Southern Maine Community College
2022 Stormwater Management Plan

Plan Submittal Date:__February 7, 2022__
Maine DEP Effective Date: October 1, 2022

MS4 Federal State Permit MER042004

1. Introduction

This Stormwater Management Plan (SWMP) for Southern Maine Community College (SMCC) presents how the college will comply with the requirements of the General Permit for Discharge of Stormwater from Small State and Federally Owned Municipal Separate Storm Sewer Systems (referenced as the "MS4 Permit" or General Permit or permit).

The South Portland campus, regulated by this MS4 Permit, measures roughly 80 acres located on the Spring Point Peninsula of South Portland, Maine. SMCC is surrounded on two sides (east and north) by Casco Bay. Port Harbor Marine abuts SMCC to the west. Benjamin Pickett Street and Fort Road abut SMCC to the south, with residential neighborhoods and small businesses beyond. See Figures 1 and 2 below.

The college has managed stormwater discharges under a MS4 Permit for nearly twenty years. In this time, the program has matured. Within its MS4 boundary, Southern Maine Community College has:

- 2 school owned residential housing units (total 5 occupants)
- 2 dormitories with a maximum of 445 student residents (during Fall and Spring Semesters)
- No combined sewer overflow systems
- No septic systems
- No discharges to an urban impaired stream(s)
- No additional state issued waste discharge licenses beyond this MS4 Permit
- Ground verified and mapped the school's stormwater infrastructure during the 2014-2015 permit period, confirming the subsurface infrastructure had no illicit connections. Since then, no construction or reconstruction has occurred.

Stormwater discharges governed by SMCC's MS4 Permit flow to the Casco Bay. The table below is a summary of receiving water quality. See Figure 3 below for an outfall map. Section 7 of this document discusses interconnections.

SMCC Outfall Name	Receiving Waterbody	Water Classification	DEP Waterbody ID	TMDLs	Shellfish Water Quality Classification
WB_15 WB_12 WB_11	Casco Bay	Class SB Category 5-B-1(a)	804	No TMDL at this time Bacteria TMDL revision pending	Prohibited
BW_11 BW_10 BW_12	Casco Bay	Class SB Category 5-B-1(a)	804	No TMDL at this time Bacteria TMDL revision pending	Prohibited

Figure 1: Southern Maine Community College is a "Nested" MS4 within the City of South Portland, which operates under General Permit Number MER041018 for the Discharge of Stormwater from Small Municipal Separate Storm Sewer Systems (MS4). The map below shows SMCC's location within the city.

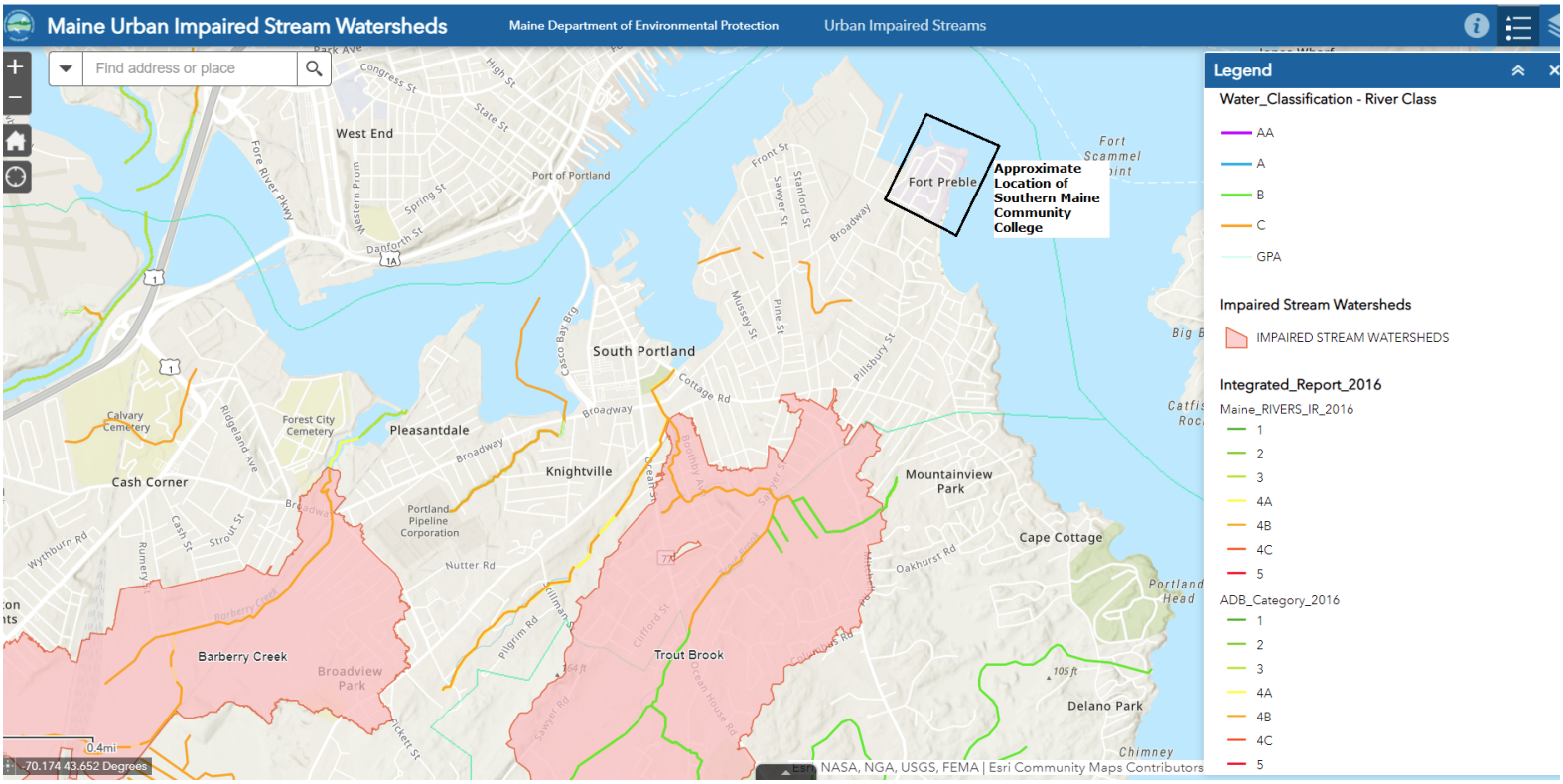
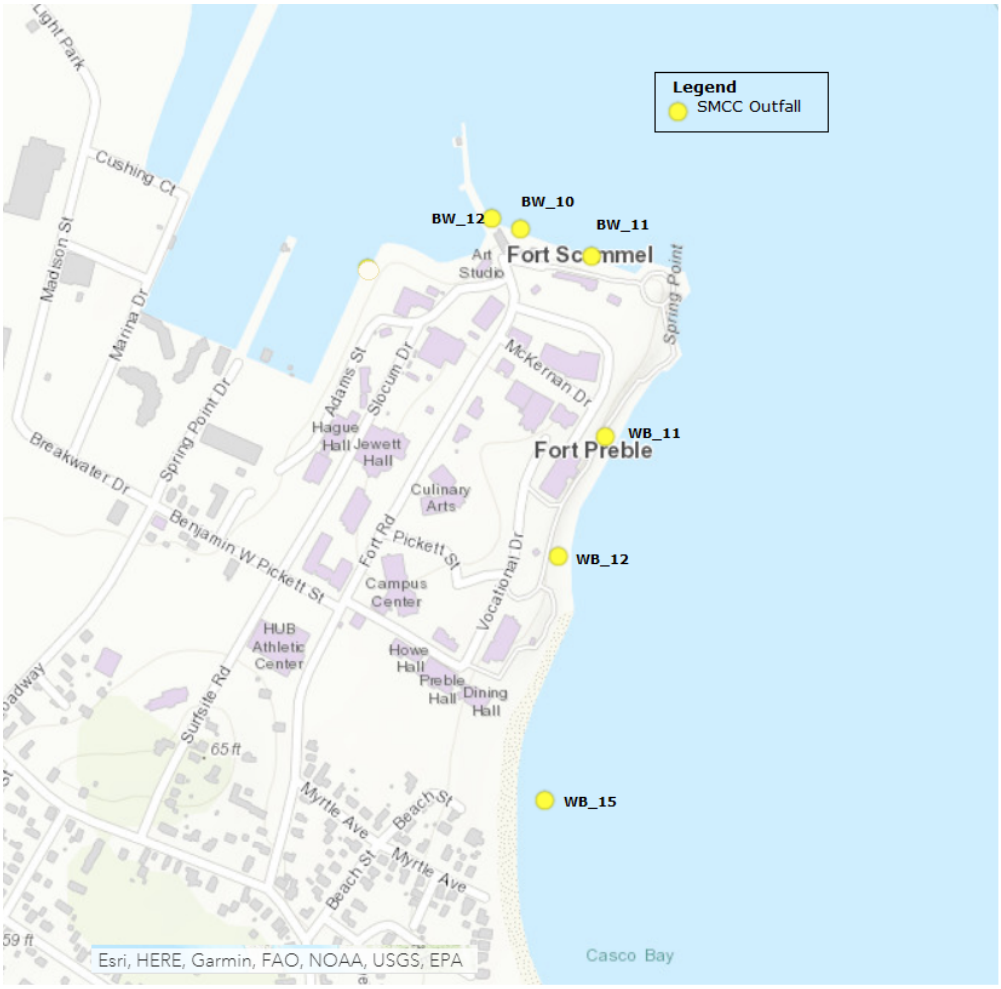


Figure 2: Map of SMCC Campus

Figure 3: Map of SMCC Outfalls governed by this permit: Outfall letter designation WB stands for Willard Beach. Outfall letter designation BW stands for Breakwater.



2. Stormwater Management Plan Requirements

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).

This SWMP describes how SMCC will implement the six MCMs set forth in Parts IV(C) of the General Permit. The six MCMs that are required to be addressed in the 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

For each MCM, the following information has been included in SMCC's SWMP:

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

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 college's NOI is provided in Attachment 1. 30-day Public Notice was provided to allow the public to comment on the SWMP. A copy of the Public Notice provided by the college is contained in Attachment 2.

Following the submission of the NOI and the public comment period, the Maine DEP will review this SWMP, the NOI, and any public comments received. The Maine DEP will then issue a permittee specific DEP Order, establishing enforceable terms and conditions in addition to the language in the 2022 MS4 General Permit.

The initial SWMP must be updated within 60 days of permit authorization to include how the permittee will meet all requirements of the DEP Order. The revised SWMP must include specific details which can be found in Part IV(B) of the MS4 Permit.

The SWMP is not an enforceable document. SMCC must remain in compliance with all standards and requirements of this MS4 Permit and the permittee specific DEP Order.

The SWMP is in effect from October 1, 2022 to September 30, 2027. If the MS4 Permit is to be renewed, the plan will remain in force until the Maine DEP takes final action on the renewal.

3. Plan Availability and Record Keeping

SMCC will have a signed copy of the SWMP and applicable records at the office of the Environmental Health & Safety Coordinator located in the Fort Building. This document will be posted on the college's public facing website: https://www.smccme.edu/about/consumer-info. The college will make a copy of the SWMP available immediately upon request to the following:

- Department or U.S. Environmental Protection Agency (EPA) personnel
- Operator(s) of the South Portland regulated small MS4
- Members of the public

SMCC will keep all records required by the General Permit for at least three (3) years following its expiration or longer if requested by the Department or the US EPA.

4. SWMP Modifications During the Permit Cycle

SMCC must keep the SWMP current. SMCC must allow the public the opportunity to comment on changes made to the SWMP at minimum once per year. The SWMP must be amended if SMCC or the Department determines that:

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

If the changes being made are explicitly required by the General Permit or the permittee specific DEP order one of the processes documented in MS4 Permit Part IV(B)(2) will be followed depending on who identified the need for the change.

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

5. Minimum Control Measures (MCMs)

There are six Minimum Control Measures (MCMs) contained in this document. For each MCM, SMCC has defined specific Best Management Practices (BMPs) outlined below.

