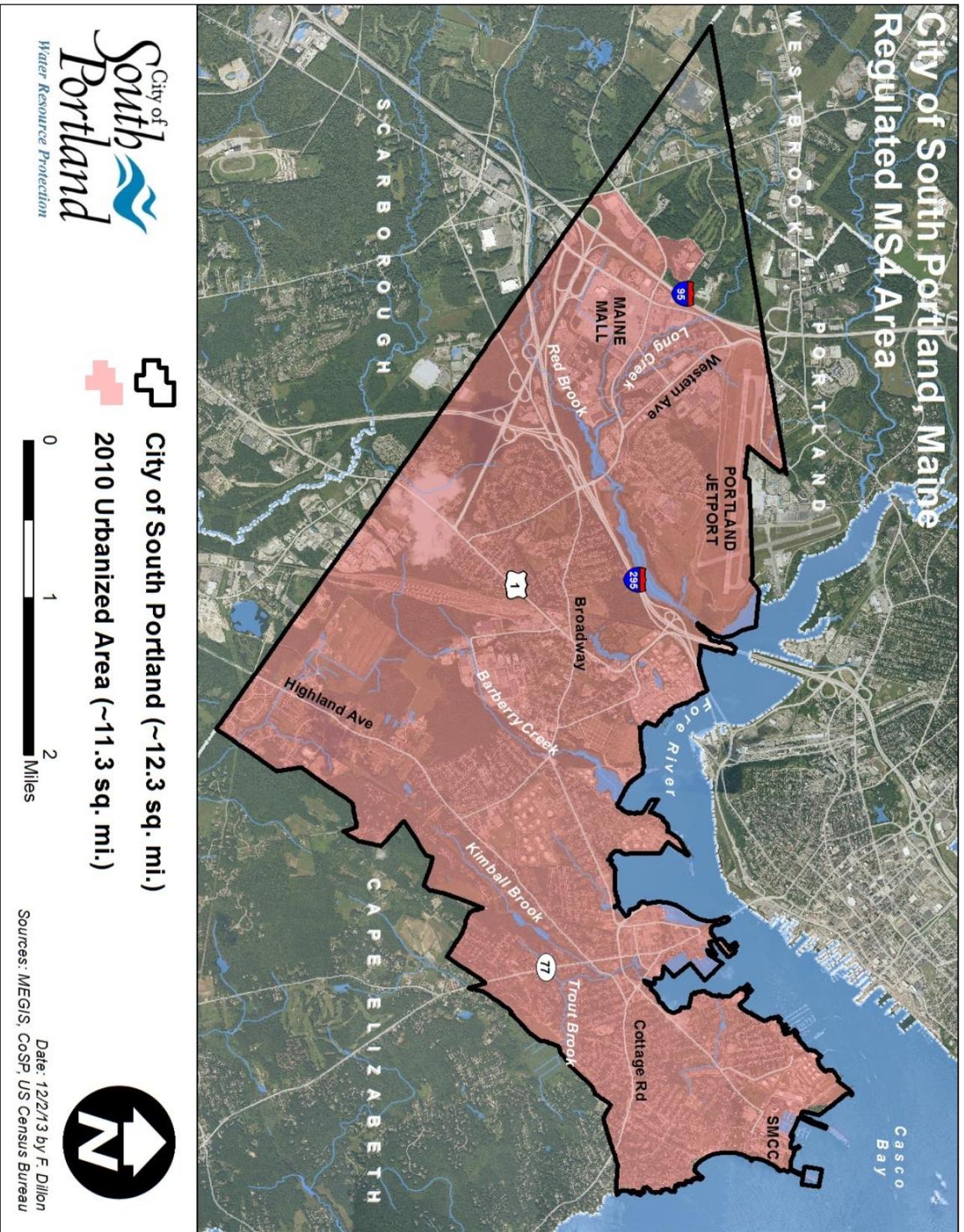


# Stormwater Phase II Annual Report for Permit Year 6\* (2018-19)



\* PY2013-18 permit administratively extended

Submitted Electronically to MEDEP on 9/6/19



Cover: informational sign for goat grazing project to remove invasive plants at Yerxa Park (Sept. 2018)

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- **Jeff Moulton** ~ *Sewer Maintenance Supervisor*
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- **Justin Gove** ~ *Civil & Transportation Engineer*
- **Paul Collins** ~ *Treatment Systems Manager*
- **Tom Wiley** ~ *Compliance Administrator*
- **Colleen Mitchell** ~ *WRP Office Manager*
- **Fred Dillon** ~ *Stormwater Program Coordinator*
- **Addie Halligan** ~ *Stormwater Program Intern*
- **Tom Burns** ~ *City's GIS Consultant*

WRP staff would also like to thank the following individuals and groups for their ongoing assistance and support of the City's Stormwater Management Program goals:

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- **Doug Howard, Melissa Hutchins & Denise Michaud** ~ *Public Works Department*
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- **Tania Ferrante & Ryan Green** ~ *South Portland High School*
- **Tom Mikulka** ~ *Cape Elizabeth Resident and Retired High School Teacher*
- **The many teachers & students involved in the City's Stormwater Program Education & Outreach efforts**

\* Tom Carellas passed away unexpectedly in June 2019. He will be greatly missed.

## Introduction

In accordance with Maine’s Small Municipal Separate Storm Sewer Systems (MS4) program, the City of South Portland continued its commitment to protect and improve local water resources through the implementation of our [Stormwater Program Management Plan](#). City staff and program partners from the Maine Department of Environmental Protection (MEDEP), Cumberland County Soil & Water Conservation District (CCSWCD), Interlocal Stormwater Working Group (ISWG), the Maine Water Environment Association (MEWEA), the Portland Water District (PWD), Long Creek Watershed Management District (LCWMD), the Friends of Casco Bay (FOCB), the Casco Bay Estuary Partnership (CBEP), the Maine Healthy Beaches Program (MHB), the South Portland Conservation Commission (SPCC) and the South Portland Land Trust (SPLT) - among others - all participated in a wide variety of activities to mitigate the adverse effects of stormwater pollution. This annual report documents these activities for the sixth Permit Year (2018-19) in the third five-year General Permit Cycle for 2013-18 period (permit administratively extended for ongoing negotiations of next MS4 General Permit).

## Minimum Control Measure 1 – Public Education and Outreach

The City of South Portland fulfilled its requirements for Public Education and Outreach Minimum Control Measure primarily through continued collaboration with the Interlocal Stormwater Working Group (ISWG) and the ongoing funding to the ISWG for Public Education and Outreach services. [Appendix 1](#) provides detailed summaries for the activities completed by ISWG in support of MCM1. The City also continued its ongoing partnerships with the Maine Department of Environmental Protection, Portland Water District, Maine Healthy Beaches Program, Friends of Casco Bay, South Portland Conservation Commission, South Portland Land



Figure 1: the City partnered with StonyField Organic to inaugurate their national effort to promote organic land care on athletic playing fields and in public parks.

Trust, and South Portland & Cape Elizabeth Public Schools (among others) to increase public awareness about stormwater pollution. In recognition of the City’s ongoing efforts to implement our [Pesticide Use Ordinance](#), we also partnered with [StonyField Organic to inaugurate their national program in Bug Light Park](#) (Figure 1) to “[make every field in America organic](#)” (see more below).

Additionally, WRP staff provided numerous presentations about the City’s water resource protection efforts to local schools, at professional conferences and workshops, and submitted articles for publication in the City’s biweekly electronic newsletter.

The overall goals for this Minimum Control Measure are:

1. To raise awareness that stormwater pollution is the most significant source of water quality problems for Maine's waters;
2. To motivate people to use BMPs that reduce stormwater pollution; and
3. To reduce polluted stormwater runoff as a result of increased awareness and utilization of BMPs.

### **BMP 1.1 Continue Awareness Outreach Efforts from Previous MS4 Permit Cycle**

*Responsible Party: Stormwater Program Coordinator    Additional Party: ISWG Education Coordinator*

#### **INTENT**

To promote and increase awareness about the issues associated with stormwater pollution, which is the most significant source of water quality problems in the state.

#### **METHODOLOGY**

Beginning July 1, 2013, the City continued its collaboration with the Interlocal Stormwater Working Group (ISWG) to conduct outreach efforts for increasing public awareness of stormwater management issues.

#### **MEASURABLE GOALS**

- **Measureable Goal 1.1.1** – engage in efforts to increase awareness about stormwater pollution including through ongoing collaboration with the Interlocal Stormwater Working Group.

#### **ACTIONS COMPLETED DURING PERMIT YEAR**

The City continued collaborating with the ISWG and provided [Think Blue Maine](#) and [YardScope](#) links on its [website](#) and educational materials in municipal buildings to help promote public awareness of local and regional stormwater management concerns.

### **BMP 1.2 Develop and Implement Stormwater Awareness Plan**

*Responsible Party: Stormwater Program Coordinator    Additional Party: CCSWCD for ISWG*

#### **INTENT**

To raise awareness of polluted stormwater runoff issues for a target audience outside of municipal government.

#### **METHODOLOGY**

Continue collaboration with the Interlocal Stormwater Working Group (ISWG) to develop and implement a **Stormwater Public Awareness Plan**.

#### **MEASURABLE GOALS**

- **Measureable Goal 1.2.1** – by February 1, 2014, develop new or revise existing **Stormwater Public Awareness Plan** to raise awareness of stormwater issues for target audience outside of municipal government. The Plan's goal will be to raise awareness of polluted stormwater runoff issues such as

the path stormwater runoff takes, sources of stormwater pollution, and the impact that polluted stormwater runoff has on local water resources.

- **Measureable Goal 1.2.2** – by December 1, 2013 submit draft **Stormwater Public Awareness Plan** to Maine DEP for review and approval; draft Plan will be considered approved by February 1, 2014 unless DEP indicates otherwise. **Stormwater Public Awareness Plan** must identify:
  - a. The target audience
  - b. The outreach tool(s) to be used
  - c. The message
  - d. The distribution system
  - e. The time line and implementation schedule
  - f. The person(s) responsible for implementation
  - g. An impact evaluation protocol
  - h. A plan modification protocol (including DEP approval of significant plan modifications)
  - i. The goals (e.g., the targeted level of change sought as a result of the education and outreach effort)
- **Measureable Goal 1.2.3** – provide review of **Stormwater Public Awareness Plan** in each annual report that specifies process indicators to assess execution of the Plan and includes impact indicators according to the following schedule (unless otherwise indicated in Plan):
  - Permit Year 5: provide in-depth assessment of both implementation and impact of Plan
- **Measureable Goal 1.2.4** – include comprehensive review of **Stormwater Public Awareness Plan** in PY5 Report that includes an analysis of process and impact indicators.

**ACTIONS COMPLETED DURING PERMIT YEAR**

The City continued to collaborate with the ISWG to implement the **Stormwater Public Awareness Plan**, as described in [Appendix 1](#). Additionally, Stormwater Program staff continued providing presentations and conducting education and outreach activities on the sources and impacts of polluted stormwater runoff (Table 1). As a result, approximately 445 people were contacted directly through these activities.

**Table 1:** presentations & activities provided by City Stormwater Program staff during PY2018-19

Date	School / Organization	# Participants (approx)	Contact	Subjects	Comments
9/24/19	South Portland High School	15	Tania Ferrante	Rain gardens, WQ & SW concepts	Classroom presentation followed by field work (weeding rain garden)
10/4/18	SPHS	30	Craig Haims	W'shed, WQ and SW concepts	Classroom presentation
10/4/18	SPHS	15	Tania Ferrante	W'shed, WQ and SW concepts	Classroom presentation
10/22/18	Cape Elizabeth High School	30	Kathy Bock	Macroinverts as WQ indicators	Classroom presentations (2)
10/24/18	CEHS	30	Kathy Bock	Macroinverts as WQ indicators	Macroinvertebrate field assessments in Trout Brook (2)

4/10/19	SPHS Earth Week	50	Dana Gross	Stream connectivity, stormwater & CSOs	Panel presentation with USF&W and SoPo Civil Engineer
4/10/19	Maine Law School	15	Ivy Frignoca	Clean Water Act, MS4 program, TMDLs & RDA	Panel presentation with CBEP & City of Portland for YR2 enviro law students
5/16/19	Kaler Elementary	50	Jane Eberle	Landscape activities and water quality	Outdoor demonstration table for "Pond Day"
5/17/19	Children's Water Festival	50	Meagan Sims	SW & beach water quality	Demonstration table with Maine Healthy Beaches Program staff
5/24/19	Mahoney Middle School	80	Julie Pitt	SW and WQ indicators	Classroom presentations (4)
5/29/19	PWD Trout Release	40	Sarah Plummer	SW, WQ & macroinverts	Landscape assessment, WQ testing and macroinvert. id. for trout release suitability
5/30/19	PWD Trout Release	40	Sarah Plummer	SW, WQ & macroinverts	Landscape assessment, WQ testing and macroinvert. id. for trout release suitability
<b>Total Students (approx.):</b>		<b>445</b>			

The City’s Stormwater Program Coordinator also made numerous presentations on what South Portland is doing to address the adverse effects of polluted stormwater runoff at conferences and community events.

- **10/9/18: Waterfront Alliance** – panel presentation with Portland officials and Friends of Casco Bay on Integrated Planning (i.e., prioritizing wastewater and stormwater projects to enhance water quality improvements).
- **10/10/19: Community Forum** – televised panel presentation with South Portland officials on connections between various land use activities and water quality.
- **3/29/19: Maine Flower Show** – panel presentation with CCSWCD, Portland officials and Pest Management Advisory Committee members on local pesticide ordinances and how they enhance compliance with MS4 permit.

### **BMP 1.3 Develop and Implement Permit Awareness Plan**

*Responsible Party: Stormwater Program Coordinator      Additional Party: ISWG Education Coordinator*

#### **INTENT**

To raise awareness of polluted stormwater runoff and MS4 program requirements for municipal staff including municipal employees, volunteers, Council members and other elected officials.

#### **METHODOLOGY**

Continue collaboration with the Interlocal Stormwater Working Group (ISWG) to develop and implement a **Permit Awareness Plan**.

