TOWN OF WINDAM STORMWATER MANAGEMENT PLAN

The Stormwater Management Plan defines specific best management practices that will be implemented by the Town of Windham under each of the six minimum control measures set forth in the General Permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer Systems, which are designed to reduce discharge of pollutants from the MS4 to the maximum extent practicable.

Town of Windham
Environment &
Sustainability

MS4 General Permit
Effective July 1, 2022

Initially Submitted to
Maine DEP March 31, 2021

Updated based on
Permittee Specific DEP
order

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SECTION 1
INTRODUCTION

1.1 Overview of Regulatory Program

The Town of Windham is subject to the General Permit for Discharge of Stormwater from Small Municipal Separate Storm Sewer Systems (MS4s), which was issued by the Maine Department of Environmental Protection (Maine DEP) with an effective date of July 1, 2022. The General Permit authorizes the direct discharge of stormwater from or associated with a regulated small MS4 to an MS4 or waters of the State other than groundwater. Compliance with the General Permit authorizes a person to discharge stormwater, pursuant to 38 M.R.S.A. § 413. In Maine, the DEP has delegated authority under the Federal National Pollutant Discharge Elimination System (NPDES) program, and the program is referred to as the Maine Pollutant Discharge Elimination System (MEPDES) program. Since the permit is a Clean Water Act permit, it is limited to a duration of five years and is due to expire on June 30, 2027. However, if the Maine DEP does not issue another Permit by June 30, 2027, the 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 time period.

Communities are regulated under this program when and if they are identified as having 'Urbanized Areas' in their municipal boundary. An Urbanized Area is a U.S. Census-defined term, applied to a large area (50,000 people or more) that has a high population density and/or a high percentage of impervious cover (hard-scape surfaces like parking lots or buildings). Both criteria (high population density and high percentage of impervious cover) cause an area to be at risk for adverse surface water quality impacts from polluted stormwater discharges.

The U.S. Environmental Protection Agency (U.S. EPA) and Maine DEP began regulating communities for their stormwater discharges using the Urbanized Area criteria in 2003. The Town of Windham became regulated in 2003 based on the 2000 census.

Once a community becomes regulated by the MS4 General Permit, only the Urbanized Area portions of the town are regulated. As each U.S. Census is published, if the Urbanized Area changes (based on changes to the population or impervious cover), additional areas can be added to the regulated area only after a new MS4 General Permit is issued. Once an Urbanized Area is regulated by the MS4 General Permit, it cannot be removed from regulation, even if a subsequent census identifies it is no longer classified as an Urbanized Area. Therefore, the area regulated by the MS4 General Permit can either grow larger or stay the same size, but it cannot become smaller. Appendix A shows the Urbanized Area that is regulated by the 2022 MS4 General Permit for the town, which is based on the cumulative 2000 and 2010 U.S. Census Urbanized Area data. The 2022 MS4 General Permit specifically does not include any areas identified by the 2020 U.S. 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 also two transportation agencies which are subject to their own MS4 General Permit, and eight state/federal agencies (which are called 'nested' MS4s) that are subject to a third MS4 General Permit. The regulated MS4s (municipal, transportation and state/federal) have a good history of cooperating on a state-wide basis to complete activities required by the General Permit such as a public outreach and training as a cost saving measure and to improve the quality of compliance.

The Town of Windham is a member of the Interlocal Stormwater Working Group (ISWG), pronounced *izzy-wig*. ISWG is a coalition of 14 MS4 municipalities in the greater Portland and Saco areas (Biddeford, Cape Elizabeth, Cumberland, Falmouth, Freeport, Gorham, Old Orchard Beach, Portland, Saco, Scarborough, South Portland, Westbrook, Windham, and Yarmouth) as well as the Southern Maine Community College and University of Southern Maine which are also regulated as MS4s under a separate MS4 General Permit. This coalition is facilitated by the Cumberland County Soil and Water Conservation District, which also assists in completing some of the permit requirements under contract to the coalition.

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

In implementing the 2022 MS4 General Permit, the Town of Windham relies on the ISWG to complete some requirements and implements the remaining requirements using municipal staff. This plan describes which elements will be completed individually, regionally or as a state-wide effort.

1.3 Stormwater Management Plan (SWMP)

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 specifies narrative effluent limitations, in the form of Minimum Control Measures (MCMs).

Each of the four MS4 General Permits (effective 2003, 2008, 2013, and 2022) has required that the regulated MS4s develop and implement a Stormwater Management Plan (SWMP) to coincide with the effective dates of the General Permit.

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

1. Education/Outreach Program
2. Public Involvement and Participation

3. Illicit Discharge Detection and Elimination Program
4. Construction Site Stormwater Runoff Control
5. Post-Construction Stormwater Management in New Development and Redevelopment
6. Pollution Prevention/Good Housekeeping for Municipal Operations

The 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 MCMs, the Town must address impaired water requirements. Sections 1.4 and 1.5 describe the water quality status in the Town, and what watersheds are priorities. Sections 1.6 through 1.9 describe how permit coverage is obtained, how the SWMP is modified (when needed), when public notice is required, and annual reporting requirements.

The Maine DEP will review this SWMP and determine if the Town is controlling 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 overall purpose of the project. Effectively, the Town can consider these concepts as they select Best Management Practices (BMPs) to meet permit requirements, but the Maine DEP decides if the Town is meeting the "Maximum Extent Practicable" standard.

The SWMP is not an enforceable document, so some flexibility is built into the BMPs to allow communities to engage in an adaptive management approach to mitigating or eliminating the discharge of pollutants to and from its regulated small MS4. This allows the Town to adjust BMPs throughout the Permit Cycle if needed on evaluation of their effectiveness, changing conditions, specific local concerns, or changes in other factors. Some SWMP Modifications require Maine 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 a SWMP.

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 (i.e., impaired waters):

1. If the waterbody to which a point source discharge drains is impaired and has an EPA approved total maximum daily load (TMDL), then the SWMP must address compliance with the TMDL waste load allocations (WLA) and any implementation plan. The GP does not authorize a direct discharge that is inconsistent with the WLA of an approved TMDL. This requirement applies only to TMDLs that were approved by EPA 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 BMPs to address the water's impairment, unless the Maine DEP has determined the MS4 discharge is not causing or contributing to the impairment.

The Fact Sheet that was 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 be focused on identifying the root cause of the impairment and developing a strategy to reduce the discharge of pollutants of concern if the permittee is causing or contributing to the impairment.

Section 1.4.1 describes generally 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, and Section 1.4.3 describes recent progress by the Town on addressing the impairments, which provides rationale for how BMPs in this SWMP address the 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 then to assess whether each of those waters is meeting 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 various waters in the Maine Statutes (Title 38, Section 464 through 469).

Assessments as to whether each water is achieving its designated classification are based on data that is obtained from several sources depending on the type of water being assessed:

- Lakes and ponds are assessed primarily through data obtained by the Maine DEP, 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 evaluation of 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, Lake Stewards of Maine 'Volunteer Lake Monitoring Program' (VLMP), and through many other government agencies such as the Department of Inland Fisheries and Wildlife, EPA, and the United States Geologic Survey.

Every two years, the Maine DEP publishes a report and list documenting the results of the assessments, and identifying 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 which requires them: the 305(b) report and/or the 303(d) list, respectively. There are five general status categories available for assignment to each water.

- Category 1: Attaining 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 presumption that all uses are attained).
- Category 3: Insufficient data and information to determine if designated uses are attained (with presumption that one or more uses may be impaired).
- Category 4: Impaired or threatened for one or more designated uses but does not require development of a TMDL (Total Maximum Daily Load) report.
    - 4A means a TMDL has already been completed.
    - 4B means other pollution control measures will address impairment.
    - 4C means the impairment is not caused by a pollutant.
- Category 5: Waters impaired or threatened for one or more designated uses by a pollutant(s), and a TMDL report is required.

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

A TMDL document identifies the source(s) of the impairments and recommendations to correct the impairments. Specifically, a TMDL document identifies how much of a pollutant a waterbody 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 2-5% of the TMDL to account for uncertainties or lack of knowledge about the relationship between the pollutant loading and water quality.

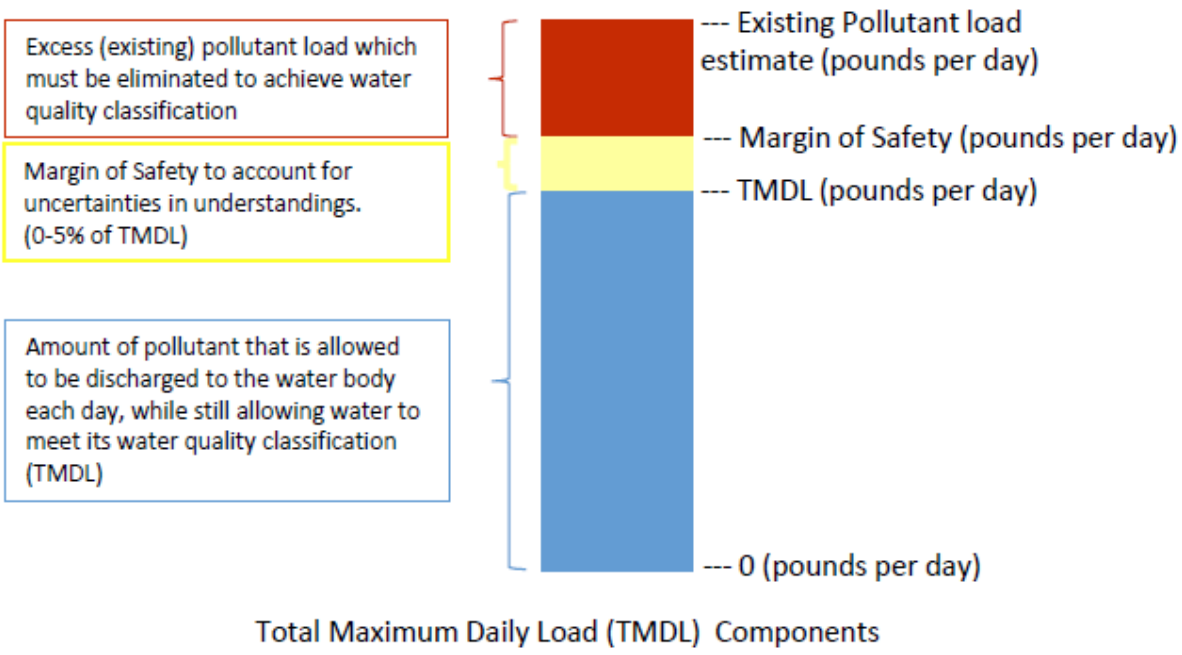

Figure 1 - Image of TMDL components.

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 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 Windham Water Quality Status

The following is a summary of the waters in the Town's Urbanized Area that receive point source discharges from the Town's MS4 and each waterbody's TMDL and impairment status.

Figure 1 shows the watersheds and waterbodies in Windham., and Table 1 shows the waterbodies where the Town has MS4 discharges and their impairment status according to the 2016 303(d) list.

The following documents were reviewed in making these determinations:

- Statewide Bacteria TMDL (September 2009)
- Chapter 502: Direct Watersheds of Lakes Most at Risk from New Development and Urban Impaired Streams

- Statewide Nonpoint Source (NPS) Pollution TMDL (June 2016)
- Impervious Cover TMDL (September 2012)
- Pleasant River Watershed Management Plan (June 2011)
- Sebago Lake Watershed Assessment and Prioritization Plan (September 2015)
- Highland Lake Phosphorous Control Action Plan and TMDL Report (August 2003)
- Highland Lake Watershed Management Plan (March 2020)
- Maine 2016 Integrated Water Quality Monitoring and Assessment Report, Appendices (February 2018)

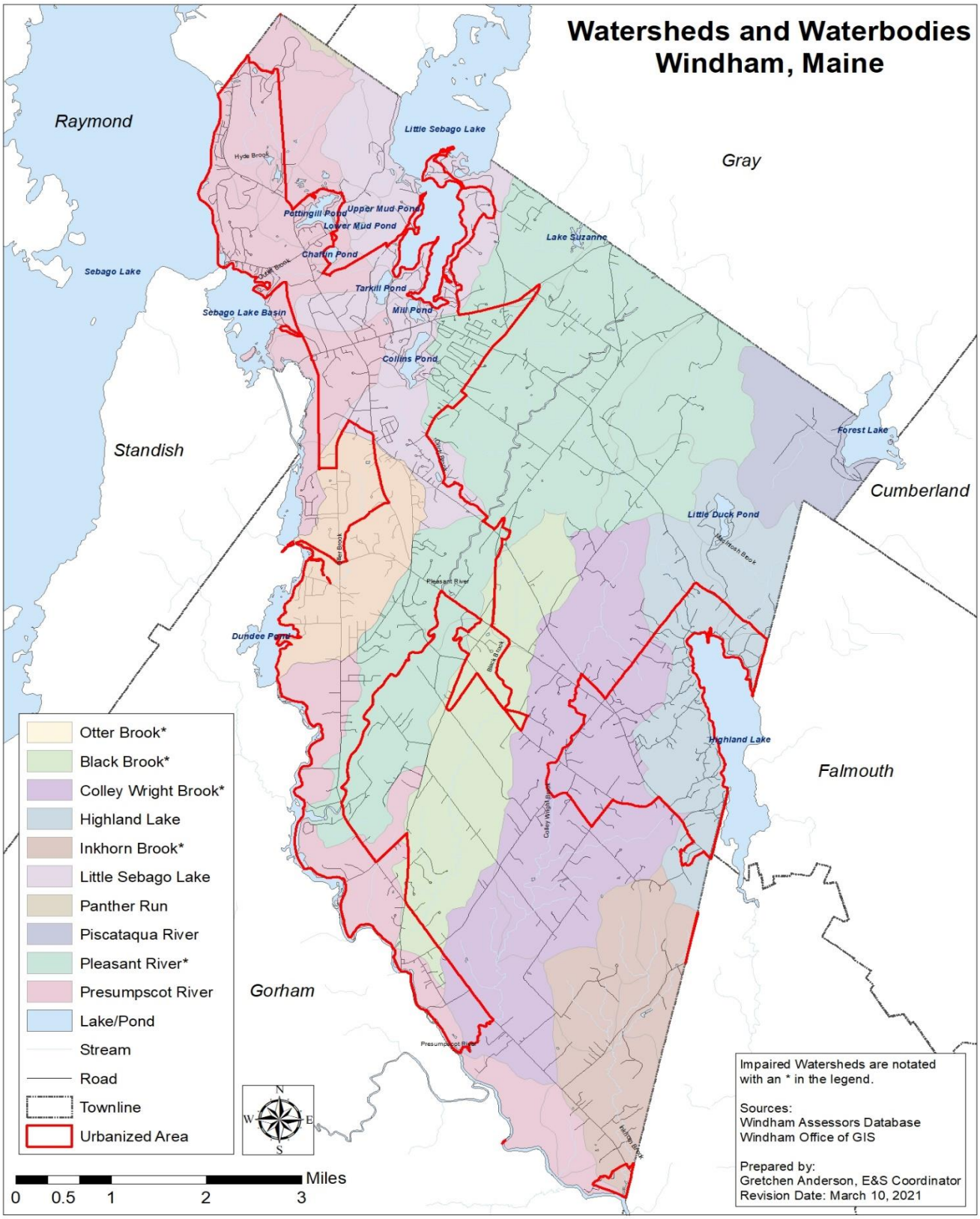

Figure 2 - Map of Windham Watersheds and Waterbodies with impaired watersheds labeled with an ''.*

Table 1 - Waters in the Town of Windham located in the Urbanized Area that receive discharges from the regulated MS4.