MCM1 – Education/Outreach Program

Southern Mane Community College is a member of the Casco Bay 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. This coalition is facilitated by the Cumberland County Soil and Water Conservation District (CCSWCD).

Southern Maine Community will fulfill the requirements for the Public Education/Outreach Program (MCM1) through participation in ISWG. The DEP approved the CCSWCD & ISWG Education Plan on August 5, 2021. The detailed Education Plan is located in Appendix 1. Below is a summary of how SMCC will meet MCM1.

BMP 1A: Outreach to Raise Awareness Campaign

Permit Requirement: Part IV(C)(1)(g)(1)

Responsible Position: EH&S Coordinator (with implementation assistance from CCSWCD)

Measurable Goal: SMCC, through its participation in ISWG will implement one (1) awareness campaign using a minimum of three (3) outreach tools per year. The target audience will be the general public ages 25 – 34 within the ISWG region and the goal is to raise the target audiences' awareness of what happens to stormwater at their residence or place of work. Efforts will align with Measurable Goal 1.1a contained within the DEP approved CCSWCD & ISWG Education Plan located in Appendix 1 on page 2.

BMP 1B: Outreach to Change Behavior Campaign

Permit Requirement: Part IV(C)(1)(g)(2)

Responsible Position: EH&S Coordinator (with implementation assistance from CCSWCD)

Measurable Goal: SMCC, through its participation in ISWG will implement one (1) awareness campaign using a minimum of three (3) outreach tools per year. The target audience will be dog owners ages 25 - 34 within the ISWG region. Efforts will align with Measurable Goal 1.2a contained within the DEP approved CCSWCD & ISWG Education Plan located in Appendix 1 on page 5.

Measurable Goal: SMCC, through its participation in ISWG will implement an additional awareness campaign using a minimum of three (3) outreach tools per year. The target audience will be dog owners ages 35 - 55 within the ISWG region. Efforts will align with Measurable Goal 1.2b contained within the DEP approved CCSWCD & ISWG Education Plan located in Appendix 1 on page 6.

BMP 1C: Effectiveness Evaluation

Permit Requirement: Part IV(C)(1)(h) & Part IV(C)(1)(i)

Responsible Position: EH&S Coordinator (with implementation assistance from CCSWCD)

Measurable Goal: The College, 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. Efforts will align with Measurable Goal 1.3a contained within the DEP approved CCSWCD & ISWG Education Plan located in Appendix 1 on page 7.

Measurable Goal: In Permit Year 5 of the 2022 MS4 General Permit (July 1 2026 to June 30, 2027) the College, through its participation in ISWG, will conduct an evaluation of the overall effectiveness of the Awareness and Behavior Change BMPs. Efforts will align with Measurable Goal 1.3b contained within the DEP approved CCSWCD & ISWG Education Plan located in Appendix 1 on page 7.

MCM2 - Public Involvement and Participation

Southern Maine Community College is a member of the Casco Bay 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. This coalition is facilitated by the Cumberland County Soil and Water Conservation District (CCSWCD).

Southern Maine Community will fulfill the requirements for the Public Education/Outreach Program (MCM2) through participation in ISWG. The DEP approved the CCSWCD & ISWG Education Plan on August 5, 2021. Below is a summary of how SMCC will meet MCM2. A detailed Education Plan is located in Appendix 1.

BMP 2A: Public Notice Requirement

Permit Requirement: Part IV(C)(2)(a)

Responsible Position: EH&S Coordinator (with implementation assistance from CCSWCD)

Measurable Goal: The College will follow applicable state and local public notice requirements for their Stormwater Management Plans and Notices of Intent (NOIs) to comply with the MS4 General Permit. Copies of the NOIs and plans will be made available on the College's website. The College will document public meetings related to their stormwater program and attendance of those meetings in their annual report. This effort will align with Measurable Goal 2.1a contained within the DEP approved CCSWCD & ISWG Education Plan located in Appendix 1 on page 8.

Measurable Goal: The ISWG members meet as a group 6 times per year to review issues associated with implementation of the Stormwater Management Plan and MS4 General Permit. These meetings will be publicized through the CCSWCD website, on ISWG member websites, and open to the public. This effort will align with Measurable Goal 2.1b contained within the DEP approved CCSWCD & ISWG Education Plan located in Appendix 1 on page 8.

BMP 2B: Public Event

Permit Requirement: Part IV(C)(2)(b)

Responsible Position: EH&S Coordinator (with implementation assistance from CCSWCD)

Measurable Goal: The College will annually host, conduct, and/or participate in a public community event with a pollution prevention and/or water quality theme from the list included in the 2022 MS4 General Permit or another activity approved by the DEP. Stormwater stewardship and educational messages and activities will be incorporated into the event. The event will be advertised through the College's and CCSWCD's social media accounts, and other college and CCSWCD communication methods. The annual report will include a description of the event and the estimated attendance/participation. Efforts will align with Measurable Goal 2.2a contained within the DEP approved CCSWCD & ISWG Education Plan located in Appendix 1 on page 8.

MCM3 - Illicit Discharge Detection and Elimination (IDDE) Program

Southern Maine Community College will continue to implement its Illicit Discharge Detection and Elimination (IDDE) program, which includes:

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

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

BMP 3A: Maintain the College's Non-Stormwater Discharge Procedure

Permit Requirement: Part IV(C)(3)(a)

Responsible Position: EH&S Coordinator

Measurable Goal: Annually, SMCC will review their Non-Stormwater Discharge Procedure for accuracy and make revisions if/as necessary.

BMP 3B: Creation of a Written IDDE Plan

Permit Requirement: Part IV(C)(3)(b)

Responsible Position: EH&S Coordinator

Measurable Goal: The IDDE plan, which includes the QAPP, is contained in Appendix 2 of this SWMP. The plan will be reviewed annually and updated if needed to reflect changes to the program.

BMP 3C: Stormwater Infrastructure Map

Permit Requirement: Part IV(C)(3)(d)

Responsible Position: EH&S Coordinator

Measurable Goal: Annually review and update, if necessary, the college's stormwater infrastructure map.

BMP 3D: Dry Weather Inspections

Permit Requirement: Part IV(C)(3)(e)

Responsible Position: EH&S Coordinator

Measurable Goal: Annually, SMCC will perform one dry weather inspection on each of their six outfalls: WB_15, WB_12, WB_11, BW_11, BW_10 and BW_12. Relevant data is captured in an online inspection form similar to the example in Attachment 3.

Measurable Goal: If dry weather flow is present at outfall WB_12, WB_11, BW_11, BW_10 or BW_12 , SMCC will sample the discharge to determine if the discharge is an illicit discharge. When dry weather flow is observed, SMCC will take at least one (1) sample per outfall, per the 5 year permit term and follow the protocols set forth in the IDDE Plan. Outfall WB_15 resides under the high tide line and frequently flows during dry weather. SMCC believes Outfall WB_15 to be exempt from the dry weather investigation required in Part IV(C)(3)(e)(iv). This is documented in the college's QAPP found in Appendix 2.

BMP 3E: Wet Weather Assessment

Permit Requirement: Part IV(C)(3)(f)

Responsible Position: EH&S Coordinator

Measurable Goal: By September 30, 2027, SMCC will perform a wet weather assessment in accordance with Part IV(C)(3)(f) and will incorporate the assessment into the written IDDE Plan.

BMP 3F: Review of Allowable Non-Stormwater Discharges

Permit Requirement: Part IV(C)(3)(h)

Primary Responsible Position: EH&S Coordinator
Secondary Responsible Position: Facilities Project Manager/Director

Measurable Goal: SMCC has reviewed the list of allowable non-stormwater discharges and has not identified any as a significant contributor of pollutants to the MS4. If SMCC should identify an allowed non-stormwater discharge, listed in Part IV(C)(3)(h) of the permit, as a significant contributor of pollutants to the MS4, the college will implement measures to control the source(s).

MCM4 – Construction Site Stormwater Runoff Control

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

SMCC does not anticipate new development or redevelopment projects of this scale will occur during this permit cycle.

BMP 4A: Erosion and Sediment Control Procedure

Permit Requirement: Part IV(C)(4)(a)(i)

Primary Responsible Position: Facilities Manager/Director
Secondary Responsible Position: Dean of Administration

Measurable Goal: Southern Maine Community College must adhere to local and state construction rules in addition to those imposed by the Maine Community College System. As a "nested" MS4 community, SMCC is required to follow the rules and ordinances enacted by the City of South Portland related to business planning, development and/or land use. The City of South Portland will update their Zoning Ordinance to include applicable sections of Attachment C within the General Permit and implement the ordinance, by July 1, 2024. Once enacted by the City of South Portland, SMCC will be obligated to follow the revised ordinance when undertaking applicable construction activities.

BMP 4B: Erosion and Sediment Control Procedure

Permit Requirement: None

Primary Responsible Position: EH&S Coordinator
Secondary Responsible Position: Dean of Administration

Measurable Goal: Once a revised ordinance is enacted by the City, the EH&S Coordinator will brief the Dean of Administration and the SMCC Facilities Manager/Director on the city's new requirements.

BMP 4C: Procedures to Notify Construction Site Developers and Operators

Permit Requirement: Part IV(C)(4)(a)(iii)

Primary Responsible Position: Facilities Manager/Director
Secondary Responsible Position: Dean of Administration

Measurable Goal: During the initial planning phase for any construction project on campus which meets the land disturbance thresholds outlined in the permit, SMCC will notify potential construction site developers and operators of the requirements for registration under the Maine Construction General Permit and Chapter 500, Stormwater Management.

BMP 4D: Construction Site Stormwater Recordkeeping

Permit Requirement: Part IV(C)(4)(a)(v)

Primary Responsible Position: Facilities Manager/Director
Secondary Responsible Position: Dean of Administration

Measurable Goal: When construction activities on campus meet the land disturbance thresholds described in this permit, SMCC will document the activities within its annual report.

Measurable Goal: Prior to June 30, 2024, SMCC will develop procedures for site inspections and enforcement of erosion and sediment control measures for future construction project meeting the land disturbance threshold outlined in this permit.

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

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

SMCC does not anticipate new development or redevelopment projects of this scale will occur during this permit cycle.

BMP 5A: Required LID Techniques

Permit Requirement: Part IV(C)(5)(a)

Primary Responsible Position: EH&S Coordinator
Secondary Responsible Position: Dean of Administration

Measurable Goal: SMCC construction requirements are set by the Maine Community College System (MCCS) and the Maine State Bureau of General Services. SMCC will develop and begin implementation of an enforceable program for stormwater management on new and redevelopment sites that disturb greater than or equal to one acre, including projects less than one acre that are a part of a larger common plan of development. The established performance standards will be at least as stringent as the LID techniques contained in Table 1 of Attachment F of the permit unless such techniques are infeasible on a site. This task will be completed on or before December 31, 2022.

BMP 5B: Post Construction BMP Inspections

Permit Requirement: Part IV(C)(5)(b)

Primary Responsible Position: EH&S Coordinator
Secondary Responsible Position: Facilities Manager/Director

Measurable Goal: The post-construction BMP's on SMCC property were installed before July 1, 2008 and/or are under 1 acre in size. This permit requirement is currently not applicable.

Measurable Goal: SMCC will ensure that future/new post-construction stormwater BMP's installed after the date of this SWMP and which fall under the scope of MCM4 and MCM5 are inspected, managed, and documented following the requirements of this permit.

MCM6 - Pollution Prevention/Good Housekeeping for Facility Operations

The objective of this program is to mitigate or eliminate pollutant runoff from state and federal facility roads, other paved surfaces, infrastructure and facility operations on property that is owned or managed by the permittee.

In 2014, the DEP determined that SMCC did not require a stormwater pollution prevention plan (SWPPP). Our operations have not changed. SMCC will continue to operate via a written Stormwater O&M Plan which will be reviewed and updated prior to October 1, 2022.

BMP 6A: Stormwater O&M Plan

Permit Requirement: Part IV(C)(6)(a) and Part IV(C)(6)(b)

Responsible Position: EH&S Coordinator
Secondary Responsible Position: Facilities Project Manager/Director

Measurable Goal: SMCC will continue to maintain an inventory of operations with the potential to cause or contribute to stormwater pollution. The written Stormwater O&M Plan is reviewed annually and, as reasonable, practices will be added or amended to eliminate or better control pollutant discharges.

