be kept current. As required by the 2022 MS4 General Permit, the Town will amend the SWMP if the Maine DEP or the Town determines the following conditions are warranted.

a) Actions required by the BMPs fail to control pollutants and meet the terms and conditions of the 2022 MS4 General Permit and the permittee-specific Maine DEP Order;
b) 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.

Even though this SWMP is not an enforceable document, if any changes are made, the SWMP will be made available for 30-day public comment by posting the changes on the Town's Website.

If the changes being made are not explicitly required by the MS4 General Permit or the permittee-specific Maine DEP Order, the opportunity for public comment will be made on the Town's website annually and the Maine DEP will be notified of the changes in the annual report following the permit year the changes were made.

If the changes being made are explicitly required by the 2022 MS4 General Permit or the permittee-specific Maine DEP Order, one of the following processes will be followed depending on who identified the need for the change.

- If the changes are initiated by the Town, the Maine DEP will be notified prior to changing any elements by filing a permit application with the Maine DEP that includes a justification to formally modify the requirement.
- If the changes are initiated by the Maine DEP, it will notify the Town, and the Town must respond in writing within 30 days of the notice explaining how it will modify the SWMP. The Town must then modify the SWMP within 90 calendar days of the Town's written response or within 120 calendar days of the Maine DEP notice, whichever is less. Any such modification must be submitted to the Maine DEP for final review.

1.9 Annual Compliance Report and Record Keeping

By September 15 of each year, the Town will electronically submit an Annual Compliance Report using a standardized form provided by and for Maine DEP review. The Annual Compliance Report must be sent to:

Rhonda.poirier@maine.gov
Municipal/Industrial Stormwater Coordinator
Department of Environmental Protection
17 State House Station Augusta,
Maine 04333-0017

The Annual Compliance Report must include the following:

1. The status of compliance with the terms and conditions of the 2022 MS4 General Permit and the Town's permittee-specific Maine DEP Order, based on the implementation of the Town'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
2. A summary of information collected and analyzed, including monitoring data, if any, during the reporting period.
3. A summary of the stormwater activities the Town intends to undertake pursuant to its SWMP to comply with the terms and conditions of the 2022 MS4 General Permit and the Town's permittee-specific Maine DEP Order during the next reporting cycle.
4. A change in any identified BMPs or measurable goals that apply to the SWMP.
5. 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 and 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, and activities taken to comply with the 2022 MS4 General Permit and it's 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.

The Maine DEP will review the annual reports and provide comments to the MS4s. Changes to the report based on the Maine DEP's review comment(s) must be submitted within 60 days of the receipt of the comment(s).

The regulated MS4s must keep records required by the 2022 MS4 General Permit and permittee-specific Maine DEP Order for at least three (3) years following its expiration or longer

if requested by the Maine DEP Commissioner. The regulated MS4s must make records, including this SWMP, available to the public at reasonable times during regular business hours.

2 MINIMUM CONTROL MEASURES

2.1 MCM 1 Education/Outreach Program

The 2022 MS4 General Permit requires the Towns to develop two Education and 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 state-wide survey to assess public awareness of various stormwater issues and related behaviors. The survey results report[1] 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 selecting the BMP based on the ISWG members' understanding of their community. The BMPs are further structured to allow for adaptive education and outreach approaches to create a strong, diverse, and effective campaign over this General Permit duration.

The Town will fulfill the requirements for Public Education and Outreach through participation in the ISWG and the Town's provision of funding to the CCSWCD for Public Education and Outreach services, as described in the following BMPs. The BMPs will be implemented according to their individual timelines over the term of the General Permit.

2.1.1 BMP 1.1 – Outreach to Raise Awareness Campaign.

Responsible Party - Town Engineer (with implementation assistance from ISWG)

The 2022 MS4 General Permit requires the permittee to raise awareness of the public and 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, i.e. development/construction.

Background for Measurable Goal 1.1a Public Audience: The Think Blue Maine campaign began in 2003 as a state-wide 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 education efforts to provide consistent

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

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 state-wide 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 – The Town, through its participation in the ISWG, will raise 15%[2] of the target audience's awareness of what happens to stormwater at their residence or workplace. 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 D 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 or demographics.
Evaluation: Effectiveness will be evaluated annually by tracking process indicators[3] for each tool implemented that year and by tracking impact indicators[4] where available (see Appendix D).
Implementation schedule: A minimum of three of the tools from Appendix D will be implemented each year for the permit duration.

Background for Measurable Goal 1.1b Development/Construction Audience: 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 state-wide stormwater education to developers and contractors to reduce development and construction-related stormwater pollutants that are not already required by MCM 4. Due to the development/construction sector's cyclical nature, a baseline evaluation will be conducted in Permit Year 1 to establish contractor and developer awareness and the baseline target audience.

[2] As recommended in the EPA's "Getting in Step: A guide for conducting watershed outreach campaigns" (2003), when 15 to 20 percent of an audience adopts a new idea or behavior, it will be able to permeate to the rest of the audience.
[3] Indicators related to the execution of the outreach program.
[4] Indicators related to the achievement of the goals or objectives of the program.

Measurable Goal 1.1b – The Town, through its participation in the ISWG, will raise awareness of developers and contractors by 15% from the Permit Year 1 established baseline audience of developers and contractors about construction-related stormwater pollutants and methods available to reduce the discharge of those pollutants.

Target Audience: Developers and contractors who are located within the ISWG region.
Overarching Message: "Through proper design and site management, erosion and sediment control best management practices can reduce the potential to impact local water bodies negatively." 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 D 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 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 D). Effectiveness will also be measured by the number of Maine DEP-certified contractors located in the ISWG region over the permit term.
Implementation schedule: A minimum of three of the tools will be implemented each year for the permit duration.

2.1.2 BMP 1.2 – Outreach to Change Behavior Campaign

Responsible Party - Town Engineer

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:

- 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.
- 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. Respondents expressed a willingness 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.
- 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 Casco Bay's health. 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.
- Several ISWG communities have encountered problems with dog waste not being picked

up[5] or not being properly disposed of in the trash, causing local water quality concerns[6] and unsanitary conditions for the public and municipal staff.

- 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.
- Dog owners ages 25 to 64 are the least likely age group to pick up after their dog[7]. However, dog owners age 25 to 64 receive their information through different outreach methods[8]. Two audiences will be created to provide effective messaging on proper dog waste management and 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.

Measurable Goal 1.2a – The Town, through its participation in the ISWG, will work towards changing the behavior of 15% of pet owners from the Permit Year 1 established baseline audience of dog owners so more will properly dispose of their pet waste.

Target audience: Dog owners ages 25 to34 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 D 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 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 D). Effectiveness will also be evaluated by conducting visual (observational) surveys of dog waste disposal at public areas and tracking the presence of dog waste bags in catch basins.
Implementation schedule: A minimum of three of the tools will be implemented each year for the permit duration.

Measurable Goal 1.2b – The Town, through its participation in the ISWG, will work towards changing the behavior of 15% of pet owners from the Permit Year 1 established baseline audience of dog owners so more will properly dispose of their pet waste.

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.

[5] https://www.pressherald.com/2019/03/21/south-portland-raises-a-red-flag-over-dog-waste-problem-at-hinckley-park/
[6] https://www.pressherald.com/2019/08/30/south-portland-park-tests-positive-for-algae-that-can-harm-dogs/
[7] Hall, S.L. (2006 June) Survey on Poop: Half don't scoop; neighborhoods seeking solutions. *The News & Observer,* pp. B1.
[8] https://umaine.edu/undiscoveredmaine/small-business/resources/marketing-for-small-business/social-media-tools/social-media-statistics-details/

Outreach Tools: A minimum of three outreach tools will be selected from Appendix D 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 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 D). Effectiveness will also be evaluated by conducting visual (observational) surveys of dog waste disposal at public areas and tracking the presence of dog waste bags in catch basins.
Implementation schedule: A minimum of three of the tools will be implemented each year for the duration of the permit.

2.1.3 BMP 1.3 – Effectiveness Evaluation

Responsible Party - Town Engineer (with implementation assistance from ISWG)

Measurable Goal 1.3a – The Town, through its participation in ISWG, will submit an annual report each year of the 2022 MS4 General Permit term documenting each BMP's implementation. The annual report will include the message 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.

Measurable Goal 1.3b – In Permit Year 5 of the 2022 MS4 General Permit the Town, through its participation in ISWG, the Town will evaluate 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 and documentation of overall changes during the permit term. The evaluation will identify recommendations for future awareness and behavior change target audiences, messages, tools, and benchmarks. A comprehensive survey will be conducted for the ISWG region to evaluate the impact of the awareness campaigns.

2.1.4 BMP 1.4 – Additional Activities

Responsible Party - Town Engineer (with implementation assistance from ISWG)

Measurable Goal 1.4a – The Town will continue to support the CCSWCD'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.

2.2 MCM 2 Public Involvement and Participation

The Town will fulfill the requirements for Public Involvement and Participation through participation in the ISWG and the Town's funding provisions to CCSWCD for Public Involvement and Participation services or directly fulfilling the requirements, as described in this section of the SWMP.

BMP 2.1 - Public Notice Requirement

Responsible party - - Town Engineer (with implementation assistance by ISWG)

Measurable Goal 2.1a – The Town will follow applicable State and local public notice requirements for their SWMPs and NOIs to comply with the MS4 General Permit. Copies of the NOIs and plans will be made available on the Town's website. The Town will document public meetings related to their stormwater program and attendance of those meetings in their annual report.

Measurable Goal 2.1b – The ISWG members meet as a group 6 times per year to review issues associated with implementing the SWMP and MS4 General Permit. These meetings will be publicized through the CCSWCD website and on ISWG member websites and are open to the public.

BMP 2.2 - Host Public Events

Responsible party - - Town Engineer (with implementation assistance by ISWG)

Measurable Goal 2.2a – The Town will annually host, conduct, or participate in a public community event with a pollution prevention 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 the Town's website, the Town's and CCSWCD's social media accounts, and local distribution. The annual report will include a description of the event and the estimated attendance and participation.

2.3 MCM 3 Illicit Discharge Detection and Elimination

The Town will continue to implement its IDDE program, which includes:

- A Watershed-based map of the stormwater infrastructure,
- A written IDDE Plan which describes:
  - Inspections of the infrastructure during dry weather (and monitoring of outfalls that flow during dry weather)
  - Investigations of potential illicit discharges,
  - Enforcement of the Non-Stormwater Discharge Ordinance
  - A Quality Assurance Project Plan (QAPP)
- Development of a list of outfalls that have the potential to cause illicit discharges during wet weather.

The following BMPs will be implemented to meet this Minimum Control Measure. The Town's Code of Ordinances are referenced in this MCM and can be found here: Charter, Ordinances and Codes | Freeport ME (freeportmaine.com)

2.3.1 BMP 3.1 – Continue to Implement the Non-Stormwater Discharge Ordinance

Responsible Party – Code Enforcement Officer and Town Engineer

Measurable Goal 3.1a – The Town adopted a Non-Stormwater Discharge Ordinance on

December 21, 2004. The Ordinance is Chapter 27 Non-Stormwater Discharge Ordinance in the Town's Code of Ordinances. The Code Enforcement Officer assists the Town Engineer by issuing Notices of Violations when the Town Engineer's IDDE investigations identify it is appropriate. The Town will continue to enforce this ordinance throughout the permit cycle.

The Town will update the Regulated MS4 and Urbanized Area definitions in Chapter 27 by June 30, 2023 in conjunction with MCM 4 and 5 ordinance changes.

Measurable Goal 3.1b – The Town will document the results of enforcement actions taken for illicit discharges on an excel spreadsheet.

2.3.2 BMP 3.2 – Maintain the Written IDDE Plan

Responsible Party - Town Engineer

Measurable Goal 3.2a - The Town prepared a written IDDE Plan to contain the elements required in the 2022 MS4 General Permit (Part IV.C.3.b.i through vi). The plan is included in Appendix E of this SWMP. The IDDE Plan will be reviewed annually and updated periodically to reflect any changes to the program.

Measurable Goal 3.2b - The Town will perform the following actions.

1. Conduct a wet weather assessment in accordance with the 2022 MS4 General Permit Part IV.C.3.f,
2. Incorporate the wet weather assessment into their IDDE Plan by the end of Permit Year 5 (6/30/2027).
3. Conduct the wet weather monitoring during the next Permit Cycle.

2.3.3 BMP 3.3 - Maintain Storm Sewer System Infrastructure Map

Responsible Party - Town Engineer

Measurable Goal 3.3a – The Town created a watershed-based map of the MS4 infrastructure during the first two permit cycles (2003-2013) and continued to update it during the 2013-2022 permit cycle. The map shows the locations of stormwater catch basins, drain manholes, connecting surface and subsurface infrastructure, showing the direction of pipe flow and the locations of stormwater outfalls. The infrastructure is documented in a Geographic Information System (GIS), which contains unique identifiers for outfalls and catch basins, as well as outfall material, size, and receiving water. The map is updated annually as follows:

- The GIS geodatabase is updated to reflect changes to infrastructure based on inspections by the Town Engineer by June 30 each year,
- The GIS geodatabase is updated when as-built drawings become available for municipal infrastructure.

2.3.4 BMP 3.4 – Infrastructure Inspections and Outfall Monitoring

Responsible Party - Town Engineer

Measurable Goal 3.4a – The Town will conduct infrastructure inspections for pollutants using the following frequency.

- One dry weather inspection will be conducted on each outfall at least once per permit cycle as required by the 2022 MS4 General Permit, but the Town will continue to attempt to inspect each outfall annually if time and municipal budget allow.
- Dry weather ditch inspections will be conducted whenever ditch maintenance work is anticipated
- Catch basins will be inspected for evidence of pollutants during their required sediment inspections (see BMP 6.4 for frequency).

Measurable Goal 3.4b – If an outfall is observed to be flowing during a dry weather inspection, the flow will be sampled and analyzed once per permit term using the methods described in the IDDE Plan unless it is exempt from dry weather investigations (as described in Part IV.C.3.e.vi of the 2022 MS4 General Permit). Outfalls sampled during dry weather will be handled as follows.