Waterbody	Reason for Impairment	Classification Notes
Hyde Brook	N/A	N/A
Pettingill Pond	N/A	N/A
Outlet Brook	N/A	N/A
Sebago Lake	N/A	N/A
Little Sebago Lake	N/A	N/A
Ditch Brook	N/A	N/A
Otter Brook	High E. Coli levels Low Dissolved Oxygen	2009: Statewide Bacteria (E.Coli) TMDL approved 2007: Monitoring for DO 2016: Statewide NPS (Dissolved Oxygen) TMDL approved - impairment excluded from final.
Black Brook	High E. Coli levels Low Dissolved Oxygen	2010: Will be included in future update to Statewide Bacteria TMDL 2007: Monitoring for DO 2016: Bacteria TMDL in development. Statewide NPS (DO) TMDL approved - impairment excluded from final.
Presumpscot River	Other flow regime alterations	Main Stem (above Dundee Dam) - Class A/Category 2 2012: Statutory Class A to confluence with Pleasant River, Class B below that point. Impoundments. 2015: Improved flow regulation from Eel Weir Dam expected to improve DO.
Colley Wright Brook	High E. Coli levels Low Dissolved Oxygen	2009: Statewide Bacteria (E.Coli) TMDL approved 2007: Monitoring for DO 2016: Statewide NPS (Dissolved Oxygen) TMDL approved - impairment excluded from final.
McIntosh Brook	N/A	N/A
Highland Lake	N/A	Listed as impaired until 2010
Pleasant River	High E. Coli levels Low Dissolved Oxygen	2009: Statewide Bacteria (E.Coli) TMDL approved 2012: VRMP showed occasional low DO values in 2009-10 at one location 2016: Statewide NPS (Dissolved Oxygen) TMDL approved - impairment excluded from final.
Inkhorn Brook	High E. Coli levels Low Dissolved Oxygen	2009: Statewide Bacteria (E. Coli) TMDL approved 2007: Monitoring for DO 2016: Statewide NPS (DO) TMDL approved - impairment excluded from final.

1.4.3 Progress on addressing Impairments.

The following subsections describe how impaired waters are addressed in this SWMP and provides some background on work the Town has done in recent years to improve water quality in these waters, including progress since the 2003 Phosphorous Control Action Plan and 1999 and 2020 Watershed Management Plans for Highland Lake were prepared.

1.4.3.1 Discharges to Waters with TMDLs

The Pleasant River, Otter Brook, Black Brook, Colley Wright Brook, and Inkhorn Brook are impaired by bacteria and are listed in the Statewide Bacteria TMDL, which was completed in 2009 with a 2014 Addendum. Additionally, Highland Land has a stand-alone Phosphorus Control Action Plan (PCAP)-TMDL document, which was finalized in 2003 and a Watershed Management Plan that was updated in 2020. Therefore, the Windham regulated MS4 discharges must be consistent with the Waste Load Allocations in these TMDLs and any implementation plan.

Statewide Bacteria TMDL: Table 1 summarizes how many outfalls discharge from Windham's regulated MS4 to the Pleasant River, Otter Brook, Black Brook, Colley Wright Brook, and Inkhorn Brook, which are impaired by bacteria.

The Statewide Bacteria TMDL does not specifically identify sources of the bacteria impairments but encourages communities to pursue an action plan that is based on 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.

Highland Lake TMDL: Highland Lake was listed as impaired and has a stand-alone PCAP-TMDL document and a Watershed Management Plan; however, in 2010 it was removed from the 303(d) list of impaired waters because of restoration efforts in the watershed. Highland Lake is also considered a 'Lake Most at Risk for New Development' in Maine DEP Rule Chapter 502. High phosphorus is identified as the main contributor to the water quality impairment. The sources and stressors contributing to this impairment identified in the PCAP-TMDL document include shoreline residential development, camp roads, state/town roads, shoreline septic systems, agriculture, etc. The PCAP-TMDL assigned a TMDL of 287 kg TP/year, with a Load Allocation of 115 kg TP/year and a Waste Load Allocation of 172 kg TP/year. The PCAP-TMDL document contains a 'Future Work' section, which provides recommendations that can be implemented to improve water quality. The Highland Lake Watershed Management Plan refined the understanding of the watershed and created an action plan that focuses on correcting the stressors and sources of high phosphorous impairment.

Additionally, the Town is a member of the Highland Lake Leadership Team (HLLT) which was a recommendation from the PACP-TMDL to ensure that phosphorous reduction and water quality

improvement were maintained in the Highland Lake Watershed. This committee is comprised of the Highland Lake Association, Town of Falmouth and associate members from the Cumberland County Soil and Water Conservation District and Maine DEP. The committee has been involved with the 2018 Watershed Survey, CWA Section 604(b) application and grant issuance, 2020 Watershed Management Plan update, CWA Section 319 application and grant issuance. The HLLT will use the Watershed Management Plan Action Plan as a map for future work and scheduling projects. Currently the committee is working on a 10-year Education and Outreach plan that will focus on the Highland Lake watershed. The Town commits staff time (Environmental & Sustainability Coordinator, Planning Department, Code Enforcement Department & Public Works Department) and budgetary expenditures for compliance with this PACP-TMDL.

1.4.3.2 Discharges to Urban Impaired Streams

There are no Urban Impaired Streams located in the Town of Windham; therefore, the Urban Impaired Stream requirements in the 2022 MS4 General Permit are not applicable.

1.4.3.3 Discharges to impaired waters that do not have TMDLs.

The Fact Sheet to the 2022 MS4 General Permit requires the Town to consult 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 shows that several waters fall into this category because of low dissolved oxygen. These waters were listed in the draft Statewide Nonpoint Source Pollution (NPS) TMDL but in 2016, the Maine DEP removed them from the final TMDL; therefore, the 2022 MS4 General Permit requirements do not apply to these waters. The Town of Windham consulted with the Maine DEP Division of Environmental Assessment via email on February 4, 2021. On February 17, 2021, the Maine DEP confirmed that these streams (Black Brook, Pleasant River, Otter Brook, Colley Wright Brook, and Inkhorn Brook) will be listed in the Maine DEP's proposed NPS TMDL Addendum when it is released and will identify agricultural and other NPS sources as likely major contribution to the impairments. The Maine DEP also confirmed no additional actions for these streams needs to be taken under the 2022 MS4 General Permit.

1.5 Priority Watersheds

Previous MS4 General Permits required regulated MS4s to identify a Priority Watershed and apply BMPs to that watershed. The 2022 MS4 General Permit does not contain 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 Windham uses this prioritization to identify where illicit discharge inspections are conducted first. The Town may also use the prioritization for illicit discharge investigations in the event there were insufficient resources to address all potential illicit discharges simultaneously. The IDDE Plan 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, which is then available to receive grant funding under Section 308(b) and Section 319 of the Clean Water Act if the funding is not used to satisfy the conditions of a Clean Water Act Permit (such as the 2022

MS4 General Permit). The Maine DEP's NPS Priority Watersheds list – Threatened Lakes Priority list includes Highland Lake as the MS4's "Priority Watershed". It should be noted that MS4s may not use 319 grant funding to implement any BMPs required by the MS4 General Permit.

The Town of Windham's highest priority watersheds are: Pleasant River and Highland Lake because of their impairments. The Pleasant River is a watershed centrally located in Town and is the major tributary to the Presumpscot River. Due to the river's bacteria and dissolved oxygen impairments, the Town believes prioritization of this watershed is warranted. As previously mentioned, Highland Lake had phosphorus control action plan implemented until 2010 but was removed from impaired list. However, due to recent history of declining water quality and potential threat of re-impairment, the town has renewed focus on the watershed.

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 also contained in Appendix B.

Following review of the SWMP and NOI, and receipt of any public comments, the Maine DEP issues a permittee specific 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 permittee specific DEP order is also subject to a 30-day public comment period, but only Maine DEP provides this public notice. Maine DEP provides any updated information to the Town at the end of the public comment permit. If no comments are received, Maine DEP will provide notice to the Town that they are authorized to discharge under the 2022 MS4 General Permit and the permittee specific DEP order.

Once the Maine DEP issues authorization to discharge, the Town has 60 days to update the SWMP to reflect any new or changed requirements based on the permittee specific DEP order and any comments. At that time, the permittee specific DEP order will be included in Appendix B. In addition, the permittee will include a summary of comments received in Appendix C with any notes on how the comments were addressed in the SWMP. The SWMP needs to be resubmitted to the Maine 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 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 posting 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) U.S. 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 permit term (2022 to 2027), 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 determine that:

a) The actions required by the BMPs fail to control pollutants to the meet the terms and conditions of the 2022 MS4 General Permit and permittee specific DEP order.
b) The BMPs do not prevent the potential for a significant contribution of pollutants to waters of the State other than groundwater.
c) New information results in a shift in the SWMP's priorities.

Even though this SWMP is not an enforceable document, if any changes are made, the SWMP will be made available for a 30-day public comment by posting the changes on the Town's website. If the changes being made are not explicitly required by the 2022 MS4 General Permit or the permittee specific 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 DEP order, one 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 Recordkeeping

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

Rhonda Poirier (Rhonda.poirier@maine.gov)

Municipal/Industrial Stormwater Program Manager
Department of Environmental Protection
17 State House Station
Augusta, Maine 04333-0017

The Annual Compliance Report must include the following:

a) The status of compliance with the terms and conditions of the 2022 MS4 General Permit and the Town's permittee specific DEP order, based on 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 maximum extent practical.

b) A summary of information collected and analyzed, including monitoring data, if any, during the reporting period.

c) A summary of the stormwater activities the 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 DEP order during the next reporting cycle.

d) A change in any identified BMPs or measurable goals that apply to the SWMP.

e) A description of the activities, progress, and accomplishments for each of the MCMs 1-6 including such items as the status of education and outreach efforts, public involvement activities, stormwater mapping efforts, the number of visual dry weather inspections performed, the number of inaccessible and new outfalls, dry weather flow sampling events and laboratory results, detected illicit discharges, detected illicit connections, illicit discharges that were eliminated, construction site inspections, number and nature of enforcement actions, post construction BMP status and inspections, the number of functioning post construction BMPs, the number of post construction sites requiring maintenance or remedial action, the status of the permittee's good housekeeping/pollution prevention program including the percentage of catch basins cleaned, those catch basins cleaned multiple times, and the number of catch basins that could not be evaluated for structural condition in a safe manner. Where applicable, the MS4 must quantify steps/measures/activities taken to comply with the 2022 MS4 General Permit and its SWMP including reporting on the types of trainings, presented the number of municipal and contract staff that received training, the length of the training and training content delivered as well as any revisions to the SWPPP procedures and/or changes in municipal operations.

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 to the Department within 60 days of the receipt of the comment(s).

The regulated MS4s must keep records required by the 2022 MS4 General Permit and permit specific DEP order for at least three 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.

SECTION 2
MINIMUM CONTROL MEASURES

2.1 MCM 1 – Public Education and Outreach

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

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

In 2018, the ISWG executed a statewide survey to assess public awareness of a variety of stormwater issues and related behaviors. The survey results 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 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 BMP provides a brief introductory section describing the rationale for the selection of 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 the duration of this permit.

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

2.1.1 BMP 1.1 – Outreach to Raise Awareness Campaign

Responsible Party: Environmental & Sustainability Coordinator (with implementation assistance from

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

CCSWCD)

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

Background for Measurable Goal 1.1a Public Audience: The Think Blue Maine campaign began in 2003 as a statewide effort to raise awareness of common stormwater pollutants and ways to prevent those pollutants. The Think Blue Maine campaign has been historically successful in increasing awareness of stormwater issues. The ISWG, AVSWG, and SWSWG coordinate their Think Blue Maine messaging and education efforts to provide consistent messaging in Southern Maine. In addition, the Massachusetts and New Hampshire small MS4s are using similar Think Blue campaigns, so there is regionally consistent messaging in circulation.

In 2018, the ISWG executed a statewide survey around public awareness of stormwater issues, and behaviors that impact stormwater. Ninety-four percent of survey respondents in the ISWG region ages 25-34 stated it was "very important to have clean water in the lakes and streams in [their] community", and 86% of ISWG respondents ages 25-34 believe that stormwater runoff has a major impact or somewhat impacts water quality, but only 46% of the ISWG respondents ages 25-34 were able to correctly describe what happens to stormwater at their residences. The ISWG communities will 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 place of work. According to the 2019 U.S. Census Bureau, the ISWG region's population for ages 25-34 is approximately 38,000 people, and 15% of the target audience is 6,000 people.

> **Target Audience:** People 25-34 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 F each year. Each tool will be assessed and customized based on the target audience's receptiveness to the method. Any tool used in a given year will be tailored to the message of the relevant target audience subset based on common characteristics and/or demographics.

[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.

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 F).

Implementation schedule: A minimum of three tools from Appendix F will be implemented each year for the duration of the permit.

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 better address common MCM 4 goals through coordinated regional and statewide 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 cyclical nature of the development/construction sector, the target audience baseline cannot be established until Permit Year 1 to establish contractor and developer awareness and the baseline target audience.

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 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 negatively impact local water bodies."

This message will be presented with variations based on target audience interests and outreach tools used.

Outreach Tools: A minimum of three outreach tools will be selected from Appendix F each year. Each tool will be assessed and customized based on the target audience's receptiveness to the method. Any tool used in any given year will be tailored to the message of the relevant target audience subset based on common characteristics and/or demographics.

Evaluation: Effectiveness will be evaluated annually by tracking process indicators for each tool implemented that year and by tracking impact indicators where available (see Appendix F). Effectiveness will also be measured by the number of Maine DEP certified contractors located in the ISWG region over the course of the permit term.

Implementation schedule: A minimum of three tools from Appendix F will be implemented each year for the duration of the permit.

[3] Indicators related to the execution of the outreach program.

[4] Indicators related to the achievement of the goals or objectives of the program.

2.1.2 BMP 1.2 – Outreach to Change Behavior Campaign

Responsible Party: Environmental & Sustainability Coordinator (with implementation assistance from CCSWCD)

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

1. Generally, excess nutrients in our waters are a nationally recognized water quality issue related to stormwater – there are multiple common sources of nutrients including sediments, pet waste, septic systems, and fertilizers.
2. The Statewide survey conducted in Permit Year 5 of the previous cycle identified that survey respondents are aware that nutrient sources (including dog waste) are a common stormwater pollutant and respondents expressed a willingness to take action to help reduce stormwater pollution. Eighty-four percent of 2018 survey respondents in the ISWG region ages 25-34 and 67% of 2018 survey respondents in the ISWG region ages 35-55 selected "picking up pet waste and putting it in the trash" as a practice they believed would reduce water pollution.
3. Most ISWG communities are part of the Casco Bay watershed. In the June 2019 Casco Bay Nutrient Council report, nutrients were identified as the main pollutant of concern for the health of Casco Bay. While there is discrepancy between nutrient models as to the contribution percentages of the three main sources of nutrients (stormwater, wastewater, and atmospheric deposition), stormwater runoff is believed to contribute between 24% and 64% of the nitrogen entering the bay.
4. 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.
5. Most ISWG communities have taken steps to discourage improper dog waste disposal through ordinances. However, there are currently still barriers to effectively educating and enforcing these types of ordinances.
6. Dog owners ages 25-64 are the least likely age group to pick up after their dog[7]. However, dog owners ages 25-64 receive their information through different outreach methods[8]. In order to provide effective messaging on proper dog waste management, two audiences will be created to allow appropriate outreach tools to be used per age group.

[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/

A baseline evaluation will be conducted in Permit Year 1 to establish dog owner behavior of dog waste disposal and the baseline target audience with the ISWG region.

Measurable Goal 1.2a – The ISWG communities will work toward changing the behavior of 15% of pet owners so more will properly dispose of their pet waste.

Target Audience: Pet owners ages 25-34 within the ISWG region.

Overarching Message: "Dispose of pet waste as a solid waste, so it does not end up in our stormwater. Once in the stormwater, pet 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 variation based on target audience interests and outreach tools used.

Outreach Tools: A minimum of three outreach tools will be selected from Appendix F each year. Each tool will be assessed and customized based on the target audience's receptiveness to the method. Any tool used in a given year will be tailored to the message of the relevant target audience subset based on common characteristics and/or demographics.

Evaluation: Effectiveness will be evaluated annually by tracking process indicators for each tool implemented that year and by tracking indicators where available (see Appendix F). Effectiveness will also be evaluated by conducting visual (observational) surveys of pet waste disposal at public areas and tracking the presence of pet waste bags in catch basins.

Implementation schedule: A minimum of three tools from Appendix F will be implemented each year for the duration of the permit.

Measurable Goal 1.2b – The ISWG communities will work toward changing the behavior of 15% of pet owners so more will properly dispose of their pet waste.

Target Audience: Pet owners ages 35-55 within the ISWG region.