BMP 6B: Stormwater O&M Plan Training

Permit Requirement: Part IV(C)(6)(b)(ii)

Responsible Position: EH&S Coordinator
Secondary Responsible Position: Facilities Project Manager/Director

Measurable Goal: Conduct annual Facilities Employee Stormwater O&M Plan training.

BMP 6C: Annual Street Sweeping

Permit Requirement: Part IV(C)(6)(b)(iii)

Primary Responsible Position: Facilities Project Manager/Director
Secondary Responsible Position: Facilities Supervisor

Measurable Goal: Once each year, as soon as possible after snow melt but before June 30th, sweep all paved streets and parking lots maintained by SMCC.

BMP 6D: Catch Basin Management

Permit Requirement: Part IV(C)(6)(b)(iv)

Responsible Position: EH&S Coordinator
Secondary Responsible Position: Facilities Project Manager/Director

Measurable Goal: SMCC will inspect and clean catch basins that accumulate sediment once every other year and if necessary, clean catch basins and other stormwater structures that accumulate sediment and dispose of the removed sediment in accordance with current state law. SMCC captures relevant data on an electronic inspection form similar to the example in Attachment 4.

Measurable Goal: Catch basins which contain excess sediment (greater than or equal to 50% of a sump's capacity) will be cleaned every year. A basin will return to the every-other-year cycle when the basin remains below 25% for two consecutive years.

BMP 6E: Stormwater Structure Repairs

Permit Requirement: Part IV(C)(6)(c)

Primary Responsible Position: Facilities Project Manager/Director
Secondary Responsible Position: Facilities Supervisor

Measurable Goal: SMCC will evaluate and implement a schedule for repairing or upgrading the conveyances, structures and outfalls under SMCC's jurisdiction in accordance with the necessity of needed repairs or maintenance.

6. Sharing Responsibility

SMCC is a member of the Interlocal Stormwater Working Group (ISWG) who, in partnership with the Cumberland County Soil & Water Conservation District (CCSWCD) and 14 area Municipalities share resources to complete both MCM1 and MCM2. This will be noted in each Annual Compliance Report. SMCC understands that if ISWG/CCSWCD fails to implement a joint BMP, detailed in Section 5 above, SMCC will remain responsible for its implementation.

7. Interconnections

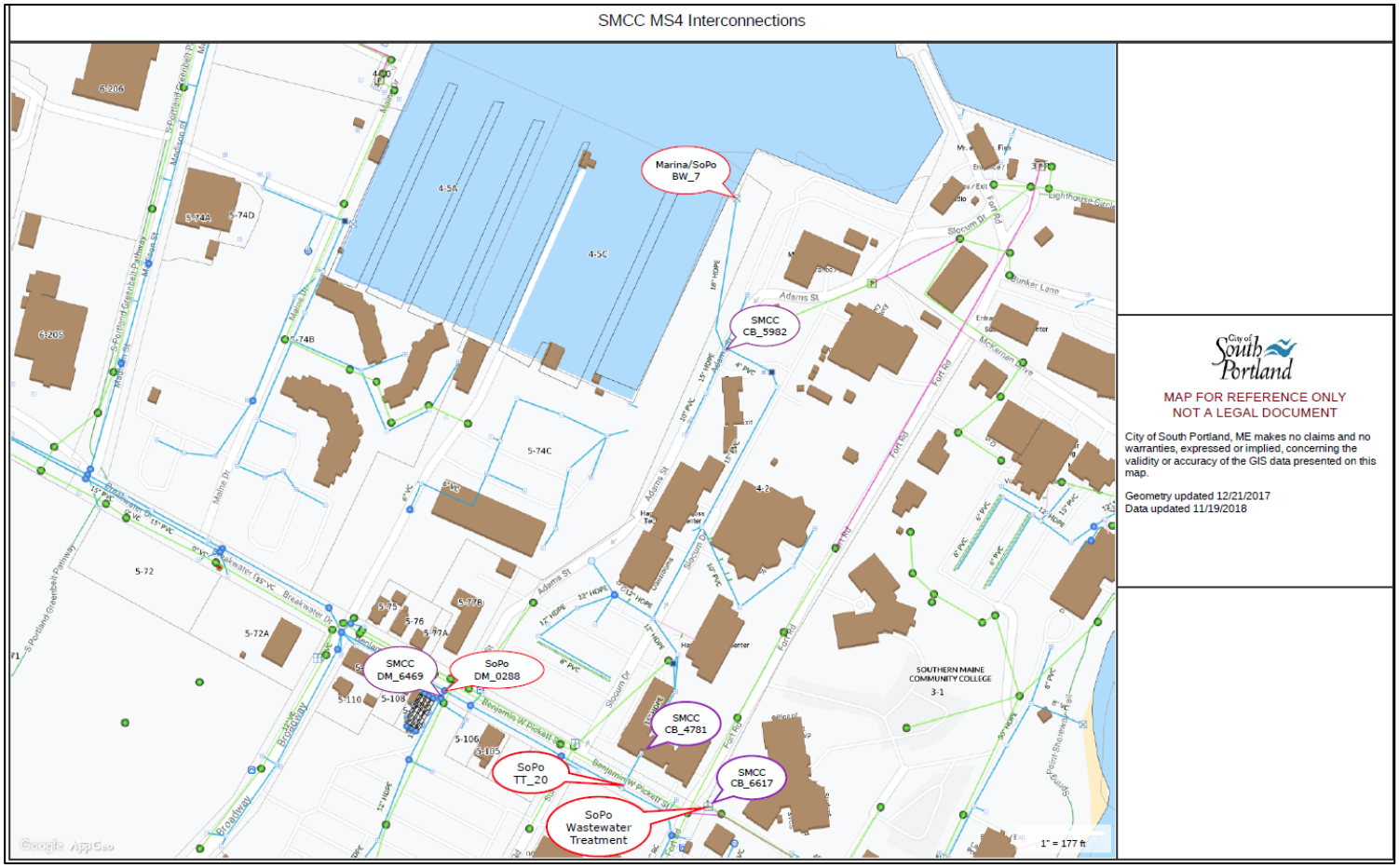
The stormwater sewer system at Southern Maine Community College interconnects with two entities detailed in the table below.

- City of South Portland operates under General Permit Number MER041018 for the Discharge of Stormwater from Small Municipal Separate Storm Sewer Systems (MS4)
- Port Harbor Marine is believed to operate under BWQ Stormwater Industrial General Permit Number MER05B322

Water flows from SMCC Catch Basin	Location on SMCC Property	Flows to Interconnecting Infrastructure	Owned or Operated by	Ultimate Discharge Location
CB_4781	Spring Point Stairwell	TT_205	South Portland (SoPo)	Fore River Outfall BW_4
CB_6617	Campus Center Dr. at Fort Road	Sewer Manhole	South Portland (SoPo)	Wastewater Treatment
DM_6469	Parking Lot A	DM_0288	South Portland (SoPo)	Fore River Outfall BW_4
CB_5982	Adams Street	-unknown-	Port Harbor Marine (Marina)	Casco Bay Outfall BW_7

SMCC has notified the City of South Portland and the Port Harbor Marine of the interconnections and agreed to alert one/both entities in the event of an illicit discharge from our property to the shared water resources listed above. Notices can be found in Attachment 5 of this document. The figure below shows where each interconnection is located.

Figure 4: SMCC Map of interconnections



8. TMDL waters and Urban Impaired Steams

The college does not have a point source discharge to a water where an EPA approved Total Maximum Daily Load (TMDL) applies.

The college does not have a point source discharge to an urban impaired stream (UIS).

9. Annual Compliance Report

By September 15th of each year, SMCC will submit an Annual Compliance Report to the Department for review. SMCC will reference Part IV(G) of the General Permit for the components of the Annual Compliance Report.

SMCC's first permit year will run October 1, 2022 to June 30, 2023 so the college may continue to align our participation with the regional stormwater working group ISWG. Subsequent permit years will follow the historic July 1 to June 30 schedule (e.g. SMCC's Permit Year 2 would run July 1, 2023 to June 30, 2024 with the annual report due by September 15, 2024).

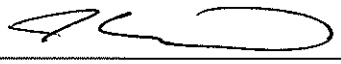
10. Duly Authorized Representatives

In addition to the individual identified in Part III(A)(2)(a) of the permit, the following positions are deemed duly authorized representatives with the authority to sign and certify documents under this permit:

- EH&S Coordinator
- Director of Human Resources
- Dean of Administration

11. 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.



Joseph L. Cassidy, Esq.
President
Southern Maine Community College

2-2-22

Date

SOUTHERN MAINE COMMUNITY COLLEGE

Attachment 1

SMCC Notice of Intent

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	Southern Maine Community College			Permittee ID #	MER042004
Name and title of chief elected official or principal executive officer	Joseph Cassidy, President				
Mailing Address	Cates Administration 2 Fort Road				
Town/City	South Portland	State	ME	Zip Code	04106
Daytime Phone	207-741-5501	Email	jcassidy@smccme.edu		
PRIMARY CONTACT PERSON FOR OVERALL STORMWATER MANAGEMENT PROGRAM (if different than PEO/CEO)					
Name and Title	Tiffanie Bentley, Director of Administration				
Mailing Address	Fort Building 2 Fort Road				
Town/City	South Portland	State	ME	Zip Code	04106
Daytime Phone	207-741-5610	Email	tbentley@smccme.edu		
STORMWATER MANAGEMENT PLAN (SWMP)					
Urbanized Area (sq. mi.)	0.125 sq mi (80 acres)				
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*): Casco Bay					
List of impaired waterbodies that receive stormwater from the regulated small MS4 (*attach additional sheets as necessary*): There are no discharges to urban imparerd streams or waterbodies classified by MEDEP as impaired.					

CERTIFICATION

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

Signature of Permittee		Date	2-2-22

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	

SOUTHERN MAINE COMMUNITY COLLEGE

Attachment 2

Public Notice

SENTRY CLASSIFIEDS

Sentry Classifieds AT YOUR SERVICE

GENERAL HELP

PART TIME
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PUBLIC NOTICES

NOTICE OF INTENT TO COMPLY WITH THE GENERAL PERMIT FOR THE DISCHARGE OF STORMWATER FROM STATE OR FEDERALLY OWNED MUNICIPAL SEPARATE STORM SEWER SYSTEMS

Southern Maine Community College located in South Portland, ME hereby gives public notice that it will file a Notice of Intent (NOI) and Stormwater Management Plan to comply with the General Permit for the Discharge of Stormwater from State or Federally Owned Municipal Separate Storm Sewer Systems (MER 042004) with the Maine Department of Environmental Protection (DEP) on or about March 1, 2022. Once filed, a copy of the NOI and Stormwater Management Plan will be posted on the college's website: https://www.smccme.edu/about/consumer-info and a copy will be available to view at the office of the EH&S Coordinator located in the Fort Building. The information will be posted on the Maine DEP website: https://www.maine.gov/dep/comment/index.html. Public comment will be taken during the Maine DEP review period. Written public comments or requests for information may be made to the MS4 Stormwater Program Manager, Maine Department of Environmental Protection, Bureau of Water Quality, 17 State House Station, Augusta, Maine 04333-0017 and must include the name of the entity filing the NOI and the permit number provided above.