1. Outfalls where sampling and analysis reveal the potential for an illicit discharge: The Town will investigate the catchment area associated with the outfall for potential illicit discharges described under Measurable Goal 3.5a.
2. Outfalls where sampling and analysis do not reveal the potential for an illicit discharge: The Town will document the dry weather flow as either uncontaminated groundwater, water from a natural resource, or an allowable non-stormwater discharge.

The Town's IDDE Plan (contained in Appendix C) describes the information collected electronically during infrastructure inspections (MG 3.4a) and dry weather flow monitoring (MG 3.4b).

The Town will summarize either the monitoring results or the exempt status on the excel spreadsheet used for MG 3.5a or in a GIS geodatabase. If the monitoring reveals the outfall has a potential illicit discharge, as described in the IDDE Plan, the outfall will be investigated as required under Measurable Goal 3.5a.

2.3.5 BMP 3.5 – Conduct Investigations on Suspect Illicit Discharges

Responsible Party - Town Engineer

Measurable Goal 3.5a – Whenever the Town becomes aware of a potential illicit discharge, it will investigate the source using methods described in the written IDDE Plan (Appendix E). The Town will track the status and outcome of the investigations using an excel spreadsheet.

2.3.6 BMP 3.6 – Significant Contributors of Pollutants

Responsible Party - Town Engineer

Measurable Goal 3.6a - During the 2013-2022 Permit Cycle, the Maine DEP identified that hydrant flushing was a potential contributor of pollutants to MS4s. The DEP published an issue profile providing water districts and departments guidance on meeting ambient water quality standards for chlorine during hydrant flushing. The document was designed explicitly for discharges to MS4s. In addition, the Maine Rural Water Association and Maine Water Utilities Association prepared a guidance document and training to show departments and districts how to meet the requirements of the issue profile.

The Town previously made annual requests to the Maine Water Company to provide an annual report describing their hydrant flushing dechlorination processes. The Town will continue to request that they provide the reports each year.

Measurable Goal 3.6b – If any of the following allowed non-stormwater discharges (in addition to hydrant flushing) are identified as significant contributors of pollutants to the MS4, the Town would work with responsible discharges to control these sources, so they are no longer significant contributors of pollutants.

- 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
- firefighting activity runoff (hydrant flushing is addressed in MG 3.6a)
- water line flushing and discharges from potable water sources
- individual residential car washing
- dechlorinated swimming pool discharges

2.4 MCM 4 Construction Site Stormwater Runoff Control

The Town will update, implement, and enforce its Construction Site Stormwater Runoff Control Program. This program pertains to construction activities that disturb greater than or equal to one acre of land, including projects less than one acre that are part of a larger common plan of development or sale as required by the 2022 MS4 General Permit. The program will be implemented through the BMPs described in this section.

Overall, the Town's existing ordinances meet most elements of the Construction Site Stormwater Runoff Control MCM, but some minor modifications are required to meet the 2022 MS4 General Permit requirements. The following is a summary of the Town's existing ordinance requirements that address this MCM.

Zoning Ordinance (May 2008)
The Town's Zoning Ordinance specifies which projects require Site Plan (Section 602) or Subdivision (Chapter 25) review according to the proposed use in each district. The districts and thresholds for various reviews are specified in Article IV Zoning District Regulations. A review of the various districts and local permitting thresholds shows that generally, sites that disturb one acre or more will require Site Plan or Subdivision Review. The one-acre or more threshold is not explicitly listed, but these projects are always inspected and enforced in accordance with the Findings of Facts and Conditions of Approval.

Article V of the Zoning Ordinance contains Performance Standards
Section 529 contains the Stormwater Management Standards, which apply to all Site Plan and

Subdivisions reviewed. There are four standards listed. The first standard requires onsite stormwater using natural features to the greatest extent possible. The second standard requires post development stormwater flows to be the same or lower than pre-development flows offsite unless the stormwater discharge is to the Cousins, Royal or Harraseeket Rivers. The third standard requires retention of the first half-inch of runoff from any storm event for 24 hours or treatment to address stormwater discharge quality. The fourth standard requires any applicant triggering a Maine DEP Chapter 500 or Site Law permit to document their compliance with those requirements.

Section 602 of the Zoning Ordinance (Site Plan Review) describes two levels of review in Freeport. Smaller projects receive review via a Staff Review Board (Town Planner, Fire Chief, Code Enforcement Officer, Town Engineer, and Public Works Superintendent and any other departments as needed). Larger projects receive review via the Project Review Board. Section 602.D specifies what documents are required to be submitted for Site Plan Review by the Staff or Project Review Boards. Although an Erosion and Sediment Control Plan is not explicitly required, this section does require the submittal of a stormwater drainage plan (602.D. 4.j) in accordance with the Criteria and Standards identified in Section 602.F. The Criteria and Standards section for Stormwater contain general requirements to prevent adverse impact to the storm drain system and downstream waters (602.F.1.e) and a statement that the project must not result in water pollution, erosion or sedimentation to surface waters (602.F.1.l). It does not contain any specific numerical sediment or erosion control standards; however, projects are always inspected and enforced in accordance with the Findings of Facts and Conditions of Approval.

Chapter 25 Subdivision Review (Subdivisions)
Section 11.4, Soil Erosion, contains statements prohibiting erosion and requires sediment control during construction. In addition, Appendix A states the Project Review Board may require an applicant of a major or minor subdivision to submit an erosion and sediment control plan in accordance with the Maine Erosion and Sedimentation Control Handbook for Construction: Best Management Practices. The plan is submitted for all projects in practice but is always required for sites that trigger the MS4 thresholds. These projects are always inspected and enforced in accordance with the Findings of Facts and Conditions of Approval.

The Town's Code of Ordinances are referenced in this MCM and can be found here: Charter, Ordinances and Codes | Freeport ME (freeportmaine.com).

The following BMPs will be implemented to meet this Minimum Control Measure.

2.4.1 BMP 4.1 – Erosion Sediment Control Ordinance

Responsible Party – Town Planner and Town Engineer

Measurable Goal 4.1a – The Town's Subdivision Ordinance (Chapter 25) requires an Erosion and Sediment Control Plan at the discretion of the Project Review Board. The Site Plan Review Procedures in the Town's Zoning Ordinance specify that any commercial and subdivision application modifying more than 500 square feet receive approval by the Staff or Project Review Board only if sedimentation and erosion are controlled. These Town Ordinances generally cover sites that disturb one or more acres of land including projects less than one acre that are part of a larger common plan of development or sale as required by the 2022 MS4 General Permit, but do not contain the specific one-acre threshold. In addition, the Ordinances do not contain all the elements specified in Attachment C to the 2022 MS4 General Permit. However, these projects

are always inspected and enforced in accordance with the project's Findings of Facts and Conditions of Approval.

The Town will update Chapter 25 Subdivision Ordinance and Section 602 of the Zoning Ordinance by 7/1/2022 to include the specific one-acre threshold trigger and to either contain or reference a set of standards consistent with the applicable sections of Attachment C to the 2022 MS4 General Permit (which are the same as the Maine DEP Stormwater Rule Chapter 500, Appendix A (Erosion and Sediment Control), Appendix B (Inspections and Maintenance), and Appendix C (Housekeeping).

Measurable Goal 4.1b – Before completing Measurable Goal 4.1a, the Town will develop either on its own or regionally, a set of standards consistent with the construction site requirements contained in Attachment C to the 2022 MS4 General Permit, (which are the same as the Maine DEP Stormwater Rule Chapter 500, Appendices A through C.

The standards will include a requirement to control waste such as discarded building materials, concrete truck washouts, chemicals, litter, and sanitary waste at the construction site that may cause adverse impacts to water quality if passed through the storm drain system.

2.4.2 BMP 4.2 – Site Plan Review Procedures

Responsible Party - Town Planner and Town Engineer

Measurable Goal 4.2a – The Town's Site Plan Review procedures in Section 602 of the Zoning Ordinance contain the required elements listed in the 2022 MS4 General Permit (e.g. consideration of potential water quality impacts, erosion control, waste storage, the ability for the public to comment at publicly noticed meetings, and procedures to consider information submitted by the public) These procedures will continue to be implemented.

2.4.3 BMP 4.3 – Procedures for Notifying Construction Site Developers and Operators

Responsible Party – Town Planner Town Engineer

Measurable Goal 4.3a – The Responsible Parties will continue notifying developers and contractors of requirements to obtain coverage under the Maine Construction General Permit and Chapter 500, Stormwater Management Law for sites that disturb one or more acres of land through implementation of Section 529.4. This section requires any applicant requiring a Maine DEP stormwater management permit to provide documentation to the Staff or Project Review Board to obtain the required permit.

2.4.4 BMP 4.4 –Develop Written Procedures, Conduct and Document Construction Site Inspections

Responsible Party – Town Engineer

Measurable Goal 4.4a – By 7/1/2022, the Town will create a written document to describe its procedure for construction site inspections and will include the following 2022 MS4 General Permit requirements:

- Identify that typically sediment and erosion control inspections are conducted by the Code Enforcement Officer, the Town Engineer, or a qualified third-party

inspector for all construction sites.

- Identify that the inspector will review any inspection deficiencies with the contractor during or after the inspection to allow for BMP repairs to be done no later than the next workday, additional BMPs to be added within 7 calendar days, and significant repairs to be completed within seven calendar days and before any storm event (i.e. rainfall).
- Require three inspections during the active earth-moving phase of construction.
- Require a minimum of one inspection annually until the project reaches substantial completion.
- Require a final inspection at project completion to ensure that permanent stabilization has been achieved and all temporary erosion and sediment controls have been removed.
- Include use of one of the construction inspection forms provided in Appendix E, depending on the project size.

Measurable Goal 4.4b. The Town Engineer will conduct sediment and erosion control inspections and document construction sites that trigger the ordinances using the Code Enforcement Inspection database (organized by map/block/lot number). The Town Engineer has access to the database and will document the inspections. The records are linked to ArcGIS software for visual display. The database contains the site's name, map and lot number, dates of inspections, and any enforcement actions and corrective actions taken.

2.5 MCM 5 Post Construction Stormwater Management in New Development/ Redevelopment

The Town will continue to implement its Post Construction Stormwater Management Program to address 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 Town's MS4 through implementation of the following BMPs.

The Town's current Ordinances contain provisions to prevent or minimize water quality impacts from development in accordance with the requirements of the MS4 General Permit. The Town's Code of Ordinances are referenced in this MCM and can be found here: Charter, Ordinances and Codes | Freeport ME (freeportmaine.com).

In addition to the overview provided for MCM 4, the following ordinances relate to the MCM 5 requirements:

Chapter 53 Post Construction Ordinance Requirements

- Prepare and implement a Post Construction Stormwater Management Plan.
- Execute and record a Maintenance Agreement for any infrastructure that will remain under private control.
- Submit an annual report documenting that all onsite BMPs have been inspected by a qualified inspector (on the list of qualified inspectors maintained by the Town Engineer) and are either functioning as intended or, if they require maintenance and repair, a list of deficiencies and documentation once they are corrected.

The Town's Code of Ordinances are referenced in this MCM and can be found here: Charter, Ordinances and Codes | Freeport ME (freeportmaine.com) . The following BMPs will be

implemented to meet this Minimum Control Measure.

2.5.1 BMP 5.1 – Promote Strategies to Prevent or Minimize Water Quality Impacts

Responsible Party – Town Planner and Town Engineer

Measurable Goal 5.1a – The Town will rely on the Maine DEP Chapter 500 Stormwater Rules, which provide stormwater treatment standards for sites that disturb one or more acres of land and are either: in the Watershed of an Urban Impaired Stream or a lake most at risk that create 20,000 square feet of impervious cover, or in any other watershed that creates 1 acre or more of impervious cover, or is in any watershed where 5 acres or more will be developed.

Measurable Goal 5.1b – The Town will continue to encourage developers to use Low Impact Development BMPs through the Staff and Project Review Board process. During the Conceptual Plan phase, the Town notifies the developer of the Chapter 529, Stormwater Management Standards, which requires onsite detention using natural features to the greatest extent possible, and retention of the first half inch of runoff from a storm event for 24 hours, or other stormwater quality improvement measures. In addition, the Town Engineer will continue to be available to developers to discuss options of incorporating low-impact development techniques.

2.5.2 BMP 5.2 – Maintain Post Construction Ordinance or Similar Measure

Responsible Party – Town Planner and Town Engineer

Measurable Goal 5.2a – During the 2008-2013 permit cycle, the Town passed a Post Construction Stormwater Discharge Ordinance (Chapter 53 Post Construction Stormwater Management Ordinance effective June 2, 2009) which requires that any site that disturbs one or more acres to annual certify to the Town by May 31 that they have inspected and maintained their stormwater BMPS. The Town will continue to track the following sites.

- The cumulative number of sites that have post construction BMPs discharging into the permittee' s MS4;
- The number of sites that have post construction BMPs discharging into the permittee's MS4 that were reported to the Town;
- The number of sites with documented functioning post construction BMPs; and,
- The number of sites that required routine maintenance or remedial action to ensure that the post construction BMP is functioning as intended.

Measurable Goal 5.2b – By 7/1/2022, the Town's Post Construction Stormwater Management Ordinance (Chapter 53) will be updated to State that for any sites reporting that maintenance is required:

- Deficiencies will be corrected within 60 days of identification, and a record of the corrective action taken will be provided to the Town's Enforcement Authority within that same 60-day period.
- If it is not possible to correct the deficiency and notify the Town within 60 days, the property owner will coordinate with the Enforcement Authority (i.e., Code Enforcement Officer) to establish an expeditious schedule to correct the deficiency and will provide a record of the corrective actions taken.

In conjunction with the updates, the definitions of MS4 and Urbanized Area in Chapter 53 will be updated to reflect the requirements of the 2022 MS4 General Permit.