#### **MEASURABLE GOALS**

- **Measureable Goal 1.3.1** – by January 6, 2014, submit draft **Permit Awareness Plan** to Maine DEP for review and approval; draft Plan will be considered approved by March 1, 2014 unless DEP

indicates otherwise and implementation shall begin within one week of approval. The **Permit Awareness Plan** must identify:

- a. The target audience
  - b. The outreach tool(s) to be used
  - c. The distribution system
  - d. Method to address turnover of employees, elected officials and volunteers
  - e. The time line and implementation schedule
  - f. The person(s) responsible for implementation
  - g. An impact evaluation protocol
  - h. A plan modification protocol (including DEP approval of significant plan modifications)
  - i. The goal (e.g., the target level of awareness for each audience)
- **Measureable Goal 1.3.2** – by March 1, 2014 or within one week of DEP approval, the **Permit Awareness Plan** will be implemented to raise awareness of stormwater issues including MS4 permit requirements for municipal employees, elected officials and volunteers within municipal government. The **Permit Awareness Plan's** goal is to raise awareness of polluted stormwater runoff such as the sources of stormwater pollution, the path polluted stormwater runoff takes from the pollution sources to waters of the State, the impact polluted stormwater runoff has on the community, potential measures to reduce or eliminate pollution sources, and General Permit obligations and responsibilities to ensure permit compliance.
  - **Measureable Goal 1.3.3** – Provide review of **Permit Awareness Plan** in Annual Reports that includes process indicators to assess execution of Plan according to the following schedule (unless otherwise indicated in the Plan):
    - Permit Year 5: provide in-depth assessment of both the implementation and impact of **Permit Awareness Plan**

#### **ACTIONS COMPLETED DURING PERMIT YEAR**

The City continued to collaborate with ISWG to implement the **Permit Awareness Plan** ([Appendix 1](#)). On 4/24/19, the [Stormwater Program Coordinator also provided a televised presentation to the Planning Board](#) and public attendees on how the City's Stormwater Program Management Plan helps maintain compliance with the MS4 General Permit.

#### **BMP 1.4 Continue Targeted BMP Adoption Efforts from Previous MS4 Permit Cycle**

*Responsible Party: Stormwater Program Coordinator      Additional Party: ISWG Education Coordinator*

#### **INTENT**

To continue outreach efforts from the previous MS4 General Permit while developing or revising a new **Targeted BMP Adoption Plan**.

#### **METHODOLOGY**

Continue collaboration with the Interlocal Stormwater Working Group (ISWG) to develop a new or revised

**Targeted BMP Adoption Plan** with the goal of promoting behavior change through the implementation of at least one specific BMP targeted for focused outreach.

#### MEASURABLE GOALS

- **Measureable Goal 1.4.1** – beginning July 1, 2013, continue outreach efforts from the previous MS4 General Permit while developing or revising a new **Targeted BMP Adoption Plan**.
- **Measureable Goal 1.4.2** – by November 1, 2013, submit draft **Targeted BMP Adoption Plan** to DEP for review and approval; Plan will be considered approved by January 15, 2014 unless DEP indicates otherwise and implementation shall begin within one week of approval. The **Targeted BMP Practices Adoption Plan** must identify:
  - a. The BMP
  - b. The target audience
  - c. The outreach tool(s) to be used
  - d. The message
  - e. The distribution system
  - f. The time line and implementation schedule
  - g. The person(s) responsible for implementation
  - h. An impact evaluation protocol
  - i. A plan modification protocol (including DEP approval of significant plan modifications)
  - j. The goal (e.g., the target level BMP adoption for each audience)
- **Measureable Goal 1.4.3** – by January 15, 2014, implement new or revised **Targeted BMP Adoption Plan** that promotes behavior change through the implementation of BMPs; emphasize at least one specific BMP to target for adoption by at least 15% of the segmented audience.
- **Measureable Goal 1.4.4** – include review of **Targeted BMP Adoption Plan** in Annual Reports that includes process indicators to assess Plan execution; also include impact indicators according to the following schedule (unless otherwise indicated in the Plan):
  - Permit Year 5: provide final assessment of Plan implementation and impact; include comprehensive review of Plan with analysis of process and impact indicators

#### ACTIONS COMPLETED DURING PERMIT YEAR

The City continued to collaborate with the ISWG to implement the **Targeted BMP Adoption Plan**, which established a goal to reduce the amount of lawn chemicals (fertilizers and pesticides) used by 15% of college-educated homeowners aged 35-55 as further described in [Appendix 1](#). The City also continued to implement the [Pesticides Use Ordinance](#), which began applying to private properties (i.e., residents and businesses) on May 1, 2018. The Stormwater Program Coordinator continued to staff the City's [Pest Management Advisory Committee](#) (PMAC) in support of the [Pesticides Use Ordinance](#). In addition to coordinating monthly meetings, preparing agendas and taking meeting notes, PMAC meeting topics of involved discussions about a variety of stormwater management considerations. PMAC members also staffed informational tables at public events to raise awareness about the ordinance and promote organic land care practices including [WillardFest](#) (7/14/18) and [Art in the Park](#) (8/11/18).

In September 2018, two public demonstration projects were held in support of the City’s efforts to implement the [Pesticide Use Ordinance](#). The Water Resource Protection and Parks Departments worked together to secure a \$15,000 Community Development Block Grant (CDBG) to make improvements to [Yerxa Park](#), an underutilized public space on the Fore River next to the City’s Green Belt. The first phase of the project entailed using goats in lieu of synthetic pesticides to manage a dense stand of Japanese knotweed. Six goats spent six days clearing a quarter acre area of knotweed and in the process generated extensive coverage from local, regional and national news media. South Portland’s Community Television (SPCTV) staff also produced an [informative video on the project](#) (Figure 2). The City partnered with Stonyfield Organic on the [Bug Light Park Fields Day](#) in conjunction with the City’s ongoing implementation of the [Pesticide Use Ordinance](#) and [Stonyfield’s nationwide effort to promote organic land care on athletic fields and public parks](#). In recognition of South Portland’s leadership to greatly reduce the use of synthetic pesticides throughout the City, Stonyfield provided financial support to help [restore the soil quality at Bug Light Park](#) (Figure 3). These efforts exemplify the City’s commitment to going “above and beyond” the minimum requirements specified in the MS4 Permit.



Figure 3: SPCTV video on Yerxa Park demonstration project



Figure 2: Stonyfield video highlighting public demonstration project to restore soil quality at Bug Light Park.

On January 29, 2019 the Cities of South Portland and Portland (which had just enacted its own pesticide use ordinance) partnered on an “**Applicator’s Roundtable**” to provide land care professionals with an opportunity to comment on specific ordinance provisions. Over 35 people attended and many expressed concerns about managing certain types of pests and invasive plants without synthetic pesticides. They also emphasized the importance of land care professionals in minimizing the use of synthetic pesticides. South Portland’s PMAC recently completed an ordinance evaluation report with recommendations to the Council and Sustainability Director for possible amendments to the Pesticides Use Ordinance. The report highlights numerous measures of success, including enhanced compliance with the MS4 General Permit due to the significant reduction in the use of synthetic pesticides.

Finally, the [Grow Healthy South Portland website](#) continues to serve as an important resource for helping to maintain compliance with the ordinance while also promoting sustainable land care practices. The website provides a wealth of information for a variety of potential audiences on minimizing the adverse impacts associated with synthetic pesticide use.

## BMP 1.5 Enhance Education & Outreach Effort

*Responsible Party: Stormwater Program Coordinator      Additional Party: ISWG Education Coordinator*

### INTENT

To target a specific activity for an impaired waterbody that if successfully addressed will improve and/or protect water quality in the priority or impaired watershed; alternately, identify common regional or statewide stormwater pollution issue with the goal of reducing or eliminating pollutant(s) of concern.

### METHODOLOGY

Continue collaboration with the Interlocal Stormwater Working Group (ISWG) to either target specific activity for improving and/or protecting water quality in priority / impaired watershed or identify common regional or statewide stormwater pollution issue for pollutant load reduction or elimination.

### MEASURABLE GOALS

- **Measureable Goal 1.5.1** – by July 1, 2014, provide draft **Education & Outreach Plan** to DEP for either targeted activity or regional / statewide stormwater issue that addresses the following element:
  - a. Identify the specific stormwater activity or pollutant to be addressed
  - b. The target audience(s)
  - c. The outreach tool(s) to be used
  - d. The message and the BMPs to be encouraged
  - e. The time line and implementation schedule
  - f. The person(s) responsible for implementation
  - g. The goal of the outreach effort
  - h. An impact evaluation protocol
- **Measureable Goal 1.5.2** – by November 1, 2014, provide final **Education & Outreach Plan** to DEP; Plan will be considered approved by January 5, 2014 unless DEP indicates otherwise with implementation to begin immediately.
- **Measureable Goal 1.5.3** – annual reports will include progress and results of targeted outreach efforts; permit year 5 report will include analysis of the process and impact indicators for implementation of the **Education & Outreach Plan**.

### ACTIONS COMPLETED DURING PERMIT YEAR

The City continued to collaborate with the ISWG to implement the **Enhanced Education & Outreach Plan** as described in [Appendix 1](#). South Portland’s Community Television (SPCTV) also produced two very informative (and entertaining!) short videos on the [importance of proper pet waste management](#) and [not feeding wildlife – especially ducks](#) (Figure 4). Additionally, the Stormwater Program Coordinator



Figure 4: “Duckasaurus” video produced by SPCTV on the importance of not feeding wildlife

continued to serve as Co-Chair for the [Maine Water Environment Association \(MEWEA\) Stormwater Committee](#). The Stormwater Committee, which includes members from all of Maine’s MS4 clusters and other various interested parties, was closely involved in ongoing MS4 Permit negotiations with DEP.

## Minimum Control Measure 2 – Public Involvement and Participation

The overall goal of this MCM is to involve the public in both the planning and implementation process of improving water quality and reducing stormwater quantity via the City’s stormwater program. The City addresses these requirements for Public Involvement and Participation primarily through continued collaboration with the Interlocal Stormwater Working Group (ISWG) and the continued funding to the ISWG for Public Involvement and Participation services, most notably including the Urban Runoff and Green Neighbor Family Fest ([Appendix 1](#)).

Additionally, the City has established public involvement and participation procedures as part of its development review process (e.g., Planning Board meetings) that provide regular opportunities for members of the public to offer comments on the implementation of stormwater performance standards. City staff and officials have also been appointed to the [Long Creek Watershed Management District](#) (LCWMD), which has an open process whereby members of the public can participate in implementing the [Long Creek Watershed Management Plan](#) (LCWMP). The LCWMP was developed largely in response to the stormwater pollution impacts from surrounding land uses and was commissioned by the City of South Portland through an EPA 319 grant. The City’s Stormwater Program Coordinator was reappointed as the LCWMD’s Board Chair in June 2019 and will likely serve in that capacity until the end of the second Long Creek General Permit term in 2020.

Finally, the City also hosts annual public events that provide opportunities for local residents to participate in South Portland’s Stormwater Management Program. The long-standing Household Hazardous Waste (HHW) Collection event has been very popular and successful at preventing potential pollutants from entering local water resources. The City also continued partnering with the LCWMD and Hydro International on a “Long Creek Clean-Up Day” that has resulted in the removal of hundreds of pounds of trash from the area around Long Creek’s South Branch (Figure 5).



**Figure 5:** staff from Hydro International and Sebago Technics help with the LCWMD’s & City’s 2019 Long Creek Clean-Up Day

### BMP 2.1 Comply with Public Notice Requirements

***Responsible Party:*** Water Resource Protection & Planning Departments

***Additional Parties:*** ISWG Stormwater Program Coordinator & LCWMD Executive Director

## **INTENT**

To comply with applicable state and local public notice requirements by using effective mechanisms for reaching the public; to comply with Maine Freedom of Access Act public notice requirements (1 M.R.S.A. §§ 401 et. seq. – “FOAA”) when involving stakeholders in General Permit implementation.

## **METHODOLOGY**

Continue participation in the ISWG and conform to applicable MEDEP, City of South Portland and Long Creek Watershed Management District public notice requirements.

## **MEASURABLE GOALS**

- **Measureable Goal 2.1.1** – ISWG, the City and the Long Creek Watershed Management District will follow all applicable state and local Public Notice requirements. Copies of the plans specifying these requirements are available on the [City of South Portland](#) and [Long Creek Watershed Management District](#) websites.
- **Measureable Goal 2.1.2** – ISWG, the City and the Long Creek Watershed Management District will follow state and local Public Notice requirements when involving stakeholders in the implementation of the MS4 General Permit, the City’s Stormwater Program Management Plan, the City’s Stormwater Management Performance Standards (Ch. 27-1536) and the Long Creek Watershed Management Plan.

## **ACTIONS COMPLETED DURING PERMIT YEAR**

Following the adoption of [Stormwater Management Performance Standards](#) by the City in April of 2009, virtually every Planning Board meeting affords the public with an opportunity to participate in efforts to improve local water quality through the reduction of impacts from stormwater pollution. This occurs because nearly every Planning Board meeting consists of new development and redevelopment proposals with provisions for stormwater management. Records of public notices, attendance and minutes for these meetings are maintained by the City’s Planning Department and [posted on the City’s website](#). The Long Creek Watershed Management District also allows public participation for efforts to reduce impacts from stormwater pollution at each of its regular meetings and posts [meeting agendas and minutes on its website](#).

## **BMP 2.2 Host, Conduct or Participate in a Public Event**

*Responsible Party: Water Resource Protection Dept.*

*Additional Party: ISWG Education Coordinator*

## **INTENT**

To increase public awareness by hosting, conducting or participating in a public event for a target audience that includes a pollution prevention and/or water quality theme.

## **METHODOLOGY**

Provide highly visible opportunities for members of the public to meaningfully participate in activities that increase awareness about reducing impacts from polluted stormwater runoff.