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SOUTHERN MAINE COMMUNITY COLLEGE

Attachment 3

Dry Weather Inspection Form

SOUTHERN MAINE COMMUNITY COLLEGE
Environmental Health & Safety

DRY WEATHER OUTFALL INSPECTION

LOCATION INFORMATION

Date: **Time**: **Inspector**:

Outfall ID: **Outfall Location**:

Receiving Water Body: Portland Channel

Photo Taken:

WEATHER:

Temp:_ **Wind**: **Cloud Cover**:

Precipitation last 3 days: **Amount**: _____ in

OUTFALL CONDITION

Pipe Flow:	None	Trickle	Steady	1/4 pipe flow or more		
Seepage Flow:	None	Trickle	Steady	1/4 pipe flow or more		
Condition:	Open	1/4 Full	1/2 Full	3/4 Full	Plugged	Unknown
Structure:	Poor	Fair	Good	Excellent	Unknown, can't see it	

Flow Color (if flow is present):_____

Debris/Pollution	**Odor**	**Water Clarity**	**Solids**
Nutrients present	None	Clear	Sediment
Foam	Musty	Cloudy	Trash
Floating Scum	Sewer/Septic	Opaque	Yard Waste
Solids	Other:	Other	Sanitary Sewage
Sheen			Other:
Other:			

General Comments:

Actions Required:

SOUTHERN MAINE COMMUNITY COLLEGE

Attachment 4

Catch Basin Inspection Form

SOUTHERN MAINE COMMUNITY COLLEGE

CATCH BASIN INSPECTION FORM

Inspector: _____ _____ Date: _____

Catch Basin I.D.			
Basin Material:	XX Concrete ☐ Corrugated Metal ☐ Stone ☐ Brick Other:_____	**Catch Basin Condition:**	☐ Good ☐ Fair ☐ Poor ☐ Crumbling
Sump Depth (in): None_____ 18_____ 24_____ 36_____ 48_____ Other			
Required Maintenance/Problems (Check all that apply): ☐ Cannot Remove Cover/Grate ☐ Cover/Grate Needs to be Replaced ☐ Inlet Pipe is Blocked ☐ Outlet Pipe is Blocked ☐ Frame Maintenance is Required ☐ Pipe Maintenance is required		☐ Basin is Undermined of Bypassed ☐ Corrosion at Structure ☐ Erosion Around Structure ☐ Settlement of Pavement Around Structure ☐ Needs Mortar/Cement Around Cover/Grate Other:_____	
Catch Basin Grate Type: ☐ **Bar** ☐ **Cascade** **Other:**_____ **Properly Aligned: Yes**____ **No**____		**Sediment Buildup Depth:** **0-6 (in):** _____ **6-12 (in):** _____ **12-18 (in):** _____ **18-24 (in):** _____ **24 + (in):** _____	
If the outlet is submerged check yes and indicate approximate height of water above the outlet invert: ☐ **No** ☐ **Yes** **height above invert (in):**_____			
Circle those present: Foam Sanitary Waste Orange Staining Excessive Sediment Black stain/film Oil Sheen Bacterial Sheen Floatables Discoloration: _____ Odor: ___ Pet Waste Bags Excess Algal Growth Other:_____			
Other Comments:			

Attachment 5

Notices of Interconnection

January 28, 2022

Mike Soucey
Port Harbor Marine
1 Spring Point Drive
South Portland, ME
04106

RE: Notice of Intent and Stormwater Management Plan Filing for 2022 MS4 General Permit

Dear Mr. Soucey,

On or before March 1, 2022, Southern Maine Community College (SMCC) will file a Notice of Intent and Stormwater Management Plan to comply with Maine's 2022 General Permit for the Discharge of Stormwater from Small State and Federally Owned Municipal Separate Storm Sewer Systems (MS4).

SMCC has four interconnections with neighboring stormwater conveyances which are highlighted on the attached map:

Water flows from SMCC Catch Basin	Location on SMCC Property	To interconnecting infrastructure	Owned or Operated by	Ultimate Discharge Location
CB_4781	Spring Point Stairwell	TT_205	South Portland	Fore River Outfall BW_4
CB_6617	Campus Center Dr. at Fort Road	Sewer Manhole	South Portland	Wastewater Treatment
DM_6469	Parking Lot A	DM_0288	South Portland	Fore River Outfall BW_4
CB_5982	Adams Street	-unknown-	Port Harbor Marina South Portland	Casco Bay Outfall BW_7

SMCC will notify the city of South Portland and, where applicable, Port Harbor Marine of an illicit discharge from our property to the shared water resources listed above.

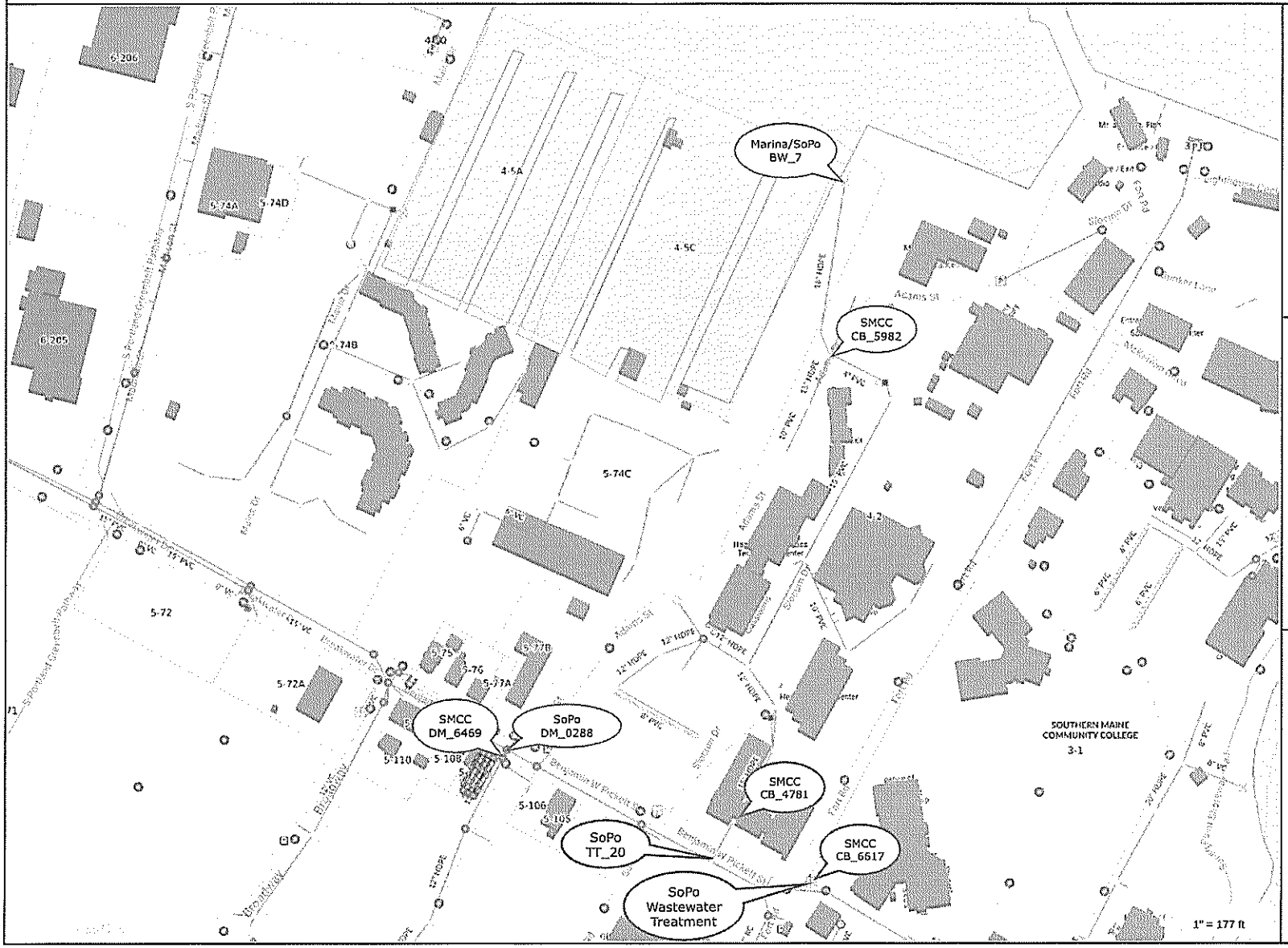
In the event of an illicit discharge identified by the Port Harbor Marine that may impact SMCC's stormwater system, we request that you notify SMCC Campus Security at 207.741.5553. The Campus Security office is open 24/7. If the discharge occurs during business hours, we request that you also notify the EHS office at 207.741.5932.

Sincerely,

Jennifer Otenti
Environmental, Health & Safety Coordinator
Southern Maine Community College

Cc: Tiffanie Bentley, Dean of Administration
Clayton Ross, Facilities Daily Operations Supervisor
Fred Dillon, Stormwater Program Coordinator for City of South Portland

SMCC MS4 Interconnections



City of South Portland

MAP FOR REFERENCE ONLY
NOT A LEGAL DOCUMENT

City of South Portland, ME makes no claims and no warranties, expressed or implied, concerning the validity or accuracy of the GIS data presented on this map.

Geometry updated 12/21/2017
Data updated 11/19/2018

Map Theme Legends

Storm and Sewer Systems

Subsurface Drainage Device
- Bio-Filter
- Bio-Retention
- Box Filter
- Isolator Row
- Soil Filter
- Subsurface Chambers

Storm Structre
- Bio Filter Outlet Valve
- Inspection Port
- Inland and Area Drain Solids
- Area and Inline Drain Beehives
- Catchbasin in Sewer
- Catchbasin
- Drain Manhole
- Outlet Control
- T Juncture

Sewer Pipes
- Abandoned Pipe
- Force Main
- Gravity
- Service
- Siphon
- Storm
- Flow Direction

Waste Water Structures
- Clean Out
- Private Pump Station
- Dead End
- Tee Juncture
- Abandoned
- Air Release SMH
- Catch Basin in Sewer
- Pump Station
- Service Tie
- SMH
- SMH Bi-Directional
- SMH_CSO
- Treatment Plant
- Vault - Metering for Cape

- Outfall

Storm Pipe Opening
- Culvert Inlet, Drain Outlet, Inlet, and Sluice
- Culvert Outlet

Open Drainage Lines
- Dentention Pond Centerline
- Ditch
- Hydrography
- Swale

Stormwater Pipe
- Combined Sewer Overflow
- Culvert
- Drain
- Force
- Gravity
- Roof Drain
- Underdrain
- Flow Direction
- Flow Direction

January 28, 2022

Fred Dillon, Stormwater Program Coordinator
City of South Portland
P.O. Box 9422
South Portland, ME
04116-9422

RE: Notice of Intent and Stormwater Management Plan Filing for 2022 MS4 General Permit

Dear Mr. Dillon,

On or before March 1, 2022, Southern Maine Community College (SMCC)will file a Notice of Intent and Stormwater Management Plan to comply with Maine's 2022 General Permit for the Discharge of Stormwater from Small State and Federally Owned Municipal Separate Storm Sewer Systems (MS4).