Overarching Message: "Dispose of pet waste as a solid waste, so it does not end up in our stormwater. Once in the stormwater, pet 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 variation based on target audience interests and outreach tools used.

Outreach Tools: A minimum of three outreach tools will be selected from Appendix F each year. Each tool will be assessed and customized based on the target audience's receptiveness to the method. Any tool used in a given year will be tailored to the message of the relevant target audience subset based on common characteristics and/or demographics.

Evaluation: Effectiveness will be evaluated annually by tracking process indicators for each

tool implemented that year and by tracking indicators where available (see Appendix F). Effectiveness will also be evaluated by conducting visual (observational) surveys of pet waste disposal at public areas and tracking the presence of pet waste bags in catch basins.

Implementation schedule: A minimum of three tools from Appendix F will be implemented each year for the duration of the permit.

2.1.3 BMP 1.3 – Effectiveness Evaluation

Responsible Party: Environmental & Sustainability Coordinator (with implementation assistance from CCSWCD)

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 the implementation of each BMP. The annual report will include the message for each audience, the methods of distribution, the outreach tools used, the measures/methods used to determine on-going effectiveness of the campaigns, and any changes planned based on the measures of effectiveness.

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

2.1.4 BMP 1.4 – Additional Activities

Responsible Party: Environmental & Sustainability Coordinator (with implementation assistance from CCSWCD)

This BMP describes activities that are not required by the 2022 MS4 General Permit but are being conducted by the Town to supplement the Education/Outreach program.

Measurable Goal 1.4a – The Town will continue to support the Cumberland County Soil & Water Conservation District's youth education curriculum to community schools, as funding allows. Annual reports will include the total number of students reached, which schools were involved, and the lesson topics covered.

Measurable Goal 1.4b – The Town will support the regional YardScaping effort to reduce nutrients from entering regional waterways and increase buffers. Annual reports will include the total number of people reached, partner point of sale locations, and workshop survey data.

Measurable Goal 1.4c - The Town, through its participation in the ISWG, will support the regional effort to reduce chloride contributions to receiving waterbodies by having at least one

representative from the Municipality will attend an annual regional training or roundtable to learn about new chloride reduction techniques coordinated by the ISWG or another organization.

Measurable Goal 1.4d –The Town, through its participation in the ISWG, will support the regional effort to reduce chloride contributions to receiving waterbodies by completing the following actions:

- In Permit Year 1, and alternating years thereafter until it passes, the Municipality will provide educational outreach regarding limited liability legislation to legislators and at least two other organizations representing firms that conduct application of chloride on private property. The Municipality will also provide comments on any drafted legislation and provide testimony at the committee level once drafted to help inform the review committee. 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 or Minnesota's Smart Salting Training Program for private applicators.

- In years when limited liability legislation has not passed and is not active for procedural reasons, the Municipality 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 Municipality will provide awareness of its passage in the form of a presentation to the Select Board/Council.

    - Beginning the second and subsequent years after passage, the Municipality will educate property owners/managers, private contractors, and/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.

2.2 MCM 2 – Public Involvement and Participation

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

2.2.1 BMP 2.1 – Public Notice Requirement

Responsible Party: Environmental & Sustainability Coordinator (with implementation assistance from CCSWCD)

Measurable Goal 2.1a: The Town will follow applicable state and local public notice requirements for their SWMP and NOI to comply with the 2022 MS4 General Permit. Copies of the NOI and SWMP

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 six times per year to review issues associated with implementation of the SWMP and MS4 General Permit. These meetings will be publicized through the CCSWCD website, on ISWG member websites, and are open to the public.

2.2.2 BMP 2.2 – Public Event

Responsible Party: Environmental & Sustainability Coordinator (with implementation assistance from CCSWCD)

Measurable Goal 2.2a: The Town will annually host, conduct, and/or participate in a public community event with a pollution prevention and/or water quality theme from the list included in the 2022 MS4 permit, or another activity approved by the Maine DEP. Stormwater stewardship and educational messages and activities will be incorporated into the event. The event will be advertised on the Town's website, through the Town's and CCSWCD's social media accounts, and other Town and CCSWCD communication methods. The annual report will include a description of the event and the estimated attendance/participation.

2.3 MCM 3 – Illicit Discharge Detection and Elimination

The Town of Windham will continue to implement its Illicit Discharge Detection and Elimination (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.

2.3.1 BMP 3.1 – Continue to Maintain Watershed-Based Storm Sewer System Infrastructure Map

Responsible Party: Environmental & Sustainability Coordinator and GIS Coordinator

Measurable Goal 3.1a: The Town created a watershed-based map of the MS4 infrastructure during the prior three permit cycles (2003-2022). 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 Public Works Staff/Environmental & Sustainability Coordinator/GIS intern by June 30 of each year.
- The GIS geodatabase is updated when as-built drawings become available for municipal infrastructure.

2.3.2 BMP 3.2 – Continue to Implement the Non-Stormwater Discharge Ordinance

Responsible Party: Code Enforcement Department and Environmental & Sustainability Coordinator

Measurable Goal 3.2a: The Town implemented a Non-Stormwater Discharge Ordinance on February 11, 2005. The Environmental & Sustainability Coordinator coordinates the enforcement of the ordinance with assistance and implementation from the Code Enforcement Department. The Town will continue to enforce this ordinance throughout the permit cycle.

Measurable Goal 3.2b: The Town will document the results of enforcement action taken for illicit discharges in an excel spreadsheet.

2.3.3 BMP 3.3 – Maintain a Written IDDE Plan

Responsible Party: Environmental & Sustainability Coordinator

Measurable Goal 3.3a: The Town prepared a written IDDE Plan in January 2017, which has been updated to contain the elements required in the 2022 MS4 General Permit (Part IV.C.3.b.i though vi). The updated IDDE plan is contained in Appendix D of this SWMP. The IDDE Plan will be reviewed annually and updated if needed to reflect any changes to the program.

Measurable Goal 3.3b: The Town will conduct a wet weather assessment in accordance with the 2022 MS4 General Permit Part IV.C.3.f. and will incorporate the wet weather assessment into their IDDE Plan by the end of Permit Year 5 (6/30/2027).

2.3.4 BMP 3.4 – Conduct Infrastructure Inspections and Monitor Flowing Outfalls

Responsible Parties: Environmental & Sustainability Coordinator, Public Works Personnel

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.

- Catch basins will be inspected for evidence of pollutants during their required sediment inspections during catch basin cleaning (BMP 6.4).

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 reveals the potential for an illicit discharge: The Town will investigate the catchment area associated with the outfall for potential illicit discharges as described under Measurable Goal 3.5a.
2. Outfalls where sampling and analysis does 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 Environmental and Sustainability Coordinator will summarize the monitoring results and any investigation completed, or the exempt status, as applicable, in an Excel spreadsheet or GIS geodatabase.

The Town's IDDE Plan (contained in Appendix D) describes the information collected during infrastructure inspections. The Town documents inspections electronically in GIS.

2.3.5 BMP 3.5 – Conduct Investigations on Suspect Illicit Discharges and Flowing Outfalls

Responsible Parties: Environmental & Sustainability Coordinator, Public Works Personnel

Measurable Goal 3.5a: When the Town becomes aware of a potential illicit discharge, it will investigate to identify the source using methods described in the written IDDE Plan (Appendix D). The Environmental & Sustainability Coordinator will track the status and outcome of the investigations in an Excel spreadsheet or GIS geodatabase.

2.3.5 BMP 3.6 – Significant Contributors of Pollutants

Responsible Party: Environmental & Sustainability Coordinator

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

The Town previously requested annual reports from Portland Water District describing their hydrant flushing dechlorination processes, and the Town will continue to request that they provide the reports each permit 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 will work with the responsible dischargers to control these sources, so they are no longer significant contributors of pollutants.

- Landscape irrigation
- Diverted stream flows.
- Rising groundwater
- Uncontaminated groundwater infiltration (as defined in 40 CFR 35.2005(20))
- Uncontaminated pumped groundwater
- Uncontaminated flows from foundation drains
- Air conditioning and compressor condensate
- Irrigation waters
- 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)
- Firefighting activity runoff
- Water line flushing and discharges from potable water sources (hydrant flushing is discussed in MG 3.6a)
- Individual residential car washing
- Dechlorinated swimming pool discharges

2.4 MCM4: Construction Site Stormwater Runoff Control

The Town of Windham will update, implement, and enforce its Construction Runoff Control Program for 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 through implementation of BMPs as described in this section.

Overall, the Town's existing Land Use Ordinances contain requirements that meet most elements of the Construction Site Stormwater Runoff Control MCM, but some modifications are required to

meet the 2022 MS4 General Permit requirements. The Town has Site Plan Review and Subdivision Review standards, which include the development of erosion and sediment control plans for all sites subject to Site Plan Review and Subdivision Review, including minor and major development and minor and major subdivisions. Additionally, development sites not subject to the Site Plan Review or Subdivision Review requirements of submitting an Erosion Control Plan, may fall under the Town's Surface Water Protection Ordinance. This ordinance applies to all activities which involve filling, grading, excavation, or other similar activities, which result in unstable soil conditions. A permit is required as well as a written soil erosion and sedimentation control (ESC) plan. Windham Ordinances can be found on the Town website. The following BMPs will be implemented to meet this Minimum Control Measure.

2.4.1 BMP 4.1 – Erosion Sediment Control Ordinance

Responsible Parties: Planning and Code Enforcement Department, Environmental & Sustainability Coordinator.

Measurable Goal 4.1a: The Town's Site Plan Review and Subdivision Review procedures (included in the Land Use Ordinance) already specify that any application for Site Plan Review or Subdivision Review contain an Erosion and Sediment Control Plan. This requirement covers all 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.

The Town will update the Review Procedures by 7/1/2023 to reference that the Erosion and Sediment Control Plan meet a set of standards consistent with the applicable sections of Attachment C to the 2022 MS4 General Permit, (i.e., Maine DEP Stormwater Rule Chapter 500 Appendices A: Erosion and Sediment Control, B: Inspections and Maintenance, and C: Housekeeping).

Measurable Goal 4.1b: Prior to the Review Procedures update identified in 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, (i.e., Maine DEP Stormwater Rule Chapter 500 Appendices A: Erosion and Sediment Control, B: Inspections and Maintenance, and C: Housekeeping).

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 and Subdivision Review Procedures

Responsible Parties: Planning Department, Environmental & Sustainability Coordinator

Measurable Goal 4.2a: The Town's Site Plan Review and Subdivision Review Procedures, which contain the required elements listed in the 2022 MS4 General Permit (consideration of potential water quality impacts, erosion control, waste storage, the ability for public comment at publicly noticed meetings and procedures to consider information submitted by the public), will continue to

be implemented.

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

Responsible Parties: Planning and Code Enforcement Department, Environmental & Sustainability Coordinator.

Measurable Goal 4.3a: The Town will continue notifying developers and contractors of requirements to obtain coverage under the Maine Construction General Permit (MCGP) and Chapter 500 Stormwater Management for sites that disturb one or more acres of land using the following methods:

- Providing check boxes on Planning Department applications and forms, and
- In discussions with applicants.

2.4.4 BMP 4.4 – Conduct and Document Construction Site Inspections

Responsible Parties: Planning and Code Enforcement Department, Environmental & Sustainability Coordinator.

Measurable Goal 4.4a: The Town will continue implementing its procedures for construction site inspections which will be formalized in a written document by 7/1/2022. The written procedure will include site inspection responsibility as well as who has authority to implement enforcement procedures. The Town will conduct erosion and sediment control inspections using the form in Appendix E. The Town will conduct a minimum of three inspections during the active earth-moving phase of construction, with one of these inspections conducted at project completion to ensure the site has been stabilized and all temporary erosion and sediment controls have been removed. Additionally, the Town will complete one inspection annually until a project reaches substantial completion.

Measurable Goal 4.4b: The Town will document construction sites as part of the Construction Runoff Control Program each year using an excel spreadsheet. The documentation will include the site's name, map and lot number, location, dates of inspections, and any enforcement action and corrective action taken.

2.5 BMP 5 – Post-Construction Stormwater Management

The Town of Windham 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 following is a summary of the ordinance contents as they relate to the MCM 5 requirements:

Chapter 140 Land Use Ordinance, Section 800 Site Plan Review & 900 Subdivision Review requires that:

- The design of the stormwater drainage system shall provide for the disposal of stormwater without damage to streets, adjacent properties, downstream properties, soils, and vegetation.

Chapter 144 Post-Construction Stormwater Ordinance requires:

- Preparation and implementation of a Post-Construction Stormwater Management Plan for all new development and redevelopment projects within the urbanized area that disturb greater than or equal to one acre that discharge to the municipalities' MS4 and to associated stormwater management facilities.
- Submittal of an annual report documenting that all on-site BMPs have been inspected by a qualified, third party inspector and are either functioning as intended or if they require maintenance and repair, a list of deficiencies, and documentation once they are corrected.

Windham Ordinances can be found on the Town website, using the links provided above. The following BMPs will be implemented to meet this Minimum Control Measure.

2.5.1 BMP 5.1 – Maintain and Enforce Post-Construction Stormwater Ordinance

Responsible Party: Planning and Code Enforcement Department, Environmental & Sustainability Coordinator

Measurable Goal 5.1a: During the 2008-2013 permit cycle, the Town passed a Post-Construction Stormwater Ordinance (Chapter 144, effective July 9, 2009) which requires that any site that disturbs one or more acres certify to the Town annually by May 1st that they have inspected and maintained their stormwater BMPs. The Town will continue to require annual certification and will trach the required information for annual reporting in an excel spreadsheet.

Measurable Goal 5.1b: By 7/1/2022, the Town's Post-Construction Ordinance (Chapter 144) will be updated to include provisions requiring the following for sites reporting that maintenance is required:

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

2.5.2 BMP 5.2 – Promote strategies to prevent or minimize water quality impacts.

Responsible Party: Planning and Code Enforcement Department, Environmental & Sustainability

Coordinator

Measurable Goal 5.2a: The Town will rely on 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 or more acres of land will be developed.

Measurable Goal 5.2b: During the 2008-2013 permit cycle, the Town developed a procedure for notifying developers to consider Low Impact Development strategies through the Town's site development process. The site development process contains general procedures to prevent or minimize water quality impacts from development, which includes notifying developers that they must consider Low Impact Development (LID) techniques in accordance with the requirements of the 2022 MS4 General Permit. The Town will continue to use these procedures.

2.6 MCM 6: Pollution Prevention/Good Housekeeping for Municipal Operations

The objective of this MCM is to mitigate or eliminate pollutant runoff from municipal operations on property that is owned or managed by the permittee and located within the Urbanized Area through implementation of the following BMPs.

2.6.1 BMP 6.1 – Operations at Municipally Owned Grounds and Facilities

Responsible Parties: Environmental & Sustainability Coordinator, Public Works Director

Measurable Goal 6.1a: During previous permit cycles, 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 review and update its inventory annually.

Measurable Goal 6.1b: During previous permit cycles, the Town developed and implemented Operation and Maintenance (O&M) Procedures for the municipal operations listed in their inventory that had the potential to cause or contribute to stormwater pollution. The town will continue to implement these O&M Procedures and will review and update the O&M Procedures annually to iteratively improve strategies and practices to eliminate or better control pollutant discharges.

2.6.2 BMP 6.2 – Municipal Employee Training

Responsible Party: Environmental & Sustainability Coordinator

Measurable Goal 6.2a: Continue to implement the Town's municipal employee training program to reduce stormwater pollution potential from municipal operations and facilities. Topics to be covered by the training program may include, but not be limited to:

- Maintenance activities, maintenance schedules, and long-term inspection procedures for

structural and non-structural stormwater controls to reduce pollutants discharged from the separate storm sewers.

- Controls for reducing or eliminating the discharge of pollutants into the separate storm sewers from streets, roads, highways, municipal parking lots, maintenance and storage yards, fleet or maintenance shops with outdoor storage areas, salt/sand storage yards, and snow disposal areas.
- Procedures for disposing of waste removed from the separate storm sewers and areas listed above in accordance with the regulatory requirements (such as dredge spoil, accumulated sediments, floatables, and other debris).