## MEASURABLE GOALS

- **Measurable Goal 2.2.1** – ISWG and/or the City will annually host/conduct or participate in at least one public event such as storm drain stenciling, stream cleanup, household hazardous waste collection day, volunteer monitoring, neighborhood educational events, conservation commission outreach program, Urban Impaired Stream outreach program, or adopt a storm drain or local stream program. The target audience will be a segment of the urbanized area population that the City wishes to reach. The ISWG and/or the City will consult with DEP to ensure the event will satisfy the requirements for this BMP.

## ACTIONS COMPLETED DURING PERMIT YEAR

In addition to the events and activities undertaken by the Interlocal Stormwater Working Group (ISWG) on behalf of the City, several other events were held to increase public awareness of and participation in efforts to reduce adverse impacts from polluted stormwater runoff.

### **October 6, 2018 – Household Hazardous Waste Collection Day**

The Water Resource Protection Department continued to provide the popular annual Household Hazardous Waste Collection Day for South Portland residents in partnership with the Public Works Department. Since the City is now offering two HHW events per calendar (and permit) year, participant turnout has become more modest than previous years with only a single HHW event. Approximately 210 residents participated in the 10/6/18 event by dropping off a variety of potentially hazardous household products. To reduce the clerical workload, the City began administering the event questionnaire electronically, which while resulting in fewer completed questionnaires also provided an opportunity for respondents to visit relevant websites (Figure 6). Of the 58 questionnaires that were completed online, the most common HHW materials included paints, solvents, pesticides and cleaners. A considerable number of respondents were familiar with the City's Pesticides Use Ordinance, stormwater management efforts, and Think Blue Maine ([Appendix 2](#)).



Figure 6: card provided to HHW attendees with links to online questionnaire and websites with relevant info on minimizing HHW, stormwater pollution and pesticide use

### **April 13, 2019 – Household Hazardous Waste Collection Event**

Of the approximately 165 residents who participated in this event, only 21 completed the online

questionnaire. The low response rate suggests a need to increase the level of participation through improved incentives, enhanced outreach and increased ease of access to the Google Form used to create the questionnaire (some residents complained that the link on the post cards provided to all event participants did not allow access to the questionnaire).

#### **April 20, 2019 – Urban Runoff & Green Neighbor Family Fest**

The City continued its involvement with and support of ISWG’s annual [Urban Runoff & Green Neighbor Family Fest](#) ([Appendix 1](#)). The City donated \$500 to help fund the effort and the Stormwater Program Coordinator volunteered at the event for the entire day. This event has proven to be highly successful at increasing public awareness about the adverse impacts of polluted stormwater runoff.

#### **May 29 & 30, 2019 – Portland Water District Trout Release Events**

The City continued to partner with the Portland Water District on the annual trout release events in the Trout Brook Nature Preserve (Figure 7). The Cumberland County Soil & Water Conservation District also provided staff to support the event. Immediately prior to the release days, the City’s Stormwater Program Coordinator provided classroom presentations on basic watershed, water quality and stormwater concepts to approximately 80 Mahoney Middle School students. On the trout release days, these students then conducted water quality analyses, identified aquatic macroinvertebrates and completed stream corridor and landscape assessments to identify potential sources of stormwater pollution.



**Figure 7:** water quality sampling & analysis station set up immediately adjacent to Trout Brook

#### **June 1, 2019 – Electronic Waste Collection Event**

This was the fourth E-waste collection event sponsored by the City and the second held by the Sustainability and Public Works Departments as a stand-alone event. It proved to be highly successful with 315 participants and over a full box truck load of waste items removed. Event organizers distributed information materials to 167 participants on the City’s [One Climate Future Plan](#), which is being done in partnership with the City of Portland. While not directly related to stormwater pollution, this effort will absolutely relate to the ability of stormwater infrastructure to accommodate a changing climate – both in terms of potential flooding impacts and the ability of stormwater treatment systems to handle increased runoff volumes.

#### **June 7, 2019 – Long Creek Stream Cleanup Day**

For the fourth consecutive year, the City partnered with the Long Creek Watershed Management District and Hydro International to remove trash from the banks of Long Creek’s South Branch. Sebago Technics also provided staff to support the event. As part of this effort, Hydro International has been [cataloging the types and amounts of trash](#) collected to assist in the development of more effective treatment systems to remove trash from polluted stormwater runoff.

## Minimum Control Measure 3 – Illicit Discharge Detection & Elimination

The overall goal of this MCM is to implement and enforce a program to detect and eliminate illicit and non-stormwater discharges.

### BMP 3.1 Continue to Keep Watershed-Based Storm Sewer System Infrastructure Map Current and Update Annually

Responsible Party: Water Resource Protection Dept.

Additional Party: N/A

#### INTENT

To maintain a current, detailed and accurate digitally-based map of the City's storm drain infrastructure to assist in stormwater management and planning.

#### METHODOLOGY

Continue updating GIS map layer of storm sewer system and add features as new stormwater infrastructure is constructed and/or as previously unidentified stormwater infrastructure is discovered.

#### MEASURABLE GOALS

- **Measurable Goal 3.1.1** – annually review GIS map layer of storm sewer system and update based on construction of new publicly owned storm sewer infrastructure and/or discovery of previously unidentified storm sewer infrastructure.
- **Measurable Goal 3.1.2** – annually incorporate construction of private storm sewer infrastructure into GIS map layer for new development or redevelopment projects as funding allows.

#### ACTIONS COMPLETED DURING PERMIT YEAR

The City continued to invest considerable time and money in maintaining, updating and improving GIS data layers of the publicly owned stormwater system and likely has one of the most complete and comprehensive spatial datasets for municipal stormwater infrastructure in the State. Of particular note was the addition of new stormwater infrastructure in the Pleasantdale neighborhood (primarily catch basins and storm drains) as part of the City's ongoing stormwater separation and CSO mitigation efforts. Construction for the final phase of this project was completed in mid-summer of 2019 and the final record drawings should be available by late summer / early fall for incorporation into the City's GIS system. We are currently completing a smaller stormwater separation project in the Ottawa Road section of South Portland that will result in new drainage infrastructure; our GIS data layers will be updated accordingly following completion of this project. We also made some minor edits to the stormwater ditch data layer to reflect recent changes and/or improvements for a few ditches.

The City has fully implemented the [VueWorks Asset Management Program](#) for our sewer system (with the stormwater system to come later). This system is fully integrated with our existing GIS data, which is improved and updated on a routine basis throughout each Permit Year.

## **BMP 3.2 Continue Implementation of Non-Stormwater Discharge Ordinance to Prohibit Unauthorized Discharges into Storm Sewer System**

Responsible Party: Stormwater Program Coordinator

Additional Party: Compliance Administrator

### **INTENT**

To prohibit unauthorized non-storm water discharges to the storm drainage system through municipal ordinance and to establish the legal authority and procedures to carry out all inspection, monitoring and enforcement activities necessary to ensure compliance with this ordinance.

### **METHODOLOGY**

Use the authority granted by the ordinance to enforce the provisions therein; coordinate and cooperate with the Maine DEP, Portland Water District and Interlocal Stormwater Working Group to develop hydrant flushing policies that are protective of local water resources.

### **MEASURABLE GOALS**

- **Measurable Goal 3.2.1** – the City of South Portland will continue to enforce the Non-Stormwater Discharge Ordinance. This ordinance is referenced in the South Portland Code of Ordinances as Chapter 22 Sewer and Drains, Article XIV Non- Stormwater Discharge (§§22-200 -- 22-209) which was passed on September 8, 2004.
- **Measurable Goal 3.2.2** – in Permit Year 1, coordinate with the Portland Water District (PWD) via mail or in person to evaluate whether water line and hydrant flushing are significant contributors of pollutants to the City’s MS4 system. Evaluation will include the following actions:
  - Provide the PWD with a location map showing the extent of the municipal urbanized area, and the highest priority watershed(s).
  - Gather information from the PWD, specific to the urbanized area and priority watershed(s), including the number and location of hydrants and details on water line or hydrant flushing that outlines procedures, including how often flushing occurs, typical flow rates and duration, where the water is conveyed, what the target or actual chlorine concentrations are, and what best practices are employed to prevent erosion and address potential pollutants.
- **Measurable Goal 3.2.3** – by no later than December 30, 2014, unless otherwise approved by the Department, using available GIS or other municipal mapping information, the location of hydrants will be added to the storm sewer system infrastructure map to aid in the evaluation; the City of South Portland will work with the PWD to prioritize the hydrants or water lines that have the potential to cause exceedances of the ambient water quality criterion for chlorine when discharged through the MS4. The City will request a water quality progress report that documents what best management practices are being implemented for flushing activity at the prioritized hydrants as well as the PWD’s testing results of the total residual chlorine for any such discharges.
- **Measurable Goal 3.2.4** – in Permit Years 3-5, the City will request an annual water quality progress report that documents what best management practices are being implemented for flushing activity

at the prioritized hydrants as well as the PWD’s testing results of the total residual chlorine for any such discharges.

- **Measureable Goal 3.2.5** – if it is determined by the end of Permit Year 3, that water line or hydrant flushing is a significant contributor of pollutants to the MS4, and the PWD has demonstrated that it will not voluntarily implement BMPs in order to reach ambient water quality criteria for chlorine, the City will, as soon as practicable or by no later than the end of Permit Year 4, update their IDDE ordinance to allow enforcement of discharges that cause exceedances of water quality criteria.

**Reporting:** the annual report will include a summary of Non-Stormwater Discharge incidents; it will also include a status update on the evaluation of water line and hydrant flushing as a significant contributor of pollutants to the MS4 and an update on subsequent actions.

**ACTIONS COMPLETED DURING PERMIT YEAR**

The City continued to enforce the Non-Stormwater Discharge Ordinance as specified in the South Portland Code of Ordinances Chapter 22 Sewer and Drains, Article XIV Non-Stormwater Discharge (§§22-200 - 22-209), which was enacted on September 8, 2004. City staff responded to 15 incident reports of potential illicit discharges or spills and followed up on all of these incidents (Table 2). The City contacted the operators or owners of problem properties and offered technical assistance as needed. Reports, correspondence on follow up actions and/or photos are available for all of these incidents. Given continuing problems with good housekeeping practices for some of the City’s restaurants (particularly in the Mall area), the Water Resource Protection Department developed a cloud-based data collection application for the draft “Restaurant Checklist for Potential Stormwater Pollution Sources” (Figure 8). Based on available staffing capacity, this program may be implemented by the Codes Department as part of their annual restaurant inspections during PY2019-20.

The City continued working with the Maine Healthy Beaches (MHB) Program on bacteria source tracking investigations in the Willard Beach watershed. Paired optical brightener and bacteria (enterococcus) samples were collected at several strategic locations during the 2018 and 2019 summer swim beach seasons to isolate potentially problematic subcatchment areas throughout the watershed. Human bacteroides samples were also collected to further identify specific sources (e.g., human, dog or wildlife). Results from these assessments will guide the City’s ongoing efforts to identify and eliminate potential bacterial contamination sources from the MS4 system. Notably, the monitoring of the Willard Beach stormwater system has not been required by the current and previous MS4 permits and is another demonstration of the

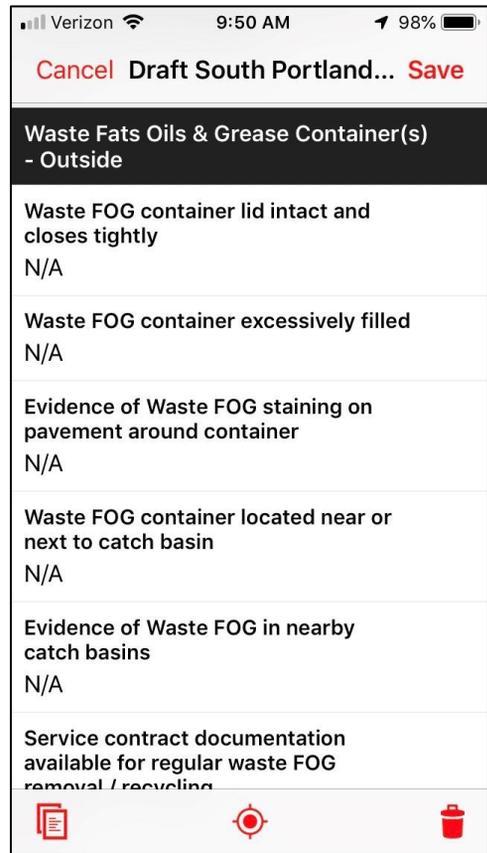


Figure 8: screenshot of draft restaurant inspection application

City’s commitment to “go above and beyond” minimum permit requirements.