2.6 MCM 6 Pollution Prevention/Good Housekeeping for Municipal Operations

This MCM's objective is to mitigate or eliminate pollutant runoff from municipal operations on property that is owned or managed by the Town and located within the 2000-2010 UA. The following BMPs are implemented to ensure compliance with MCM 6.

2.6.1 BMP 6.1 – Operations at Municipally-Owned Grounds and Facilities

Responsible Party – Town Engineer

Measurable Goal 6.1a – During the previous MS4 permit cycle, the Town developed an inventory of municipal operations conducted in, on, or associated with facilities, buildings, golf courses, cemeteries, parks, and open space owned or operated by the Town that have the potential to cause or contribute to stormwater pollution. The Town will annually review and update its inventory.

Measurable Goal 6.1b – During the previous MS4 permit cycle, the Town developed and implemented Operation and Maintenance (O&M) Procedures for the municipal operations that could cause or contribute to stormwater pollution. The Town will continue to implement these O&M Procedures and annually review and update them to improve strategies and practices to eliminate or better control pollutant discharges.

2.6.2 BMP 6.2 – Training

Responsible Party – Town Engineer

Measurable Goal 6.2a – The Town will annually train the Public Works employees in Good Housekeeping, Pollution Prevention, and the O&M Procedures.

2.6.3 BMP 6.3 – Continue Street Sweeping Program

Responsible Party – Public Works Superintendent

Measurable Goal 6.3a - Each permit year, the Town will continue to sweep all publicly accepted paved streets and publicly owned paved parking lots as soon as possible after snowmelt.

2.6.4 BMP 6.4 – Catch Basin Cleaning

Responsible Party – Public Works Superintendent

Measurable Goal 6.4a – The Town will inspect its catch basins for sediment content at least once every two years and clean catch basins that accumulate more than 25% of the sump's capacity.

Measurable Goal 6.4b – The Town will track which catch basins accumulate excess sediment (i.e., more than 50% of the sump contains sediment) to ensure those basins are inspected the following year and cleaned if necessary. If a catch basin exhibits less than 25% sediment in its sump for two consecutive years, it is removed from the excess sediment list, and can be inspected every two years.

Measurable Goal 6.4c – The Town will continue to beneficially re-use any catch basin grit that

does not exhibit evidence of sewage, oil and grease, litter, or other pollutants in accordance with Maine DEP Solid Waste Management Rule 418, Beneficial Use of Solid Waste. Grit that exhibits evidence of pollutants will be profiled to assess its waste classification and disposed of at an appropriately licensed solid waste facility.

2.6.5 BMP 6.5 –Stormwater Conveyance and Outfall Rehabilitation and Maintenance

Responsible Party – Town Engineer

Measurable Goal 6.5a – The Town will maintain and upgrade the stormwater conveyance systems based on the results of the catch basin, outfall, and ditch inspections, in accordance with the urgency of any needed repairs or maintenance. The Town continues to perform systematic capital upgrades of the storm drain system in correlation with the Town's road paving program. Town Staff also inspect and maintain its public stormwater treatment systems.

2.6.6 BMP 6.6 – Stormwater Pollution Prevention Plans (SWPPPs)

Responsible Party – Town Engineer

Measurable Goal 6.6a –Freeport's Transfer Station and Public Works Garage are outside the UA and are regulated under the Maine DEP Multi-Sector General Permit for Stormwater Discharges from Industrial Activities and are therefore exempt from this MS4 program. The Town prepared SWPPPs for these facilities in accordance with the Multi-Sector General Permit regulations.

The school system is administered and operated by Regional School Unit No. 5, an independent regional government, separate from the Town government. The school bus garage is collocated with the Public Works Garage and is not regulated under this MS4 program since it lies outside the UA.

Measurable Goal 6.6b - The Town implements the SWPPPs through the Multi-Sector General Permit program.

2.7 Impaired Waters BMPs

The Town's regulated MS4 has discharges to Frost Gully Brook and Concord Gully Brook, which are classified as Urban Impaired Streams in Maine DEP Rule Chapter 502 and are listed in the Maine Statewide Impervious Cover Total Maximum Daily Load (TMDL). Frost Gully Brook is also listed in the Maine Statewide Bacteria TMDL. The 2022 MS4 General Permit requires that the Town implement three BMPs for each of these Urban Impaired Streams, and the Maine DEP has stated that no additional actions need to be taken to address the TMDLs.

In addition, the Town's MS4 discharges to the Cousins River Estuary, which is listed in the 2016 303(d) list for bacteria impairments that are not subject to a TMDL, but the Maine DEP indicated no additional BMPs are required in this SWMP to address this impairment.

A Watershed Management Plan was created for Concord Gully Brook, and several other evaluations have been conducted for Frost Gully Brook. These documents are referenced in the following BMPs.

To meet the Urban Impaired Stream requirement of the 2022 MS4 General Permit, the Town will implement the following Best Management Practices.

2.7.1 BMP 7.1 – Minimize Chloride Contributions to Frost Gully Brook and Concord Gully Brook

Responsible Party – Town Engineer (with implementation assistance from CCSWCD)

As described in Section 1.4 of the Town's SWMP, chlorides were identified as a stressor in the Concord Gully Brook Watershed Management Plan. Although Frost Gully Brook does not have a Watershed Management Plan, chloride contributions to stormwater runoff may be a stressor.

The Town has already taken several actions over the past few years to minimize their chloride contributions during deicing. The Town will continue to implement the following chloride reduction practices, which are also specified in the Maine BMP Manual for Snow and Ice Control, 2015:

- 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 Town will implement the following Measurable Goals related to chloride reduction in both its UIS(s).

Measurable Goal 7.1a. At least one representative from the Town will attend an annual regional training or roundtable to learn about new chloride reduction techniques coordinated by the ISWG or another organization.

Measurable Goal 7.1b. The Town will complete the following actions to facilitate future reduction of chlorides through application by private contractors:

- In Permit Year 1, and alternating years thereafter until it passes, the Town will provide educational outreach to legislators regarding limited liability legislation, provide comments on draft legislation, and provide testimony at the committee level once drafted. The information provided will identify how chlorides affect water quality and how limited liability legislation will support a training, data collection, and certification program like the New Hampshire "Green Snow Pro" program for private applicators.
- In years when limited liability legislation has not passed and is not active for procedural reasons, the Town will provide winter maintenance education and outreach to the public. The messaging will be delivered using two tools per year selected from Appendix D.
- Should the legislation be successful:
    - The first year after it passes, the Town will provide awareness of its passage in a presentation to the Council.
    - Beginning the second and subsequent years after passage, the Town will educate property managers, private contractors, or the public on winter maintenance practices to maintain public safety and protect the environment. These practices

will be delivered using two tools per year selected from Appendix D.

2.7.2 BMP 7.2 – Targeted Behavior Change: YardScaping 2.0

Responsible Party – Town Engineer (with implementation assistance from CCSWCD)

Measurable Goal 7.2a – As identified in Section 1.4 of the Town's SWMP, public education was identified as a recommendation in the Watershed Management Plan(s) for Concord Gully Brook, and has been identified by the Maine DEP as appropriate for Frost Gully Brook. This BMP will provide targeted education to the residents living adjacent to the Urban Impaired Stream(s). The goal of the enhanced public education is to encourage the residents to improve their riparian zone by creating or improving and maintaining the riparian buffer with native species to minimize erosion and to implement one of the YardScaping concepts. This BMP will incorporate targeted and regional outreach with other ISWG municipalities that have urban impaired streams. Within the ISWG municipalities with urban impaired streams, the following items will occur each year:

- One digital and one print outreach to residents within the UIS area designated above about ways to create, improve, and maintain their riparian zone.
- Offer four regional workshops on YardScaping and buffer BMPs (workshops will alternate between communities with UIS each year).
- Product and plant recommendations will be identified at regional point of sale partners.

Surveys will be conducted immediately after workshops and then a follow up survey will be conducted after the next growing season to evaluate behavior changes of the target audience.

2.7.3 BMP 7.3 – Enhanced Public Street and Public Parking Lot Sweeping in Frost Gully Brook Watershed

Responsible Party – Town Engineer

The Town will conduct monthly street sweeping on all Town-owned roads and parking lots in the UIS Watersheds between May and October each year that this BMP is in effect. The Downtown Village area between Main, School, Bow, Depot, and West Street will be swept weekly between May and October of each year that this BMP is in effect.

2.7.4 BMP 7.4 – Enhanced Public Street and Public Parking Lot Sweeping in Concord Gully Brook Watershed

Responsible Party – Public Works Superintendent

Measurable Goal 7.4 – The Town will conduct monthly street sweeping on all Town-owned roads and public parking lots in the UIS Watersheds between May and October each year that this BMP is in effect. The Downtown Village area between Main, School, Bow, Depot, and West Street will be swept weekly between May and October of each year that this BMP is in effect.

3 GENERAL REQUIREMENTS

3.1 Certification

The General Permit requires that this Stormwater Management Plan be certified by either a principal executive officer or ranking elected official. This section provides the necessary 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."

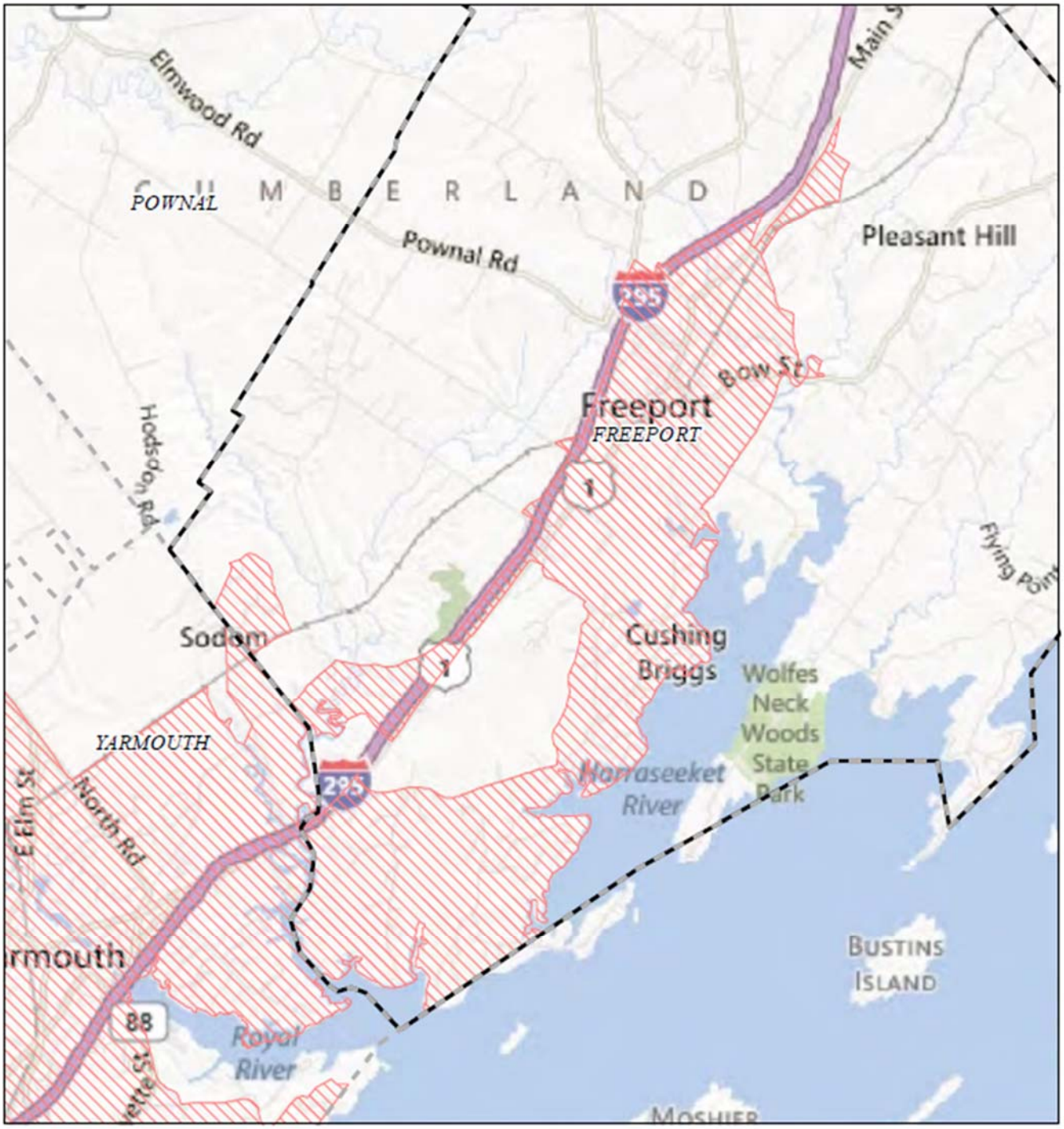
Signature: _____ Date: 03/30/21

Peter Joseph

Title: Town Manager

APPENDIX A

URBANIZED AREA MAP



NPDES Phase II Stormwater Program
Automatically Designated MS4 Areas

Freeport ME

Regulated Area (2000 + 2010 Urbanized Area)

0 1 2 3 4 Kilometers
0 1 2 3 Miles

Town Population:	**7872**
Regulated Population:	**3100**

(Populations estimated from 2010 Census)

EPA

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

APPENDIX B

NOTICE OF INTENT and PERMITTEE-SPECIFIC MAINE DEP ORDER

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	Town of Freeport			Permittee ID #	MER041017
Name and title of chief elected official or principal executive officer	Peter Joseph, Town Manager				
Mailing Address	30 Main Street				
Town/City	Freeport	State	ME	Zip Code	04032
Daytime Phone	207-865-4743	Email	pjoseph@freeportmaine.com		
PRIMARY CONTACT PERSON FOR OVERALL STORMWATER MANAGEMENT PROGRAM (if different than PEO/CEO)					
Name and Title	Adam Bliss, Town Engineer				
Mailing Address	30 Main Street				
Town/City	Freeport	State	ME	Zip Code	04032
Daytime Phone	207-865-4743	Email	abliss@freeportmaine.com		
STORMWATER MANAGEMENT PLAN (SWMP)					
Urbanized Area (sq. mi.)	3.5				
I have attached our updated SWMP with ordinances, SOPs, forms. ☐					
Name of streams, wetlands, or waterbodies to which the regulated small MS4 discharges (*attach additional sheets as necessary*): Concord Gully Brook, Frost Gully Brook, Cousins River and Redding Creek, Harraseeket River and tributaries including Mill Brook, and Allen Range Brook.					
List of impaired waterbodies that receive stormwater from the regulated small MS4 (*attach additional sheets as necessary*): Concord Gully Brook, Frost Gully Brook, Cousins River Estuary, Harraseeket River					

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.