2.6.3 BMP 6.3 – Continue Street Sweeping Program

Responsible Party: Public Works Department

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

2.6.4 BMP 6.4 – Cleaning of Stormwater Infrastructure including Catch Basins

Responsible Party: Public Works Department

Measurable Goal 6.4a: The Town will inspect its stormwater infrastructure for sediment content at least once every two years, but the Town will continue to attempt to inspect annually if time and municipal budget allows. Stormwater infrastructure that is found to have more than two inches of sediment during an inspection, will be cleaned. Sediment removed during stormwater infrastructure cleaning is stored and disposed of in accordance with state law.

Measurable Goal 6.4b: The Town will track catch basins with excess sediment (i.e., more than 50% of the sump contains sediment) to ensure those catch basins are inspected again the following year and cleaned if necessary. If two consecutive inspections show excess sediment, the catch basin will be cleaned every year instead of every other year until it has been documented to exhibit less than 25% sediment in its sump for two consecutive years, at which point it will be removed from the excess sediment list and will be inspected every other year.

2.6.5 BMP 6.5 – Maintenance and Upgrading of Stormwater Conveyances and Outfalls

Responsible Party: Public Works Department

Measurable Goal 6.5a: The Town will maintain and upgrade the stormwater conveyance systems based on the results of the catch basin and outfall inspections, in accordance with the urgency of any needed repairs or maintenance. The Town will continue to perform systematic capital upgrades of the storm drain system in correlation with the road paving program for the town. The Town also inspects and maintains its stormwater treatment systems using a qualified inspector.

2.6.6 BMP 6.6 – Stormwater Pollution Prevention Plans (SWPPPs)

Responsible Party: Public Works Department

Measurable Goal 6.6a: During the previous permit cycle, the Town prepared a SWPPP for the Public Works Facility. The Town will amend the SWPPP to comply with the requirements specified in Part IV.C.6.d by 6/30/2022. In addition, the Town will amend the SWPPP within 30 calendar days of any of the following:

- A change in design, construction, operation, or maintenance that may have significant effect on the discharge or potential for discharge of pollutants including the addition or reduction of industrial activity.
- Monitoring, inspections, or investigations by the Town, local, state, or federal officials which determines the SWPPP is ineffective in eliminating or significantly minimizing the intended pollutants.
- A discharge that occurs that is determined by the Maine DEP to cause or have the reasonable potential to cause or contribute to the violation of an applicable water quality standard.

Measurable Goal 6.6b: The Town will implement the SWPPP throughout each permit year including conducting quarterly facility inspections using the Town's own form and visual monitoring using the forms containing the inspection criteria identified in Appendix E of the 2022 MS4 General Permit.

SECTION 3
GENERAL REQUIREMENTS

3.1 Certification

The General Permit requires this SWMP 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: Barry A. Tibbetts Date: 03/30/2021

Barry Tibbetts

Title: Town Manager

APPENDICES

A. Urbanized Area Map

General Permit MER041010
Urbanized Area
Windham, Maine

Raymond

Gray

Standish

Cumberland

Falmouth

Gorham

Gorham

Westbrook

Little Sebago Lake

Hyde Brook

Pettingill Pond

Upper Mud Pond

Lower Mud Pond

Sebago Lake

Lake Suzanne

Chaffin Pond

Outlet Brook

Tarkill Pond

Mill Pond

Sebago Lake Basin

Collins Pond

Ditch Brook

Forest Lake

Little Duck Pond

Otter Brook

MacIntosh Brook

Pleasant River

Dundee Pond

Black Brook

Highland Lake

Colley Wright Brook

Presumpscot River

Inkhorn Brook

Stream

Road

Lake/Pond

Urbanized Area

Townline

N

W

E

S

0 0.5 1 2 3 Miles

Sources:
Windham Assessors Database
Windham Office of GIS

Prepared by:
Gretchen Anderson, E&S Coordinator
Revision Date: March 10, 2021

B. Notice of Intent, Public Notice, and Permittee Specific 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 Windham			Permittee ID #	MER041010
Name and title of chief elected official or principal executive officer	Barry Tibbetts				
Mailing Address	8 School Road				
Town/City	Windham	State	Maine	Zip Code	04062
Daytime Phone	207-894-5900	Email	batibbetts@windhammaine.us		
PRIMARY CONTACT PERSON FOR OVERALL STORMWATER MANAGEMENT PROGRAM (if different than PEO/CEO)					
Name and Title	Gretchen Anderson - Environmental & Sustainability Coordinator				
Mailing Address	8 School Road				
Town/City	Windham	State	Maine	Zip Code	04062
Daytime Phone	207-894-5900	Email	gaanderson@windhammaine.us		
STORMWATER MANAGEMENT PLAN (SWMP)					
Urbanized Area (sq. mi.)	15.4				

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*):

Pleasant River, Presumpscot River, Otter Brook, Black Brook, Colley Wright Brook, Inkhorn Brook, Pettingill Pond, Chaffin Pond, Sebago Lake, Little Sebago Lake, Highland Lake, Hyde Brook, Outlet Brook, Ditch Brook, McIntosh Brook, Collins Pond, Dundee Pond.

List of impaired waterbodies that receive stormwater from the regulated small MS4 (*attach additional sheets as necessary*):

Pleasant River, Otter Brook, Black Brook, Colley Wright Brook, Inkhorn Brook

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	Barry A. Tibbetts	Date	03/30/2021

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	

ZONING Cont. from page 1

number of small businesses.

"The proposed zone slightly reduces minimum lot sizes and road frontages to allow for more residential development that is consistent with the older subdivision developments in the area," Lessard said. "The Windham Center District, to the east of the Pleasant River, is intended to be the primarily residential civic village with a mixture of uses intended to complement the cultural, public, and institutional uses with other small business that meet local neighborhood needs."

This proposed zone further reduces minimum lot sizes and road frontages (to be the same as the Town's current Medium-Density Residential zone and proposes to allow additional commercial uses that are limited in size, Lessard said.

"Both districts are proposed to require pitched rooflines, all new streets must be public streets, and new development on existing public streets must provide sidewalks along the frontage of the lot," she said.

It will be several months before Windham town councilors could vote on the rezoning proposal as there is a process to follow.

"The LRPC will consider revisions to the proposal based on public input and make a recommendation to the Windham Town Council," Lessard said. "The Land Use Ordinance specifies the process for amendments, so the Council will forward the proposal to the Planning Board for review and recommendation."

As part of the process, a public hearing will be held as part of the Windham Planning Board's review. The board's recommendation will be sent back to the Windham Town Council for discussion and a public hearing before a vote is held.

Windham's Comprehensive Plan Update was adopted in June 2017 and included numerous policy and implementation strategies to achieve the vision for Windham in the next 10-plus years.

"These were distilled into the 4 Big Things, one of which was 'Change the game for Windham's Growth Areas: North Windham, Windham Center, South Windham.,'" Lessard said. "This zoning change would expand the range of options available in Windham by allowing for different types and scales of neighborhood development and provide more options for people to choose from when considering Windham for a home or a place to start or expand a business." <

Maine DHHS offers free transportation to COVID vaccination clinics

The Maine Department of Health and Human Services is offering a new, free option for Maine people who need a ride to and from a COVID-19 vaccination appointment.

Maine DHHS is partnering with ModivCare, one of the organizations that coordinates rides for MaineCare members, to provide rides for any Maine resident who is unable to drive, lacks reliable transportation or is otherwise unable to travel to their appointment.

ModivCare will in turn partner with Community Action Programs and transportation companies to provide rides. This new option is in addition to the transportation support that DHHS already offers for eligible MaineCare members who face challenges getting to their vaccine appointment.

Individuals must have a vaccination appointment before requesting a ride and must request a ride at least 48 hours in advance of their appointment. More information on accessing this service is included below.

The dashboard on Maine's COVID-19 vaccination website shows that 20.4 percent of Maine residents have gotten their first doses and 11.6 percent have received final doses.

Currently, Maine residents age 60 and older are eligible to be vaccinated. Additionally, Maine residents who are educators, school staff, and childcare workers can get vaccinated. Maine DHHS and the Maine Department of Education are partnering with health care organizations to hold dedicated vaccination clinics for school staff aged 60 and older on March 12, 13, and other dates. Additional information on vaccination for people in Maine is available at Maine's COVID-19 vaccine website.

Information about free ride program

Individuals must have a vaccination appointment before requesting a ride. Rides will be provided to and from the appointment. These may be shared rides so DHHS can provide transportation to as many people as possible, and face masks will be required.

DHHS can provide transportation for appointments that are scheduled Monday through Saturday from 7 a.m. to 4 p.m. At least 48 hours before the vaccine appointment, individuals should call 1-855-608-5172 to reserve a ride and should have the following information ready:

Date and time of appointment

Name, address, and phone number of the facility where they are receiving the vaccination.

MaineCare members who already use a Non-Emergency Transportation broker to arrange rides to their MaineCare-covered services should call that same broker for rides to vaccination clinics. This program is for MaineCare members who are ineligible for Non-Emergency Transportation as well as any other Maine resident who does not have access to reliable transportation to get to their vaccination appointment. <

LEGAL ADVERTISEMENT

TOWN OF RAYMOND
Raymond, ME 04071

ZONING BOARD OF APPEALS

SITE WALK

Saturday, March 20, 2021 at 9:00a.m.

You are hereby notified of the Raymond ZONING BOARD OF APPEALS Site Walk at the following location Saturday, March 20, 2021 at 9:00am. regarding the information on the following application:

APPLICANT: Jeffrey D. Clark and Bethany A F Clark
LOCATION: 3 Orchard Estates Map 012 Lot 044/000 Zone R
DESCRIPTION: Requesting Variance to divide lot, creating one conforming and one non-conforming lot

The site walk will commence at 9:00 am on site. We request that attendees wear masks and observe all COVID 19 precautions.

VIDEO Public Hearing

(Internet or Cable Public Access TV)

Wednesday, March 31, 2021 • 7:00P.M.

You are hereby notified that the Raymond Appeals Board will hold a public hearing video conference public hearing on Wednesday, March 31, 2021 at 7:00 pm to hear information on the following application:

APPLICANT: Jeffrey D. Clark and Bethany A F Clark
LOCATION: 3 Orchard Estates Map 012 Lot 044/000 Zone R
DESCRIPTION: Requesting Variance to divide lot, creating one conforming and one non-conforming lot

The meeting can be viewed via the internet or on cable TV. The meeting will be streamed real time. from the local Government channel. This live stream is hosted on YouTube, so make sure that your computer or router/firewall does not block YouTube content. A telephone number will be displayed on the screen for public comment call-in during the Public Hearing portion of the meeting.

Copy of the submitted application is available for review on the town website (https://www.raymondmaine.org/content/zba-agenda) after March 12, 2021, OR at the Town Office (401 Webbs Mills Road) by appointment during regular business hours.

TOWN OF WINDHAM

LEGAL NOTICE

The Municipality of Windham 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 by March 31, 2021.

A copy may also be seen at the Town of Windham municipal offices and on the municipal website: www.windhammaine.us/DocumentCenter/View/6948/Windham-Stormwater-Management-Plan-2022-2027. 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: 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.

C. Summary of Public Comments Received

D. IDDE Plan

ILLICIT DISCHARGE DETECTION AND ELIMINATION MANUAL

This manual is intended to serve as a guidance tool for the Town of Windham's IDDE program, as required by the 2022 General Permit for Stormwater Discharges from Municipal Separate Storm Sewer Systems. These tools are shown through Standard Operating Procedures for different aspects of the program.

Town of Windham
Environment &
Sustainability

Date Prepared:
January 2017

Date Revised:
March 2021

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Section 1.0 Introduction

This manual is intended to serve as guidance for the Town of Windham's Illicit Discharge Detection and Elimination (IDDE) program, as required by the Maine Department of Environmental Protection (Maine DEP) through the Municipal Separate Storm Sewer System (MS4) General Permit. This manual profiles the minimum control measure (MCM) 3, which is one of six MCMs required to be included in the Town's Stormwater Management Plan.

1.1 What is an MS4?

The State of Maine defines a MS4 as "…a conveyance or system of conveyances designed or used for collecting or conveying stormwater including, but not limited to roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, human-made channels or storm drains owned or operated by any municipality, sewer or sewage district, Maine Department of Transportation (MaineDOT), Maine Turnpike Authority (MTA), State agency or Federal agency or other public entity that discharges directly to waters of the State other than groundwater."

1.2 Background of NPDES and MS4 General Permit

Although the quality of the nation's waters has improved greatly since the passage of the Clean Water Act (CWA) in 1972, many water bodies are still impaired by pollution. According to the United States Environment Protection Agency (EPA), the top causes of impairment include siltation, nutrients, bacteria, metals, and oxygen-depleting substances. Polluted stormwater runoff, including runoff from urban/suburban areas and construction sites are leading sources of impairment. To address this problem, EPA has put into place a program that regulates certain stormwater discharges.

In the 1990s, the EPA promulgated Phase I and II of its stormwater program under the NPDES permit provisions of the CWA. The Phase II program regulates discharges from small MS4s located in "urbanized areas" (as delineated by the Census Bureau in the most recent census) and from additional small MS4s designated by the permitting authority. On October 15, 2020, the General Permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer Systems (MS4 General Permit) was issued by the Maine Department of Environmental Protection (Maine DEP) with an effective date of July 1, 2022. The Maine DEP holds delegated authority under the Federal National Pollution Discharge Elimination Systems (NPDES) permit program to administer the MS4 General Permit in Maine. To demonstrate how the regulated MS4 (Town of Windham) proposed to meet requirements of the General Permit, the Town was required to develop, implement, and enforce a Stormwater Management Plan. The Plan outlines best management practices (BMPs) that the Town intends to utilize toward implementing the six minimum control measures. These include:

Source: CCSWCD

- MCM1 Public Education and Outreach on Stormwater Impacts
- MCM2 Public Involvement and Participation
- MCM3 Illicit Discharge Detection and Elimination (IDDE)
- MCM4 Construction Site Stormwater Runoff Control
- MCM5 Post-Construction Stormwater Management in New Development and Redevelopment
- MCM6 Pollution Prevention / Good Housekeeping for Municipal Operations

1.3 IDDE Responsibilities in the Town of Windham

The Town's Environmental & Sustainability Coordinator is responsible for overall permit compliance, and for implementation of this IDDE Manual, including outfall inspections, sampling, and training. The following other Town personnel support implementation of this Manual:

Public Works Department: Conduct catch basin inspections. Coordinate with Environmental & Sustainability Coordinator on stormwater infrastructure maintenance, street sweeping and illicit discharge detection and elimination (IDDE). Participate in IDDE training.

Planning Department: Facilitates any required ordinance changes related to non-stormwater discharges through Planning Board.

Code Enforcement Department: Assist in illicit discharge inspections when needed and enforcement authority for ordinances. Coordinator with Environmental & Sustainability Coordinator on illicit discharge detection and elimination. Participate in IDDE training.

Coordination and data transfer is conducted through email/telephone correspondence. Documentation is stored and organized electronically on the Town server.

1.4 Amendments and updates to the IDDE Plan

The MS4 General Permit provides coverage for a five-year period. The first MS4 General Permit applicable to the Town of Windham became effective in 2003 and expired in 2008. Subsequent General Permits were issued, providing the Town with continuous coverage for their stormwater discharges.

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

- A new permit is issued which changes the requirements described in this IDDE Manual.
- The Town identifies that the Manual is not effective.
- Municipal operations change which need to be reflected in this Manual.

The Environment & Sustainability Coordinator will either modify this IDDE Manual 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
January 2017	Development of document from Stormwater Management Plan BMPs and Measurable Goals. Previously utilized state-wide IDDE Standard Operating Procedures.
March 2021	Updated document to reflect 2022 MS4 General Permit requirements, including QAPP and required inspection fields and domains for GIS.

1.5 What is an illicit discharge?

An illicit discharge is defined under the MS4 General Permit as 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.

In Windham, the MS4 is directly connected to waterbodies and does not receive any type of treatment prior to its discharge to receiving waters of the State. Since there is little or no treatment, it is vital that only stormwater be discharged from Windham's MS4.