**Table 2: spills or IDDE incidents reported for PY2018-19**

Report Date	Incident Location	Description	Findings / Follow-up
7/3/18	Municipal Services Facility	<5 gal diesel fuel spilled on ~400' section of access road	Inadvertent spill due to missing fuel cap; cleaned with sand and regen sweeper. NO DISCHARGE TO MS4.
7/10/19	Marsh Road	Resident reported engine oil leak on bare soil next to Trout Brook	Documented spill area and sent letter to property owner suspected of source; vehicle removed shortly thereafter. NO DISCHARGE TO MS4.
7/11/18	Kobe Steakhouse & Sushi	Grease & rubbish spills in dumpster storage area enter CB	CCSWCD sent incident report to City, owners & operators; SW Program Coord forwarded to Codes; operator had basins cleaned on 7/13/18. DISCHARGE TO PRIVATE SYSTEM.
7/17/18	South Portland High School	Washwater dumping into CB	Documented spill area and sent letter to head of janitorial staff requesting dumping of all washwater by school dept. staff in municipal sewer. DISCHARGE TO MS4.
7/18/18	Mallside Plaza - Super Great Wall Buffet	Pump station malfunction - discharged raw sewage into Long Creek via adjacent catch basin	Notified owner & property manager of sewage surcharge & met with maintenance crew; helped Codes with NOV and met with property manager to discuss grease vault replacement and pump station upgrades. Vault replaced but still awaiting supporting documentation as of Aug. 2019. DISCHARGE TO PRIVATE SYSTEM.
7/31/18	Anthoine Creek @ Broadway Crossing	DEP’s Matt Hight called to report resident complaint about alleged sewage in Anthoine Creek.	Documented site conditions shortly after call but no apparent evidence of sewage discharge. NO DISCHARGE TO MS4.
8/6/18	Strout Street	Opportunistic inspection by staff identified engine oil leak onto pavement	Documented spill area and sent letter to property owner suspected of source. NO DISCHARGE TO MS4.
8/8/18	Ocean Street	Water main break	Learned of incident ~2 days after the fact and documented site conditions; PWD generally uses dirt bags & CB inserts for water line repair but sediment may have been discharged prior to their arrival. DISCHARGE TO MS4.
9/5/18	Danforth Street	Resident reported bleach discharge to MS4 from powerwashing activities	Followed up with Maine Powerwash to inform them of prohibition on bleach discharge to MS4 and sent City’s NSDO.
9/21/18	Channel Road	Resident reported oil spilled from furnace repairs	Documented spill area and determined that it had been properly addressed by furnace repair company; notified resident accordingly. NO DISCHARGE TO MS4.
10/4/18	Ocean Street	Resident reported broken hydraulic line on Clynk truck resulting in oil spill on public ROW	Documented spill area & contacted DEP and Clynk to notify them of spill; City applied sand and swept spill area; Clynk staff person responded that they would take appropriate action to prevent future recurrence. NO DISCHARGE TO MS4.
12/7/18	Sandy Hill Road	Resident complaint about freezing discharge from residential sump pump	Determined discharge to be groundwater and worked with Codes to redirect to MS4 system.
12/17/18	Memorial Middle School	Lubricating oil discharge to frozen lawn area	Documented incident and contacted DEP to report spill; Clean Harbors conducted cleanup of spill area. NO DISCHARGE TO MS4.
3/27/18	Edmund Muskie Street	Residential sewage discharge from basement sump pump onto public ROW	Documented incident and confirmed discharge to MS4; worked with Codes, Public Health Officer and Collection Systems to replace damaged sewer service line.

The City’s Stormwater Program Coordinator continued to initiate communications on behalf of all Interlocal Stormwater Working Group (ISWG) communities with the Portland Water District (PWD) in the latter half of PY2018-19 to obtain their annual water quality report. PWD provided a report to all ISWG communities documenting that their water line and hydrant flushing SOP successfully prevented pollutant discharge (i.e., total residual chlorine) in concentrations above DEP’s stated threshold of 0.05 ppm ([Appendix 3](#)).

## BMP 3.3 Continue Implementation of Prioritized Dry Weather Outfall Inspection Program

Responsible Party: Stormwater Program Coordinator

Additional Party: N/A

### INTENT

To identify potential sources of illicit non-stormwater discharges for elimination in watersheds or sub-watersheds that pose the greatest potential threat to local receiving waters.

### METHODOLOGY

Physically inspect stormwater outfalls in priority subwatersheds during dry weather periods.

### MEASURABLE GOALS

- **Measureable Goal 3.3.1** – continue conducting dry weather outfall inspections in all the subwatersheds of Long Creek (formerly the highest priority watershed for the 2008-13 MS4 permit) and Trout Brook (the highest priority watershed for the 2013-18 MS4 permit). The boundaries of all subwatersheds may be further refined as additional mapping and field assessment is conducted or as development / redevelopment occurs.
- **Measureable Goal 3.3.2** – by the end of Permit Year 1, the City will identify the subwatersheds for dry weather outfall inspections within the second highest priority watershed, Barberry Creek. By the end of Permit Year 3, the City will conduct dry weather outfall inspections in all subwatersheds of Barberry Creek. The boundaries of all subwatersheds may be further refined as additional mapping and field assessment is conducted or as development / redevelopment occurs.
- **Measureable Goal 3.3.3** – the City will continue using the standard operating procedure (SOP) and data collection system for the dry weather outfall inspection program from the previous permit cycle and modify either as needed. The SOP includes inspection forms and a policy/procedure or protocol that identifies the steps that must be taken when an illicit discharge is encountered during routine and opportunistic inspections.

**Reporting:** inspection results will be documented in a database management system or other recordkeeping system. The annual report will provide a summary of the inspection results.

### ACTIONS COMPLETED DURING PERMIT YEAR

Dry weather outfall inspections for Barberry Creek, Long Creek and Trout Brook were completed using a cloud-based data collection application in December 2018 when temperatures were below freezing. Due to increasing concerns with the spread of Lyme disease and other tick-borne illnesses, the City would like to continue conducting outfall inspections during times of the year when the temperatures are below freezing and ticks are much less likely to be active. The inspection summaries for all three watersheds are included in [Appendix 4](#). While there were a number of potential maintenance issues identified, such as erosion and vegetative overgrowth, no obvious occurrences of illicit discharges were detected. The City currently relies on the two volume [Guidelines and Standard Operating Procedures for Stormwater Phase II Communities in Maine](#) to determine our response to potential or suspected illicit discharges.

## BMP 3.4 Continue Development & Implementation of Dry Weather Open Ditch Inspection Program

Responsible Party: Stormwater Program Coordinator

Additional Party: N/A

### INTENT

Identify potential sources of illicit discharge from open drainage ditches that serve as part of the City's stormwater collection and conveyance system.

### METHODOLOGY

Identify the extent, location and hydrologic connectivity of drainage ditches in priority watershed in relation to the City's stormwater collection system and develop an IDDE strategy for all relevant ditches.

### MEASURABLE GOALS

- **Measureable Goal 3.4.1** – continue implementing the inspection program from the previous permit cycle to detect any illicit discharges in the open ditch system of the Long Creek watershed.
- **Measureable Goal 3.4.2** – by the end of Permit Year 1, the City will identify the length of open ditches within the highest priority watershed, Trout Brook.
- **Measureable Goal 3.4.3** – by the end of Permit Year 2, the City will implement a strategy to detect any illicit discharges in the open ditch system of the Trout Brook watershed.
- **Measureable Goal 3.4.4** – by the end of Permit Year 4, the City will identify the length of open ditches within the second highest priority watershed, Barberry Creek.
- **Measureable Goal 3.4.5** – by the end of Permit Year 5, the City will implement a strategy to detect any illicit discharges in the open ditch system of the Barberry Creek watershed.

**Reporting:** inspection results will be documented in a database management system or other recordkeeping system. The annual report will provide a summary of the inspection results.

### ACTIONS COMPLETED DURING PERMIT YEAR

In June of 2019, WRP staff inspected and photographed all of the open ditches in the Long Creek watershed. Five ditches for Barberry Creek were inspected after 6/30/19 due to the mistaken use of an earlier version of the watershed that excluded these ditches. Upon discovering the error and referring to the updated watershed delineated by DEP in 2016, the five ditches were inspected on 7/16/19. The summary of inspections is included in [Appendix 5](#). We continued to use the ArcGIS Online (AGOL) application for data collection. There were no overt signs of illicit discharges observed at the time of inspections. Given the extensive use of piped stormwater systems to provide drainage for the densely developed residential and commercial areas in the Trout Brook watershed, no open ditches are present in the public right-of-way and therefore no inspections are necessary.

### **BMP 3.5 Develop List & Evaluation Protocols for Septic Systems 20 Years Old or Greater with Potential to Discharge into MS4 System in Event of Failure**

Responsible Party: Stormwater Program Coordinator

Additional Party: N/A

#### **INTENT**

To identify and assess the potential for discharges from failing septic systems to enter City’s MS4 system and adversely affect local water resources.

#### **METHODOLOGY**

Develop list of septic systems 20 years or older and an evaluation protocol to determine whether any of these may be discharging to the MS4 system and/or nearby water resources.

#### **MEASURABLE GOALS**

- **Measureable Goal 3.5.1** – by the end of Permit Year 3, develop a list and evaluation protocols for septic systems that are 20 years old or greater and have the potential to discharge into the MS4 for the Long Creek watershed (formerly the highest priority watershed for the 2008-13 MS4 permit) and Trout Brook (the highest priority watershed for the 2013-18 MS4 permit).
- **Measureable Goal 3.5.2** – by the end of Permit Year 4, implement a drive-by evaluation and documentation program for septic systems that are 20 years old or greater and have the potential to discharge into the MS4 for the Long Creek watershed and Trout Brook. This septic system inspection and documentation program will include a mechanism for addressing any discharges to the MS4 from malfunctioning septic systems.

**Reporting:** the annual report for Permit Year 3 will provide a summary of the progress made on developing the septic system list and evaluation protocols; the reports for Permit Years 4 and 5 will include a summary of septic system inspection results and associated corrective actions if needed.

#### **ACTIONS COMPLETED DURING PERMIT YEAR**

In PY2015-16, drive-by septic system evaluations were conducted for 183 parcels throughout the City (Figure 8). In most cases, the evaluations were of limited value because septic systems located on the rear of properties could not be accessed directly for inspection. However, 19 systems were identified for potential follow up primarily due to the presence of greener grass above the leach fields (the inspections were conducted during an extended period of extreme drought). No corroborating indicators, such as ponding or sewage breakout, were observed. There has been considerable discussion recently within the State’s MS4 community about the efficacy and value of drive-by septic system evaluations and the 7<sup>th</sup> preliminary draft of the next MS4 General Permit (dated 6/28/19) does not include any such requirements. Therefore, no further actions for septic system evaluations will be completed by the City until or unless additional requirements are specified in the next MS4 General Permit.

### **BMP 3.6 Continue Hosting Annual Household Hazardous Waste Collection Day**

Responsible Parties: Water Resource Protection & Public Works Departments

Additional Party: N/A

## INTENT

To provide a means for residents to dispose of household hazardous waste.

## METHODOLOGY

Host an annual Household Hazardous Waste collection day.

## MEASURABLE GOALS

- **Measureable Goal 3.6.1** – as funding allows, provide a reasonable means for residents to dispose of hazardous materials by continuing to host an Annual Household Hazardous Waste (HHW) collection day.

## ACTIONS COMPLETED DURING PERMIT YEAR

As described in BMP 2.2, the City’s Water Resource Protection and Public Works Departments partnered to hold HHW collection events on 10/6/18 and 4/13/19; the Sustainability and Public Works Departments held a joint E-waste collection event on 6/1/19 (Figure 9). All events were successful in diverting significant amounts of HHW & E-waste from the municipal waste stream and reducing potential sources of stormwater pollution (and potentially toxic discharges to the City’s wastewater treatment facility). The City invested just over \$26,400 to host all events and selected a new service provider for the 4/13/19 HHW event (at considerable savings relative to the previous service provider). Please refer to the summary of activities for BMP 2.2 and [Appendix 2](#) for more details.



Figure 9: E-waste collection staff packaging up devices dropped off by residents on 6/1/19.

## BMP 3.7 Continue Supporting the Friends of Casco Bay Mobile Vessel Pumpout Service

*Responsible Party:* Water Resource Protection

*Additional Party:* N/A

## INTENT

To support the Friends of Casco Bay’s mobile vessel pumpout service.

## METHODOLOGY

Annual financial contribution (\$5,000) to pumpout program.

## MEASURABLE GOALS

- **Measureable Goal 3.7.1** – as funding is available, continue to financially support the mobile vessel pumpout service.

## ACTIONS COMPLETED DURING PERMIT YEAR

The City contributed another \$5,000 to the [Friends of Casco Bay's Boat Pumpout Program](#) for PY2018-19. On June 10, 2019, the Water Resource Protection Department received special recognition at FOCB's christening ceremony for their new pumpout boat, the Headmaster. A brief article describing the ceremony was produced for the [City's Community Newsletter](#) (Figure 10).

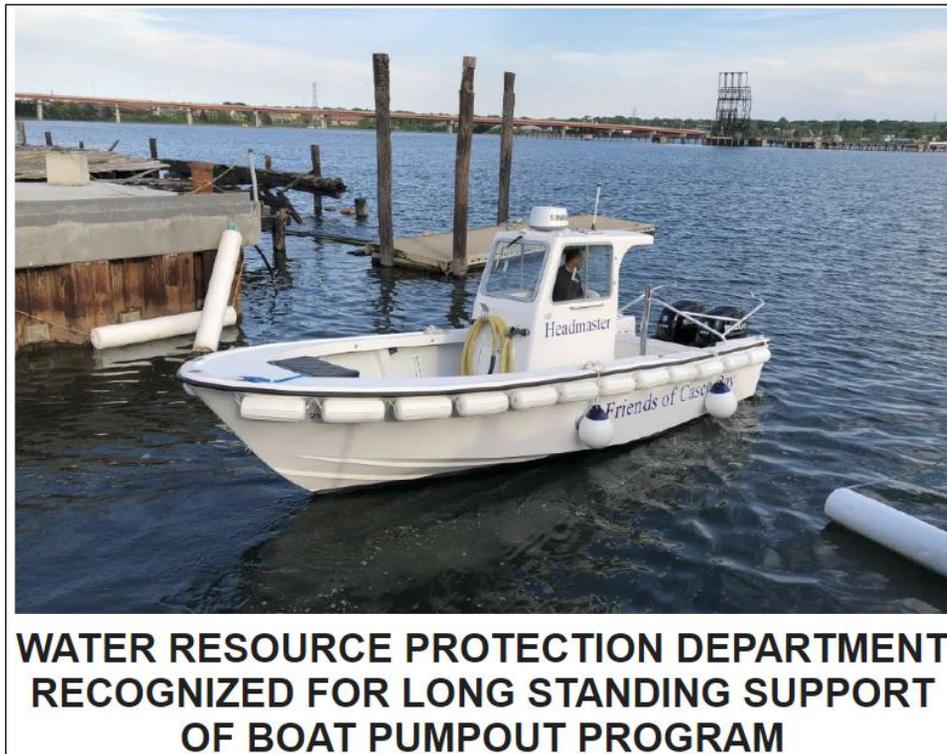


Figure 10: City's Community Newsletter photo and heading for article on recognition by FOCB

### **BMP 3.8 Continue Providing Confidential Public Complaint Hotline for Suspected Illicit Discharges**

Responsible Party: Water Resource Protection

Additional Party: N/A

#### **INTENT**

To provide a confidential method for residents to report suspected illicit discharges to the City's stormwater system.