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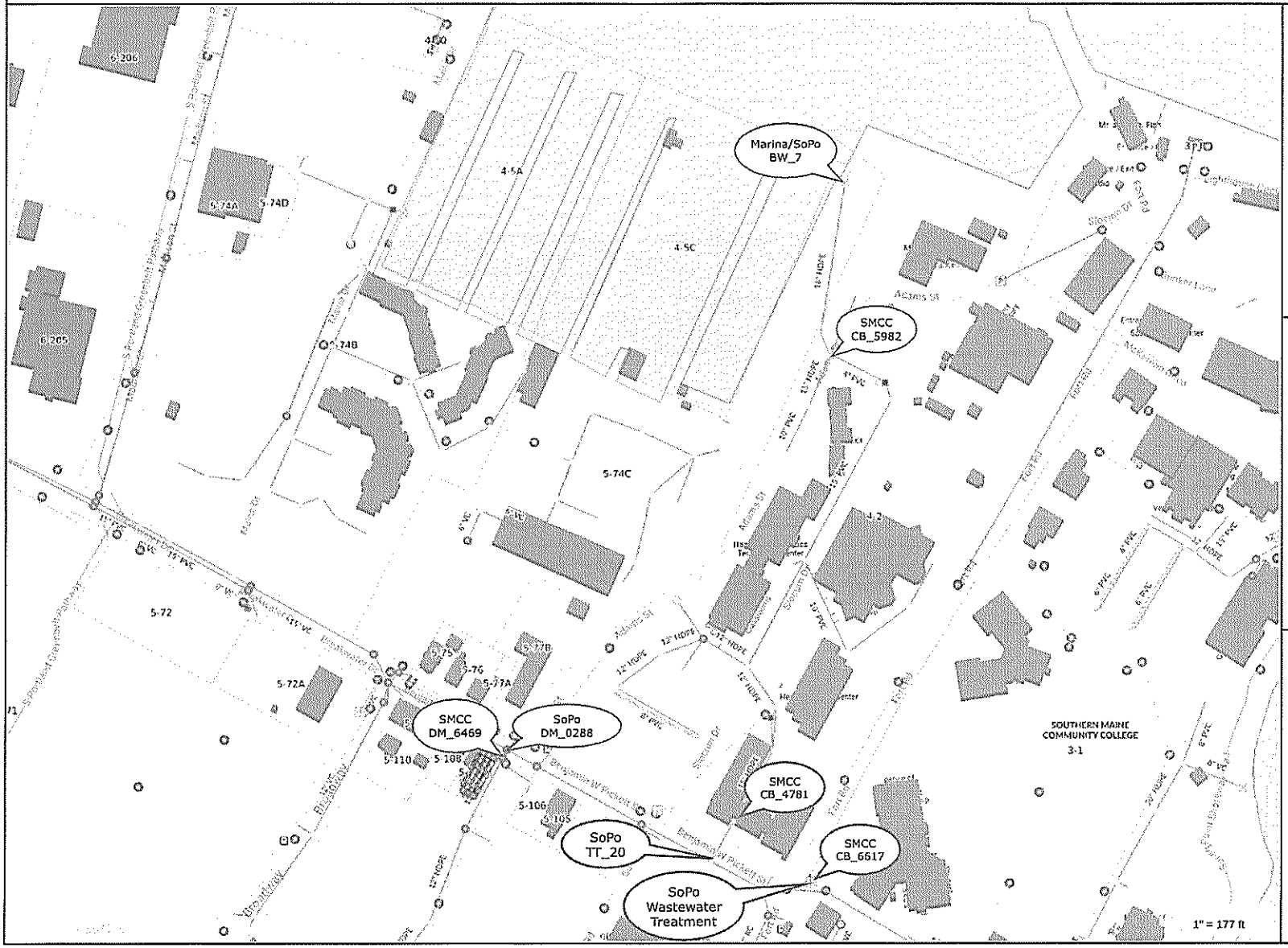
Sincerely,

Jennifer Otenti
Environmental, Health & Safety Coordinator
Southern Maine Community College

Cc: Tiffanie Bentley, Dean of Administration
Clayton Ross, Facilities Daily Operations Supervisor
Fred Dillon, Stormwater Program Coordinator for City of South Portland

SMCC MS4 Interconnections



City of South Portland

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- Abandoned Pipe
- Force Main
- Gravity
- Service
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- Flow Direction

Waste Water Structures
- Clean Out
- Private Pump Station
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- Pump Station
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- Vault - Metering for Cape

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Open Drainage Lines
- Dentention Pond Centerline
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- Swale

Stormwater Pipe
- Combined Sewer Overflow
- Culvert
- Drain
- Force
- Gravity
- Roof Drain
- Underdrain
- Flow Direction
- Flow Direction

Appendix 1

CCSWCD & ISWG Education Plan for MCM1 and MCM2

Appendix 1 Approved CCSWCD & ISWG Education Plan for MCM1 and MCM2

Note: Items below which have been ~~struck through~~ are not applicable to SMCC's MS4 permit. This Education Plan encompasses the entire ISWG community however, Municipal MS4 permit holders have a different set permit requirements than Federal/State permittees.

1 MINIMUM CONTROL MEASURES

1.1 MCM 1 Education/Outreach Program

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

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

In 2018, the Interlocal Stormwater Working Group (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 the unique conditions within each of their communities, and evaluated the needs for public education around stormwater at five of their regional meetings (9/13/2018, 3/21/2019, 7/18/2019, 3/26/2020, 5/21/2020). Based on the survey results and the discussions at their regional meetings, the ISWG communities agreed on which issues of significance to address and what tools and messages might be effective. Each of the BMPs provides a brief introductory section describing the rationale for the selection of the BMP based on the regional and local issues within the ISWG region. The BMPs are further structured to allow for adaptive education and outreach approaches to create a strong, diverse, and effective campaign over the duration of this permit.

SMCC will fulfill the requirements for Public Education/Outreach through participation in the ISWG and SMCC'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.

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

1.1.1 BMP 1.1 – Outreach to Raise Awareness Campaign

Responsible Party - EH&S Coordinator (with implementation assistance from Cumberland County Soil & Water Conservation District)

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

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, Androscoggin Valley Stormwater Working Group (AVSWG), and Southern Maine Stormwater Working Group (SMSWG) coordinate their Think Blue Maine messaging and education efforts to provide consistent messaging in Southern Maine. In addition, the Massachusetts and New Hampshire small MS4s are using similar Think Blue campaigns, so there is some regionally consistent messaging in circulation.

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

Measurable Goal 1.1a – SMCC, 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 US Census Bureau, the ISWG region's population for ages 25 to 34 is approximately 38,000 people: therefore 15% of the target audience is approximately 6,000 people.

Target Audience: People 25 to 34 in the ISWG region

Overarching Message: "Water that lands on our roads, roofs, and other hard surfaces picks up pollutants and carries them to our local waterbodies without being treated." This message will be presented with variations based on target audience interests and outreach tools used.

[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.

Outreach Tools: A minimum of three outreach tools will be selected from *Supplement A Table 1. Tools for Measurable Goal 1.1a* each year. Each tool will be assessed and customized based on the target audience's receptiveness to the method. Any tool used in a given year will be tailored to the message for the relevant target audience subset based on common characteristics and/or demographics.
Evaluation: Effectiveness will be evaluated annually by tracking process indicators[3] for each tool implemented that year and by tracking impact indicators[4] where available (see *Supplement A Table 1. Tools for Measurable Goal 1.1a*).
Implementation schedule: A minimum of three of the tools from *Supplement A Table 1. Tools for Measurable Goal 1.1a* will be implemented each year for the duration of the permit. As part of the ISWG adaptive management education and outreach program, tools and messaging will be reviewed and evaluated on an annual basis at a minimum as part of annual reporting. To address emerging issues, opportunistic tools and outreach may also be implemented. Seasonal messaging and tool adjustments will be used when applicable. Report findings will be incorporated into ISWG meeting discussions as well as annual workplans and budgets.

Background for Measurable Goal 1.1b Development/Construction Audience: Evaluation of municipal stormwater programs, through annual meetings with municipal staff and officials, has revealed a large amount of effort required to comply with MCM 4 tasks. The ISWG communities identified opportunities to address common MCM 4 goals through coordinated regional and statewide stormwater education to contractors to reduce development and construction-related stormwater pollutants that are not already required by MCM 4. Due to the cyclical nature of the development/construction sector, a baseline evaluation will be conducted before or during Permit Year 1 to establish current Maine Department of Environmental Protection (DEP) Erosion and Sediment Control Certified Contractors. If contractors are certified by DEP in erosion and sediment control, their awareness of best practices is established.

~~Measurable Goal 1.1b – The Municipality, through its participation in the ISWG, will raise awareness of construction-related stormwater pollution by increasing the net number of DEP Certified contractors located in the ISWG region by 15% from the Permit Year 1 established baseline audience.~~

~~**Target Audience:** Contractors located within the ISWG region.~~
~~**Overarching Message:** "Through erosion and sediment control best management practices training and certification, contractors can reduce the potential to negatively impact local water bodies."~~
~~This message will be presented with variations based on target audience interests and outreach tools used.~~
~~**Outreach Tools:** A minimum of three outreach tools will be selected from *Appendix D Table 2. Tools for Measurable Goal 1.1b* each year. Each tool will be assessed and~~

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

~~customized based on the target audience's receptiveness to the method. Any tool used in a given year will be tailored to the message for the relevant target audience subset based on common characteristics and/or demographics.~~

~~**Evaluation:** Effectiveness will be evaluated annually by tracking process indicators for each tool implemented that year and by tracking impact indicators where available (see *Appendix D Table 2. Tools for Measurable Goal 1.1b*). Effectiveness will also be measured by the number of DEP certified contractors located in the ISWG region over the course of the permit term.~~

~~**Implementation schedule:** A minimum of three of the tools from *Appendix D Table 2. Tools for Measurable Goal 1.1b* will be implemented each year for the duration of the permit. As part of the ISWG adaptive management education and outreach program, tools and messaging will be reviewed and evaluated on an annual basis at a minimum as part of annual reporting. To address emerging issues, opportunistic tools and outreach may also be implemented. Seasonal messaging and tool adjustments will be used when applicable. Report findings will be incorporated into ISWG meeting discussions as well as annual workplans and budgets.~~

1.1.2 BMP 1.2 – Outreach to Change Behavior Campaign

Responsible Party – EH&S Coordinator (with implementation assistance from Cumberland County Soil & Water Conservation District)

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

1. Generally, excess nutrients in our waters are a nationally recognized water quality issue related to stormwater – there are multiple common sources of nutrients including sediments, pet waste, septic systems, and fertilizers.
2. The Statewide survey conducted in Permit Year 5 of the previous cycle identified that survey respondents are aware that nutrient sources (including dog waste) are a common stormwater pollutant and respondents expressed a willingness to take action to help reduce stormwater pollution. Eighty-four percent of 2018 survey respondents in the ISWG region ages 25 to 34 and 67% of 2018 survey respondents in the ISWG region ages 35 to 55 selected "picking up pet waste and putting it in the trash" as a practice they believed could reduce water pollution.
3. Most ISWG communities are part of the Casco Bay watershed. In the June 2019 Casco Bay Nutrient Council report, nutrients were identified as the main pollutant of concern for the health of Casco Bay. While there is discrepancy between nutrient models as to the contribution percentages of the three main sources of nutrients (stormwater, wastewater, and atmospheric deposition), stormwater runoff is believed to contribute between 24% and 64% of the nitrogen entering Casco Bay.

4. Several ISWG communities have encountered problems with dog waste not being picked up[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 to 64 are the least likely age group to pick up after their dog[7]. However, dog owners ages 25 to 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.

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

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

Target audience: Dog owners ages 25 to 34 within the ISWG region
Overarching Message: "Dispose of dog waste as a solid waste, so it does not end up in our stormwater. Once in the stormwater, dog waste contributes nutrients, bacteria, and pathogens to our ponds, lakes, streams, rivers, and bays, which can lower property values, harm our drinking water, and hinder recreational and economic opportunities."
This message will be presented with variations based on target audience interests and outreach tools used.
Outreach Tools: A minimum of three outreach tools will be selected from *Supplement A Table 3. Tools for Measurable Goal 1.2a* each year. Each tool will be assessed and customized based on the target audience's receptiveness to the method. Any tool used in a given year will be tailored to the message of the relevant target audience subset based on common characteristics and/or demographics.
Evaluation: Effectiveness will be evaluated annually by tracking process indicators for each tool implemented that year and by tracking impact indicators where available (see *Supplement A Table 3. Tools for Measurable Goal 1.2a*). Effectiveness will also be evaluated by conducting observational field surveys of improper dog waste disposal at public areas. These annual field surveys will be on established routes and will include geotagging of observed dog waste. Site factors such as signage, community litter cleanups, and other variables will also be documented. In addition, the presence of dog

[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/

waste bags in catch basins will be recorded during annual inspections. In Permit Year 1 the field survey work will be supplemented by also observing the age groups utilizing the spaces and their pet waste disposal behavior in a subsample of the sites. This supplemental observation will be repeated in Permit Year 5.

Implementation schedule: A minimum of three of the tools from *Supplement A Table 3. Tools for Measurable Goal 1.2a* will be implemented each year for the duration of the permit. As part of the ISWG adaptive management education and outreach program, tools and messaging will be reviewed and evaluated on an annual basis at a minimum as part of annual reporting. To address emerging issues, opportunistic tools and outreach may also be implemented. Seasonal messaging and tool adjustments will be used when applicable. Report findings will be incorporated into ISWG meeting discussions as well as annual workplans and budgets.