Signature of Permittee		Date	3/30/21

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

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	

The Town of Freeport, Maine will file a Notice of Intent (NOI) to comply with the Maine General Permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer Systems issued 10/15/2020 (MER041000 W009170-5Y-C-R) and an associated Stormwater Management Plan (SWMP) with the Maine Department of Environmental Protection. The NOI and SWMP will be filed on or about 3/30/2021. A copy may also be seen at the Freeport municipal offices and on the Town website: www.freeportmaine.com

The DEP will review the submittal and assess if it is complete for processing within 60 days of submittal. Once it has been deemed complete for processing, it will be made available on the Maine DEP website for 30-day public comment: https://www.maine.gov/dep/comment/index.html. A request for public hearing or request that the Board of Environmental Protection assume jurisdiction over this application must be received by the DEP, in writing, no later than 20 days after the application is found acceptable for processing. Requests must indicate the interest of the person filing the request and specify the reasons why a hearing is warranted. Unless otherwise provided by law, a hearing is discretionary and may be held if the Commissioner or the Board finds significant public interest or there is conflicting technical information.

The NOI and SWMP are also available for viewing at the DEP Office in Augusta by scheduled appointment during normal business hours during the pandemic. Written public comments or requests for information may be made to the Division of Water Quality Management, Department of Environmental Protection, State House Station #17, Augusta, ME 04333- 0017; telephone (207) 592-6233 and must include the name of the municipality filing the NOI and the Permit number provided above.

APPENDIX C

SUMMARY OF PUBLIC COMMENTS RECEIVED

APPENDIX D

Education & Outreach Tools, Levels of Effort, and Effectiveness Benchmarks

Below is a list of tools with their corresponding minimum level of effort and effectiveness benchmark that will be selected from each year to implement BMP 1.1 and 2.1.

Outreach Tool	Minimum Level of Effort	Effectiveness Benchmark
Poster	10 posters/municipality	Total # of posters distributed (process indicator)
Flyer	1 flyer	Total # of flyers distributed (process indicator)
Brochure	1 brochure	Total # of brochures distributed (process indicator)
Rack Card	1 rack card	Total # of rack cards distributed (process indicator)
Newsletter Article	2 newsletter articles	Total # of newsletters distributed (process indicator)
Post Card	1 post card	Total # of postcards distributed (process indicator)
Factsheet	1 factsheet	Total # of factsheets distributed (process indicator)
Sign	5 signs/municipality	Total # of signs distributed (process indicator)
Email Newsletter	4 email newsletters	Number of people reached with email (process indicator) Number of interactions with email (e.g., link clicks) (impact indicator)
Municipal Website Content	Semiannual updates to website stormwater content	Number of visitors to webpage (impact indicator)
Think Blue Maine Website Content	Semiannual updates to website content	Number of visitors to website (impact indicator)
Social Media Post (each platform counts as separate tool)	12 posts	Amount of post engagement (e.g., reactions, comments, shares, etc.) (impact indicator)

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.) (impact indicator) Number of people reached with ad (impact indicator)
Social Media Video (each platform counts as separate tool)	3 videos	Amount of video engagement (e.g., views, reactions, comments, shares, etc.) (impact indicator)
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 (impact indicator) Amount of ad engagement (e.g., link clicks) (impact indicator)
Radio Ad	1 radio ad	Number of people reached with ad (impact indicator)
Radio Segment	1 radio segment	Number of people reached with segment (impact indicator)
Television Ad (broadcast or streaming)	1 television ad	Number of people reached with ad (impact indicator)
Television News Segment (broadcast or streaming)	1 television news segment	Number of people reached with segment (impact indicator)
Newspaper Article	1 newspaper article	Number of people reached with article (impact indicator)
Newspaper Ad	1 newspaper ad	Number of people reached with ad (impact indicator)
Webinar/Workshop	7 hours of training offered (multiple webinars/workshops may be offered to reach 7 hours)	Number of workshop attendees (process indicator)
Social Gathering	3 events	Number of interactions (process indicator)
Tabling	3 events	Number of interactions (process indicator)
Outreach partnership with local retailer	50% of industry retailers in region participating	Number of local retailers participating (process indicator)
Outreach partnership with local organization	3 content shares by partner organization	Number of people reached (process indicator)
Item with branding/messaging	1 item with branding/messaging	Total # of items distributed (process indicator)
A DEP-approved tool	Minimum level of effort will be determined based on the tool	Effectiveness benchmark will be determined based on the tool

APPENDIX E

IDDE PLAN AND QAPP

Illicit Discharge Detection and Elimination Plan

For the

Town of Freeport,

Maine

For the

General Permit for Storm Water Discharges from Municipal Separate Storm Sewer Systems

March 2021

Table of Contents

List of Attachments

1.0 INTRODUCTION

The Town of Freeport is subject to the requirements of the Maine Department of Environmental Protection (Maine DEP) General Permit for Storm Water Discharges from Municipal Separate Storm Sewer Systems (hereafter referred to as the MS4 General Permit).

Maine DEP defines an illicit discharge as any discharge to an MS4 that is not composed entirely of storm water, except that the following are not considered illicit discharges:

- Discharges authorized under a Maine DEP permit (38 M.R.S §413.)
- Uncontaminated groundwater,
- Water from a natural resource (such as a wetland), or
- an allowable non-storm water discharge.

See Section 3.0 of this Plan for a list of the allowed non-storm water discharges.

The MS4 General Permit requires permittees to address six Minimum Control Measures throughout the Town's Urbanized Area:

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

This document describes the IDDE Plan for the Town of Freeport, Maine. The IDDE Plan described in this document fulfills the Minimum Control Measure 3 IDDE requirements specified in Part IV.C.3.b of the MS4 General Permit.

1.1 IDDE Responsibilities in the Town of Freeport

The Town's Engineer is responsible for overall permit compliance, and for implementation of this IDDE Plan. The following other Town personnel support implementation of this Plan:

Town Engineer or Designee: Conducts outfall inspections, is primary administrator for ArcGIS ESRI licensing (for mapping) and ensures other elements of IDDE Plan are completed.
Public Works staff: conduct ditch and catch basin inspections and monitoring, and conduct illicit discharge investigations, supported by third party contractors where necessary.
Planning Assistant: and facilitates any required ordinance changes related to non-stormwater discharges through Planning Board.
Code Enforcement Officer/Health Inspector: assists Public Works staff in illicit discharge investigations and Issues Notices of Violation when needed (e.g., if plumbing inspections are needed) .

1.2 Amendments and updates to the IDDE Plan

The MS4 General Permits are designed to provide coverage for five-year periods. The first MS4 General Permit applicable to the Town of Freeport became effective in 2003 and expired in 2008. Subsequent General Permits were issued, providing the Town with continuous coverage for their storm water discharges.

This IDDE Plan has been developed to meet the requirements of the 2022 MS4 General Permit. This Plan will be updated if any of the following occur:

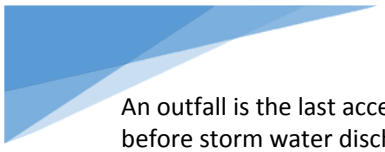
- a new permit is issued which changes the requirements described in this IDDE Plan document,
- the Town of Freeport identifies that the Plan is not effective,
- municipal operations change which need to be reflected in this Plan.

The Town Engineer will either modify this IDDE Plan, or engage a third party to update the document.
The following table briefly summarizes the origin and amendments to this document.

Date of Document	Description of changes
March 2021	Created document to reflect 2022 MS4 General Permit requirements.

1.3 Typical Illicit Discharges

The Center for Watershed Protection (CWP) developed a comprehensive IDDE Manual in 2004, and provided an abbreviated update in 2011 which classifies illicit discharges into three categories related to frequency of discharge. This categorization allows communities to develop a comprehensive IDDE Plan that will address all kinds of illicit discharges. The three categories of illicit discharges identified in the CWP manual are described below along with examples of the types of discharges that may be encountered:



An outfall is the last accessible point before storm water discharges to a water body. Some things that are NOT outfalls include: driveway culverts that connect ditch segments, culverts that convey water bodies under roadways, and pipes that discharge to other storm water infrastructure elements.

1. Transitory illicit discharges are typically one-time events resulting from spills, breaks, dumping, or accidents. Examples of transitory illicit discharges include:

    a. paint equipment rinse water
    b. carpet cleaning water
    c. sediment from construction sites
    d. wash water from vehicles other than individual residential car washing by an owner
    e. oil or gasoline spill from a vehicle crash or other source
    f. yard waste
    g. litter or pet waste

    Transitory illicit discharges are often reported to an authority through a citizen complaint line or following observation by a municipal employee during regular duties. Because they are not recurring, they are the most difficult to investigate, trace, and remove. The best method to reduce

transitory discharges is through general public education, education of municipal personnel to minimize spills and accidents, tracking of discharge locations (to identify potential patterns associated with spills), and enforcement of an illicit discharge ordinance.

2. Intermittent illicit discharges occur occasionally over a period of time (several hours per day, or a few days per year). Intermittent discharges can result from legal connections to the storm drain system, such as a legal sump pump connection that is illegally discharging washing machine water, a single home sanitary connection, or from illegal connections such as floor drains from industrial or commercial operations. Intermittent discharges can also result from activities such as excessive irrigation or wash down water from exterior areas. The 2022 General Permit requires that MS4s consider illicit discharges that might result from dumping. One example of this would be trash or litter dumped in/near stormwater structures might leak leachate into the system intermittently. Because intermittent discharges are longer lasting than transient, they are more likely to be discovered during an opportunistic or regularly scheduled inspection. They are less difficult to trace and remove than transitory discharges but can still present significant challenges. These discharges can have large or small impacts on water bodies depending on pollutant content.

3. Continuous illicit discharges are typically the result of a direct connection from a sanitary sewer, overflow from a malfunctioning septic system, or inflow from a nearby subsurface sanitary sewer that is malfunctioning. Continuous illicit discharges are usually easiest to trace and can have the greatest pollutant load but are typically the most costly and time consuming to correct because they likely involve construction and alteration of subsurface connections. (CWP and Robert Pitt 2004)

1.4 Overview of IDDE Plan Components

The MS4 General Permit requires an IDDE Plan be developed and implemented to assist the Town in locating and eliminating Illicit Discharges. An overview of each component of the Plan is provided in this subsection, and the remaining sections of this document describe how the Town of Freeport is implementing each component.

- Development of a watershed-based map: The Town is required to develop a watershed-based map of the storm sewer system infrastructure including: catch basins, connecting surface and subsurface infrastructure, the direction of in-flow and out-flow pipes, and the locations of all discharges from the Town's MS4 outfalls into any other interconnected MS4 or receiving water. The catch basins and outfalls must have unique identifiers. The following outfall information is included in the map system: the type of outfall (a connected pipe, a culvert, or a ditch), the material, its size, the name and location of the nearest named water body to which it discharges. Section 2.0 of this document describes the Town's watershed-based map.

- Authority to Prohibit Illicit Discharges: To the extent allowable under state or local law, the Town must effectively prohibit, through an ordinance or other regulatory mechanism, non-storm water discharges into the system and implement appropriate enforcement procedures and actions. Section 3.0 of this document describes how the Town's Non-Storm Water Discharge Ordinance is implemented.

- Identification of High Priority Areas for Inspections: Prior MS4 General Permits required that the Town identify priority areas that need to be protected from illicit discharges. The 2022 MS4 General Permit does not have this requirement, but it does require that the Town have "Procedures for prioritizing watersheds". The Town of Freeport conducts inspections more frequently than the 2022 MS4 General Permit requires, so they continue to conduct inspections in the priority watershed first. The Town's high priority areas are described in Section 4.0 of this document, including a discussion of the basis for determining the high priority areas.

- Procedures to Locate Illicit Discharges (inspections): The Town must develop procedures for locating illicit discharges by conducting dry weather outfall inspections and assessing catch basins for evidence of pollutants. The Town also conducts opportunistic ditch inspections. The 2022 MS4 General Permit also requires monitoring be conducted on outfalls that are flowing during dry weather. Section 5.0 of this document describes the Town's inspection Plan.

- Procedures to Investigate and Remove Illicit Discharges: The Town must develop procedures for locating the source of the discharge and procedures for the removal of the source. Sections 6.0 and 7.0 of this document describe how the Town investigates potential discharges to determine their sources and removes illicit discharges once the source is discovered.

- Procedures to Document Illicit Discharges: The Town must develop procedures for documenting actions and evaluating impacts on the storm sewer system subsequent to the removal. Section 8.0 describes how the Town tracks illicit discharges.

Section 9.0 of this document describes the record retention requirements of the MS4 General Permit and Section 10.0 of this document provide references.

2.0 STORMWATER INFRASTRUCTURE MAP

The Town of Freeport maintains storm water infrastructure information in Geographic Information System (GIS) format. Freeport's storm water map was created from GPS data collection, review of subdivision plans, review of Maine Department of Transportation plans, and from public works knowledge of storm water infrastructure. Field verification has been used when needed to refine locations and infrastructure information.

The Town Engineer maintains the stormwater GIS layers in the Town Hall office, using the ArcGIS Standard license. The Town's Engineer has overall responsibility for data integrity.

Though the storm water infrastructure information is not currently available to the general public it will be provided whenever requested verbally or in writing. The following subsections provide general information on the infrastructure naming protocols and procedures in use that keep the maps updated.