1.6 Types of 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 CW manual are described below along with examples of the types of discharges that may be encountered:

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

1. **Transitory Illicit Discharges** are typically one-time events resulting from spills, breaks, dumping, or accidents. Examples 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 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. Since they are not recurring, they are the most difficult to investigate, trace, and remove. The best method to reduce transitory discharges is through 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 (several hours per day, or a few days a year). Intermittent Illicit 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, or illegal connections from a single home sanitary connection or floor drains from industrial or commercial operations. Intermittent discharges can also result from activities such as excessive irrigation or wash water from exterior areas. The 2022 MS4 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. Since 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 have large or small impacts on water bodies depending on the 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 costliest and most time consuming to correct because they likely involve construction and alteration of subsurface connections (CWP and Robert Pitt, 2004). They can result from cross connections, infrastructure problems with a sanitary sewer system, or malfunctioning subsurface wastewater disposal system (SWDS).

1.7 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 this IDDE Manual is provided in this subsection, and the remaining sections of this document describe how the Town of Windham is implementing each component.

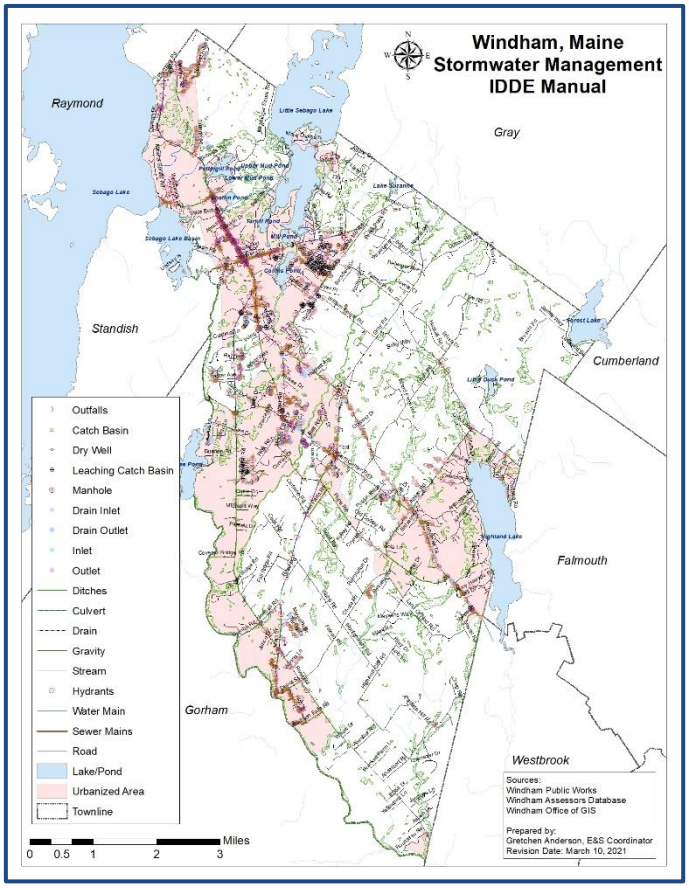
- Development of a watershed-based map - The Town is required to develop a watershed-based map of the storm sewer system infrastructure including catch basins, connecting surface and subsurface infrastructure, the direction of in-flow and out-flow pipes, and the locations of all discharges from the Town's MS4 outfalls into any other interconnected MS4 or receiving waters. 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 waterbody 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-stormwater discharges into the system and implement appropriate enforcement procedures and actions. Section 3.0 of this document describes how the Town's Non-Stormwater Discharge Ordinance is implemented.
- Identification of High Priority Areas for Inspections – Prior MS4 General Permits required that the Town identify priority areas that needed 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 Windham 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 (detection and inspection) - The Town must develop procedures for locating illicit discharges by conducting dry weather outfall inspections and assessing catch basins for evidence of pollutants. The 2022 MS4 General Permit also requires the monitoring be conducted on outfalls that are flowing during dry weather. The Town also conducts ditch inspections. Section 5.0 of this document describes the Town's detection and inspection procedures.
- 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 describes 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 after 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 provides references.

Section 2.0: Mapping and Inventory

Section 2.1 Mapping

The Town of Windham has developed and continues to maintain mapping of the MS4 using Geographic Information System (GIS). The inventory is maintained and updated by the GIS Mapping Department, or their designee, as needed (e.g. infrastructure upgrades, new developments, etc.). Inspections are conducted by the Environmental & Sustainability Coordinator and the Public Works Department. Cleaning and system upgrades are provided by the Public Works Department. Maps can be viewed in Attachment A.



Section 2.2 Inventory

The location and attributes of stormwater infrastructure is collected by Environmental & Sustainability Coordinator or their designee using a Global Positioning System (GPS) unit or the ArcGIS Collector App. The data features collected include catch basins, junction boxes, manholes, storm pipes, outfalls, culverts, ditches, etc. For each feature, specific information is gathered including size, material, type, length, GPS date, location, comments, reference number, condition, etc. All data is housed on a server at the Town Hall. The "Stormwater" geodatabase contains the following shapefiles:

- Infalls
- Outfalls
- Drainage Structures
- MS4 Post-Construction Sites
- Culverts
- Ditches
- Drain Pipes

The GIS information is used to create an annual map, which is used by the Public Works Department, Code Enforcement Department, and the Environmental & Sustainability Coordinator daily for various tasks including inspections and cleaning the MS4. As the results of the Town maintaining a very extensive GIS database, including roads, parcels, addresses, the Town can digitally map inspections, cleanings, complaints, etc. Additionally, the Code Enforcement Department can digitally track Notice of Violations, Stop Work Orders, etc. regarding illicit discharges and construction activity.

2.3 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 drawings. When the Public Works Department makes changes to the storm drain infrastructure, the Environmental & Sustainability coordinator updates the online GIS layer to reflect these changes using an iPad, as an interface to the online files. These changes can be made within weeks of the physical changes on the ground.
2. More significant changes are typically constructed after preparation of formal design drawings, whereupon the Public Works Department or a private contractor constructs the changes. Where a private contractor constructs the changes, the Town requires the formal as-built plan be prepared and submitted to the Planning Department in electronic format, so that the infrastructure can be imported into the GIS. These changes are typically made annually.

'Paper Maps' are kept in PDF format until printing is needed/wanted to reduce number of maps printed.

Section 3.0: Authority to Prohibit Illicit Discharges

The Town of Windham's authority to prohibit illicit discharges became effective February 11, 2005, when the Town passed a Non-Stormwater Discharge Ordinance (Chapter 143). 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-Stormwater Discharge Ordinance town wide.

The Ordinance allows the following non-stormwater discharges to the storm drain system if 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 materials 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 Manager or designee is the enforcement authority within the ordinance. The primary designee is the Code Enforcement Department, which has the authority to issue a notice of violation if needed.

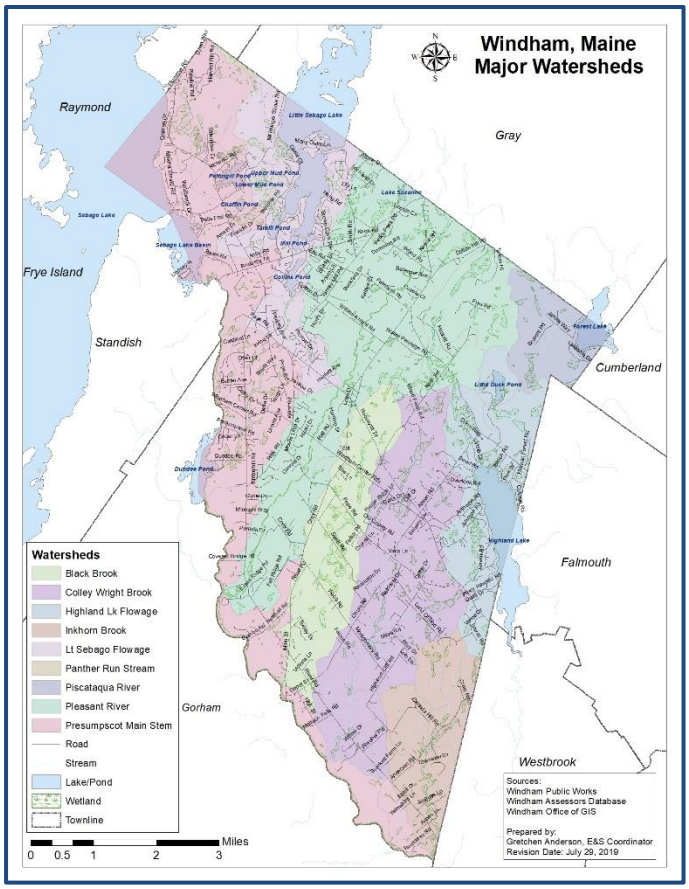
Discharges from hydrant and water line flushing are required to be dechlorinated if they are to be discharged to a portion of the MS4 system which discharges to a small stream. In accordance with the Maine DEP November 18, 2016 issue Profile for Drinking Water System Discharges to Regulated Small MS4s,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

- Freshwater – 19 ug/L (adjusted to 50 ug/l per the Maine DEP as the reporting limit for available reliable and consistent test methods)

The Portland Water District flushes the system every three years and provides an annual report to the Town describing water dechlorination methods in use and testing results for any flushing conducted. The upcoming flushing schedule for the Town of Windham is as follows: 2020, 2023, etc.

Section 4.0: Priority Areas

Prior MS4 General Permits required the Town to identify priority areas that need to be protected from illicit discharges. The priority areas were used to implement a prioritized dry weather outfall inspection program. The 2022 MS4 General Permit does not have this requirement. Since the Town of Windham conducts inspections more frequently than required, they will continue to conduct inspections in priority areas first. Additionally, the prioritization may also be used for illicit discharge investigations in the event there were insufficient resources to address all potential illicit discharges simultaneously.



Windham's IDDE program under the 2022 MS4 General Permit will begin in the Town's priority watershed. The Town will conduct annual dry weather outfall inspections until 100% are inspected by the end of the 5-year permit cycle. If an illicit discharge is suspected or detected during routine work, the standard operating procedures contained in this Manual will be followed and it will be reported to the Environmental & Sustainability Coordinator, regardless of location.

To identify areas within the Town that are high priority for illicit discharge inspections, the Town considered impaired waters, size, land use, etc.

- Highest priority watershed – Pleasant River (Impairment for bacteria and dissolved oxygen. Identified in the statewide bacteria TMDL. Watershed Management Plan is being implemented.)
- Other noted watershed– Highland Lake (previous phosphorus control action plan implemented until 2010, when removed from impaired list. However, due to history of declining water quality, town has renewed focus on watershed.)
- Other noted watershed – Presumpscot River (tributary to Sebago Lake, which flows to Casco Bay and is downstream from multiple regulated municipalities).

Section 5.0: Detection and Inspections

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

1. Catch basin cleaning inspections.
2. Citizen reports of illicit discharges.
3. Dry weather outfall inspections
4. Outfall sampling and analysis
5. Wet Weather Assessment

5.1 Catch Basin Cleaning Inspections

Although inspections are only required every two years by the MS4 General Permit, each year Public Works personnel attempts 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 evidence of an illicit discharge is present. If the employee sees any evidence of an illicit discharge, the evidence is documented in GIS and provided to the Environmental & Sustainability Coordinator for further action. Information collected during the inspection is outlined in Attachment B under MS4 Inspection Type: Structure.

5.2 Citizen Reports of Illicit Discharges

Citizen reports of illicit discharge issues received by phone are routed to various departments depending on the nature of the illicit discharge. Illegal dumping and spills from vehicle accidents are covered by Public Safety. Monthly reports of spills are sent to the Environmental & Sustainability Coordinator for input into the IDDE tracking sheet. Illegal connections, failing septic systems, and construction site runoff discharges are handled by the Code Enforcement Department via education, warnings, Stop Work Orders, and Notices of Violation. The Environmental & Sustainability Coordinator will work with the Code Enforcement Department to remediate these illicit discharges. Individual reports are drafted for these types of reports.

5.3 Dry Weather Outfall Inspections

During previous permit cycles, dry weather outfall inspections had been conducted in the priority watersheds identified in Section 4.0, and then expanded to other areas of the Town as time and budget allowed. The Town began documenting the results of the inspections on an iPad in the summer of 2017. Information collected during the inspection is outlined in Attachment B under MS4 Inspection Type: Outfall.

The following guidelines are used:

- Inspections are performed during periods of dry weather.
- Inspections are performed in a safe and efficient manner.
- Inspections are performed during periods of no or minimal snow cover and prior to growth of vegetation such that outfalls can be easily spotted.
- Observations include the following at a minimum:
    - Sheen

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 hours window for rain or melting, and it is not flowing, the inspection can be considered a dry weather inspection.

    - Discoloration
    - Foaming
    - Sanitary Sewage
    - Excessive Algal Growth
    - Odor
- Photographs are often taken at the time of inspection for documentation purposes.
- MS4 outfalls are inspected where the Town has safe and legal access to the structure to be inspected.
- If maintenance issues are identified, the Public Works Department is informed so that work can be prioritized with other projects in 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 regardless of if it has exhibited evidence of an illicit discharge. Outfalls and/or other structures may also be sampled if other evidence of illicit discharges is observed during inspection. The Environmental & Sustainability Coordinator may solicit the assistance of a third-party contractor to collect a sample for field screening and/or analysis depending on 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 results indicate a flowing outfall might be from a natural source. The QAPP is contained in Attachment E to this IDDE Plan.

5.6 Wet Weather Assessment

The Town will conduct a wet weather assessment for the potential for illicit discharges during wet weather events. The Town will utilize data from existing studies, including (but not limited to):

- Areas within the MS4 that have combined sewer systems.
- Sanitary sewer systems located in a common trench with stormwater infrastructure, particularly those with known infiltration.
- Subsurface wastewater disposal systems that are 20 years old or more, or those in areas known to have experienced recent malfunctions or failures.
- Complaints of sewage odor at a stormwater outfall during wet weather events.
- Direct discharge from the stormwater system to any of the following.
    - Public beach or recreational area.
    - A waterbody impaired for bacteria.
    - Drinking water supply.

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

On or before the expiration of the 2022-2027 General Permit, the Town will identify outfalls using the assessment and include them in an attachment of this IDDE Manual. The IDDE Manual will also be updated to include procedures for

wet weather monitoring based on the EPA New England Bacterial Source Tracking Protocol or other acceptable protocols or methodologies and specify the timing and frequency of wet weather monitoring to be completed during the term of the next permit cycle. If the Town completes the wet weather assessment and includes it within the IDDE Manual prior to the expiration of the 2022-2027 permit and the Town-specific DEP order, the Town will implement the wet weather monitoring upon completion of the update.

5.7 Cooperation with other MS4s

Since the Town of Windham has interconnections with other MS4s, it may be necessary to conduct cooperative investigations with other MS4s or to inform them of issues associated with the Town of Windham's infrastructure, including potential illicit discharges. The Town has provided notices to all adjacent MS4s to ensure adequate spill response. The MS4 contacts with which Windham is adjacent are:

Entity	Contact	Email	Phone
City of Westbrook	Lynn Leavitt *Sustainability Coordinator*	lleavitt@westbrook.me.us	(207) 591-8135
Maine Department of Transportation (MDOT)	Kerem Gungor *Stormwater Engineer*	Kerem.gungor@maine.gov	(207) 592-3489
Town of Cumberland	Laura Neleski *Public Works Administrative Assistant*	lneleski@cumberlandmaine.com	(207) 829-2220
Town of Falmouth	Justin Early *Town Engineer*	jearly@falmouthme.org	(207) 699-5371
Town of Gorham	Matt LaCroix *Stormwater Compliance Officer*	mlacroix@gorham.me.us	(207) 892-9062
Town of Gray	Nathaniel Rudy *Town Manager*	nrudy@grayme.org	(207) 657-3339
Town of Raymond	Don Willard *Town Manager*	don.willard@raymondmaine.org	(207) 655-4742
Town of Standish	Bill Giroux *Town Manager*	bgiroux@standish.org	(207) 642-2538

Notification letters with adjacent MS4s are included in Attachment F.

Section 6.0: Procedures to Investigate Illicit Discharges

Once an illicit discharge has been identified and detected, tracing will be implemented to locate the source of discharge. Once a location is determined to have an illicit discharge, the Environmental & Sustainability Coordinator or their designed will start the tracing protocol starting at that location to determine where the source of the illicit discharge is originating from. An *Illicit Discharge Incident Form* (Attachment C) will be completed to record the discharge, regarding steps taken, responsible party as the investigation occurs. These forms are filled in and maintained by the Environmental and Sustainability Coordinator via Microsoft Word. The incident will be recorded in the *Illicit Discharge Tracking Sheet* (Attachment D), both of which are maintained by the Environmental & Sustainability Coordinator. Once the source of the illicit discharge is located, the discharge will be eliminated from Windham's MS4 system (Section 7).