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

Target audience: Dog owners ages 35 to 55 within the ISWG region

Overarching Message: "Dispose of dog waste as a solid waste, so it does not end up in our stormwater. Once in the stormwater, dog waste contributes nutrients, bacteria, and pathogens to our ponds, lakes, streams, rivers, and bays, which can lower property values, harm our drinking water, and hinder recreational and economic opportunities."
This message will be presented with variations based on target audience interests and outreach tools used.

Outreach Tools: A minimum of three outreach tools will be selected from *Supplement A Table 4. Tools for Measurable Goal 1.2b* each year. Each tool will be assessed and customized based on the target audience's receptiveness to the method. Any tool used in a given year will be tailored to the message for the relevant target audience subset based on common characteristics and/or demographics.

Evaluation: Effectiveness will be evaluated annually by tracking process indicators for each tool implemented that year and by tracking impact indicators where available (see *Supplement A Table 4. Tools for Measurable Goal 1.2b*). Effectiveness will also be evaluated by conducting observational field surveys of improper dog waste disposal at public areas. These annual field surveys will be on established routes and will include geotagging of observed dog waste. Site factors such as signage, community litter cleanups, and other variables will also be documented. In addition, the presence of dog waste bags in catch basins will be recorded during annual inspections. In Permit Year 1 the field survey work will be supplemented by also observing the age groups utilizing the spaces and their pet waste disposal behavior in a subsample of the sites. This supplemental observation will be repeated in Permit Year 5.

Implementation schedule: A minimum of three of the tools from *Supplement A Table 4. Tools for Measurable Goal 1.2b* will be implemented each year for the duration of the permit. As part of the ISWG adaptive management education and outreach program, tools and messaging will be reviewed and evaluated on an annual basis at a minimum as part of annual reporting. To address emerging issues, opportunistic tools and outreach may also be implemented. Seasonal messaging and tool adjustments will be used when applicable.

Report findings will be incorporated into ISWG meeting discussions as well as annual workplans and budgets.

1.1.3 BMP 1.3 – Effectiveness Evaluation

Responsible Party – EH&S Coordinator (with implementation assistance from Cumberland County Soil & Water Conservation District)

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

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

The evaluation will identify recommendations for future awareness and behavior change target audiences, messages, tools, and benchmarks.

~~1.1.4 BMP 1.4 – Additional Activities~~

~~**Responsible Party – Public Works Director (with implementation assistance from Cumberland County Soil & Water Conservation District)**~~

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

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

1.2 MCM 2 Public Involvement and Participation

SMCC will fulfill the requirements for Public Involvement and Participation through participation in the ISWG and SMCC's provisions of funding to Cumberland County Soil & Water Conservation District for Public Involvement and Participation services, or through directly fulfilling the requirements, as described in this section of the plan.

1.2.1 BMP 2.1 - Public Notice Requirement

Responsible Party – EH&S Coordinator with implementation assistance from Cumberland County Soil & Water Conservation District)

Measurable Goal 2.1a – SMCC will follow applicable state and local public notice requirements for their Stormwater Management Plans and Notices of Intent (NOIs) to comply with the MS4 General Permit. Copies of the NOIs and plans will be made available on SMCC's website. SMCC will document public meetings related to their stormwater program and attendance of those meetings in their annual report.

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

1.2.2 BMP 2.2 - Public Event

Responsible Party – EH&S Coordinator (with implementation assistance from Cumberland County Soil & Water Conservation District)

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

Supplement A: Education & Outreach Tools, Levels of Effort, and Effectiveness Benchmarks
Audience appropriate social media platforms will be determined by platform use demographics each year.

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

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

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

~~**Outreach Tool**~~	~~**Minimum Level of Effort**~~	~~**Effectiveness Benchmark**~~
~~Factsheet~~	~~1 factsheet~~	~~Total number of factsheets distributed~~
~~Email Newsletter~~	~~4 email newsletters~~	~~Number of people reached with email~~ ~~Number of interactions with email (e.g., link clicks)~~
~~Municipal Website Content~~	~~Annual updates to website stormwater content~~	~~Number of visitors to stormwater webpage(s)~~
~~Think Blue Maine Website Content~~	~~Semiannual updates to website content~~	~~Number of visitors to website~~
~~Online ad~~	~~Ad(s) run 90 days (multiple ads may be run for shorter durations to total 90 days)~~	~~Number of people reached with ad~~ ~~Amount of ad engagement (e.g., link clicks)~~
~~Webinar/Workshop~~	~~7 hours of training offered (multiple webinars/workshops may be offered to reach 7 hours)~~	~~Number of workshop attendees~~

~~Outreach partnership with local organization~~	~~3 content shares by partner organization~~	~~Number of people reached~~
~~Other DEP-approved tools~~	~~Minimum level of effort will be determined based on the tool~~	~~Effectiveness benchmark will be determined based on the tool~~

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

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

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

Outreach Tool	**Minimum Level of Effort**	**Effectiveness Benchmark**
Story Walk	1 story walk	Number of QR code (or similar technology) scans from signs
Targeted Social Media Post (each platform counts as separate tool)	12 posts	Amount of post engagement (e.g., reactions, comments, shares, etc.)
Targeted Social Media Ad (each platform counts as separate tool)	Ad(s) run 90 days (multiple ads may be run for shorter durations to total 90 days)	Amount of ad engagement (e.g., reactions, comments, shares, link clicks, etc.) Number of people reached with ad
Online ad	Ad(s) run 90 days (multiple ads may be run for shorter durations to total 90 days)	Number of people reached with ad Amount of ad engagement (e.g., link clicks)
Outreach Tabling	3 events	Number of interactions

Outreach partnership with local retailer	50% of industry retailers in region participating	Number of local retailers participating
Item with branding/messaging	1 item with branding/messaging	Total number of items distributed
Other DEP-approved tools	Minimum level of effort will be determined based on the tool	Effectiveness benchmark will be determined based on the tool

SOUTHERN MAINE COMMUNITY COLLEGE

Appendix 2

Illicit Discharge Detection and Elimination Plan (IDDE)

Illicit Discharge Detection and Elimination Plan

For

Southern Maine Community College

For the

General Permit for Storm Water Discharges from Federal/State Municipal Separate Storm Sewer Systems (2022-2027)

February 2022

Table of Contents

List of Supplements

1.0 INTRODUCTION

Southern Maine Community College is subject to the requirements of the Maine Department of Environmental Protection (Maine DEP) General Permit for the Discharge of Stormwater from State or Federally Owned Municipal Separate Storm Sewer Systems (hereafter referred to as the MS4 General Permit).

This document describes the Illicit Discharge Detection and Elimination (IDDE) Plan for Southern Maine Community College (SMCC). The IDDE Plan described in this document fulfills the Minimum Control Measure 3 IDDE requirements specified in Part IV(C)(3)(b) of the MS4 General Permit.

Maine DEP defines an illicit discharge as any discharge to an MS4 that is not composed entirely of stormwater, except that the following are not considered illicit discharges: Discharges authorized under a Maine DEP Permit (38 M.R.S. §413), Uncontaminated groundwater, Water from a natural resource, or an allowable non-stormwater discharge as discussed in Part IV(C)(3)(h) of the MS4 General Permit.

Septic systems and sanitary sewer overflows are not present within the property bounds of SMCC.

The college surveyed its stormwater infrastructure in 2014 and confirmed there were no cross connections with the sanitary system and there has been no development or redevelopment since this time.

SMCC follows the SMCC Procedure on Non-Stormwater Discharges to Storm Sewerage enclosed as Supplement A for reference. The most recent version of this document is maintained separately.

1.1 IDDE Responsibilities at Southern Maine Community College

The following personnel support implementation of this Plan:

- Environmental, Health & Safety Coordinator: conducts outfall inspections and illicit discharge investigations supported by Facilities or third party contractors where necessary.
- Facilities: assists the Environmental, Health & Safety Coordinator in illicit discharge investigations when needed.
- Dean of Administration and Human Resources Director: assists with obtaining funding for laboratory analysis and/or the hiring of an outside vendor to identify the source of a confirmed illicit discharge

1.2 Amendments and updates to the IDDE Plan

This IDDE Plan has been developed to meet the requirements of the 2022 MS4 General Permit.

This IDDE Plan will be updated if any of the following occur:

- A new permit is issued which changes the requirements described in this IDDE Plan document,
- SMCC identifies that this IDDE Plan is not effective,
- SMCC operations change which need to be reflected in this Plan.

2.0 PROCEDURES TO LOCATE POTENTIAL ILLICIT DISCHARGES

Southern Maine Community College uses the following methods to locate illicit discharges:

1. Reports of illicit discharge issues
2. Storm drain Inspections
3. Dry weather outfall inspections

2.1 Reports of Illicit Discharges

A member of the SMCC Community (employee, student, or visitor) may observe and report a potential illicit discharge to Campus Security, Facilities, or the Environmental, Health & Safety Coordinator. The observation will be routed to the appropriate department (Facilities or Environmental, Health & Safety) for further investigation.

2.2 Storm drain Inspections

The college evaluates storm drains following the Stormwater O&M Plan. Visual signs of a possible illicit discharge include the presence of: foam, sanitary waste, oil sheen, bacterial sheen, pet waste bags, odor or discoloration. If one of these cues is observed, the issue would be documented on an inspection form and the appropriate department (Facilities or Environmental, Health & Safety) would be notified to investigate further.

2.3 Dry Weather Outfall Inspections

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

- There has been no snow or ice melt for 72 hours (3 days) OR
- There has been no precipitation greater than ¼ inch (0.25 inch) for 72 hours (3 days).

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

Within SMCC's property, there are six outfalls over which the college has full control. The six outfalls will be inspected once each year:

Outfall Number	Location	Discharges to:
WB_15	Willard Beach	Casco Bay
WB_12	Willard Beach	Casco Bay
WB_11	Willard Beach	Casco Bay
BW_11	Breakwater/Seawall	Casco Bay
BW_10	Breakwater/Seawall	Casco Bay
BW_12	Breakwater/Seawall	Casco Bay

The following considerations will be given:

- Inspections will be performed during periods of dry weather when possible.
- Inspections will be performed where field inspections may be performed in a safe and efficient manner;
- Observations will include the follow at a minimum: observations of sheen, discoloration, foaming, evidence of sanitary sewage, excessive algal growth and similar visual indicators, and detection of odor
- Photographs may be taken at the time of inspection for either maintenance or illicit discharge documentation.

The procedure for performing dry weather inspections is in SMCC's Stormwater O&M Plan, which was implemented during the last permit cycle in lieu of a SWPPP.

2.3.1 Outfall WB_15

Outfall WB-15 is visible only at very low tide. Water viewed flowing from this outfall during a dry weather inspection is associated with subsurface drainage at the school's ball field, a roof drain at the HUB and ocean water receding from the pipe after high tide.

The college televised drains in 2014/2015 and confirmed they were structurally sound and there were no illicit connections. There has been no development or redevelopment since then. Further explanation is attached to this document as Supplement B.

- Dry weather flow from this outfall is comprised of salt water retreating from the pipe as tide moves out and water associated with subsurface drainage from the college's athletic field and/or stormwater from the roof drain.

- SMCC has determined Outfall WB_15 is exempt from the sampling and analysis required in Part IV(C)(3)(e)(iv) and Part IV(C)(3)(e)(v).

2.4 Outfall Sampling and Analysis

Outfall sampling and analysis is required under the 2022 MS4 General permit when an outfall is

observed to be flowing during dry weather conditions whether or not it has exhibited evidence of an illicit discharge.

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

2.5 Interconnections

The stormwater sewer system at Southern Maine Community College interconnects with two entities:

Water flows from SMCC Catch Basin	Location on SMCC Property	Flows to Interconnecting Infrastructure	Owned or Operated by	Ultimate Discharge Location
CB_4781	Spring Point Stairwell	TT_205	South Portland	Fore River Outfall BW_4
CB_6617	Campus Center Dr. at Fort Road	Sewer Manhole	South Portland	Wastewater Treatment
DM_6469	Parking Lot A	DM_0288	South Portland	Fore River Outfall BW_4
CB_5982	Adams Street	-unknown-	Port Harbor Marina	Casco Bay Outfall BW_7

SMCC has contacted both South Portland and the Port Harbor Marina to notify of the interconnections and agreed to notify one/both in the event of an illicit discharge from our property to the shared water resources listed above.