2.1 Infrastructure Naming Protocols

The Town of Freeport naming protocols are generally as follows:

- Catch basins and other structures in the Town have a 4-digit unique identifier in the format: XYYY, where the X is either 1, 2, 3, 4, 5, or 6 depending on the location and associated series number and the Y's are numeric values between 000 and 999.
- Outfalls carry a unique three-digit identifier in the format: YYY. Drain manholes and pipes are also named using a straight numbering schema DMH-YYY.

- Ditch names are given a unique identifier as a three-digit number between 000 and 999.
- Other water quality or quantity control devices are given numeric designations also numbered between 000 and 999.

2.2 Procedures to Update Map of Infrastructure

The following describes the scenarios under which changes to the storm drain system are typically made, and how the map subsequently gets updated:

1. Generally, the Public Works Department constructs minor changes to the system based on immediate or planned need without formal design drawings. When the Public Works Department makes changes to the storm drain infrastructure, the Town Engineer updates the GIS layer to reflect these changes. These changes can be made within weeks of the physical changes on the ground depending on the workload of the Town Engineer.

2. More significant changes are typically constructed after preparation of formal design drawings, whereupon either the Public Works Department or a private contractor constructs the changes. Where a private contractor constructs the changes, the Town requires a formal as-built plan be prepared and submitted to the Town Engineer in electronic format, so that the infrastructure can be imported into the GIS. A third-party consultant could be used to update the infrastructure for large projects such as this. These changes are typically made annually.

The Town Engineer also maintains paper maps as needed, which are updated if/when deemed necessary by the Town Engineer.

3.0 AUTHORITY TO PROHIBIT ILLICIT DISCHARGES

The Town of Freeport authority to prohibit illicit discharges became effective December 21, 2004, when the Town passed a Non-Storm Water Discharge Ordinance as part of the Town's Code of Ordinances, Chapter 27. The ordinance was created from a model ordinance developed by the Maine Municipal Association for Towns that are regulated by the MS4 General Permit. Though the MS4 General Permit is only applicable to the Urbanized Area of Town, the Town implements the Non-Storm Water Discharge Ordinance in all areas of Town.

The Ordinance allows the following non-storm water discharges to the storm drain system as long as they do not cause or contribute to violations of water quality standards:

- 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);
- hydrant flushing and firefighting activity runoff;
- water line flushing and discharges from potable water sources;
- individual residential car washing.

The Town's Codes Enforcement Officer administers the ordinance, and has the authority to issue a notice of violation if needed.

It should be noted that discharges associated with dye testing are also allowed with verbal notice to the Enforcement Authority.

In addition, discharges of hydrant and water line flushing are required to be dechlorinated if they are to be discharged to a portion of the MS4 system which discharges to a small stream. In accordance with the Maine DEP 11/18/2016 Issue Profile for Drinking Water System Discharges to Regulated Small MS4s, the Maine Water Company either aerates or dechlorinates during flushing to meet Total Residual Chlorine (TRC) acute water quality criteria as follows:

- Fresh water 19 ug/L (adjusted to 50 ug/L, per the Maine DEP as the reporting limit for available reliable and consistent test methods)
- Marine water 13 ug/L (adjusted to 50 ug/L, per the Maine DEP as the reporting limit for available reliable and consistent test methods)

The Maine Water Company flushes the system annually and provides an annual report to the Town describing water dechlorination methods in use and testing results for any flushing conducted.

4.0 IDENTIFICATION OF PRIORITY AREAS

Prior MS4 General Permits required that the Town identify priority areas that need to be protected from illicit discharges. The 2022 MS4 General Permit does not have this requirement, but the Town of Freeport conducts inspections more frequently than the 2022 MS4 General Permit requires, so they continue to conduct inspections in the priority watershed first. The Town may also use this prioritization for illicit discharge investigations in the event there are insufficient resources to address all potential illicit discharges simultaneously.

To identify areas within the Town that are high priority for illicit discharge inspections, the Town considered impaired waters (i.e., waters that are not meeting their designated classification) as

highest priority.

The Town of Freeport identified Concord Gully Brook as the highest priority and Frost Gully Brook as its second highest priority because of their water quality impairments.

5.0 PROCEDURES TO LOCATE POTENTIAL ILLICIT DISCHARGES

The Town of Freeport uses the following methods to locate illicit discharges:

1. Observations during catch basin cleaning
2. Citizen reports of illicit discharge issues
3. Dry weather outfall inspections
4. Outfall Sampling and Analysis (for flowing outfalls and to identify potential illicit discharge sources)
5. Opportunistic Ditch inspections
6. Other Opportunistic Inspections

5.1 Catch Basin Cleaning Inspections

Each year, a public works employee attempt to inspect all the Town's accessible catch basins to assess which need to be cleaned. During this inspection process, the employee is also inspecting to assess if any oil, litter, sewage, or other evidence of illicit discharges is present. The employee uses a form with information similar to the form contained in Attachment B of this IDDE Plan. If the employee sees any evidence of illicit discharges, the evidence is documented on the form, and provided to the Town Engineer for further action.

5.2 Citizen Reports of Illicit Discharges

Citizen reports of illicit discharge issues received by phone are routed to the Town Engineer or Public Works Department to be investigated. Occasionally the public will call or email the Planner or Code Enforcement Officer, who directs the caller to Public Works.

5.3 Dry Weather Outfall Inspections

Although not required by the General Permit, the Town attempts to inspect all piped and ditch outfalls every year, if time and resources allow in accordance with the following:

- Inspections will be performed during periods of dry weather whenever possible.
- Inspections will be performed where field inspections may be performed in a safe and efficient manner;
- Inspections will be performed during periods of no or minimal snow cover and prior to the growth of vegetation (or after leaves have fallen) such that outfalls may be easily spotted;
- Observations will include the follow at a minimum: observations of sheen, discoloration, foaming, evidence of sanitary sewage, excessive algal growth and similar visual indicators, and detection of odor;
- Photographs may be taken at the time of inspection for either maintenance or illicit discharge documentation.
- MS4 outfalls will be inspected where the Town has safe and legal access to the structure to be inspected.
- When maintenance or potential illicit discharge issues are identified, the Public Works Supervisor will be informed so that he may prioritize the work with other required work for the Town.

5.4 Outfall Sampling and Analysis

Outfall sampling and analysis is required under the 2022 MS4 General permit when an outfall is observed to be flowing during dry weather conditions whether or not it has exhibited evidence of an illicit discharge.

Dry weather is defined in the permit as a time when:

- There has been no snow or ice melt for 72 hours or
- There has been no precipitation greater than ¼ inch for 72 hours

If an outfall is inspected within the 72 hour window for rain or melting, and it is not flowing, the inspection can be considered a dry weather inspection.

Outfalls and/or other structures may also be sampled if other evidence of illicit discharges is observed during inspection. The Town Engineer may solicit the assistance of a third-party

contractor to collect a sample for field screening depending on the conditions encountered.

A Quality Assurance Project Plan (QAPP) has been developed to provide sampling personnel the information that will assist them in collecting samples and using field equipment, test kits and obtaining analyses. The QAPP describes the sampling procedures that should be used as well as the analytical methods and field equipment that are appropriate for use in investigating potential illicit discharges and flowing outfalls. The QAPP also provides guidance on interpretation of the results obtained so that investigators can make informed decisions about whether to continue investigating a potential source, or whether the results indicate a flowing outfall might be from a natural source. . The QAPP is contained in Attachment C to this IDDE Plan.

Wet weather sampling is not required by the MS4 General Permit at this time, but the Public Works Department may choose to conduct wet weather sampling if they suspect a discharge occurs only during wet weather (such as may be the case for failed septic systems).

5.5 Ditch Inspections

The 2022 MS4 General Permit does not require ditch inspections be completed. Ditch inspections were completed by the Public Works Department on all ditches in the fall of 2014. The ditch inspections were completed using the IPAD and online map system.

Moving forward, the Town will generally inspect ditches for potential illicit discharges whenever maintenance work on ditches is being completed. The Town follows these guidelines in conducting inspections:

- Field inspection will be performed during periods of dry weather where no significant precipitation has occurred in the preceding 72 hours;
- Inspections will be performed during periods low flow where field inspections may

be performed in a safe and efficient manner;

- Inspections will be performed during periods of no snow cover and prior to the growth of ditch vegetation such that potential outfalls may be easily spotted;
- Evidence of potential illicit discharges will be documented in the IDDE Tracking Sheet.
- If maintenance issues are identified, the Public Works Supervisor will be informed so that he may prioritize the work with other required work for the Town.

5.6 Septic System Inspections

As required by the 2013-2022 MS4 General Permit, by June 30, 2016, the Town developed a list of aging (i.e., greater than 20 years old) septic systems in its highest priority watersheds (Frost Gully Brook and Concord Gully Brook) that might discharge to the MS4 if they were to fail. Ten property owners were identified as having aged septic systems that might discharge into the Town's MS4. The owners were notified that their septic systems were aged, and may need replacement, and 9 responded to the letter informing the Town they had replaced their systems. The 10th property did not respond, but a site inspection was completed from the right-of-way, and there were no signs of malfunction (such as unusually green vegetation, eroded areas or ponded areas).

Because this Plan did not yield useful information on septic system failures, it is no longer being conducted.

5.7 Cooperation with other MS4s

Because the Freeport MS4 infrastructure has interconnections with the Maine DOT, it may be necessary to conduct cooperative investigations with them or to inform them of issues associated with the Freeport infrastructure. The other MS4 contacts with which Freeport has interconnections are:

Maine DOT –Kerem Gungor Kerem.Gungor@maine.gov Ph: 207-592-3489

Town of Yarmouth – Steve Johnson sjohnson@yarmouth.me.us Ph: 207-846-2401

Documentation of correspondence with interconnected MS4s is contained in Attachment D to this IDDE Plan.

6.0 PROCEDURES TO INVESTIGATE ILLICIT DISCHARGES

Investigations of illicit discharge issues are conducted by the Town Engineer with assistance from the Public Works Department. The Town relies on visual observations of the location where the illicit discharge was reported as a first step in identifying the source of the illicit discharge. If the evidence of the illicit discharge is still present in the initial structure or location where it was reported, the Town uses their knowledge of the infrastructure routing to systematically inspect other structures upstream of the initial location until either the evidence of the illicit discharge is no longer present, or until they locate a potential source of the illicit discharge.

For example, if evidence of gray water were observed during catch basin cleaning of a separated storm drain system, the Public Works Department would review as-built drawings, and the available GIS, and would inspect drain manholes and/or catch basins upstream of the initial observation until they could isolate one or more locations from which the gray water was likely emanating.

In the event visual observations of the structures cannot identify the source of an illicit discharge, the Town Engineer may employ televising, systematic dye testing, or smoke testing to identify the source. The Town Engineer could conduct dye testing, but would need to hire a third party contractor for smoke testing or televising. Sampling and analysis may also be conducted as described in subsection 5.4.

If no source can be located, the area may be re-inspected to assess if the illicit discharge was a one-time occurrence, or is a repeating occurrence, whereupon additional investigations may be

conducted.

7.0 PROCEDURES TO REMOVE ILLICIT DISCHARGES

Once the potential source of the illicit discharge is identified, the Town Engineer would identify and contact the responsible party in order to initiate removal or discontinuation of the illicit discharge.

If the illicit discharge is caused by a private entity, the Codes Enforcement Officer may invoke the authority granted him/her under the Non-Storm Water Discharge Ordinance (See section 3.0 of this IDDE Plan). The Town Engineer typically provides initial verbal or email notice to any responsible party, then the Codes Enforcement Officer follows up with a Notice of Violation. The Notice of Intent specifies the illicit discharge be removed within 60 days of its source identification, but allows that if removal within 60 days is not possible, the responsible party must work with the Codes Enforcement Officer to establish a schedule to remove the illicit discharge as expeditiously as possible.

If the illicit discharge is caused by the Town, the Town Engineer would contact the department most responsible and work with them to remove or discontinue the illicit discharge within 60 calendar days of identification of the source, or would develop a schedule to expedite elimination.

8.0 PROCEDURES TO DOCUMENT ILLICIT DISCHARGES

The Town will document the progress of investigating and removing illicit discharges using an IDDE Tracking Sheet. The spreadsheet is maintained by the Town Engineer. Each year, the Town is required to complete an annual report summarizing the activities completed under the MS4 Plan. The Town Engineer will print or retain an electronic copy of the IDDE Tracking Sheet for the year as back-up documentation of investigative and removal work completed.

9.0 RECORDS RETENTION

The Town Engineer will retain paper or electronic files of inspections and investigations including laboratory reports, for a minimum of three years after expiration of the MS4 General Permit Term. If the General Permit expires on June 30, 2021, the files may be discarded July 1, 2024.