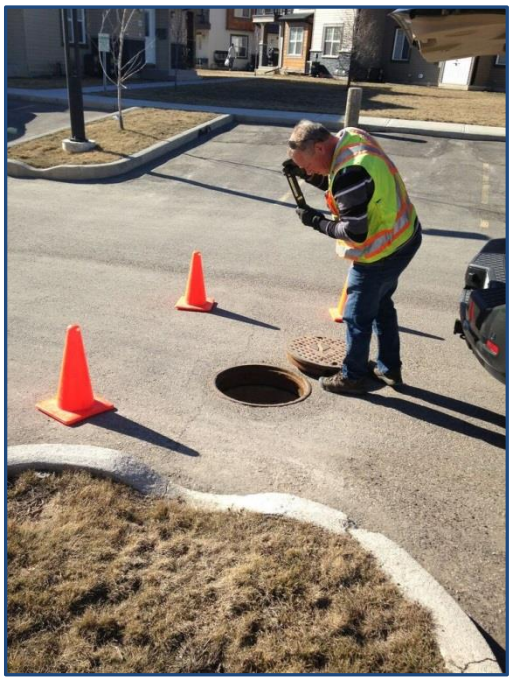
6.1 Tracing Techniques

There are different techniques that are utilized by Windham staff to trace for an illicit discharge within the separate storm sewer system, depending on the type of discharge and whether a potential source has been identified. Each technique listed, including their limitations, should be fully understood by staff. If questions or comments arise, staff is to contact the Environmental & Sustainability Coordinator.

6.1.a.1 Visual Inspections

Once dry weather flow or evidence of an illicit discharge are observed and it has been determined to be an illicit discharge, inspections along the closed drainage system or within the municipal roadside ditch must occur. The visual inspection process that the Public Works Department adheres to is as follows:

1. Staff starts at the initial detection location – the MS4 outfall where the illicit discharge has been observed and noted.
2. Staff works "upstream" from initial detection location – that is they move up the stormwater system to the first catch basin or manhole or further up the municipal roadside ditch, if the outfall is a ditch outfall.
3. Staff checks the catch basin or manhole or municipal roadside ditch for evidence of flow or evidence of an illicit discharge.
4. If flow is observed, staff moves to the next upstream manhole or further up the municipal roadside ditch. Step 3 is repeated until no or low flow and no evidence of an illicit discharge is observed. *junction lines entering the stormwater system at other locations are noted using the stormwater map. Under these circumstances, Public Works checks those catch basins or manholes as well.
5. During the inspection process, the following observations are noted in GIS using the collector app (see Attachment B for inspection fields and domains):
    a. Presence of flow
    b. Odors
    c. Colors/Clarity
    d. Stains or deposits on the bottom/sides of structure(s)
    e. Oil sheen, scum, or foam on any standing water
6. If the source is located, information is relayed to the Public Works Director and Environmental & Sustainability Coordinator if necessary, for next steps.



Source: Pro-Hawk Inspections

6.1.a.2 Dry Weather Flow Monitoring

Once a visual inspection has occurred, Town staff would conduct dry weather water quality sampling to potentially determine a source or cause of the illicit discharge. See Section 5.4 and Attachment E for more information.

6.1.a.3 Dye Testing

Once the area has been determined where the potential illicit discharge source is located, Windham would utilize dye testing to assist in determining the exact location of the illicit discharge. The dye testing procedure that the Public Works department would adhere to is as follows:

1. Prior to starting a dye test procedure, staff will obtain permission to access private property. If a dye test is needed on the inside of a building, staff will obtain written permission. Once permission is granted, staff will begin the dye test procedure.
2. Staff will pour dye into sinks, toilets, etc., and then flush it through the sanitary sewer system.
3. An additional staff member will monitor the stormwater and sanitary sewer systems to observe where the dye discharges to.

4. If the source is located, information is relayed to the Public Works Director and the Environmental & Sustainability Coordinator for next steps.

This procedure is effective in determining direct connections of sanitary lines to storm lines.

6.1.a.4 Sandbagging/Damming

This method would be used by Windham staff to determine if discharge is intermittent (See Section 1.6). Staff would place and secure sandbags at strategic locations within the system to isolate the source of the discharge. Junction lines would be noted as they can help rule out branches of the system and narrow down the source. Staff would leave the sandbags in place for a maximum of 48 hours. Windham would conduct this technique during forecasted dry weather due to potential blockage of the stormwater system.

Section 7.0: Procedures to Remove Illicit Discharges

Once the source of an illicit discharge has been identified, an Illicit Discharge Incident Report (Attachment C) will be generated and sent to the Code Enforcement Department who will initiate the removal process. The Environmental & Sustainability Coordinator or designee will provide technical information to the Code Enforcement Department including any suggestions on how to remediate the illicit discharge or possible correction. If the source of the suspected illicit discharge cannot by identified, the outfall will be re-inspected at a later date.

Enforcement and removal of illicit discharges will be accomplished through the reliance on the Non-Stormwater Discharge Ordinance.

As part of the removal process, the Code Enforcement Department and/or the Environmental & Sustainability Coordinator will determine who is financially responsible for removal of the illicit discharge (i.e., municipality, private property owner, or exempt person).

- If the municipality is responsible, the appropriate municipal authority will be notified, removal will be scheduled, and the necessary repairs or corrections will be made.
- If a private property owner is responsible, the owner will be contacted, a Notice of Violation will be issued, and the schedule for removal will be determined. No repairs or corrections will be made on private property without the direction of the appropriate municipal authority (Code Enforcement Director and/or Public Works Director).
- If an exempt party (see box below) is responsible, the facility operator will be notified as well as the appropriate enforcement authority.

Exempt Facility	Regulation	Enforcement Authority
Maine Turnpike Authority and Maine DOT (in select urbanized areas)	Maine General Permit for the Discharge of Stormwater from the MDOT and MTA MS4s	Maine DEP
Industrial Facilities with selected SIC codes	Multi Sector General Permit for Industrial Activities	Maine DEP

The illicit discharge must be removed or eliminated within 60 days of identification of the source of the illicit discharge. If this is not possible, an expeditious schedule for its elimination will be established and summarized in the MS4 General Permit annual report.

If it is determined that an "imminent and substantial danger" exists because of the illicit discharge, access to the storm drain system will be suspended. Once the removal process is completed, a follow-up inspection will be conducted to confirm that the illicit discharge has been eliminated.

Section 8.0: Procedures to Document Illicit Discharges

The Town will document the progress of investigating and removing illicit discharges using an IDDE Tracking sheet (Attachment D). The spreadsheet is maintained in Excel. Each year, the Town is required to complete an annual report summarizing the activities completed under the Stormwater Management Plan. The Environmental & Sustainability Coordinator 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.

Section 9.0 Records Retention

The Environmental & Sustainability Coordinator 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 or longer if requested by the Maine DEP or the USEPA. If the General Permit expires on June 30, 2027, the files may be discarded July 1, 2030.

Section 10.0: Education to Town Employees and the General Public

The Maine DEP requires that communities train public employees on pollution prevention and raise the public's awareness of stormwater pollution. The Town informs both public employees and the public of hazards associated with illegal discharges and improper disposal of waste as part of their IDDE program.

10.1 Town Employees

The MS4 General Permit requires that municipal employees be trained on pollution prevention techniques. This is located under Minimum Control Measure 6: "Pollution Prevention/Good Housekeeping for Municipal Operations" of the Town's Stormwater Management Plan.

The Town has also developed a comprehensive schedule to meet the requirements. Two primary trainings have been identified related to IDDE:

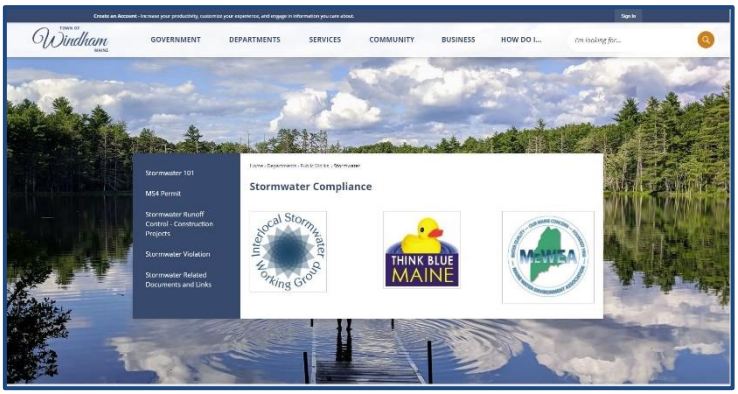
- Training for all staff personnel that are routinely in the field to educate them on what constitutes an illicit discharge and how to report suspected problems.
- Training for illicit discharge responders on proper identification, investigation, clean-up, disposal, and reporting techniques for illicit discharges.

These trainings are generally conducted by the Environmental & Sustainability Coordinator, who administers a PowerPoint presentation as well as a pre/post-training evaluation to measure the trainings' effectiveness. The Town will also schedule follow-up trainings as needed to keep the information current and introduce new information acquired during implementation of the IDDE program.

Training for illicit discharge responders will primarily include distribution and review of this procedure manual as well as a refresher on Town spill response procedures. Follow-up trainings for illicit discharge responders may take the form of debriefings following significant IDDE incidents. Debriefings allow staff to review the actions that were taken, identify what worked well and what should be modified for future responses.

10.2 General Public

The MS4 General Permit requires the Town to conduct outreach activities to educate the public about water quality protection. This is located under Minimum Control Measure 1: "Public Education and Outreach" of the Town's Stormwater Management Plan. Outreach activities focus on reducing pollutants at the source by educating the public about their ultimate impact on the natural environment. Many members of the community are apt to modify behaviors once they understand the potential negative consequences.



The Town, through the Interlocal Stormwater Working Group, has conducted outreach activities aimed at educating residents about natural yard care techniques, habitat protection, and personal impact on the natural environment.

The General Public can also learn about illicit discharges under the "Stormwater Violation" section of the Stormwater Compliance Page on the Town website. The content includes what constitutes an illicit discharge, why illicit discharges negatively impact the environment/storm sewer system, and pollution prevention techniques that can be applied to eliminate illicit discharges. The section also includes a "Stormwater Violation Form", which can be filled out and submitted to the Environmental & Sustainability Coordinator.

Section 11.0 References

CWP and Robert Pitt 2004. *Illicit Discharge Detection and Elimination Manual* – A Guidance Manual for Plan Development and Technical Assessments. October 2004. Available at: https://www3.epa.gov/npdes/pubs/idde_manualwithappendices.pdf

Aquarion Engineering Services and Casco Bay Estuary Partnership 2005. *Guidelines and Standard Operating Procedures for Stormwater Phase II Communities in Maine.* Available at: http://thinkbluemaine.cumberlandswcd.com/index.php/documents/ (under Minimum Control Measures Resources – 3. Illicit Discharge Detection & Elimination)

CWP and Robert Pitt 2011 Illicit Discharge Detection and Tracking Guide. Available at: https://www.riverkeeper.org/wp-content/uploads/2015/03/Center-for-Watershed-Protection_Illicit-Discharge-Tracking-Guide-short.pdf

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

Attachments

Attachment A – Stormwater Infrastructure and Watershed Maps

Windham, Maine
Major Watersheds

N
W E
S

Raymond
Gray
Standish
Cumberland
Falmouth
Gorham
Westbrook
Frye Island

Little Sebago Lake
Sebago Lake
Sebago Lake Basin
Pettingill Pond
Upper Mud Pond
Lower Mud Pond
Chaffin Pond
Tarkill Pond
Mill Pond
Collins Pond
Lake Suzanne
Dundee Pond
Little Duck Pond
Forest Lake
Highland Lake

Plummer Rd
Dylan Way
Pipeline Rd
Harvest Hill Rd
Clemans Dr
Enterprise Dr
Mt Hunger Shore Rd
Many Oaks Ln
Canal Ct
Richards Rd
Alpine Dr
Lockland Dr
Lily Ln
Hang Rd
Millers Spring Rd
Woodbrook Dr
Sandbar Rd
Trails End Rd
Amato Dr
Franklin Dr
Brown Cove Rd
Smith Rd
Knox Rd
Lincoln Cir
Perks Peak Rd
Keene Rd
Strawberry Ln
Brand Rd
Dutton Hill Rd
Tavern Hl
Basin Rd
Abby Rd
Tanoberg Trl
Eric Rd
Lindsay Is
Northwood Dr
Shady Ln
Acorn Ln
Varney Mill Rd
Buckfield Dr
Kaitlyn Ct
Falmouth Rd
Coyote Ct
Belanger Ave
Cotton Dr
Hunts Dr
William Knight Rd
Frye Rd
Page Rd
Peabody Ave
Provost Dr
Cardinal Ln
Irving Ln
Gray Rd
Walter Partridge Rd
Haskell Rd
Ethan Dr
James Way
Bruschi Rd
Lakeside Dr
Rio Dr
Starlit Way
Pope Rd
Harriett Ave
Easter Ave
Colby Dr
Delta Dr
Kings Ln
Yankee Dr
Lotts Dr
Nash Rd
Inland Farm Rd
Ward Rd
Ursula Ave
Harding Dr
Hall Rd
Outpost Dr
Orion Way
Visa Dr
Sabatus Ln
Drigo Ln
Lisa Dr
Hazel Dr
Moses Little Dr
Dundee Rd
Park Rd
Timberhill Rd
Conrad Dr
Stadium Dr
Text
Tate Ln
Windham Center Rd
Swan Rd
Beach Rd
Pine Dr
Overlook Rd
Cottage Rd
Curtis Dr
Midnight Way
Pamela Dr
Cartland Rd
Town Farm Rd
Pope Rd
Poplar Ridge Ln
Carol Dr
Cliff Dr
Albion Rd
Old County Rd
Balsam Ln
Anthoine Rd
Johnson Rd
Cook Rd
Finley Rd
Crystal Ln
Viola Ln
Roosevelt Trl
Covered Bridge Rd
Evans Ridge Rd
Fall Ridge Rd
Read Rd
Swett Rd
Webb Rd
Revolution Dr
Retriever Dr
Cattle Dr
Haven Rd
Percy Hawkes Rd
Quail Dr
Vance Dr
Lowell Rd
Land Of Nod Rd
Chute Rd
Gambo Rd
Newhall Rd
Meredith Dr
Twoey Dr
Junco Dr
Main St
Falcon Rd
Montgomery Rd
Miles Rd
Riley Dr
Lolo Ln
Highland Cliff Rd
Victoria Ln
River Rd
Depot St
High St
Mallison Falls Rd
Craig Rd
Canada Hill Rd
Willow Dr
Alweber Rd
Brackett Farm Ln
Anderson Rd
Ebenezer Dr
Elliott Dr
Yellowbird Ln
Jacques Ln
Aspen Ln
Rousseau Rd