3.0 PROCEDURES TO INVESTIGATE ILLICIT DISCHARGES

Investigations of illicit discharge issues are conducted jointly by the Facilities Department and the Environmental, Health & Safety Coordinator. SMCC relies on visual observations of the location where the illicit discharge was reported as a first step in identifying the source of the illicit discharge. If the evidence of the illicit discharge is still present in the initial structure or location where it was reported, SMCC uses their knowledge of the infrastructure to systematically inspect other structures upstream of the initial location until either the evidence of the illicit discharge is no longer present, or until they locate a potential source of the illicit

discharge.

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

In the event visual observations of the structures cannot identify the source of an illicit discharge, SMCC would hire a third party contractor and employ camera investigation, systematic dye testing or smoke testing to identify the source.

4.0 PROCEDURES REMOVE ILLICIT DISCHARGES

Once the potential source of the illicit discharge has been identified, Facilities would contact the responsible party in order to initiate removal or discontinuation of the illicit discharge.

If the illicit discharge is caused by the college, the Environmental, Health & Safety Coordinator or Facilities would contact the department most responsible and work with them to remove or discontinue the illicit discharge within 60 calendar days of identification of the source, or would develop a schedule to expedite elimination.

5.0 PROCEDURES TO DOCUMENT ILLICIT DISCHARGES

SMCC will document the progress of investigating and removing illicit discharges. Each year, SMCC is required to complete an annual report summarizing the activities completed under the MS4 Permit.

6.0 RECORDS RETENTION

The Environmental, Health & Safety Coordinator will retain paper or electronic files of inspections and investigations including laboratory reports in line with Section 3 of the SWMP.

Supplement A

SMCC PROCEDURE ON NON-STORMWATER

DISCARGES TO STORM SEWERAGE

PROCEDURE ON NON-STORMWATER DISCHARGES TO STORM SEWERAGE

It is Southern Maine Community College's procedure that discharges to storm drains and other conveyances of the college stormwater collection system are not permitted or to be minimized depending upon the nature of the potential discharge.

Non permitted potential discharges include but are not limited to the following:

- Leakage from motor vehicles, other than *de minimus* drippage;
- Leakage from petroleum storage tanks;
- Dumping of any kind of grease, chemicals, cleaning products, solvents, and similar items;
- Dumping of solid and hazardous wastes;
- Filter rinses;
- Wash water of any kind.

Discharges to be minimized include runoff containing road sand and salt used to treat campus-owned roadways and parking lots during the winter.

This procedure applies as well to discharges to campus ditches, drains, and marine waters.

APPROVED 9/4/2019

Supplement B

2019 WB_15 discussion for annual report

April 30, 2019

Ms. Jana Wood
Environmental Specialist
Maine Department of Environmental Protection
106 Hogan Road, Suite 6
Bangor, Maine 04401

Sent via email to: Jana.Wood@maine.gov; jmanhardt@smccme.edu

RE: State or Federally Owned Municipal Separate Storm System (MS4) Annual Report Review PY Five 2017-2018, for Southern Maine Community College (SMCC), permit number MER042004

Dear Ms. Wood:

Southern Maine Community College (SMCC) received your letter dated March 5, 2019 containing the Department of Environmental Protection (DEP) comments on the SMCC MS4 PY5 Annual Report. Please find below SMCC's response to the question identified in the review document.

Question 3A: *Have you sampled WB-15 for illicit discharges to confirm that it is comprised only of uncontaminated groundwater?*

Outfall WB-15 is a 24 inch cast iron pipe which resides approximately 115 feet below the high tide line and is fully submerged except for a brief period during low tide. Ocean water flows out of the pipe as the tide recedes.

Figure Above: WB-15 visible at low tide


Figure Above: W-15 not visible at high tide

Water flowing from a perforated under drain beneath SMCC's six-acre ballfield, stormwater runoff from the roof of SMCC's gymnasium (Hutchinson Union Building Athletic Center or HUB) and a groundwater sump located in the HUB's basement ultimately discharge at Outfall WB-15.

In January 2015, SMCC mapped its stormwater infrastructure and confirmed, via camera inspection, there were no illicit connections. Twelve (12) stormwater drainage structures are linked to Outfall WB-15 and shown on the attached map:

RD_1	CB_5973	CB_5975	EC_5
CB_5974	DM_5979	CB_5976	CB_5014
TT_204	DM_5978	DM_5977	CB_5779

There have been no infrastructure changes since 2015. Dry weather outfall inspections have not revealed sign of an illicit discharge (e.g. presence of debris/pollution, odor, solids or discolored/cloudy water). SMCC has not seen cause to sample Outfall WB-15.

Between 2012 and 2014 the City of South Portland took thirteen water samples from CB_5779 which is the basin directly up line of Outfall WB-15. CB_5779 resides in the grass, along the fence line, of a pathway frequented by dog walkers and the general public. The samples were part of a wider Maine Healthy Beaches program testing for enterococci and optical brighteners along the Willard Beach Watershed.

Figure Above: Location of CB_5779

Figure Above: Area surrounding CB_5779

The 2015 Maine Healthy Beaches report determined the presence of enterococci (geometric mean of 59 MPN/100mL) and optical brighteners (mean 39 micrograms/L) found in samples collected from CB_5779 to be non-point source pollution. Follow-up investigation was not required of SMCC. The college did not receive individual sample results for CB_5779.

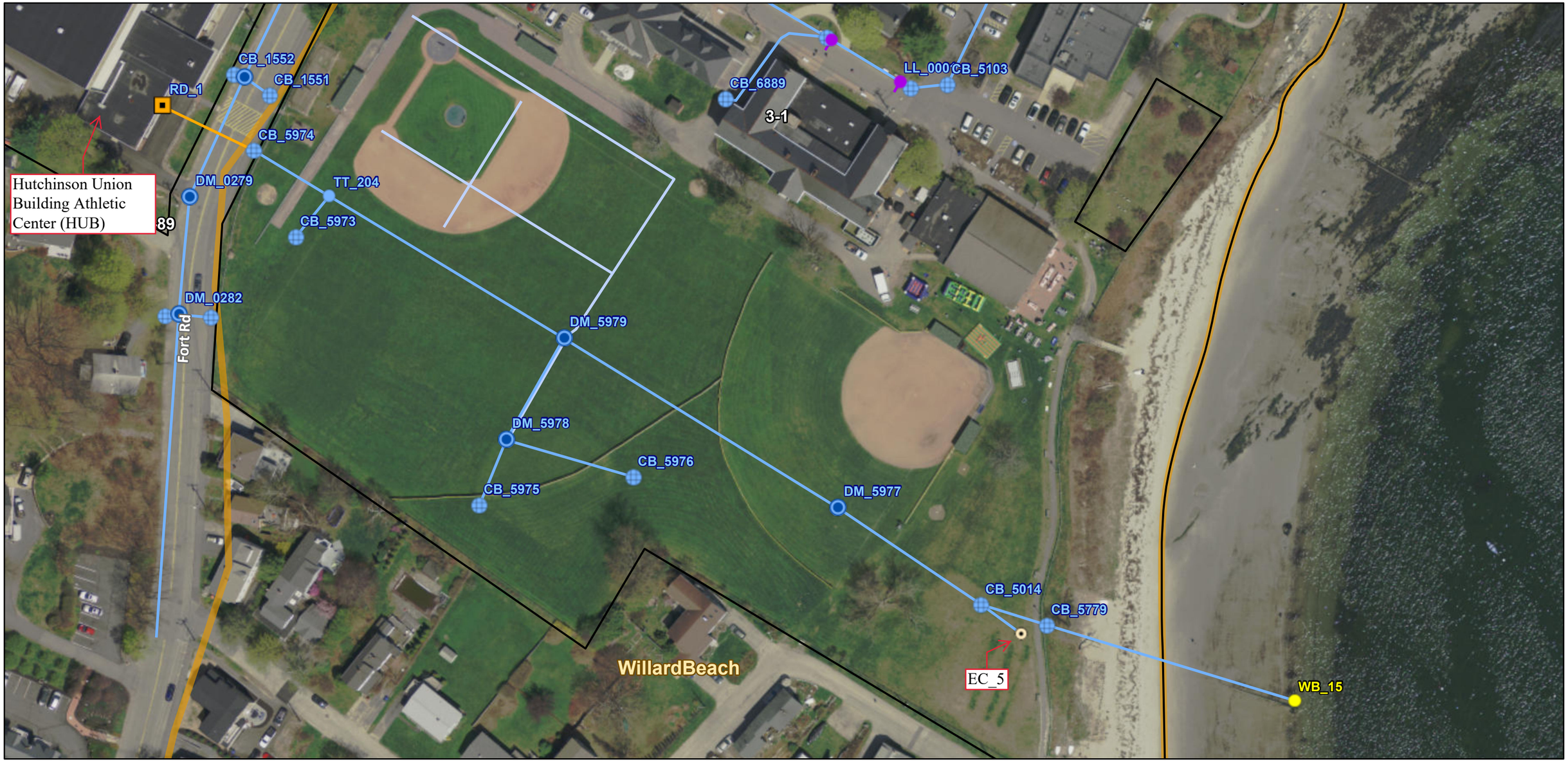
The information provided above addresses the outstanding question regarding the SMCC PY5 MS4 annual report. If you have need additional information, please contact me at 207-741-5932 or jotenti@smccme.edu .

Sincerely,

Jennifer Otenti
Environmental, Health and Safety Coordinator
Southern Maine Community College

Cc: Jay Manhardt, Director of Public Safety, SMCC

Southern Maine Community College Outfall WB_15 and Associated Stormwater Conveyances



4/4/2019 11:48:42 AM

Drainage Outfalls

Drainage Structures

Catchbasin

Drain Manhole

T Juncture

Lateral

End Cap

Roof Drain

Drainage Pipes

Underdrain

Gravity

Lateral

Roof Drain

Property Boundary

Watersheds

Road Names

1:1,350

0 62.5 125 250 ft

0 15 30 60 m

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/ Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Web Viewer
Maine GeoLibrary, DigitalGlobe |

Supplement C

QUALITY ASSURANCE PROJECT PLAN (QAPP)

Stormwater Monitoring Quality Assurance Project Plan

1.0 Background and Scope

Southern Maine Community College (SMCC) is regulated by the 2022 Maine General Permit for Stormwater Discharges from Federal/State Municipal Separate Storm Sewer Systems (MS4 General Permit). .Under this MS4 General Permit, SMCC has committed to performing one dry weather inspection of each of six outfalls annually.

SMCC stormwater discharges to six outfalls fully under the college's authority/jurisdiction:

Outfall Number	Location	Discharges to:
WB_15	Willard Beach	Casco Bay
WB_12	Willard Beach	Casco Bay
WB_11	Willard Beach	Casco Bay
BW_11	Breakwater/Seawall	Casco Bay
BW_10	Breakwater/Seawall	Casco Bay
BW_12	Breakwater/Seawall	Casco Bay

Under most conditions, if an outfall is observed to have dry weather flow, monitoring must be conducted to assess whether there is an illicit discharge associated with the flow. The MS4 General Permit contains a few conditions under which flowing outfalls do not need to be monitored and SMCC has explained the origins of dry weather flow seen at Outfall WB_15 in Section 2.2.1 of the college's Illicit Discharge Detection and Elimination (IDDE) Plan.

The purpose of this 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.

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

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

The objective of the monitoring is to collect data that can be used to determine if there is an illicit discharge present in the flow, or if the flow is from uncontaminated groundwater, water from a natural resource, or an allowable non-stormwater discharge. .

If there is evidence of an illicit discharge, SMCC 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 for the subsequent investigations.

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.

2.0 Sampling Procedures

With the exception of Outfall WB_15, samples are required to be collected at any one of SMCC's outfalls that exhibit dry weather flow. 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 (0.25 inch) for 72 hours.

Personnel should be prepared to collect samples during any outfall inspection, because dry weather flow is sometimes intermittent, and if personnel need to return to the site later in the same day, or several days later, the dry weather flow may no longer be present.