10.0REFERENCES

CWP and Robert Pitt 2004. *Illicit Discharge Detection and Elimination Manual* – A Guidance Manual for Plan Development and Technical Assessments. October 2004 Available: http://cfpub1.epa.gov/npdes/stormwater/idde.cfm

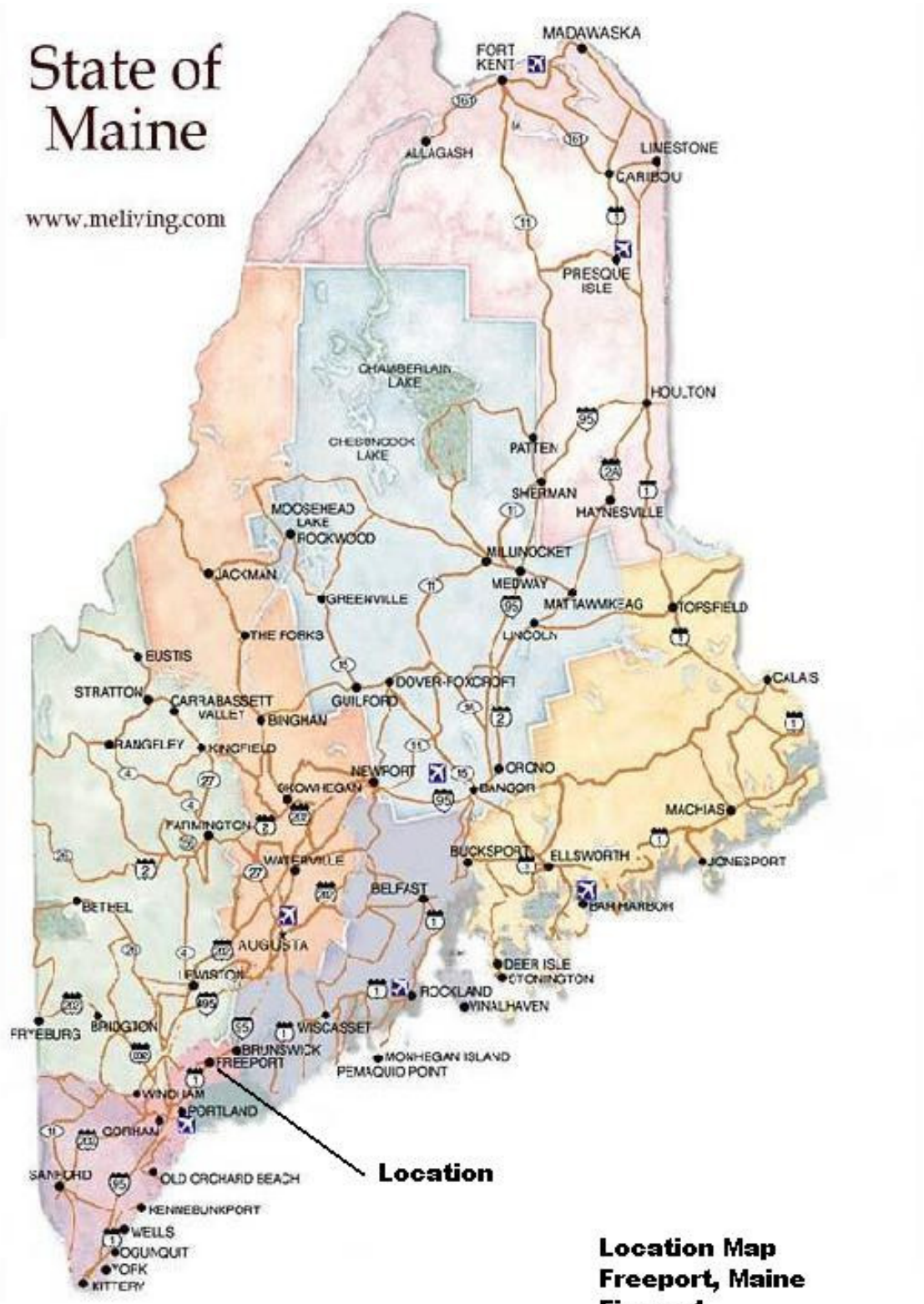
Aquarion Engineering Services and Casco Bay Estuary Partnership 2004. *Guidelines and Standard Operating Procedures for Stormwater Phase II Communities in Maine.* Available: http://www.thinkbluemaine.org/docs/index.htm

CWP and Robert Pitt 2011 Illicit Discharge Detection and Tracking Guide Available: http://www.cwp.org/2013-04-05-16-15-03/idde

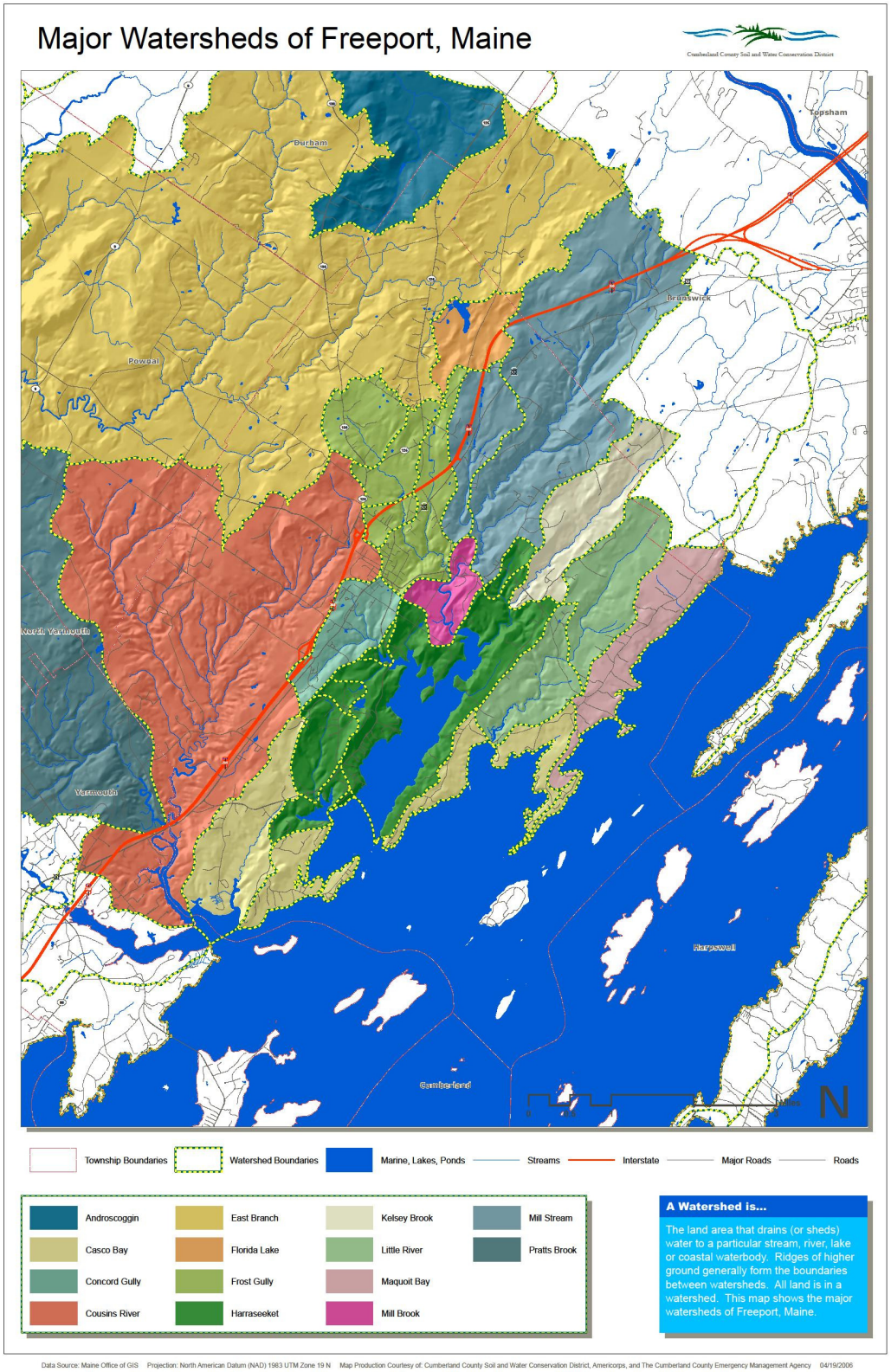
USEPA New England Bacterial Source Tracking Protocol 2012. Provided by USEPA to Integrated Environmental Engineering. Available at https://www3.epa.gov/region1/npdes/stormwater/ma/2014AppendixI.pdf

ATTACHMENT A

FREEPORT WATERSHED MAP



Location Map
Freeport, Maine
Figure 1



MAJOR WATERSHEDS IN FREEPORT

ATTACHMENT B

INSPECTION FORMS

Catch Basin Cleaning Form

Date _____	Precipitation last three days? NO YES			
Inspector: _____				
Basin Location	Sediment Condition	Pollution Present?	Maintenance Needed?	Notes

For Pollution enter one of the following: Oil sheen, discoloration, foam, sanitary sewage, excess algae, odor, or none

For Sediment Condition enter one of the following: Okay= Less than 3 inches (does not need cleaning), Moderate Sediment = Between 3 inches and ½ of available sump (needs cleaning)
Excess Sediment = ½ of the sump or more is full of sediment (needs cleaning)

OUTFALL RECONNAISSANCE INVENTORY/ SAMPLE COLLECTION FIELD SHEET

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):

☐ Industrial ☐ Ultra-Urban Residential ☐ Commercial ☐ Open Space ☐ Suburban Residential ☐ Institutional

Other: _____ Known Industries: _____

Notes (e.g., origin of outfall, if known):

Section 2: Outfall Description

LOCATION	MATERIAL	SHAPE	DIMENSIONS (IN.)	SUBMERGED
	☐ RCP ☐ CMP	☐ Circular ☐ Single	Diameter, circular: ____	In Water: ☐ No ☐ Partially* ☐ Fully*
☐ Closed Pipe	☐ PVC ☐ HDPE	☐ Elliptical ☐ Double	Box: h - ____ w - ____	
☐ Manhole	☐ Steel	☐ Box ☐ Triple	Elliptical: h - ____ w - ____	With Sediment: ☐ No ☐ Partially ☐ Fully
	☐ Other: _____	☐ Other: ____ ☐ Other: ____		
☐ Open drainage	☐ Concrete ☐ rip-rap ☐ Earthen	☐ Trapezoid ☐ Other: _____	Depth: ____	Bottom Width: _____
	☐ Other: _____	☐ Parabolic	Top Width: ____	
☐ In-Stream	Complete Stream Discharge form			
Flow Present?	☐ Yes ☐ No	*If No, Skip to Section 5*	Flow Description ☐ Trickle	☐ Moderate ☐ Substantial
*Tidal?	☐ Yes ☐ No	If yes, *stage* ☐ Flood ☐ Ebb	Time:	

Section 3: Quantitative Characterization

FIELD DATA FOR FLOWING OUTFALLS				
PARAMETER		RESULT	UNIT	EQUIPMENT
☐Flow #1	Volume		Liter	Bottle
	Time to fill		Sec	Stopwatch
☐Flow #2 (only for free-flowing outfalls)	Flow depth		In	Tape measure
	Wetted width		ft	Tape measure
☐Flow #3	Flow width	_____' _____"	Ft, In	Tape measure
	Flow depth		In	Tape measure
	Time of travel (avg)	1._____ 2._____ 3._____	Sec	Stop watch
	Measured length	_____' _____"	Ft, In	Tape measure
Ammonia			mg/L	Specific ion probe Type:

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	☐	☐ Sewage ☐ Rancid/sour ☐ Petroleum/gas ☐ Sulfide ☐ Other:	☐ 1 – Faint	☐ 2 – Easily detected	☐ 3 – Noticeable from a distance
Color	☐	☐ Clear ☐ Brown ☐ Gray ☐ Yellow ☐ Green ☐ Orange ☐ Red ☐ Other:	☐ 1 – Faint colors in sample bottle	☐ 2 – Clearly visible in sample bottle	☐ 3 – Clearly visible in outfall flow
Turbidity	☐	See severity	☐ 1 – Slight cloudiness	☐ 2 – Cloudy	☐ 3 – Opaque
Floatables -Does Not Include Trash!!	☐	☐ Sewage (Toilet Paper, etc.) ☐ Suds ☐ Petroleum (oil sheen) ☐ Other:	☐ 1 – Few/slight; origin not obvious	☐ 2 – Some; indications of origin (e.g., possible suds or oil sheen)	☐ 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	☐	☐ Spalling, Cracking or Chipping ☐ Peeling Paint ☐ Corrosion	
Deposits/Stains	☐	☐ Oily ☐ Flow Line ☐ Paint ☐ Other:	
Abnormal Vegetation	☐	☐ Excessive ☐ Inhibited	
Poor pool quality	☐	☐ Odors ☐ Colors ☐ Floatables ☐ Oil Sheen ☐ Suds ☐ Excessive Algae ☐ Other:	
Pipe benthic growth	☐	☐ Brown ☐ Orange ☐ Green ☐ Other:	

Section 6: Overall Outfall Characterization

☐ Unlikely ☐ Potential (presence of two or more indicators) ☐ Suspect (one or more indicators with a severity of 3) ☐ Obvious

Section 7: Data Collection

1.	Sample for external lab?	☐ Yes	☐ No	2.	Sample for CWP?	☐ Yes	☐ No	3.	Sterile sample for bacteria analysis?	☐ Yes ☐ No
4.	Sample(s) collected from:	☐ Flow	☐ Pool							
5.	Duplicate collected?	☐ Yes	☐ No	*If yes, check appropriate:*		☐ External lab	☐ CWP	☐ Sterile		

Section 8: Any Non-Illicit Discharge Concerns (e.g., trash or needed infrastructure repairs) or other Notes?

ATTACHMENT C

QUALITY ASSURANCE PROJECT PLAN (QAPP)

Stormwater Monitoring Quality Assurance Project Plan Template

1.0 Background and Scope

In Maine, there are 30 municipalities (permittees) 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 the municipalities conduct dry weather inspections on 100% of their 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. (Part IV(C)(3)(e)(vi) of the MS4 General Permit contains a few conditions under which flowing outfalls do not need to be monitored.)

The following monitoring needs to be conducted whether or not the outfall's dry weather flow exhibits evidence of an illicit discharge:

- E. coli, enterococci, total fecal coliform or human bacteroides;
- Ammonia, total residual chlorine, temperature, and conductivity; and
- Optical enhancers or surfactants.

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.

> 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.

The purpose of this Quality Assurance Project Plan (QAPP) is to provide sampling personnel information that will assist them 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.

Each municipality is required by the MS4 General Permit to prepare a written Illicit Discharge Detection and Elimination (IDDE) Plan. This QAPP has been developed to be an attachment to a municipality's IDDE Plan, and therefore does not contain all of the IDDE requirements associated with the MS4 General Permit. For example, some communities are conducting outfall inspections more frequently than once every 5 years. The IDDE Plan should be consulted to determine the municipality's frequency of inspections. In addition, if there is evidence of an illicit discharge, the municipality must conduct additional investigations to identify the source and work with responsible parties to remove the source. The IDDE Plan describes the processes and procedures specific to a municipality for the subsequent investigations.