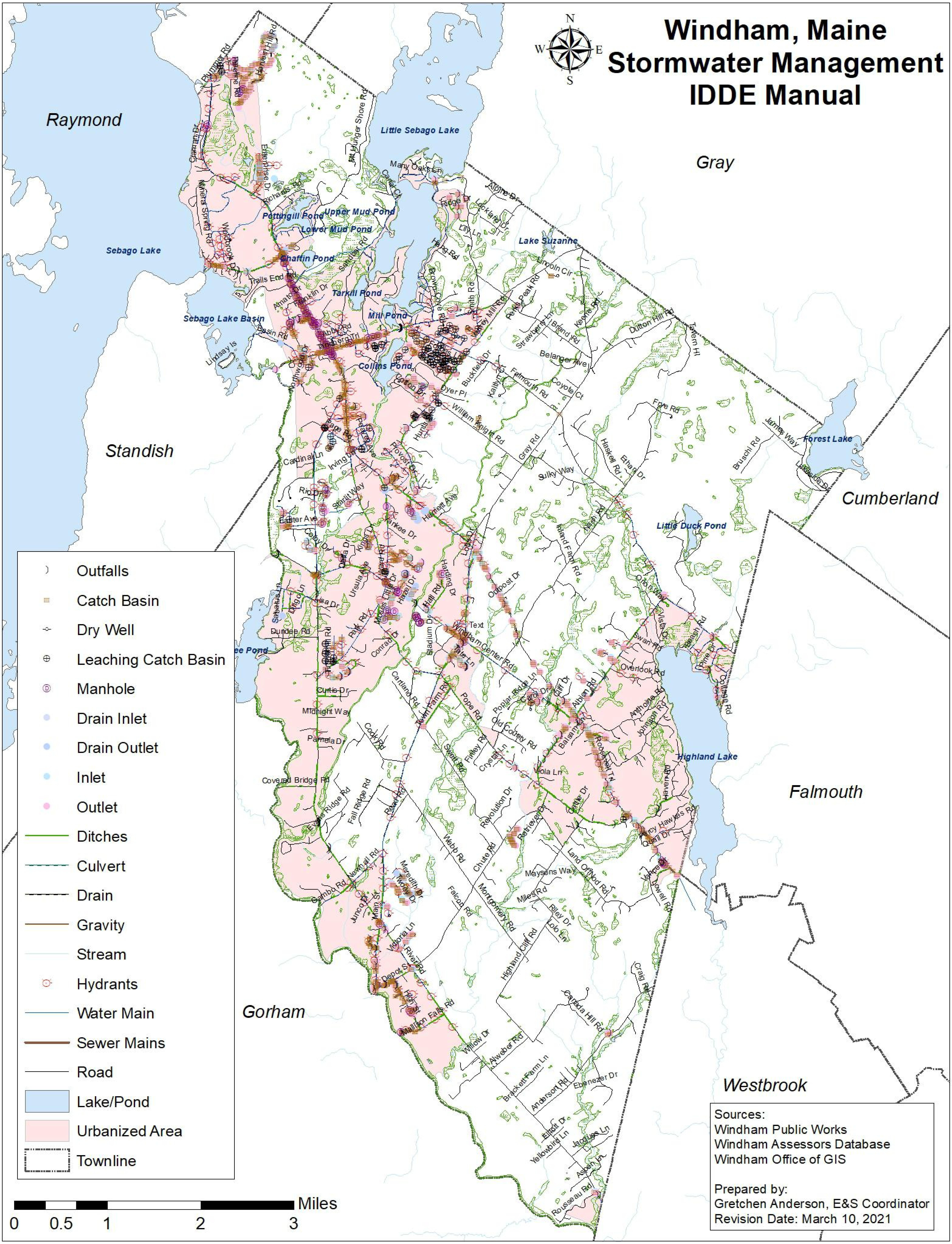
Watersheds

- Black Brook
- Colley Wright Brook
- Highland Lk Flowage
- Inkhorn Brook
- Lt Sebago Flowage
- Panther Run Stream
- Piscataqua River
- Pleasant River
- Presumpscot Main Stem
- Road
- Stream
- Lake/Pond
- Wetland
- Townline

0 0.5 1 2 3 Miles

Sources:
Windham Public Works
Windham Assessors Database
Windham Office of GIS

Prepared by:
Gretchen Anderson, SW Compliance Officer
Revision Date: August 11, 2020


Windham, Maine
Stormwater Management
IDDE Manual
N
S
E
W
Raymond
Gray
Standish
Cumberland
Falmouth
Gorham
Westbrook
Sebago Lake
Little Sebago Lake
Pettingill Pond
Upper Mud Pond
Lower Mud Pond
Chaffin Pond
Tarkill Pond
Mill Pond
Collins Pond
Sebago Lake Basin
Lake Suzanne
Forest Lake
Little Duck Pond
Highland Lake
Plummer Rd
Harvest Hill Rd
Clarion Dr
Enterprise Dr
Richards Rd
Mineral Spring Rd
Trails End Rd
Franklin Dr
Basin Rd
Lindsay Is
Northwood Dr
Sandbar Rd
Many Oaks Ln
Ridge Dr
Alpine Dr
Lockland Dr
Lily Ln
Smith Rd
Buckfield Dr
Dyer Pl
William Knight Rd
Perks Peak Rd
Lincoln Cir
Keene Rd
Strawberry Ln
Briand Rd
Dutton Hill Rd
Tavern Hl
Belanger Ave
Falmouth Rd
Coyote Ct
Frye Rd
James Way
Bruschi Rd
Gray Rd
Sulky Way
Haskell Rd
Ethan Dr
Cardinal Ln
Irving Ln
Provost Dr
Rio Dr
Starlit Way
Easter Ave
Colby Dr
Yankee Dr
Hamlett Ave
Kings Dr
Ursula Ave
Harding Dr
Hall Rd
Outpost Dr
Inland Farm Rd
Nash Rd
Orion Way
Vista Dr
Sabatus Ln
Dingo Ln
Lisa Dr
Dundee Rd
Park Rd
Hazel Dr
Conrad Dr
Stadium Dr
Text
Windham Center Rd
Tate Ln
Swan Rd
Beach Rd
Pine Dr
Overlook Rd
Cottage Rd
Curtis Dr
Midnight Way
Cartland Rd
Town Farm Rd
Pope Rd
Poplar Ridge Ln
Carol Dr
Cliff Dr
Albion Rd
Anthoine Rd
Johnson Rd
Pamela Dr
Cook Rd
Finley Rd
Crystal Ln
Old County Rd
Balsam Dr
Roosevelt Trl
Viola Ln
Covered Bridge Rd
Evans Ridge Rd
Fall Ridge Rd
Read Rd
Revolution Dr
Retriever Dr
Cattle Dr
Haven Rd
Land Of Nod Rd
Quail Dr
Vance Dr
Webb Rd
Chute Rd
Maysens Way
Miles Rd
Riley Dr
Lolo Ln
Dowell Rd
Newhall Rd
Gambo Rd
Meredith Dr
Junco Dr
Main St
Falcon Rd
Montgomery Rd
Victoria Ln
River Rd
Depot St
High St
Highland Cliff Rd
Craig Rd
Canada Hill Rd
Mallison Falls Rd
Willow Dr
Alweber Rd
Brackett Farm Ln
Anderson Rd
Ebenezer Dr
Elliott Dr
Yellowbird Ln
Jacques Ln
Aspen Ln
Rousseau Rd
Outfalls
Catch Basin
Dry Well
Leaching Catch Basin
Manhole
Drain Inlet
Drain Outlet
Inlet
Outlet
Ditches
Culvert
Drain
Gravity
Stream
Hydrants
Water Main
Sewer Mains
Road
Lake/Pond
Urbanized Area
Townline
Miles
0
0.5
1
2
3
Sources:
Windham Public Works
Windham Assessors Database
Windham Office of GIS
Prepared by:
Gretchen Anderson, E&S Coordinator
Revision Date: March 10, 2021

Attachment B – Inspection Fields and Domains in GIS

IDDE inspections are conducted using ArcGIS and Collector App.

As an inspector is using the iPad in the field, they tap on the structure or element they are inspecting and edit the inspection fields by either typing data or using the drop-down entries, where available. The Town utilizes related tables to allow multiple inspections on one feature. The following is a summary of the available fields associated with each type of inspection. **Those items in BOLD are required as part of the MS4 General Permit**.

MS4 Inspection Type	GIS Fields and Domains Completed as Part of Inspection
Structure (Catch Basin)	**OBJECTID – Auto Populated and linked with Structure (Catch Basin) Feature.** **Cleaning Date – Auto Populated with date and time.** **Grit Volume – Less than ¼ full, ¼ full, ½ full, ¾ full, plugged** **Sediment Depth – open text field** Leaves – Yes or No Rocks – Yes or No **Odor – Yes or No** Pet Waste – Yes or No **Foam/Soap – Yes or No** **Sewage – Yes or No** Litter – Yes or No Yard Waste – Yes or No **Fats, Oils, Grease – Yes or No** **Discoloration/Staining – Yes or No** **Excessive Algal Growth – Yes or No** Follow-Up – Yes or No Cleaning Comments – Open text field
Outfall (Pipe and Ditch)	**OBJECTID – Auto Populated and linked with Outfall Feature.** **Inspection Date – Auto Populated with date and time.** **Precipitation in past 72 hours? – Yes or No** **Precipitation Amount –** Open text field Approximate Temperature Wind Present? – Yes or No Pipe Submerged? – Yes, No, Not Applicable **Foam – Yes or No** Floating Green Scum – Yes or No **Vegetative Mat/Excessive Algal Growth – Yes or No** **Oil/Film – Yes or No** **Sewage Solids – Yes or No** **Odor – None, Natural, Musty** **Discoloration/Staining – Yes or No** Water Clarity – Not Applicable, Clear, Cloudy, or Opaque **Flow – None, Trickling, Steady, ¼ pipe/ditch, full pipe/ditch** Seepage Flow – None, Trickling, Steady, ¼ pipe/ditch, full pipe/ditch Flow Color – Brown, Tan, Gray, Other (explain in comments) Date Flow Sampled – Open Text field. Enter date or 'not applicable'. Sediment Condition – Open, ¼ fill, ½ full, ¾ full, plugged Structure Condition – Excellent, Fair, Poor Trash/Litter – Yes or No Yard Waste – Yes or No Follow-Up – Yes or No Comments – Open text field

Attachment C – Illicit Discharge Incident Form

ILLICIT DISCHARGE INCIDENT REPORT FORM

(Modified from: *Illicit Discharge Detection and Elimination-A Guidance Manual for Program Development and Technical Assessments*, CWP, 2004.) Rev. 8/1/16

Incident ID:

Responder Information	
Call taken by:	Call date:
Call time:	Precipitation (inches) in past 24-48 hrs:
Reporter Information	
Incident time:	Incident date:
Caller contact information (*optional*):	

Incident Location *(complete one or more below)*

Latitude and longitude:			
Stream address or outfall #:			
Closest street address:			
Nearby landmark:			
Primary Location Description	**Secondary Location Description:**		
☐ Stream corridor (*In or adjacent to stream)*	☐ Outfall	☐ In-stream flow	☐ Along banks
☐ Upland area *(Land not adjacent to stream)*	☐ Near storm drain	☐ Near other water source (stormwater pond, wetland, etc.) Describe:	
Outfall ID closest to or most likely to be impacted by discharge:			
Extent of area affected by the discharge:			
Narrative description of location:			

Upland Problem Indicator Description

☐ Dumping	☐ Oil/solvents/chemicals	☐ Sewage
☐ Wash water, suds, etc.	☐ Other: _____	

Stream Corridor Problem Indicator Description

Odor	☐ None	☐ Sewage	☐ Rancid/Sour	☐ Petroleum (gas)
	☐ Sulfide (rotten eggs); natural gas	☐ Other: Describe in "Narrative" section		
Appearance	☐ "Normal"	☐ Oil sheen	☐ Cloudy	**X** Suds
	☐ Other: Describe in "Narrative" section			
Floatables	☐ None:	☐ Sewage (toilet paper, etc)	☐ Algae	☐ Dead fish
	☐ Other: Describe in "Narrative" section			
Narrative description of problem indicators:				

Suspected Violator (name, personal or vehicle description, license plate #, address, etc.):

Investigation Notes	
Work order number assigned to incident (if applicable):	
Initial investigation date:	Investigators:
☐ No Investigation made	Reason:
☐ Reported to different Department/Agency (including DEP)	Department/Agency: Notification Date: Name and contact of Person reported to: Actions Required:
☐ Investigated: No action necessary	
☐ Investigated: Requires Action / Follow Up	Description of actions required:
Description of correction action taken:	
Amount of time between the call/discovery and initial investigation (in hours):	
Amount of time to investigate incident (in hours):	
Date incident resolved/closed:	

Pictures:

Figure 1 -

Figure 2 -

Figure 3 –

Figure 4 -

Attachment D – Illicit Discharge Tracking Sheet

Town of Windham
MS4 Program
IDDE / Spill Tracking Sheet

Date of Incident/Date Reported:	**Time Incident Reported:**	**Report Initiated by**: Phone, drop-in, contact info (optional), maintenance, inspection, etc.	**Location of Discharge**: For example: lat/long, closest street address, nearby landmark, etc.	**Urbanized Area:** Did the illicit discharge or spill occur in the UA?	**Outfall ID:** Closest outfall or outfall most likely impacted by discharge	**Extent of area affected by discharge**: For example: immediate area, area upstream, area downstream, size of area, etc.	**Description of Discharge**: For example: dumping, wash water, suds, oil/solvents/chemicals, sewage, etc.	**Description of Spill/ID**: Who, What, Where, When, and How.	**Description of Resolution**: Outcome of actions taken and any necessary follow-up (what was done).	**Date Resolved**:

Stormwater Monitoring Quality Assurance Project Plan

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 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.

Attachment E – Quality Assurance Project Plan (QAPP)

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
Sunscreen 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 Environmental & Sustainability 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 – 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	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
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.

Optical Enhancers or Surfactants (select one)	**CWA Method, Field Equipment, or Test Kit**	**Preservation**	**Holding time**	**Bottle needed**	**Notes on Use**
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	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.
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 (4°C)	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 (4^oC)	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 (4^oC)	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 Duplicate Samples[1] To assess the precision of the dry weather flow monitoring, the municipality will collect one duplicate sample for every 10 samples collected. Precision reflects the reproducibility of a given parameter by calculating the Relative Percent Difference (RPD) of the samples. RPD is calculated as follows:

$$RPD = \frac{(X_1 - X_2)\times 100}{(X_1 + X_2)\div 2}$$

Where X_1 is the concentration of one sample and X_2 is the concentration of the duplicate sample.

Table 3 provides information on the use of duplicate samples and troubleshooting information in the event the duplicate samples results are outside acceptable precision limits. The Precision and Target Relative Percent Differences shown were taken primarily from the Draft USEPA Bacteria Source Tracking Protocol. It is not possible to cover all possible reasons a set of duplicate samples may be outside the precision or Relative Percent Difference targets but the last column of the table lists a few considerations. If RPDs are not met on a day when samples were collected from multiple sites, the sampler should consider carefully the conditions that may have lead to the issue and whether those conditions would cause all the sample results to be unreliable.

[1] Optional – Not required by permit.

Table 3 Sample Precision Goals

Parameter	Precision/ Target Relative Percent Difference	Use of Data when it meets the Precision or RPD	Comments/Troubleshooting if outside Precision or RPD
Temperature	0.1 °C or 0.2 °F	Retain both sets of data.	Because there are no thresholds for additional investigations for this parameter, just retain both sets of data and provide any comments that may have affected discrepancy such as age and condition of meter, or if exposure to ambient temperature could have affected temperature of sample.
Specific Conductance	5 uS/cm	Retain both sets of data.	Because there are no thresholds for additional investigations for this parameter, just retain both sets of data and provide any comments that may have affected discrepancy such as age and condition of meter.
Bacteria (E-Coli, Enterococci, or Fecal Coliform)	+/- 100 col/100ml or 30% RPD	Retain both sets of data, use an average of the samples to compare to the investigation thresholds.	Assess cleanliness of equipment used to collect sample. Review Laboratory quality control reports for any errors or issues. Review visual observations of sample collected to assess if there were any differences in color, clarity, odor, or volume of discharge that could account for discrepancy. Consider resampling site.
Dissolved Oxygen	0.02 mg/L	Retain both sets of data.	Assess cleanliness of equipment used to collect sample. Consider resampling site.
All other parameters	30% RPD	Retain both sets of data, use an average of the samples to compare to any investigation thresholds.	Assess cleanliness of equipment used to collect sample. Consider resampling site.

4.2 Equipment or Rinsate Blanks. For most instances, dedicated equipment and containers are used to collect samples, so that equipment and rinsate blanks are not required to be collected and analyzed. However, if equipment or collection containers are being used multiple times in the field for different sample locations, they should be cleaned in between samples, wash water should be collected in the field and disposed of when returning to office or lab spaces, and equipment or rinsate blanks should be collected and assessed. The USEPA Volunteer Monitor's Guide to Quality Assurance Project Plans has additional 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 the Environmental & Sustainability 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 Environmental & Sustainability 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 4** are exceeded.

Table 4 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.
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. (Rothenburger 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.
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.
2. Updates in accordance with municipal-specific needs and information.

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 4
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 Sciency 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.

Sampler: _____ Date: _____
Time: _____ Field ID: _____

Sampler: _____ Date: _____
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Sampler: _____ Date: _____
Time: _____ Field ID: _____

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.