#### **METHODOLOGY**

Use voicemail and online system for residents to anonymously report suspected illicit discharges and conduct follow up inspections to document findings from resident reports.

#### **MEASURABLE GOALS**

- **Measureable Goal 3.8.1** – continue to provide an easy and confidential method for individuals to report suspected illicit connections or illegal dumping via the voice mail system and / or the online

complaint form for the Water Resource Protection Department.

### **ACTIONS COMPLETED DURING PERMIT YEAR**

The City continued to maintain a [Stormwater Violations Hotline and Online Complaint Report form](#) that allowed concerned citizens to easily and anonymously report any suspected incidents of non-stormwater discharge violations to the publicly owned stormwater system. No complaints were filed through the online reporting system during the permit year. As summarized in Table 2, when illicit discharge incidents are reported by any means, follow up inspections are almost always conducted.

### **BMP 3.9 Continue Storm Drain Stenciling Program**

Responsible Party: Water Resource Protection

Additional Party: N/A

#### **INTENT**

To provide a visible reminder to residents about the close connections between their activities, the stormwater collection / conveyance system and potential impacts to local surface waters.

#### **METHODOLOGY**

Continue ongoing annual catch basin stenciling program.

#### **MEASURABLE GOALS**

- **Measureable Goal 3.9.1** – continue to annually stencil catch basins in conjunction with catch basin cleaning.

### **ACTIONS COMPLETED DURING PERMIT YEAR**

The City continued to stencil catch basins as part of its annual catch basin cleaning program. We reapplied the “No Dumping Drains to Casco Bay” stencils for many of our catch basins while locating our piped infrastructure for construction projects. The City also continued to partner with the Friends of Casco Bay on their stormwater education and outreach efforts by permitting teams of volunteers to stencil catch basins in the City’s right of way.

## Minimum Control Measure 4 – Construction Site Stormwater Runoff Control

The City of South Portland completed a variety of activities for the Construction Site Stormwater Runoff Minimum Control Measure. The overall goals of this MCM are to develop, implement, and enforce a program that reduces pollutants in stormwater runoff to the City’s regulated small MS4 from construction activities that result in a land disturbance of an acre or more.

### BMP 4.1 Continue Notification to Construction Site Developers and Operators of Maine Construction General Permit or Chapter 500 Registration Requirements

Responsible Party: Planning Dept.

Additional Party: Water Resource Protection Dept.

#### INTENT

To reduce the amount of stormwater runoff pollution by ensuring that construction site developers and operators use appropriate stormwater BMP practices and are aware of their obligations under applicable state regulations.

#### METHODOLOGY

Use existing municipal notification procedures through development application and review process.

#### MEASURABLE GOALS

- **Measurable Goal 4.1.1** – continue notification procedures from previous permit cycle that occur through the site plan review permitting process. Additionally, notification is provided to building permit applicants that meet the one-acre threshold.
- **Measurable Goal 4.1.2** – continue annual evaluations of current notification system and modify if necessary.

**Reporting:** the annual report will include a description of any updates made to the notification procedures.

#### ACTIONS COMPLETED DURING PERMIT YEAR

The City requires property owners, developers and contractors for all permitted construction activities from single family residential house lots to large commercial projects constructing principle structures and disturbing a minimum of 15,000 ft<sup>2</sup> (often less) of land area to comply with [Planning Board Regulation #2](#). This local regulation was developed specifically for erosion and sediment control and refers directly to the Maine Erosion and Sediment Control Practices Field Guide for Contractors (which refers directly to the Maine’s Erosion and Sedimentation Control Law, the Natural Resources Protection Act, the Maine Construction General Permit, the Shoreland Zoning Act, and the Stormwater Management Law). Applicants for construction projects are required to sign a certification statement that the owner/developer and excavation contractor/subcontractor have read and will follow the applicable provisions in the Maine Erosion & Sediment Control BMP Manual. As part of this process, owners/developers and their excavation contractors are also required to attend a pre-construction meeting prior to the start of the project to review

site-specific erosion and sediment control plans. The City also produced an [informative brochure](#) for developers and contractors on our construction project oversight expectations and procedures that includes an EPA diagram on the types of typical erosion & sediment control (ESC) BMPs needed for most projects (Figure 11). The [brochure is available online](#) and on display in the City’s Planning Department office. We also routinely send it electronically to developers and contractors of construction sites that have BMP deficiencies identified by 3<sup>rd</sup> party or City staff inspections (along with the site-specific ESC plans).



Figure 11: construction site diagram adapted from EPA with typical ESC BMPs highlighted for most construction projects.

The City continued to confirm that developers for projects requiring site plan review under the Maine Construction General Permit (MCGP) sent in their Notice of Intent (NOI) before receiving approval from the South Portland Planning Board. The City also confirmed that the Maine DEP had all applicable projects on file. All building permit applicants disturbing greater than one acre received a copy of the NOI to comply with the MCGP. [The City’s Stormwater Performance Standards \(Ch. 27-1536\)](#) require projects subject to a modified site plan approval process to comply with the provisions of [Planning Board Regulation #2](#). In addition to conducting internal staff reviews for proposed development/redevelopment projects (which now include the WRP’s Civil Engineer), the City also continued to use third party inspectors to evaluate proposed site plans. Each site plan was reviewed to ensure that proposed construction phasing included appropriate

soil erosion and sedimentation control practices. Site plans that lacked appropriate soil erosion and sediment control practices were brought to the attention of the City and design engineer for further action.

## BMP 4.2 Continue to Document Every Construction Activity that Disturbs One or More Acres within the Urbanized Area

Responsible Party: Planning Dept.

Additional Party: Water Resource Protection Dept.

### INTENT

To annually document all construction activities disturbing one or more acres within the urbanized area for use in the construction site inspection program (BMP 4.3).

### METHODOLOGY

Use shared computer network to implement electronic filing & tracking system for documentation of applicable construction activities.

### MEASURABLE GOALS

- **Measurable Goal 4.2.1** – continue implementation of tracking system to record every activity that disturbs greater than or equal to one acre of land area. This system will track and differentiate construction activities within an urban impaired stream watershed; priority watershed(s), and all other watersheds. The system will be used to summarize data to be included in the annual report submitted to the DEP.

**Reporting:** the number of construction activities disturbing greater than or equal to one acre will be included under MCM 4, BMP 4.3, described immediately below.

### ACTIONS COMPLETED DURING PERMIT YEAR

The City continued to document periodic inspections of construction activities disturbing one or more acres of area (see discussion in BMP 4.3). Third parties appointed by the City (or the Long Creek Watershed Management District for projects covered under the Long Creek General Permit) conducted Erosion & Sediment Control (ESC) inspections on at least a monthly basis and on a weekly basis whenever significant deficiencies were identified. The City’s Community Planner, Engineering Inspector and Stormwater Program Coordinator reviewed all third party ESC reports to determine whether any follow up actions were needed to address deficiencies. Reports are electronically filed in a shared network folder accessible to all City staff responsible for ensuring compliance with the City’s Stormwater Permit. The

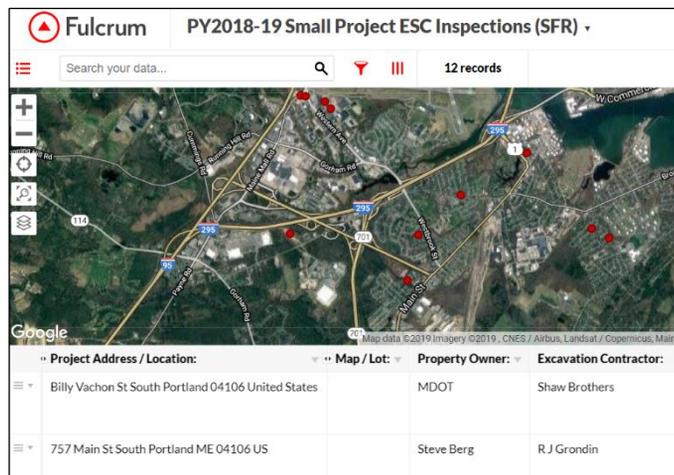


Figure 12: screen shot of mobile / cloud-based data collection app for documenting inspections for “small” construction projects

City’s Engineering Inspector also continued to use the [Fulcrum](#) application to document inspections for single family residential house lots (Figure 12).

### **BMP 4.3 Continue Implementation of Construction Site Inspection Program**

*Responsible Party: Planning Dept.*

*Additional Party: Water Resource Protection Dept.*

#### **INTENT**

To ensure construction projects an acre or larger are in compliance with the MCGP and Chapter 500 and to reduce the amount of stormwater pollution entering local water resources through the City’s MS4 system.

#### **METHODOLOGY**

Develop and implement construction site inspection program in accordance with local and state stormwater laws (South Portland Ordinance § 27-1536, Maine Construction General Permit, Chapter 500, and General Permit for Small MS4s, respectively).

#### **MEASURABLE GOALS**

- **Measurable Goal 4.3.1** – continue procedures for construction site inspections that meet the terms and conditions of the General Permit and modify if necessary.
- **Measurable Goal 4.3.2** – continue use of standardized inspection form to ensure documentation of all required inspections.
- **Measurable Goal 4.3.3** – continue implementation of process for tracking and notifying the site developer or contractor of non-compliance issues. The inspector will complete an inspection report that will be transmitted to the City, and necessary enforcement will be the responsibility of the City. Sites that are not in compliance will be issued a written letter from the City requiring the site to come into compliance within a specified time period. If the violation continues, the City’s Code Enforcement Officer will contact the Corporation Counsel to authorize legal proceedings needed to enforce all applicable ESC requirements. Continued non-compliance will be reported to the DEP with supporting documentation.
- **Measurable Goal 4.3.4** – continue inspecting construction sites located in the watershed of an urban impaired stream a minimum of three times, and inspect construction sites located in all other watersheds a minimum of two times. For all construction sites, at least one of the required inspections will be at project completion to ensure that all post-construction BMPs were properly installed and that final stabilization of the site has been completed. All construction inspections will be properly documented.

**Reporting:** inspection results will be documented in a database management system or other recordkeeping system. The annual report will provide a summary of the inspection results.

#### **ACTIONS COMPLETED DURING PERMIT YEAR**

The WRP and Planning & Development Departments continued to [share construction project oversight](#) duties for PY2018-19 and continued to use the [process flow chart](#) that clearly defines roles & responsibilities

for the third party inspector (3PI), relevant City staff, the contractor and the owner. It also establishes processes for submitting and filing inspection reports and escalating enforcement responses by the City to BMP deficiencies. The first significant deficiency identified by the 3PI results in an increased inspection frequency from monthly to weekly; the second deficiency results in a warning letter from the Engineering Inspector to the contractor and owner; and the third deficiency results in a Notice of Violation and Stop Work Order from the Code Enforcement Officer with an option to involve DEP.

The City and our 3PIs continued to use a [comprehensive erosion & sedimentation control \(ESC\) inspection report form](#) developed by ISWG and intended to comply with the MS4 General Permit, the MCGP and Chapter 500. To facilitate nearly real-time ESC report transmittal from 3PIs to City staff, we adapted this form for use with Fulcrum, a cloud-based data collection application. 3PIs can also simply submit completed ESC report forms via email provided this is done shortly after the inspections are completed (i.e., within 1 or 2 days). During PY2018-19 there were 11 active construction projects an acre or larger that were inspected 72 times entirely by City-appointed inspectors. All sites were inspected on at least a monthly basis (Figure 13).

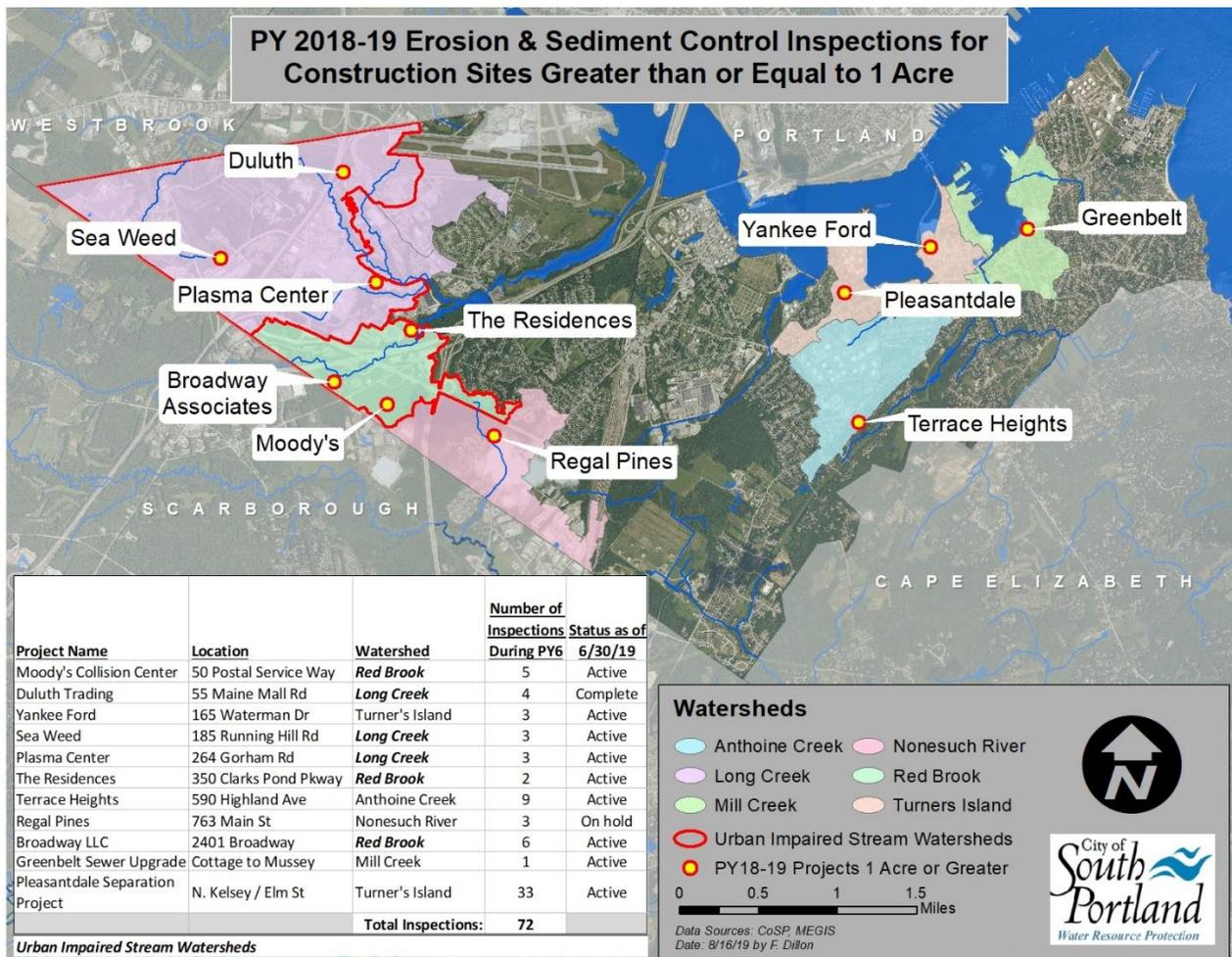


Figure 13: PY18-19 inspections for construction projects 1 acre or larger

A City-appointed 3<sup>rd</sup> party inspector, City’s Engineering Inspector and/or the Stormwater Program Coordinator also conducted 54 inspections for 24 construction projects that disturbed less than one acre (Table 3). Most inspections were recorded using the Fulcrum application and most were for single family residential projects along with a few smaller commercial projects.