Samples will be collected from a flowing source only (not from stagnant water), and where the pipe outlet has at least 1 or 2 inches of free-flowing drop before any standing water or pool below it. Stagnant water should not be sampled unless SMCC 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.

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

Table 1 Field Equipment for Monitoring

1 Gallon of Distilled or de-ionized water for rinsing
1 Roll Paper towels
3-5 clean plastic 250 ml beakers for water sample collection in Baggie marked "Clean" or disposable "whirl bags"
Garbage bags
1 long sampling pole and or sampling pump and tubing
Equipment to remove and access catch basin covers if needed (pull, hammer, crowbar)
Field equipment/test kits (see Table 2) and bottles for any laboratory samples or off-site field test kits. Ensure field test kits reagents have not expired typically keep bottles for 3-5 samples available

Non-latex gloves
Box of 1 gallon plastic bags
Cooler with ice
Camera or phone
Safety Vest
Steel toed boots, waterproof
scissors
Sun screen and bug spray
Clip board
3-5 Field Data Sheets (See Addendum 1)
Chain of Custody (Addendum 3)
Sharpies and water-proof pens
Packing tape and Duct tape
Sheet of blank labels for bottles
First aid kit
Small white board with pen to mark outfall ID, date, and time in photo

For each outfall sampled, a Field Data Sheet can 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, etc. The observations can be documented in this location instead of, or in addition to the observations made during the dry weather outfall inspection conducted in accordance with the procedure outlined in SMCC's Stormwater O&M Plan.

Sample bottles that will be taken away from the sampling site for analysis will be labeled 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. 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
- CWA analysis methods, field equipment, and test kits, where applicable
- 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 or EH&S 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 will 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

Parameter for all Potential Illicit Discharges	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.
Parameter for Potential Bacteria Illicit Discharges	**CWA Method, Field Equipment, or Test Kit**	**Preservation**	**Holding time**	**Bottle needed**	**Notes on Use**
Bacteria - E. coli	SM 9223 B (IDEXX Colilert Quanti-Tray) EPA 1603 (membrane filtration, MF) Or SM 9221 B (Most probable number, MPN)	Ice	To lab within 6 hours Analyze within 2 hours of receipt	120 ml or 250 ml plastic sterile bottle with lid from lab	Use for discharges to freshwater (with ammonia and either optical enhancers or surfactants)
Bacteria - enterococcus	SM 9230 B, C or D, (MPN including IDEXX Enterolert, or MF) EPA 1600 (MF)	Ice	To lab within 6 hours Analyze within 2 hours of receipt	120 ml or 250 ml plastic sterile bottle with lid from lab	Use for discharges to salt water (with ammonia and either optical enhancers or surfactants)
Bacteria – Fecal Coliform	SM 9222 D (MF CFU/100ml) Or SM 9221 C, E (Multitube MPN/100ml)	Ice	To lab within 6 hours Analyze within 2 hours of receipt	120 ml or 250 ml plastic sterile bottle with lid from lab	Use for discharges to salt or freshwater (with ammonia and either optical enhancers or surfactants)

Bacteria – Human Bacteroides	Labs: EMSL (NJ), Microbial Insights (TN) or Source Molecular (FL) Or Dr. Steve Jones, UNH	Ice	To lab within 24 hours Analyze within 48 hours	1000 ml plastic bottle with sodium thiosulfate from lab (with insulated shipping box)	Use for discharges to salt or freshwater (with ammonia and either optical enhancers or surfactants). Not a CWA method, so Maine Laboratory certification not required.
Parameter for Potential Bacteria Illicit Discharges (continued)	**CWA Method, Field Equipment, or Test Kit**	**Preservation**	**Holding time**	**Bottle needed**	**Notes on Use**
Surfactants	SM5540C	Ice	To lab within 24 hours Analyze within 48 hours	500 ml plastic bottle from lab	Works on most soaps (laundry detergent, personal care products, dish soap)
Surfactants	CheMetrics K-9400 field test kit (see Maine DEP guidance on handling and disposal in **Addendum 2**)	None	Immediate (w/in 15 minutes) in Field	Field jar or beaker	Works on most soaps (laundry detergent, personal care products, dish soap). Contains alcohol and chloroform. Generates a Flammable (D001) and Toxic (D022) Hazardous Waste. Do not use test kit in the field unless licensed to transport hazardous wastes. Instructional Video available at: https://www.youtube.com/watch?v=6vwiZgWqa04
Optical brighteners	VWR handheld UV lamp: UV-A: 360-365 nm, model number 89131-488	None	Analyze within 7 days	Unbleached cotton pad wetted with sample placed in sealed baggie	Works only on water with high to moderate laundry detergent. Provides only presence/absence.
Optical brighteners	Maine Healthy Beaches Fluorometer ($15,000 unit)	None	Keep in a dark container, provide to MHB in 1-2 days, analyze within 7 days	Whirl bag or 100 ml plastic bottle.	Provides semi-quantitative numeric fluorescenc 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.
Ammonia	Hach Ammonia Test Strips	None	Immediate (w/in 15	Field jar or beaker	

			minutes) in Field		
Ammonia	Laboratory Method EPA 350.1/350.2	H_2SO_4 (pH <2) + Ice	28 days	250 ml plastic bottle from lab	
Ammonia	Hach DR300 Pocket Colorimeter Ammonia Nitrogen or LaMotte 3680-01 DC1200 Colorimeter test kit	None	Immediate (w/in 15 minutes) in Field	Field jar or beaker	Reagent contains Mercury, Generates a Toxic Hazardous Waste (D009) instructional video (10 minutes): https://www.youtube.com/watch?v=hFiEEEAmWFo
Parameter for Potential Chlorine based Illicit Discharges	**CWA Method, Field Equipment, or Test Kit**	**Preservation**	**Holding time**	**Bottle needed**	**Notes on Use**
Chlorine	Field kit – Hach Colorimeter II low range	None	Immediate (w/in 15 minutes) in Field	Field jar or beaker	Instructional video available at: https://www.youtube.com/watch?v=WTTUD0Hq1Vw
Chlorine	Industrial test Systems Ultra-Low Total Chlorine Test Strips	None	Immediate (w/in 15 minutes) in Field	Field jar or beaker	As of 6/2020, USEPA had not used this set of test strips, but the strips can detect to an appropriate lower limit for chlorine.

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.

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. SMCC may opt to utilize a Chain of Custody form provided by the contracted laboratory.

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 EH&S Coordinator. Data shall be stored electronically or in paper format for the length of time specified by Section IV(F) of the MS4 General Permit.

If the person collecting the sample is the EH&S Coordinator, they may opt to have another staff person review the data, or a Stormwater Manager or Coordinator from a MS4 municipality if they deem it necessary to assist in the overall investigation.

Data should be reviewed within 2 weeks of receipt and additional investigations should be implemented to identify the source of any potential illicit discharge if any of the thresholds in **Table 3** are exceeded.

Table 3 Thresholds for Additional Investigation

Parameter	Threshold Level for Additional Investigation	Notes/Discussion
E. coli	236 cfu/100 ml – discharges into freshwater rivers or streams	All classifications of flowing fresh surface water in Maine (AA, A, B and C) have a standard that no more than 10% of the samples may exceed this concentration in any 90 day interval. A fresh surface water is at risk of impairment if it is receiving significant discharges from human sources above this concentration.
E. coli	194 cfu/100 ml – discharges into freshwater ponds	Great Ponds and lakes less than 10 acres have a standard that no more than 10% of the samples may exceed this concentration in any 90 day interval. A water of this type is at risk of impairment if it is receiving significant discharges from human sources above this concentration.
Enterococci	54 CFU/100 ml – discharges into saline/estuarine Class SA or SB	These waters have a standard that no more than 10% of the samples may exceed this concentration in any 90 day interval. A water is at risk of impairment if it is receiving significant discharges from human sources above this concentration. (Note Maine Healthy Beaches threshold is 104 MPN/100 ml)
Enterococci	94 CFU/100 ml – discharges into saline/estuarine Class SC	These waters have a standard that no more than 10% of the samples may exceed this concentration in any 90 day interval. A water is at risk of impairment if it is receiving significant discharges from human sources above this concentration. (Note Maine Healthy Beaches threshold is 104 MPN/100 ml)
Fecal Coliform	61 cfu/100 ml (2 times 31 cfu/100 ml for MF) to 100 cfu/100ml	The low end of this threshold is two times the 90th percentile standards that DMR applies for approved (open) shellfish harvesting areas and is very conservative (90% of the samples collected from the area must be above these concentrations for the harvesting area to remain open and completely unrestricted for shellfish harvesting. See Addendum 2 for additional info from DMR)
Human Bacteroides	Any concentration may be indicative of human sewage, but MHB considers 4,200	Any concentration of human source of sewage should be investigated.

Parameter	Threshold Level for Additional Investigation	Notes/Discussion
	col/100ml HB to be equivalent to the level of contamination that exceeds the EPA acceptable risk of gastrointestinal illness to swimmers. *(Rothenburger and Jones, 2018 and Boehm, Soller and Shanks 2015)*	
Ammonia	≥ 0.50 mg/L	This is the effective reporting limit of the Ammonia test strips and was taken from USEPA Draft 2012 Bacteria Source Tracking Protocol.
Chlorine	≥ 0.05 mg/L	Limit of test kit and was taken from USEPA Draft 2012 Bacteria Source Tracking Protocol.
Surfactants	≥ 0.25 mg/L	Taken from USEPA Draft 2012 Bacteria Source Tracking Protocol.
Optical Brighteners	≥ 100 ug/L) (≥ 0.10 mg/L)	This is used by Maine Healthy Beaches as an actionable threshold. If using a handheld fluorometer, conduct further investigation if presence of optical brighteners is detected

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

Addendums

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

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: ____________________

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Time: ________ Field ID: ____________________

Addendum 2
-Reference E-mails

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.

Integrated Environmental
ENGINEERING
Kristie L. Rabasca, P.E
Integrated Environmental Engineering, Inc.
12 Farms Edge Road
Cape Elizabeth, ME 04170
207-415-5830

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 the90 th 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.

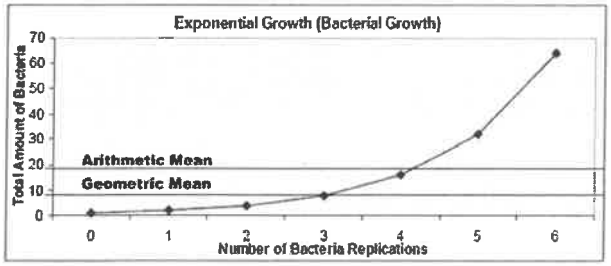
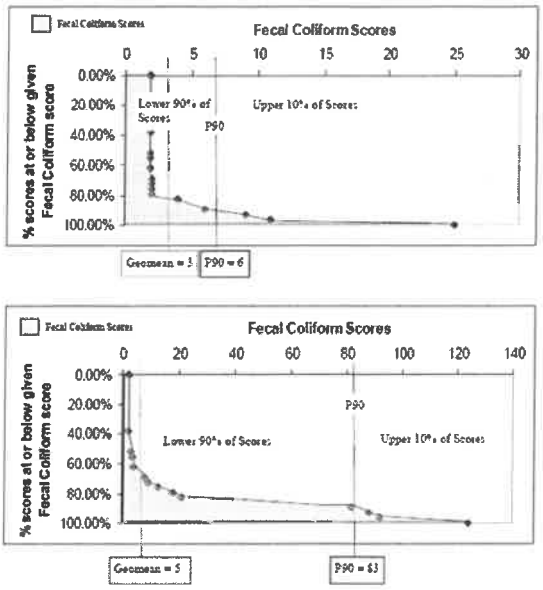


Figure 1. The graph illustrates exponential growth. The arithmetic mean for the scores is 18.1 while the geomean is 8.

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

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 Order Number (*Lab Use Only*):

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

Company :		**EMSL-Bill to:** ☐Same ☐ Different **If Bill to is Different please note in Comments****	
Street:		*Third Party Billing requires written authorization from third party*	
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

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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

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****Comments/Special Instructions**

Page ______ of ______ pages