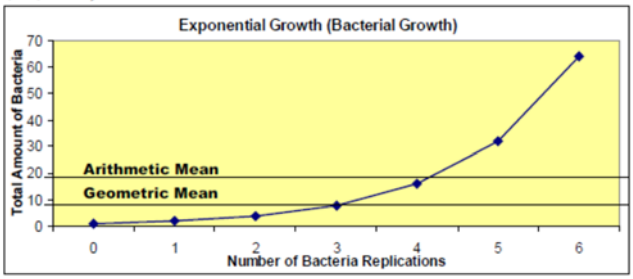
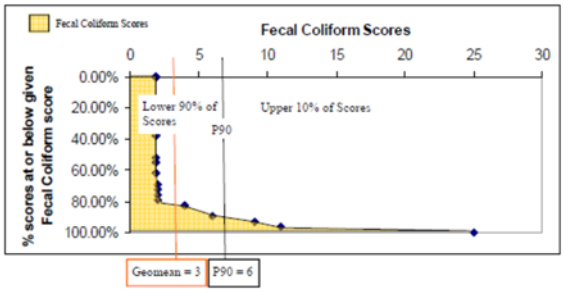


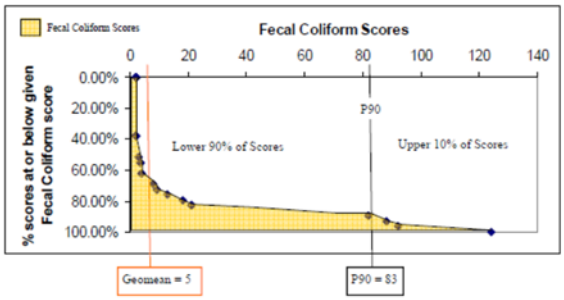
Figure 1. The graph illustrates exponential growth. The arithmetic mean for the scores is 18.1 while the geomean is 8.

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 ANALYTICAL, INC.
LABORATORY•PRODUCTS•TRAINING

EMSL Order Number (*Lab Use Only*):

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).

All user manuals and Safety Data Sheets for Field Equipment and/or Test Kits will be kept in the Environmental & Sustainability Coordinator's office with corresponding equipment and test kits.

Attachment F - MS4 Interconnection Notices

Town of Windham

8 School Road
Windham, ME 04062

voice 207.892.1907 fax 207.892.1916

March 23, 2021

Ms. Lynn Leavitt, Sustainability Coordinator
City of Westbrook, Public Services Department
371 Saco Street
Westbrook, Maine 04092

RE: Interconnected MS4 Coordination

Dear Ms. Leavitt,

The Town of Windham has filed a notice of intent to comply with the Maine General Permit for the discharge of stormwater from the municipal separate storm sewer system (MS4). Under this permit, we are required to coordinate with interconnected and nested MS4 permittees on spill response efforts in order to improve the health of Maine waters.

The Town of Windham has interconnections with your MS4. We will notify you if there is a spill of hazardous or non-hazardous substances in Windham that could affect your MS4 and we request that you do the same. In the event of an emergency after hours, please contact Windham Public Safety Dispatch at 207-892-2525.

Please forward this letter and/or request to any first responders or other municipal staff who may be able to coordinate spill response efforts with Windham. Please contact me if you have any questions regarding this letter and thank you for your cooperation in this matter.

Sincerely,

Gretchen Anderson

Gretchen Anderson
Environmental & Sustainability Coordinator

gaanderson@windhammaine.us
Office: 207-777-1948
Cell: 207-310-7393

Cc: Barry Tibbetts, Town Manager
Brent Libby, Fire Chief
Kevin Schofield, Police Chief

Town of Windham

8 School Road
Windham, ME 04062

voice 207.892.1907 fax 207.892.1916

March 23, 2021

Mr. Kerem Gungor, Stormwater Engineer
Maine Department of Transportation, Environmental Office
16 State House Station
Augusta, ME 04333

RE: Interconnected MS4 Coordination

Dear Mr. Gungor,

The Town of Windham has filed a notice of intent to comply with the Maine General Permit for the discharge of stormwater from the municipal separate storm sewer system (MS4). Under this permit, we are required to coordinate with interconnected and nested MS4 permittees on spill response efforts in order to improve the health of Maine waters.

The Town of Windham has interconnections with your MS4. We will notify you if there is a spill of hazardous or non-hazardous substances in Windham that could affect your MS4 and we request that you do the same. In the event of an emergency after hours, please contact Windham Public Safety Dispatch at 207-892-2525.

Please forward this letter and/or request to any first responders or other municipal staff who may be able to coordinate spill response efforts with Windham. Please contact me if you have any questions regarding this letter and thank you for your cooperation in this matter.

Sincerely,

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Environmental & Sustainability Coordinator

gaanderson@windhammaine.us
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Cell: 207-310-7393

Cc: Barry Tibbetts, Town Manager
Brent Libby, Fire Chief
Kevin Schofield, Police Chief

Town of Windham

8 School Road
Windham, ME 04062

voice 207.892.1907 fax 207.892.1916

March 23, 2021

Mr. Matthew LaCroix, Stormwater Compliance Officer
Town of Gorham, Public Works Department
75 South Street
Gorham, Maine 04038

RE: Interconnected MS4 Coordination

Dear Mr. LaCroix,

The Town of Windham has filed a notice of intent to comply with the Maine General Permit for the discharge of stormwater from the municipal separate storm sewer system (MS4). Under this permit, we are required to coordinate with interconnected and nested MS4 permittees on spill response efforts in order to improve the health of Maine waters.

The Town of Windham has interconnections with your MS4. We will notify you if there is a spill of hazardous or non-hazardous substances in Windham that could affect your MS4 and we request that you do the same. In the event of an emergency after hours, please contact Windham Public Safety Dispatch at 207-892-2525.

Please forward this letter and/or request to any first responders or other municipal staff who may be able to coordinate spill response efforts with Windham. Please contact me if you have any questions regarding this letter and thank you for your cooperation in this matter.

Sincerely,

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Environmental & Sustainability Coordinator

gaanderson@windhammaine.us
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Cc: Barry Tibbetts, Town Manager
Brent Libby, Fire Chief
Kevin Schofield, Police Chief

Town of Windham

8 School Road
Windham, ME 04062

voice 207.892.1907 fax 207.892.1916

March 23, 2021

Ms. Laura Neleski, Administrative Assistant
Town of Cumberland
290 Tuttle Road
Cumberland, Maine 04021

RE: Interconnected MS4 Coordination

Dear Ms. Neleski,

The Town of Windham has filed a notice of intent to comply with the Maine General Permit for the discharge of stormwater from the municipal separate storm sewer system (MS4). Under this permit, we are required to coordinate with interconnected and nested MS4 permittees on spill response efforts in order to improve the health of Maine waters.

Although the interconnections are outside the urbanized area, the Town of Windham still has interconnections with your MS4. We will notify you if there is a spill of hazardous or non-hazardous substances in Windham that could affect your MS4 and we request that you do the same. In the event of an emergency after hours, please contact Windham Public Safety Dispatch at 207-892-2525.

Please forward this letter and/or request to any first responders or other municipal staff who may be able to coordinate spill response efforts with Windham. Please contact me if you have any questions regarding this letter and thank you for your cooperation in this matter.

Sincerely,

Gretchen Anderson

Gretchen Anderson
Environmental & Sustainability Coordinator

gaanderson@windhammaine.us
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Cell: 207-310-7393

Cc: Barry Tibbetts, Town Manager
Brent Libby, Fire Chief
Kevin Schofield, Police Chief

Town of Windham

8 School Road
Windham, ME 04062

voice 207.892.1907 fax 207.892.1916

March 23, 2021

Mr. Justin Early, Town Engineer
Town of Falmouth, Public Works Department
271 Falmouth Road
Falmouth, Maine 04105

RE: Interconnected MS4 Coordination

Dear Mr. Early,

The Town of Windham has filed a notice of intent to comply with the Maine General Permit for the discharge of stormwater from the municipal separate storm sewer system (MS4). Under this permit, we are required to coordinate with interconnected and nested MS4 permittees on spill response efforts in order to improve the health of Maine waters.

The Town of Windham has interconnections with your MS4. We will notify you if there is a spill of hazardous or non-hazardous substances in Windham that could affect your MS4 and we request that you do the same. In the event of an emergency after hours, please contact Windham Public Safety Dispatch at 207-892-2525.

Please forward this letter and/or request to any first responders or other municipal staff who may be able to coordinate spill response efforts with Windham. Please contact me if you have any questions regarding this letter and thank you for your cooperation in this matter.

Sincerely,

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gaanderson@windhammaine.us
Office: 207-777-1948
Cell: 207-310-7393

Cc: Barry Tibbetts, Town Manager
Brent Libby, Fire Chief
Kevin Schofield, Police Chief

Town of Windham

8 School Road
Windham, ME 04062

voice 207.892.1907 fax 207.892.1916

March 23, 2021

Mr. Bill Giroux, Town Manager
Town of Standish
175 Northeast Road, Rt. 35
Standish, Maine 04084

RE: Interconnected MS4 Coordination

Dear Mr. Giroux,

The Town of Windham has filed a notice of intent to comply with the Maine General Permit for the discharge of stormwater from the municipal separate storm sewer system (MS4). Under this permit, we are required to coordinate with interconnected and nested MS4 permittees on spill response efforts in order to improve the health of Maine waters.

Although the Town of Standish is not an MS4 permittee, the Town of Windham has interconnections with your MS4. We will notify you if there is a spill of hazardous or non-hazardous substances in Windham that could affect your MS4 and we request that you do the same. In the event of an emergency after hours, please contact Windham Public Safety Dispatch at 207-892-2525.

Please forward this letter and/or request to any first responders or other municipal staff who may be able to coordinate spill response efforts with Windham. Please contact me if you have any questions regarding this letter and thank you for your cooperation in this matter.

Sincerely,

Gretchen Anderson

Gretchen Anderson
Environmental & Sustainability Coordinator

gaanderson@windhammaine.us
Office: 207-777-1948
Cell: 207-310-7393

Cc: Barry Tibbetts, Town Manager
Brent Libby, Fire Chief
Kevin Schofield, Police Chief

Town of Windham

8 School Road
Windham, ME 04062

voice 207.892.1907 fax 207.892.1916

March 23, 2021

Mr. Don Willard, Town Manager
Town of Raymond
401 Webb Mills Road
Raymond, Maine 04071

RE: Interconnected MS4 Coordination

Dear Mr. Willard,

The Town of Windham has filed a notice of intent to comply with the Maine General Permit for the discharge of stormwater from the municipal separate storm sewer system (MS4). Under this permit, we are required to coordinate with interconnected and nested MS4 permittees on spill response efforts in order to improve the health of Maine waters.

Although the Town of Raymond is not an MS4 permittee, the Town of Windham has interconnections with your MS4. We will notify you if there is a spill of hazardous or non-hazardous substances in Windham that could affect your MS4 and we request that you do the same. In the event of an emergency after hours, please contact Windham Public Safety Dispatch at 207-892-2525.

Please forward this letter and/or request to any first responders or other municipal staff who may be able to coordinate spill response efforts with Windham. Please contact me if you have any questions regarding this letter and thank you for your cooperation in this matter.

Sincerely,

Gretchen Anderson

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Cell: 207-310-7393

Cc: Barry Tibbetts, Town Manager
Brent Libby, Fire Chief
Kevin Schofield, Police Chief

Town of Windham

8 School Road
Windham, ME 04062

voice 207.892.1907 fax 207.892.1916

March 23, 2021

Mr. Nathaniel Rudy, Town Manager
Town of Gray
24 Main Street
Gray, Maine 04093

RE: Interconnected MS4 Coordination

Dear Mr. Rudy,

The Town of Windham has filed a notice of intent to comply with the Maine General Permit for the discharge of stormwater from the municipal separate storm sewer system (MS4). Under this permit, we are required to coordinate with interconnected and nested MS4 permittees on spill response efforts in order to improve the health of Maine waters.

Although the Town of Gray is not an MS4 permittee, the Town of Windham has interconnections with your MS4. We will notify you if there is a spill of hazardous or non-hazardous substances in Windham that could affect your MS4 and we request that you do the same. In the event of an emergency after hours, please contact Windham Public Safety Dispatch at 207-892-2525.

Please forward this letter and/or request to any first responders or other municipal staff who may be able to coordinate spill response efforts with Windham. Please contact me if you have any questions regarding this letter and thank you for your cooperation in this matter.

Sincerely,

Gretchen Anderson

Gretchen Anderson
Environmental & Sustainability Coordinator

gaanderson@windhammaine.us
Office: 207-777-1948
Cell: 207-310-7393

Cc: Barry Tibbetts, Town Manager
Brent Libby, Fire Chief
Kevin Schofield, Police Chief

E. Construction Inspection Form

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/replacment) **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 (requiured 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	
Distrubred 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 petrolium from discharging	M	P	F	N/A	
Petrolium/ 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 fugative dust	M	P	F	N/A	
Weekly sweeping of roadways being conducted	M	P	F	N/A	

Part XIII: Corrections Needed	Compliance Deadline / Timeframe

Part XIV: Photo Documentation

Insert Picture by: **1) Right-click text-box and choose "Format Picture"** **2) Choose "Fill" and then "Picture or Texture fill"** **3) Click "File"** **4) Choose photo**		
P1 -	P2 -	P3 -
P4 -	P5 -	P6 -

F. 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 number of posters distributed
Flyer	1 flyer	Total number of flyers distributed
Brochure	1 brochure	Total number of brochures distributed
Rack Card	1 rack card	Total number of rack cards distributed
Newsletter Article	2 newsletter articles	Total number of newsletters distributed
Post Card	1 post card	Total number of postcards distributed
Factsheet	1 factsheet	Total number of factsheets distributed
Sign	5 signs/municipality	Total number of signs distributed
Story Walk	1 story walk	Number of QR code (or similar technology) scans from signs
Story Map	1 regional story map	Number of visitors to page
Stormwater Geocaching	1 regional activity (14 sites)	Number of participants per site
Augmented Reality App	1 regional activity (14 sites)	Number of app downloads Number of engagements within the app
Municipal Electronic Message Board	3 messages	Amount of time message was displayed
Email Newsletter	4 email newsletters	Number of people reached with email Number of interactions with email (e.g., link clicks)
Municipal Website Content	Annual updates to website stormwater content	Number of visitors to stormwater webpage
Think Blue Maine Website Content	Semiannual updates to website content	Number of visitors to website
Social Media Post (each platform counts as separate tool)	12 posts	Amount of post engagement (e.g., views, reactions, comments, shares, etc.)
Social Media Ad (each platform counts as separate tool)	Ad(s) run 90 days (multiple ads may be run for shorter durations to total 90 days)	Amount of ad engagement (e.g., reactions, comments, shares, link clicks, etc.) Number of people reached with ad
Social Media Video (each platform counts as separate tool)	3 videos	Amount of video engagement (e.g., views, reactions, comments, shares, etc.)
Online Ad	Ad(s) run 90 days (multiple ads may be run for shorter durations to total 90 days)	Number of people reached with ad Amount of ad engagement (e.g., link clicks)
Radio Ad	1 radio ad	Number of people reached with ad
Radio Segment	1 radio segment	Number of people reached with segment

Outreach Tool	Minimum Level of Effort	Effectiveness Benchmark
Television Ad (broadcast or streaming)	1 television ad	Number of people reached with ad
Television News Segment (broadcast or streaming)	1 television news segment	Number of people reached with segment
Newspaper Article	1 newspaper article	Number of people reached with article
Newspaper Ad	1 newspaper ad	Number of people reached with ad
Webinar/Workshop	7 hours of training offered (multiple webinars/workshops may be offered to reach 7 hours)	Number of workshop attendees
Social Gathering	3 events	Number of interactions
Tabling	3 events	Number of interactions
Outreach partnership with local retailer	50% of industry retailers in region participating	Number of local retailers participating
Outreach partnership with local organization	3 content shares by partner organization	Number of people reached
Item with branding/messaging	1 item with branding/messaging	Total number of items distributed
A DEP-approved tool	Minimum level of effort will be determined based on the tool	Effectiveness benchmark will be determined based on the tool.