**Table 3: PY18-19 construction inspections for projects disturbing less than 1 acre**

<u>Address</u>	<u>Project Type</u>	<u>Number of Inspections During PY6</u>	<u>Status as of 6/30/19</u>
4 Spurwink Ave	Residential fill	2	Complete
10 Coolidge Ave	SFR*	1	Active
10 Cumberland Ave	SFR	2	Complete
13 Bennett	SFR	2	Complete
16 Bowdoin	Commercial	4	Active
17 Bennett	SFR	2	Complete
19 Bennett	SFR	2	Complete
20 Carlisle Place	SFR	2	Complete
31 Bonnybank	SFR	2	Complete
33 Marcelle Ave	SFR	1	Complete
35 Park Ave	Commercial	4	Active
46 Elizabeth Taylor Ln	SFR	7	Complete
49 Bonnybriar	SFR	2	Active
50 Market St	Commercial	3	Complete
70 Bonnybank	SFR	1	Active?
70 Old Bog Rd	Commercial stockpile	1	Complete
141 Brigham	SFR	1	Complete
159 School St	SFR	1	Complete
245 Lincoln St	SFR	2	Complete
333 Western Ave	Commercial	3	Complete
726 Sawyer	SFR	1	Complete
863 Broadway	Commercial	1	Complete
1122 Broadway	Commercial	2	Complete
Billy Vachon Dr	MDOT drainage	5	Complete
<b>Total Inspections:</b>		<b>54</b>	

\*SFR = single family residential

**BMP 4.4 – Continue Promotion of Certified Contractors in Erosion Control Practices**

*Responsible Party: Planning Dept.*

*Additional Party: Water Resource Protection Dept.*

**INTENT**

To encourage contractors to receive MEDEP certification (or equivalent training) in erosion control practices as a means of reducing the amount of stormwater pollution into the City’s water resources.

**METHODOLOGY**

Provide informational materials from the MEDEP’s Nonpoint Source Training and Resource Center to contractors and developers as part of the project proposal and site plan review process.

**MEASURABLE GOALS**

- **Measurable Goal 4.4.1** – continue to encourage contractors to be certified in erosion and sediment control through the DEP Non-Point Source Training and Resource Center or its designee.

**ACTIONS COMPLETED DURING PERMIT YEAR**

The City continued to provide information to contractors about the DEP’s erosion and sediment control certification as part of the project proposal and site plan review process. We also provided the following [information on our website](#) encouraging the use of contractors certified by DEP in erosion and sediment control practices:

*The City strongly encourages property owners and/or developers to use excavation contractors that have been [certified by the Maine Department of Environmental Protection \(MEDEP\) in the proper use of erosion and sediment control \(ESC\) practices](#). State law requires excavation contractors working in the shoreland zone to have MEDEP’s ESC certification.*

## Minimum Control Measure 5 – Post-Construction Stormwater Management of Development and Redevelopment

The overall goals of this MCM are to develop and implement a program that addresses stormwater runoff from new development and redevelopment projects greater than or equal to one acre in size, including projects less than one acre that discharge to the MS4 and are part of a larger common plan of development or sale; implement local ordinance regulations to ensure the adequate long-term operation and maintenance and proper functioning of post-construction BMPs; and to annually document all related post-construction activities for inclusion the City’s annual stormwater report.

### BMP 5.1 Continue Implementation of Program to Address Stormwater Runoff from New Development and Redevelopment Projects

*Responsible Party: Planning Dept.*

*Additional Party: Water Resource Protection Dept.*

#### INTENT

To ensure that controls are in place to prevent or minimize water quality impacts from newly developed or redeveloped projects.

#### METHODOLOGY

Continue using City’s Stormwater Management Performance Standards ([Section 27-1536](#)) to address post-construction stormwater runoff from new development and redevelopment projects greater than or equal to one acre in size, including projects less than one acre that discharge to the MS4 and are part of a larger common plan of development or sale.

#### MEASURABLE GOALS

- **Measureable Goal 5.1.1** – implement Stormwater Management Performance Standards to ensure the installation of post-construction BMPs from applicable new development and redevelopment projects.

#### ACTIONS COMPLETED DURING PERMIT YEAR

The City continued to implement the Stormwater Management Performance Standards (local ordinance [Sec. 27-1536](#)) to ensure that post-construction BMPs were being installed for applicable new development and redevelopment projects. Implementation of these standards occurs through the [Planning Board application review process](#) for all new development or redevelopment projects disturbing 15,000 square feet of land or for nonconforming lots of record. As such, the City’s ordinance requirements exceed state standards which generally do not require stormwater management practices for projects disturbing less than 1 acre of land. For PY2019-20, we also hope to revise some provisions of our Stormwater Management Performance Standards to ensure that most new development and redevelopment projects include some level of stormwater treatment. We have also participated in preliminary discussions with the Long Creek Watershed Management District about an interlocal collaboration to develop stormwater treatment standards that will provide increased protections beyond those currently afforded by municipal ordinances in the watershed.

## BMP 5.2 Continue Implementing Tracking Program for Post-Construction BMPs in Urbanized Area

Responsible Party: Planning Dept.

Additional Party: Water Resource Protection Dept.

### INTENT

To ensure the adequate long-term operation and maintenance of post-construction stormwater BMPs for new development or redevelopment projects that disturb an acre or more (including projects less than 1 acre that are part of a larger common plan of development) and discharge to the City's MS4 system.

### METHODOLOGY

Establish and implement a process to notify owners/operators of qualifying properties about annual inspection requirements for post-construction stormwater BMPs; establish and implement a tracking system to ensure that these systems are being inspected annually and properly maintained to ensure effective long-term operation.

### MEASURABLE GOALS

- **Measurable Goal 5.2.1** – continue implementing tracking program for post-construction stormwater BMPs in the Urbanized Area to ensure completion and receipt of annual inspection certification reports from owner/operator of BMPs.
- **Measurable Goal 5.2.2** – conduct yearly evaluations of tracking program and modify if necessary.

**Reporting:** documentation of all BMPs and annual certifications will be entered into a database management system or other recordkeeping system for tracking and annual reporting to DEP. The following information will be included in the annual report:

- Cumulative number of sites that have post construction BMPs discharging to City's MS4.
- Summary of the number of sites that have post-construction BMPs discharging into the City's MS4 that were reported to municipality.
- Number of sites with documented functioning post-construction BMPs.
- Number of sites that required routine maintenance or remedial action to ensure the post-construction BMP was functioning as intended.

### ACTIONS COMPLETED DURING PERMIT YEAR

The City's tracking program for the annual post-construction stormwater BMP inspections in the Urbanized Area continued to document the submittal of certified 3<sup>rd</sup> party inspection reports for all qualifying properties (Figure 14). In addition to inspection requirements for new or redevelopment projects disturbing an acre or more as specified in the MS4 permit, the City's Stormwater Performance Standards ([27-1536](#)) also require stormwater BMPs and inspections for projects disturbing 15,000 square feet or more and in some cases even for small non-conforming lots of record (~5,000 s.f.). Annual inspections must be completed (in most cases by City-approved 3<sup>rd</sup> parties) by 6/30 of each year and corresponding reports must be received by 7/15.



**Table 4: PY2018-19 properties requiring post-construction 3<sup>rd</sup> party inspections for stormwater treatment BMPs**

INSPECTIONS	Discharge to MS4	3PI Report Received	Properly Functioning	Comments
<b>Privately Owned</b>				
28 Edgewood Rd	No	NA	-	Next report not due until 2020 (self-inspection every 2 yrs per Planning Board)
740 Broadway	Yes	Yes	Yes	6/18/19: Hydro International 3PI notes eroded riprap may need repair soon & asphalt curb needs immediate repair
Armory - 682 Broadway	Yes	Yes	Yes	Sterling Stormwater inspections on 8/23/18 & 4/19/19
Berlin City Auto Group	Yes	No	-	7/19/19: SW Compliance email states 3PI report will be done ASAP. 8/20/19: 3PI report not received sent followup email. 8/21/19: Nathan Marles confirmed receipt of contract to proceed with maint work ASAP
CarMax	Yes	Yes	Yes	7/22/19: Melissa Newman no longer Facilities Coordinator; left VM and sent email to her replacement Wendy Sitko; Sterling's Tom Gorrivan confirms 3PI completed and will reinspect to confirm proper functioning. 8/20/19: 3PI report not received sent followup email. 8/27/19: 3PI report received from Tom Gorrivan / Sterling.
Casco Bay Steel	Yes	Yes	No	7/22/19: sent email to Bryon Tait and STI (Dan Riley & Mike Kane) 8/20/19: 3PI report not received sent followup email. 8/22/19: 3PI report from Mike Kane indicates not all required SW systems in place. 8/28/19: P&D will follow up with owner.
Duluth Trading - 55 Maine Mall Rd	Yes	Yes	Yes	5/10/19: Acorn 3PI notes no maint needed
F.W. Webb	Yes	Yes	Yes	6/10/19: Alliance Env 3PI notes minor maint needed
Highland Commons	No	Yes	Yes	7/9/19: Stormwater Compliance 3PI after extensive repairs to SW systems
Hilton Garden Inn	Yes	Yes	Yes	6/14/19: Acorn inspection notes no maint needed
Hissong Salt Packaging	No	Yes	Yes	7/22/19: Chris Pizey sent 6/27/19 STI 3PI report that specified moderate maintenance needs
Hoyt Street Apartments	Yes	Yes	Yes	6/14/19 STI 3PI notes minor maint needed (areas of bare soil)
John Roberts Rd Office Park	No	Yes	Yes	7/22/19: sent email to Sam Tedford and Tom Gorrivan; Sterling 3PIs conducted on 7/3, 8/23 & 10/8/18.
Main Street Retail	Yes	Yes	Yes	6/21/19: Blaise 3PI notes no maint needed
Meetinghouse Lofts	Yes	Yes	Yes	7/22/19: Ransom 3PI notes no maint needed
Osprey Circle	No	Yes	Yes	7/22/19: sent email to Daphne Pappas and ESI; 5/29/19 report received on 7/23/19.
Pape Subaru	Yes	Yes	Yes	6/21/19: CCSWCD 3PI notes sediment will eventually need to be removed from CBs
Peary Terrace - 50 Peary Terrace	No	No	-	7/22/19: need to send letter as don't have owner's email 8/20/19: self-inspection report not received will send followup letter
Peary Terrace - 52 Peary Terrace	No	No	-	7/22/19: need to send letter as don't have owner's email 8/20/19: self-inspection report not received will send followup letter
Peary Terrace - 54 Peary Terrace	No	Yes	Yes	Self-inspection on 6/15/19; no maint noted
Peary Terrace - 56 Peary Terrace	No	Yes	Yes	Self-inspection on 5/22/19; no maint noted
Peary Terrace - 64 Southeast Rd	No	Yes	Yes	Wright-Pierce inspection on 5/29/19; no maint noted
Peary Terrace - 70 Southeast Rd	No	Yes	Yes	Self-inspection on 4/27/19; no maint noted
Peary Terrace - 76 Southeast Rd	No	No	-	7/22/19: need to send letter as don't have owner's email 8/20/19: self-inspection report not received will send followup letter
Peary Terrace - 82 Southeast Rd	No	Yes	Yes	Self-inspection on 3/23/19; no maint noted
Riverbrook Apartments	No	Yes	Yes	7/22/19: last year's 3PI John Mahoney (Ransom) reaching out to owner 8/19/19: Ransom will inspect next week 9/4/19: 3PI report received from Ransom
RMS 28 Chris Toppi Drive	Yes	Yes	Yes	Blaise inspection on 6/21/19; no maint noted
RMS Donald Dean Drive	Yes	Yes	Yes	Blaise inspection on 6/21/19; no maint noted