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.
Table 1 contains a list of equipment that should be prepared and available in order to conduct dry weather monitoring.

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.

This outfall, though in poor condition because it is cantilevered, provides a good opportunity for a clean catch of its discharge.

This outfall is partially submerged and a clean catch of its discharge is not possible. If tidal influences are strong, wait until low tide to sample. Additional options include: sampling upstream structures or using sand bags around the outfall to prevent contamination from backflow.

Table 1 provides a list of equipment that should be gathered and available for use in the event dry weather outfall monitoring needs to be conducted.

Table 1 Field Equipment for Monitoring

1 Gallon of Distilled or de-ionized water for rinsing
1 Roll Paper towels
3-5 clean plastic 250 ml beakers for water sample collection in Baggie marked "Clean" or disposable "whirl bags"
Garbage bags
1 long sampling pole and or sampling pump and tubing
Equipment to remove and access catch basin covers if needed (pull, hammer, crowbar)
Field equipment/test kits (see Table 2) and bottles for any laboratory samples or off-site field test kits. Ensure field test kits reagents have not expired typically keep bottles for 3-5 samples available
Non-latex gloves
Box of 1 gallon plastic bags
Cooler with ice
Camera or phone
Safety Vest
Steel toed boots, waterproof
scissors
Sun screen and bug spray
Clip board
3-5 Field Data Sheets (See Addendum 1)
Chain of Custody (Addendum 3)
Sharpies and water-proof pens
Packing tape and Duct tape
Sheet of blank labels for bottles
First aid kit
Small white board with pen to mark outfall ID, date, and time in photo

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 (which should be conducted in accordance with the MS4's IDDE Plan or SOP).

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. If samples are being collected on a Friday, some laboratories need prior notice to meet short hold times. 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 and water or trisodium phosphate and water. Cleaning will be completed in a location where wash

water can be discharged to a licensed wastewater treatment plant, sanitary sewer, or septic system.

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.

Use of a certified laboratory is specified in this QAPP because the data generated by a certified lab would be more likely to stand up in a court of law than data generated by a non-certified lab.

A list of commercial certified laboratories is available on the Maine DEP website at: https://www.maine.gov/dhhs/mecdc/environmental-health/dwp/professionals/labCert.shtml . Note also that many Wastewater Treatment Plants conduct bacteria analysis for operational purposes. If there is a Wastewater Treatment Plant in the area, it can also be used for the bacteria screening.

This QAPP does not specify CWA methods or Maine DEP certification for use of field equipment/test kit(s).

Table 2 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 2** include CWA methods, field equipment, and test kits, where applicable. **Table 2** 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.

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 included as Addendum 4 to this QAPP, or may be 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 2 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.

Table 2 Sampling Parameters, Analysis Methods, and Sample Preservation and Holding Times

Ammonia (select one method)	**CWA Method, Field Equipment, or Test Kit**	**Preservation**	**Holding time**	**Bottle needed**	**Notes on Use**
Ammonia	Hach Ammonia Test Strips	None	Immediate (w/in 15 minutes) in Field	Field jar or beaker	
Ammonia	Laboratory Method EPA 350.1/350.2	H_2SO_4 (pH <2) + Ice	28 days	250 ml plastic bottle from lab	
Ammonia	Hach DR300 Pocket Colorimeter Ammonia Nitrogen or LaMotte 3680-01 DC1200 Colorimeter test kit	None	Immediate (w/in 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=hFiEEEAmWFo
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 (w/in 15 minutes) in Field	Field jar or beaker	Instructional video available at: https://www.youtube.com/watch?v=WTTUD0Hq1Vw
Chlorine	Industrial test Systems Ultra-Low Total Chlorine Test Strips and other mid range chlorine test strips	None	Immediate (w/in 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 (w/in 15 minutes) in Field	Field jar or beaker	Use to distinguish between groundwater and surface water.
Conductivity	Temperature/ Conductivity probe	None	Immediate (w/in 15 minutes) in Field	Field jar or beaker	Use to distinguish between salt water and fresh water.

Table 2 Sampling Parameters, Analysis Methods, and Sample Preservation and Holding Times

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)
Surfactants	CheMetrics K-9400 field test kit (see Maine DEP guidance on handling and disposal in **Addendum 2**)	None	Immediate (w/in 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.
Other Optional Parameters	**CWA Method, Field Equipment, or Test Kit**	**Preservation**	**Holding time**	**Bottle needed**	**Notes on Use**
Dissolved Oxygen	Hach DO Test kit Model OX-2P	None	Immediate (w/in 15 minutes) in Field	Field jar or beaker	Waters of the state have Dissolved Oxygen standards. This test can show whether outfall contributions are affecting Dissolved Oxygen content of receiving waters.
Total Phosphorus	EPA 365.3	Sulfuric Acid (pH <2) + Ice (4°C)	28 days	250 ml glass bottle from lab.	Provides data regarding nutrient contributions to receiving waters which can originate from paved surfaces, fertilizers and eroding soils.

Table 2 Sampling Parameters, Analysis Methods, and Sample Preservation and Holding Times

Other Optional Parameters (continued)	CWA Method, Field Equipment, or Test Kit	Preservation	Holding time	Bottle needed	Notes on Use
Personal Care Products	EPA 1694	Sulfuric Acid (pH <2) + Ice (4ºC)	7 day to extraction 40 days after extraction	1000 ml amber jar	EPA Lab Chelmsford can run if capacity. Contact Todd Borci. Otherwise need to use a commercial laboratory. EPA recommends analyzing only for following subset: Caffeine, 1,7-DMX (metabolite of caffeine), Acetominophen, Carbamazepine (anti-depressant), Primidone (anti-epilepsy drug), Atenolol (high Blood pressure med), Cotinine (metabolite of nicotine), urobilin (by product of hemoglobin breakdowns), Azithromycin (antibiotic)
Total Suspended Solids	EPA 160.2 or SM2549D	Ice	7 days	1000 ml plastic bottle from lab	
Biochemical Oxygen Demand	EPA 405.1 or SM5210B	Ice	To lab within 24 hours, analyze within 48 hours		Provides general water quality information.
Total Petroleum Hydrocarbons DRO and GRO	SW 8015C	Ice	7 Days to extraction 40 days after extraction	500 ml amber glass jar and 3 40 ml VOA containers from lab with sulfuric acid	DRO is Diesel Range Organics (C10 to C28) GRO is Gasoline Range Organics (C5 to C10)
Nitrate + Nitrite	SM 4500 or EPA 300	Sulfuric Acid (pH <2) + Ice (4ºC)	28 days	125 ml plastic bottle from lab	Provides data regarding nutrient contributions to receiving waters which can originate from paved surfaces, fertilizers, eroding soils or wastewaters.
Total Kjeldahl Nitrogen	SM 4500 or EPA 300	Sulfuric Acid (pH <2) + Ice (4ºC)	28 days	1000 ml amber glass bottle from lab	Provides data regarding nutrient contributions to receiving waters which can originate from paved surfaces, fertilizers, eroding soils or wastewaters.

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 MS4 permittee will use either a Maine Certified Laboratory or one of the field equipment/test kit methods listed in **Table 2** to assess dry weather flow.

Each of the test kits listed in **Table 2** 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 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 information 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 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 90th percentile standards that 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 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. (Rothenheber and Jones, 2018 and Boehm, Soller and Shanks 2015)	Any concentration of human source of sewage should be investigated.
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.

Parameter	Threshold Level for Additional Investigation	Notes/Discussion
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

MS4s should use the thresholds listed above 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 MS4s 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 MS4s 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.

Revisions:

1. Original document prepared for 2022 MS4 General Permit Submission to Maine DEP

Addenda

1. Example Field Data Collection Sheet and labels
2. References:
    a. E-mail on Surfactant field kit handling of residuals from DEP staff
    b. E-mail on Fecal Coliform thresholds from DMR listed in Table 3
3. Example Chains of Custody
4. User Manual(s) and Safety Data Sheets (SDS) for Field Equipment and/or Test Kit(s) (This is an optional addendum. The information must be located where field personnel can access electronically or in paper form, so this Addendum can be used as a place to describe where field personnel will find equipment, manuals and SDSs).

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:			
Sample Location/Sketch:			

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 or Optical Brighteners (potential bacteria sources)			Surfactants ≥ 0.25 mg/L Optical Brighteners ≥ 100 ug/L or if present
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
Fecal Coliform	SM 9222 D or SM 9221 D, E	For fresh or marine/estuarine waters
Human Bacteriodes	qPCR	For fresh or 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.

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Addendum 2
-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?

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?

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 if 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?

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.

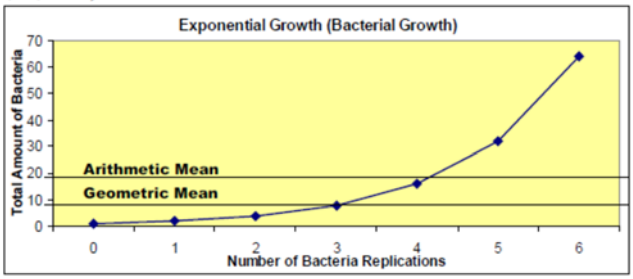
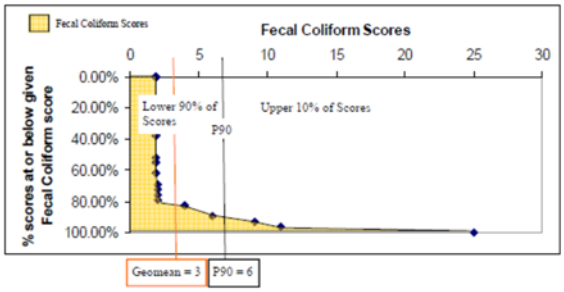


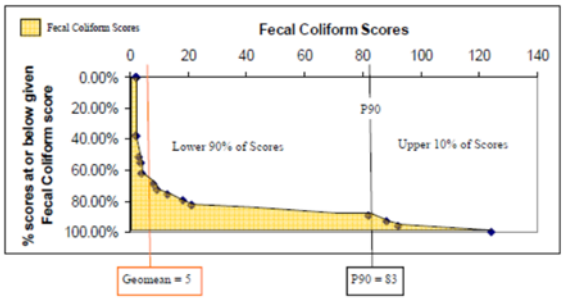
Figure 1. The graph illustrates exponential growth. The arithmetic mean for the scores is 18.1 while the geomean is 8.

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**	**90th 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 Doo1 and Do22 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 choses 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 mil 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

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 #:

Remarks:

Shipping Info: FEDEX UPS CLIENT
Airbill No:
Temp C Temp Blank Intact Not Intact

*	Sample Description	Date/Time Collected	Matrix water/soil /other	No. of Containers	Analysis and Container Type Preservatives									
					Filt. Y / N	Filt. Y / N	Filt. Y / N	Filt. Y / N	Filt. Y / N	Filt. Y / N	Filt. Y / N	Filt. Y / N	Filt. Y / N	Filt. Y / N

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:

EMSL ANALYTICAL, INC.
LABORATORY • PRODUCTS • TRAINING

EMSL ANALYTICAL, INC.
200 ROUTE 130 NORTH
CINNAMINSON, NJ 08077
PHONE: (800) 220-3675
FAX:(856) 786-0262

EMSL Order Number (*Lab Use Only*):

Company :		**EMSL-Bill to:** ☐ Same ☐ Different **If Bill to is Different please note in Comments**** *Third Party Billing requires written authorization from third party*	
Street:			
City:	**State/Province:**	**Zip/Postal Code:**	**Country:**
Report To (Name):		**Fax #:**	
Telephone #:		**E-mail Address:**	
Project Name/ Number:			
Please Provide Results: ☐ **Fax** ☐ **E-mail**	**PO#**	**State Samples Taken:**	

Turnaround Time (TAT) Options* - Please Check

☐ **3 Hour**	☐ **6 Hour**	☐ **24 Hour**	☐ **48 Hour**	☐ **72 Hour**	☐ **96 Hour**	☐ **1 Week**	☐ **2 Week**

**Analysis completed in accordance with EMSL's Terms and Conditions located in the Analytical Price Guide. TATs are subject to methodology requirements.*

Fungi	Bacteria	Insects
☐ **ERMI Panel (M180)** *Dust Only*	☐ **Human *Bacteroides* (M199)**	☐ **Bed Bug (*Cimex lectularius*) (M146)**
☐ **EPA 36 Panel (M233)** *Air, Swab*	☐ **Total *Bacteroides* (M095)**	☐ **Tick - *Anaplasma phagocytophilum* Anaplasmosis (M261)**
☐ **Water Damage 20 Panel (M181)**	☐ ***E. coli* O157:H7 (M140)**	☐ **Tick - *Babesia microti* Babesiosis (M260)**
☐ **Wood Rot Fungi 10 Panel (M232)**	☐ ***E. coli* (M200)**	☐ **Tick - *Borrelia burgdorferi* Lyme disease (M196)**
☐ ***Aspergillus* 15 Panel (M186)**	☐ **Total *Enterococcus* (M096)**	**Other**
☐ ***Aspergillus* 6 Panel (M188)**	☐ ***Helicobacter pylori* (M207)**	☐ ***Acanthamoeba* spp. (M147)**
☐ ***Penicillium* 13 Panel (M189)**	☐ ***Legionella pneumophila* (M103)**	☐ ***Cryptosporidium* spp. (M237)**
☐ **Customized Fungi Panel (M100)**	☐ ***Legionella* 4 species-EPA (M162)**	☐ ***Giardia* spp. (M149)**
☐ ***Penicillium* Mycotoxin 9 Panel (M190)**	☐ ***Legionella* Broad Screen (M163)**	☐ **Enterovirus RT-PCR (M142)**
Birds, Animal Droppings	☐ **MRSA (M203)**	☐ **Food Authentication (F130)**
☐ ***Chlamydophila psittaci* (M234)**	☐ ***Mycobacterium avium* (M144)**	☐ **GMO Analysis (F131)**
☐ ***Cryptococcus neoformans* (M143)**	☐ ***Mycobacterium tuberculosis* (M159)**	☐ **DNA Barcode Analysis (M195)**
☐ ***Histoplasma capsulatum* (M208)**	☐ ***Pseudomonas aeruginosa***	☐ **DNA Sequencing Fungi/Bacteria Isolates (M192)**
☐ **Raccoon Roundworm (M236)**	☐ ***Salmonella* spp. (M141)**	☐ **Special Request:**
☐ **Rodent (Mouse, Rat) Dropping (M271)**	☐ ***Shigella* spp. (F122)**	

Sample #	Sample Location	Sample Type	Test Code	Volume/Area	Date/Time Collected

Client Sample # (s): -	**Total # of Samples:**	
Relinquished (Client):	**Date:**	**Time:**
Received (Lab):	**Date:**	**Time:**
Comments:		

Additional Pages of the Chain of Custody are only necessary if needed for additional sample information

EMSL Order Number (*Lab Use Only*):

EMSL ANALYTICAL, INC.
LABORATORY•PRODUCTS•TRAINING

EMSL ANALYTICAL, INC.
200 ROUTE 130 NORTH
CINNAMINSON, NJ 08077
PHONE: (800) 220-3675
FAX:(856) 786-0262

Sample #	Sample Location	Sample Type	Test Code	Volume/Area	Date/Time Collected

Comments/Special Instructions

Page ______ of ______ pages

Addendum 4
User Manual(s) and Safety Data Sheets (SDS) for Field Equipment and/or Test Kit(s)
(This is an optional addendum. The information must be located where field personnel can access electronically or in paper form, so this Addendum can be used as a place to describe where field personnel will find equipment, manuals and SDSs).