INSPECTIONS	Discharge to MS4	3PI Report Received	Properly Functioning	Comments
<b>Privately Owned</b>				
Sable Lodge	No	No	No	7/19/19: Pat Cloutier sent enforcement letter on behalf of City 7/24/19: FDillon sent Tom Gorrivan / Sterling Stormwater email inquiry on work status 8/8/19: Tom Gorrivan sent email confirming OK to proceed with repairs
Texas Instruments / ON Semiconductor	Yes	Yes	Yes	7/22/19: sent email to TI's Allison Green; received 5/20/19 STI report on 7/23/19 which identified a few obstruction issues for City culverts
100 Foden Road	Yes	Yes	Yes	Stormwater Compliance inspection on 4/22/19; maint completed systems in good condition
Troiano Waste Services	Yes	Yes	Yes	SGC inspection on 6/7/19; no maint noted
Tru Choice Credit Union	Yes	Yes	Yes	DM Roma inspection on 6/15/19: maint completed system in good condition
VanEastland LLC - 363 Maine Mall Rd	Yes	Yes	Yes	7/22/19: sent email to Joe VanWhy; Tom Gorrivan confirms 3PI done with report pending 8/20/19: 3PI report not received sent followup email 8/23/19: 3PI report received from Sterling
Western Avenue Crossing	Yes	Yes	No	7/22/19: sent email to STI's Paul Ostrowski; Shawn Frank phone call confirms 3PI complete & maint may be needed - report by end of month. 8/20/19: 3PI report not received sent follow up email 8/21/19: received 6/14/19 3PI report (failed) from STI which id'ed numerous maint issues 9/4/19: followed up with Codes for enforcement
Windward Circle Unit 8 - 312 Gannett Dr	Yes	Yes	Yes	STI inspection on 5/10/19: no maint noted
<b>Publicly Owned</b>				
72 Simmons Rd Rain Garden	Yes	Yes	Yes	STI 3PI on 6/21/19; no maint needed
Aspen Ave Biofilter	Yes	Yes	Yes	STI 3PI on 6/12/19: sparse riprap noted in some areas but no follow-up maint recommended
Boothy Ave StormTree	No	Yes	Yes	Sediment removal from deep sump CBs and tree box inlet
City Hall / Transit Hub (7)	Yes	Yes	Yes	Bioretention cell #1 failed due to various maint needs; repairs later this fall 8/28/19: curbing repaired & system OK
Community Center Det. Pond	Yes	Yes	Yes	Remove woody veg & replace gravel bench stone as needed
DHHS - State Office Building	Yes	Yes	Yes	Stormwater Compliance 3PI on 4/4/19; minor maint needed
Hinckley Park Rain Garden	No	Yes	Yes	6/21/19 STI 3PI with maint recommended
Long Creek PS (3)	No	Yes	Yes	6/24/19: STI 3PI for bioretention cell, porous asphalt & permeable pavement (all need maint); maintenance later this fall. 8/28/19: repairs to asphalt & biocell; pavers to be swept later this fall.
Mahoney Middle School	Yes	Yes	Yes	6/21/19 STI 3PI with no maint recommended
Main St Biofilters (10)	Yes	Yes	Yes	STI 3PIs in early June with no maint recommended
Memorial MS Gravel Wetland	Yes	Yes	Yes	STI inspection on 6/14/19; remove woody growth & decaying vegetation in forebay.
Municipal Services Facilities (2)	No	Yes	Yes	6/19/19 STI 3PI with maint noted
Ridgeland Gardens	Yes	Yes	Yes	6/26/19 3PI by Peter Dalfonso; no maint noted
SMCC Parking Lot	Yes	Yes	Yes	6/21/19 3PI by Blais; no maint noted
South Portland High School (7)	Yes	Yes	Yes	6/7/19 STI 3PIs; minor maint noted
Sunset Ave Gravel Wetlands	No	Yes	Yes	6/14/19 STI 3PIs; moderate maint noted
Wythburn Gravel Wetland	Yes	Yes	Yes	6/12/19 STI 3PI; minor maint noted
<b>SUMMARY</b>				
Yes:	33	47	45	
No:	20	5	3	
<b>Totals:</b>	<b>53</b>	<b>52</b>	<b>48</b>	

Our staff also continued to use the [Stormwater Treatment System Maintenance Manual](#) to guide annual maintenance activities for all 37 City-owned stormwater treatment systems. Each system has a unique

identifier and 2-page maintenance form that briefly describes the type of system (e.g., bioretention, gravel wetland, etc.), includes a maintenance checklist, location map, photo and schematic diagram.

### **BMP 5.3 Continue Implementing Procedures for Notifying Site Developers to Consider Incorporating Low Impact Development Techniques**

Responsible Party: Planning Dept.

Additional Party: Water Resource Protection Dept.

#### **INTENT**

To promote the use of LID practices for new development and redevelopment projects.

#### **METHODOLOGY**

Use Stormwater Management Performance Standards ([Sec. 27-1536](#)) to encourage the use of LID practices.

#### **MEASURABLE GOALS**

- **Measurable Goal 5.3.1** – as specified in the City’s Stormwater Management Performance Standards ([Sec. 27-1536](#)), projects requiring a Chapter 500 stormwater permit will comply with the practices described in Maine DEP’s Stormwater Management Manual, which include low impact development techniques.
- **Measurable Goal 5.3.2** – as specified in the City’s Stormwater Management Performance Standards ([Sec. 27-1536](#)), projects not requiring a Chapter 500 stormwater permit but requiring a Post-Construction or Basic Stormwater Management Plan from the City will use LID practices as determined by the Planning Board to be appropriate for the site.
- **Measurable Goal 5.3.3** – as specified in the City’s Stormwater Management Performance Standards ([Sec. 27-1536](#)), projects not requiring a Chapter 500 stormwater permit but requiring a Drainage Plan from the City are encouraged but not required to use LID practices appropriate for the type of development identified in the Maine DEP’s Volume III – BMP Technical Design Manual or City’s Stormwater Manual.

#### **ACTIONS COMPLETED DURING PERMIT YEAR**

The City continued to rely on Stormwater Management Performance Standards ([Sec. 27-1536](#)) to encourage the use of LID practices. All new or redevelopment projects requiring Planning Board review are subject to these standards. The relevant ordinance language is as follows:

*If the project does not require a stormwater permit from the DEP under its Chapter 500 Rules, the plan may either meet the Chapter 500 standards as set forth in (a) above, or provide for the treatment of 0.5 inches of runoff from ninety percent (90%) of the impervious surfaces on the site, and 0.2 inches of runoff from all disturbed pervious areas of the site using LID design practices and techniques determined by the Planning Board to be appropriate for the site...The treatment techniques used may include those set forth in Chapter 10 of the DEP Stormwater Manual, Volume III-BMPs Technical Design Manual, and/or any [City of South Portland LID \(Stormwater\) Manual](#) adopted by the Planning Board...Provisions must be made in the Stormwater Management Plan for all stormwater treatment techniques to be maintained in perpetuity.*

## Minimum Control Measure 6 – Pollution Prevention / Good Housekeeping for Municipal Operations

The City completed a variety of activities for the Pollution Prevention / Good Housekeeping for Municipal Operations Minimum Control Measure as described below. The overall goals of this MCM are to develop an inventory of all municipal operations that have the potential to generate stormwater pollution; conduct a municipal employee training program; develop a sweeping program for all publicly owned streets and parking lots; develop a cleaning and maintenance program for all City-owned catch basins and other stormwater structures; evaluate and implement a prioritized schedule for maintaining and upgrading the City's stormwater system; and develop Stormwater Pollution Prevention Plans (SWPPPs) for all applicable municipal facilities and operations.

### BMP 6.1 Continue to Maintain Inventory of Municipal Properties, Facilities & Activities for Implementation of Operation & Maintenance Plans

Responsible Party: Stormwater Program Coordinator

Additional Party: N/A

#### INTENT

To ensure the use of structural and non-structural controls at all applicable municipally owned or operated properties and facilities that will reduce stormwater pollution to the maximum extent practicable.

#### METHODOLOGY

Continue to maintain GIS-based inventory of all City properties with a list of associated municipal activities that have the potential to generate stormwater pollution and continue implementation of O&M procedures.

#### MEASURABLE GOALS

- **Measurable Goal 6.1.1** – continue maintaining and updating inventory of all municipal operations conducted in, on, or associated with facilities, buildings, golf courses, cemeteries, parks and open space owned or operated by the City that have the potential to cause or contribute to stormwater or surface water pollution.
- **Measurable Goal 6.1.2** – continue implementing written operation and maintenance (O&M) procedures that include maintenance schedules and inspection procedures to ensure long-term operation of structural and non-structural controls that reduce stormwater pollution to the maximum extent practicable for all areas of the City within the Urbanized Area. These procedures must address the following, as applicable:
  - Proper use, storage, and disposal of petroleum and non-petroleum products, hazardous materials, waste materials, pesticides and fertilizers, including minimizing the use of these products and an alternative product analysis;
  - Spill response and prevention;
  - Vehicle and equipment storage, maintenance, and fueling;
  - Amount and type(s) of deicing materials used each deicing season;
  - Landscaping and lawn care, including, where applicable, an evaluation of reduced mowing

frequencies, establishing and maintaining buffers, and cutting vegetation within 100 feet of a stormwater conveyance or surface water;

- Erosion and sedimentation control;
- Feeding gulls, waterfowl or other wildlife.

### ACTIONS COMPLETED DURING PERMIT YEAR

The City continued to maintain and update an inventory of City-owned properties subject to O&M procedures developed to reduce polluted stormwater runoff to the maximum extent practicable. South Portland’s most recent cadastral records (from April 2018) identify 204 parcels that are owned by the City (Figure 15). Various municipal departments are responsible for maintaining these properties in accordance with the [Operations & Maintenance Plans developed by the Interlocal Stormwater Working Group in 2015](#).

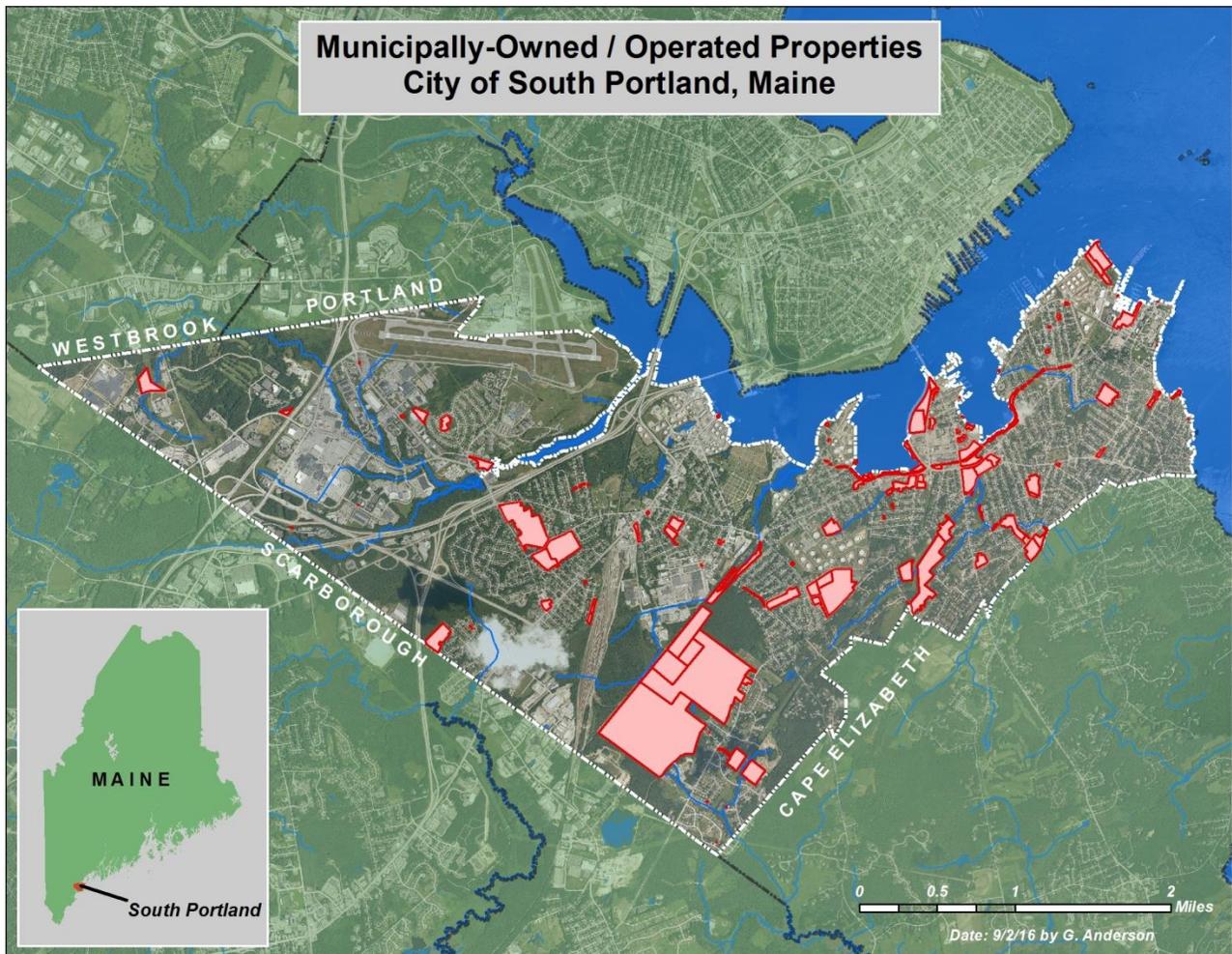


Figure 15: properties owned and operated by the City and subject to O&M plans to minimize / prevent polluted stormwater runoff

### BMP 6.2 Continue Implementation of Municipal Employee Training Program

*Responsible Party:* Stormwater Program Coordinator

*Additional Party:* N/A

## **INTENT**

To provide employee training that will prevent or reduce stormwater pollution from municipal operations and facilities.

## **METHODOLOGY**

Continue working independently and in partnership with the Interlocal Stormwater Working Group and Maine DEP to provide municipal employees with relevant training for the prevention or reduction of stormwater pollution from municipal operations.

## **MEASURABLE GOALS**

- **Measurable Goal 6.2.1** – continue to identify training needs and materials and revise / update as necessary.
- **Measurable Goal 6.2.2** - continue implementing municipal employee training program to reduce stormwater pollution potential from municipal operations. Topics to be covered by the training program may include, but not be limited to:
  - Maintenance activities, maintenance schedules, and long-term inspection procedures for structural and non-structural stormwater controls to reduce pollutants discharged from the separate storm sewers.
  - Controls for reducing or eliminating the discharge of pollutants into the separate storm sewers from streets, roads, highways, municipal parking lots, maintenance and storage yards, fleet or maintenance shops with outdoor storage areas, salt/sand storage locations, snow disposal areas, and waste transfer stations.
  - Procedures for disposing of waste removed from the separate storm sewers and areas listed above in accordance with all regulatory requirements (such as dredge spoil, accumulated sediments, floatables, and other debris).