ATTACHMENT D

COORDINATION LETTERS WITH INTERCONNECTED MS4S

March 31, 2021

Steven S. Johnson, P.E.
Town Engineer / Stormwater Program Coordinator
Town of Yarmouth
200 Main Street
Yarmouth, ME 04096

RE: MS4 and IDDE Coordination Letter

Dear Steve:

The 2013 Maine General Permit regulates the Town of Freeport for the Discharge of Stormwater from our Municipal Separate Storm Sewer System (MS4). Our mapping shows that we have cross-connections (some of your MS4 system flows into ours and/or some of our MS4 system flows into yours).

With this letter, we are acknowledging that you will notify us of any illicit discharges or spills in your MS4 that could affect our MS4. We will also notify you of any illicit discharges in our MS4 that may affect your MS4 system.

If you have any MS4 related issues, please contact me at 207.865.4743 ext. 106 during regular business hours. In the event of an emergency after hours, please contact 911, who will relay any pertinent information to the Public Works Department and me.

Also, the Town intends to apply for coverage under the 2022 MS4 General Permit, and as such, is preparing its Stormwater Management Plan and Illicit Discharge Detection and Elimination Plan. This letter constitutes notice that we are applying for continued coverage, and we will be providing formal public notice in March 2021.

Thank you for your consideration in this matter.

Regards,

Adam S. Bliss, P.E.
Freeport Town Engineer / Public Works Director

cc: Peter Joseph, Freeport Town Manager
Charlie Jordan, Freeport Fire/ Rescue Chief
Earl Gibson, Freeport Public Works Superintendent

March 1, 2021

Kerem Gungor, P.E.
Stormwater Engineer
MaineDOT Environmental Office
16 State House Station
Augusta, ME 04333

RE: MS4 and IDDE Coordination Letter

Dear Kerem:

The 2013 Maine General Permit regulates the Town of Freeport for the Discharge of Stormwater from our Municipal Separate Storm Sewer System (MS4). Our mapping shows that we have cross-connections (some of your MS4 system flows into ours and/or some of our MS4 system flows into yours).

With this letter, we are acknowledging that you will notify us of any illicit discharges or spills in your MS4 that could affect our MS4. We will also notify you of any illicit discharges in our MS4 that may affect your MS4 system.

If you have any MS4 related issues, please contact me at 207.865.4743 ext. 106 during regular business hours. In the event of an emergency after hours, please contact 911, who will relay any pertinent information to the Public Works Department and me.

Also, the Town intends to apply for coverage under the 2022 MS4 General Permit, and as such, is preparing its Stormwater Management Plan and Illicit Discharge Detection and Elimination Plan. This letter constitutes notice that we are applying for continued coverage, and we will be providing formal public notice in March 2021.

Thank you for your consideration in this matter.

Regards,

Adam S. Bliss, P.E.
Freeport Town Engineer / Public Works Director

cc: Peter Joseph, Freeport Town Manager
Charlie Jordan, Freeport Fire/ Rescue Chief
Earl Gibson, Freeport Public Works Superintendent

APPENDIX F

CONSTRUCTION INSPECTION FORMS

Construction Inspection Form for Sediment and Erosion Control (for small sites)

Site Name: Map/Lot:	Date of Inspection:
Inspector:	Inspection Time: AM/PM
Pictures Taken:	Weather:
Type of Inspection: Initial / Return / Winter Stabilization / Final Stabilization / Complaint / Other _____	

Inspection Parameters		**Comments/Follow up Date**
Description and estimate of construction area that is disturbed:		
Does contractor have Erosion and Sediment Control Plan, drawings, and inspection log on site?	**Yes / No / NA**	
Is the contractor or a third party inspector conducting inspections after rain events and weekly as required by the Erosion and Sediment Control Plan for the site?	**Yes / No / NA**	
Is the construction entrance clean with no trackout of sediment?	**Yes / No**	
Is waste properly managed (concrete washout disposed of properly, no liquids in waste container, waste containers closed)?	**Yes / No**	
Are there any petroleum or hazardous materials on site, and if so, are there spill controls in place?	**Yes / No**	
Review the site plan for sediment and erosion control requirements. Select "Pass" if structures are properly installed and functioning as required. Select "Fail" if contractor needs to make corrections or repairs, and describe briefly repairs needed. **Select "N/A" for "Not Applicable" if they do not apply at the site.**		
Catch Basin Protection	**Pass / Fail / NA**	
Silt Fence /Hay bales	**Pass / Fail / NA**	
Erosion Control Berm or Sock	**Pass / Fail / NA**	
Dust Control	**Pass / Fail / NA**	
Dewatering	**Pass / Fail / NA**	
Other:_____	**Pass / Fail / NA**	
Any Areas of Repeated Non-compliance that require MDEP Notification?	**Yes / No**	
Any other comments?		

Tier II: Erosion & Sedimentation Control Inspection Report

Part I: General Information	
Project Name:	
Project Address:	
Project Contact Person:	
Contact Phone Number:	
Contact Email:	

Part II: Inspection Details					
Inspection Date:					
Time:					
Weather at time of inspection:					
Date & Amount Last Precipitation: *					
Inspector Name:					
Inspector Phone Number:					
ESC Plan Available?	Yes	No	Modifications to ESC Plan Needed?	Yes	No
Note any changes needed to ESC Plan					
Previous Inspection Reports Available?	Yes	No	Previous Corrective Actions Required?	Yes	No
Note previous corrective actions					
O&M Plan Available?	Yes	No			

Part III: Certification	Initial Below
I attest that no sediment, trash, debris, or contaminated water is leaving the construction site.	
I attest that no sediment, trash, debris, contaminated water is entering a wetland or waterway.	

Part IV: Erosion & Sedimentation Controls				
				Notes - include location(s) of issue (picture #s)
Perimeter controls in place and in good condition	Yes	No	N/A	
Stockpiles properly managed (no signs of migration)	Yes	No	N/A	
Construction entrance(s) clean and free of tracking onto roadways	Yes	No	N/A	
Dewatering activity following ESC Plan	Yes	No	N/A	
Waste management in good condition (trash and debris)	Yes	No	N/A	
Dust control measures in place and effective	Yes	No	N/A	
Slopes stabilized and free of rills and gulley erosion	Yes	No	N/A	
Infiltration areas protected from compaction	Yes	No	N/A	

Part V: Recommended Corrective Actions

Part VI: Re-Inspection						
Re-inspection required?	Yes	No	Recommended timeline for re-inspection	24 hrs	1 week	Other (specify)
Date of re-inspection:						
All issues have been corrected			Yes		No (Notice of violation or stop-work order may be considered)	

Erosion Sedimentation Control Inspection Report

Construction Sites ≥ 1 Acre

Part I: General Information			
Project Name			
Project Address			
Project Contact Person & Title			
Project Contact Phone Number			
Project Contact Email			
Project in Shoreland Zone?	Yes	No	
DEP ESC-Certified Inspector?	Yes	No	
DEP Permimt Number (if known)			
Inspection Date & Time			
Inspector Name			
Inspector Phone Number			
Current Weather & Temperature °F			
Date & Amount Last Precipitation			
Part II: Previous Inspections			
ESC Plan Available on site?	Yes	No	
Self Inspection Reports Available?	Yes	No	
Previous third-party inspection reports reviewed?	Yes	No	
Note any outstanding issues from previous inspection reports below.			
	Fixed?	Yes	No
	Fixed?	Yes	No
	Fixed?	Yes	No
	Fixed?	Yes	No
	Fixed?	Yes	No

Erosion Sedimentation Control Inspection Report

Construction Sites ≥ 1 Acre

M and F ratings require follow-up be noted in Part XIII	M = Maintenance Needed (BMP is functioning, but needs attention) P = Pass (BMP is functioning and in good condition) F = Fail (BMP is not functioning and needs repair/replacement) N/A = Not Applicable				
Part III: Overall Site BMPs					
					Notes
Disturbed areas minimized	M	P	F	N/A	
Natural buffers protected	M	P	F	N/A	
Perimeter controls (required prior to construction)	M	P	F	N/A	
Part IV: Winter Stabilization (November 1 - April 15)					
					Notes
Hay mulch is applied at 2x standard application rate	M	P	F	N/A	
Areas brought to final grade are stabilized each day	M	P	F	N/A	
Areas W/I 75' of protected natural resource must be double row of barriers	M	P	F	N/A	
Part V: Sediment Barriers					
					Notes
Sediment barriers downgradient of disturbance(s)/stock piles	M	P	F	N/A	
Sediment barriers adjacent to drainage channels	M	P	F	N/A	
Sediment barriers functioning as intended; excess sediment removed	M	P	F	N/A	
Part VI: Temporary Site Stabilization					
					Notes
Disturbed but inactive area stabilized w/mulch or non-eroding cover	M	P	F	N/A	
Disturbed area within 75' of wetland stabilized w/in 48hrs of storm event	M	P	F	N/A	
No evidence of washing/rilling of topsoil	M	P	F	N/A	
Seeded areas protected with mulch or erosion control blanket	M	P	F	N/A	
Part VII: Permanent Site Stabilization					
					Notes
90% cover of healthy vegetation established on vegetated areas	M	P	F	N/A	
Binding of sod roots to soil; sod healthy and intact	M	P	F	N/A	
Mulched landscape areas totally covered with approved mulch materials	M	P	F	N/A	

Rip-rap backed by well-graded gravel or geo-textile	M	P	F	N/A	
Soil stable behind rip-rap	M	P	F	N/A	
Rip-rap appropriately sized to stay in place	M	P	F	N/A	
Placement of compacted subbase is complete on paved areas	M	P	F	N/A	
Roads & parking drain to stable area	M	P	F	N/A	
Runoff is evenly distributed to buffers	M	P	F	N/A	
Catch basin(s) are capturing run-off without by-pass to other areas	M	P	F	N/A	
Part VIII: Ditches, Channels, Swales					
					Notes
Well graded rip-rap lining or other non-erosive lining	M	P	F	N/A	
No evidence of undercutting of banks	M	P	F	N/A	
No evidence of down-cutting of channel	M	P	F	N/A	
No evidence of slumping of channel lining	M	P	F	N/A	
Stabilized with geotextile, gravel bed and stone lining	M	P	F	N/A	
Netting used to anchor mulch on 8% slopes unless;	M	P	F	N/A	
Erosion control blankets or erosion control mix is in place	M	P	F	N/A	
Stabilized for long-term erosion control	M	P	F	N/A	
Sized to handle runoff	M	P	F	N/A	
Constructed and completed w/in same day	M	P	F	N/A	
If delayed, diversion berms used	M	P	F	N/A	
Check dams installed appropriately and functioning as intended	M	P	F	N/A	
Temporary lining installed/prevent scour	M	P	F	N/A	
Channels, banks, and slopes free of erosion	M	P	F	N/A	
Part IX: Culverts					
					Notes
No evidence of overtopping or flooding	M	P	F	N/A	
Culvert outlet has apron or plunge pools installed	M	P	F	N/A	
Culvert inlets protected with appropriate materials to prevent erosion	M	P	F	N/A	
Aprons and plunge pools are functioning as intended	M	P	F	N/A	

Construction Sites ≥ 1 Acre

Part X: Materials Storage / Good Housekeeping					
					Notes
Material storage areas is not exposed to the elements	M	P	F	N/A	
Spill prevention, containment, and response plan is on site	M	P	F	N/A	
A spill kit is on site to prevent petroleum from discharging	M	P	F	N/A	
Petroleum/ haz. materials not stored / handled where exposed to stormwater	M	P	F	N/A	
Litter and construction debris is enclosed /covered / not overfull	M	P	F	N/A	

Part XI: Dewatering					
					Notes
Discharge to a wooded buffer, sediment bag, or specifically designated BMP	M	P	F	N/A	
Discharge is not flowing across disturbed areas	M	P	F	N/A	

Part XII: Tracking & Dust Control					
					Notes
No evidence of tracking mud/soil onto public roadway	M	P	F	N/A	
Stabilized construction entrance installed and functioning	M	P	F	N/A	
Non-oil dust control used to minimize fugitive dust	M	P	F	N/A	
Weekly sweeping of roadways being conducted	M	P	F	N/A	

Part XIII: Corrections Needed	Compliance Deadline / Timeframe