## **ACTIONS COMPLETED DURING PERMIT YEAR**

The City's Stormwater Program Coordinator offered three Pollution Prevention / Good Housekeeping (PP/GH) training events for PY2018-19. Much of the content for the trainings was general in nature and applied to all municipal operation & maintenance activities with the potential to generate stormwater pollution but some was also facility-specific to provide more detailed information unique to South Portland's municipal departments:

- **7/11/18:** facility-specific PP/GH training for 2 Police Department maintenance staff
- **4/30/19:** facility-specific PP/GH training for 11 Water Pollution Control Facility operations & maintenance staff
- **6/19/19:** general SWPPP training for 44 operations & maintenance staff from numerous municipal departments (Figure 16)

The [6/19/19 training presentation](#) was adapted from similar presentations developed by the CCSWCD (on behalf of ISWG) and Maine DEP and was modified to include facility-specific information unique to South Portland. As with PY2017-18, it also included an online “Stormwater Jeopardy” game developed with the [Jeopardy Labs platform](#) that allows trainers to create customized games for particular topic areas. This training element included “prizes” (e.g., granola bars and nut packs) that introduced a bit of fun and levity into an otherwise somewhat dry topic area.

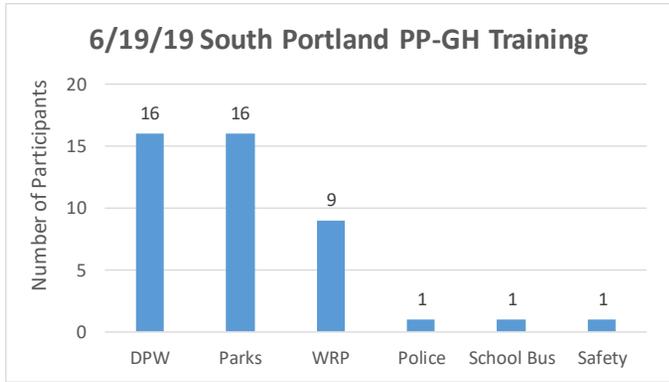


Figure 16: municipal staff attendees at 6/19/19 PP/GH training

We also administered questionnaires (Figure 17) before and after the training event to measure the relative effectiveness in helping staff gain a better understanding of the relevant topics presented. Only 20 forms were completed and not all forms were completely filled out. Therefore, we will need to do more to emphasize the importance of fully completing the questionnaires to more accurately measure the effectiveness of future training events. Even so, the completed questionnaires for the 6/19/19 event indicated that many staff already had a good general understanding of basic PP/GH concepts before the presentation and also believed the training provided helpful information.

South Portland Stormwater Training Evaluation

Date: 6/19/19	Trainer: Fred Dillon
---------------	----------------------

**Pre-Training Evaluation**

*Circle True or False for each statement below:*

True False Parking lots and streets in urban areas are significant sources of polluted stormwater.

True False Polluted stormwater is not a very big source of water pollution overall.

True False South Portland has a permit that requires us to implement practices to minimize stormwater pollution.

True False The City has five streams that do not meet State water quality standards due to the adverse impacts of polluted stormwater.

True False Certain municipal facilities are required to develop plans to reduce or eliminate adverse impacts from polluted stormwater.

True False “BMP” stands for “Black Metal Pipe”.

True False Catch basins are designed to remove cleaners, lawn chemicals and petroleum products.

True False Applying more fertilizers or pesticides than recommended on the label can result in adverse impacts to water quality.

True False The State’s stormwater permit allows the uncontrolled discharge of erosion & sedimentation from construction activities into municipal drainage systems.

True False There is no requirement for City staff to document and/or report petroleum product spills.

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**Post-Training Evaluation**

*Circle True or False for each statement below:*

True False Parking lots and streets in urban areas are significant sources of polluted stormwater.

True False Polluted stormwater is not a very big source of water pollution overall.

True False South Portland has a permit that requires us to implement practices to minimize stormwater pollution.

True False The City has five streams that do not meet State water quality standards due to the adverse impacts of polluted stormwater.

True False Certain municipal facilities are required to develop plans to reduce or eliminate adverse impacts from polluted stormwater.

True False “BMP” stands for “Black Metal Pipe”.

True False Catch basins are designed to remove cleaners, lawn chemicals and petroleum products.

True False Applying more fertilizers or pesticides than recommended on the label can result in adverse impacts to water quality.

True False The State’s stormwater permit allows the uncontrolled discharge of erosion & sedimentation from construction activities into municipal drainage systems.

True False There is no requirement for City staff to document and/or report petroleum product spills.

*Please circle one answer for each row*

How helpful was this training?	Not at all helpful/applicable	Not very helpful/applicable	Somewhat helpful/applicable	Very helpful/applicable
How clear were the messages?	Not at all helpful/applicable	Not very helpful/applicable	Somewhat helpful/applicable	Very helpful/applicable

*Is there anything else you’d like me to know?*

\_\_\_\_\_

\_\_\_\_\_

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Figure 17: questionnaire administered to measure effectiveness of 6/19/19 training event

## BMP 6.3 Continue Implementation of Street Sweeping Program

Responsible Party: Public Works Dept.

Additional Party: Water Resource Protection Dept.

### INTENT

To continue (and refine as needed) the City’s ongoing pavement sweeping program for all municipally owned or operated streets and parking areas.

### METHODOLOGY

Annually assess the effectiveness of the City’s ongoing pavement sweeping program and refine as needed based on the latest research and available funding.

### MEASURABLE GOALS

- **Measurable Goal 6.3.1** – continue or modify as needed the City’s ongoing pavement sweeping program for all municipally owned or operated streets and parking areas and ensure that sweeping is conducted at least once a year as soon as possible after snowmelt.

### ACTIONS COMPLETED DURING PERMIT YEAR

The City continued its ongoing sweeping program for all municipally owned or operated streets and parking areas. In the spring of 2019, we continued to provide sweeping services to the Long Creek Watershed Management District in support of the ongoing restoration efforts there. Our regenerative air sweeper removed approximately 180 tons of sediment from nearly 62 acres of publicly owned streets (Table 5).

Table 5: PY2018-19 sweeping summary for Long Creek Watershed

Public Road Name	Impervious Area (acres)	Equip <sup>2</sup> & Labor Hours	Labor Cost <sup>3</sup>	Fuel Use (Gal) <sup>4</sup>	Fuel Cost <sup>5</sup>	Equipment Cost <sup>6</sup>	Total Cost <sup>7</sup>
Chris Toppi/Donald Dean Dr	0.901	1.50	\$53.13	3.12	\$6.86	\$84.22	\$144.21
Clarks Pond Pkway	1.091	2.00	\$70.84	4.15	\$9.13	\$112.29	\$192.26
Cummings Rd*	4.295	3.50	\$123.97	7.26	\$15.97	\$196.51	\$336.45
Darling Ave	1.933	3.00	\$106.26	6.22	\$13.68	\$168.43	\$288.38
Foden Rd / Pope Ave	1.464	2.00	\$70.84	4.15	\$9.13	\$112.29	\$192.26
Gannett Dr	3.575	2.25	\$79.69	4.67	\$10.27	\$126.33	\$216.29
Gorham Road*	7.395	8.00	\$283.36	16.60	\$36.52	\$449.16	\$769.03
James Baka Rd	1.015	0.75	\$26.56	1.56	\$3.43	\$42.11	\$72.11
Jetport Plaza Road	5.064	3.50	\$123.97	7.26	\$15.97	\$196.51	\$336.45
John Roberts Rd	0.512	2.00	\$70.84	4.15	\$9.13	\$112.29	\$192.26
Long Creek Dr	0.432	0.75	\$26.56	1.56	\$3.43	\$42.11	\$72.11
Maine Mall Rd*	10.232	10.00	\$354.20	20.74	\$45.63	\$561.45	\$961.27
Philbrook Ave	5.226	4.75	\$168.24	9.85	\$21.67	\$266.69	\$456.60
Running Hill Road*	7.985	10.50	\$371.91	21.77	\$47.89	\$589.52	\$1,009.32
Western Avenue*	10.701	6.50	\$230.23	13.48	\$29.66	\$364.94	\$624.82
<b>Totals:</b>	<b>61.821</b>	<b>61.00</b>	<b>\$2,160.60</b>	<b>126.54</b>	<b>\$278.39</b>	<b>\$3,424.83</b>	<b>\$5,863.81</b>

#### NOTES

1. Sweeping services for spring 2019
  2. 2011 Tymco regenerative air sweeper used for all street sweeping.
  3. Labor rates based on single employee including fringe benefits: \$34.72/hr
  4. Fuel use "normalized" for equipment run times on each road segment from overall fuel consumption for entire watershed.
  5. Fuel cost = \$2.20/gal
  6. Based on percentage of total annual hrs. that equip. was used in LC w'shed at 2.5% CPI over extent of service life.
  7. Annual O&M and admin. overhead costs NOT included.
- \*MDOT roads that SoPo maintains and for which the LCWMD allows credit on annual assessments to the City.

By the end of PY2018-19, the Asset Management (AM) Program [VUEWorks](#) had not been implemented for the City's street sweeping program. Once fully implemented, it will provide basic data on sweeping locations, amounts of sediment removed and additional relevant information. In the interim, we continued to use a cloud-based Google Form to track sweeping activities. The types of data entered by the Public Works Department's sweeper operators included: sweeping date; operator name and position; sweeper type (i.e., mechanical, vacuum, regenerative air or contract sweeper); start and stop times; roads swept; fuel use; and number of sweeper loads. All sweepers combined removed approximately 597 tons of sediment from publicly owned streets throughout the City for PY2018-19 (through 5/16/19). The City is in the process of purchasing a new [Tymco 500x](#) high dump regenerative air sweeper. Regenerative air sweepers are generally one of the most effective types of street sweeper for preventing pollutants attached to fine particulate matter from entering local waterways.

### **BMP 6.4 Continue Cleaning of Stormwater Structures Including Catch Basins**

Responsible Party: Water Resource Protection Dept.

Additional Party: N/A

#### **INTENT**

To ensure that all municipally owned or operated stormwater structures and catch basins are properly functioning and maintained and that the materials removed from them are disposed of appropriately per applicable state law.

#### **METHODOLOGY**

Conduct annual cleaning activities for stormwater structures and catch basins to ensure their proper functioning and dispose of associated materials appropriately.

#### **MEASURABLE GOALS**

**Measurable Goal 6.4.1** – continue or modify as needed the City's ongoing stormwater structure and catch basin cleaning program with cleaning frequencies determined by sediment accumulation rates. At a minimum, all stormwater structures and catch basins should be cleaned every other year. Stormwater structures and catch basins will be cleaned more frequently if inspections indicate excessive sediment accumulation (i.e., when the sump is greater than or equal to 50 percent filled).

#### **ACTIONS COMPLETED DURING PERMIT YEAR**

For calendar year 2019, the City once again will clean virtually 100% of all publicly-owned catch basins with sumps. We continued using [ArcGIS Online](#) (AGOL) with iPads to track data collection and as of 8/25/19, approximately 254 tons of grit material was removed from 1,996 catch basins and disposed of at Commercial Paving & Recycling in Scarborough. The total operational cost to complete this work was just over \$30,000 and the average catch basin cleaning cost was approximately \$15.23 (Table 6). **[NOTE: the number of catch basins cleaned is lower than usual for this time of year (ca. 9/1) due to a mechanical issue with one of the trucks and need to allocate labor resources to other areas of responsibility earlier in the season. However, and as with previous years, we fully expect that virtually all publicly-owned catch basins will have been**

cleaned by the end of calendar year 2019 – which greatly exceeds the minimum standard required by the MS4 General Permit.]

**Table 6: summary of 2019 catch basin cleaning activities and costs**

2019 CITY OF SOUTH PORTLAND CATCH BASIN CLEANING SUMMARY (as of 8/25/19)							RELATIVE EFFICIENCIES			
Watershed	CBs Cleaned	Labor Hours	Fuel Use (Gallons)	Grit Tons	Grit Tons / CB	Approx. Ops. Cost*	Labor Hrs/CB	Gallons Fuel/CB	Ops Cost \$/Ton	\$/CB Cleaned
Anthoine Creek	101	31.28	58.31	9.80	0.10	\$1,698	0.31	0.58	\$173.24	\$16.81
Barberry Creek	204	46.19	36.33	25.23	0.12	\$2,979	0.23	0.18	\$118.06	\$14.60
Breakwater	298	59.94	125.06	30.67	0.10	\$3,925	0.20	0.42	\$127.99	\$13.17
Calvary Pond	418	77.86	72.65	56.42	0.13	\$5,796	0.19	0.17	\$102.74	\$13.87
Clarks Pond	109	9.60	45.00	12.01	0.11	\$1,067	0.09	0.41	\$88.83	\$9.79
Gamblers Arm Bk	9	2.16	5.32	0.64	0.07	\$118	0.24	0.59	\$184.54	\$13.12
Kimball Brook	15	3.24	7.44	0.66	0.04	\$160	0.22	0.50	\$242.08	\$10.65
Long Creek	224	84.16	180.96	37.37	0.17	\$5,215	0.38	0.81	\$139.56	\$23.28
Long Creek Lower	96	30.90	38.30	13.66	0.14	\$1,850	0.32	0.40	\$135.41	\$19.27
Mill Creek	23	9.18	22.51	5.97	0.26	\$677	0.40	0.98	\$113.42	\$29.44
Nonesuch River	114	16.10	33.00	15.33	0.13	\$1,436	0.14	0.29	\$93.67	\$12.60
Red Brook	22	9.00	11.00	4.71	0.21	\$578	0.41	0.50	\$122.69	\$26.27
Trout Brook	66	2.60	6.20	9.04	0.14	\$588	0.04	0.09	\$65.09	\$8.91
Turners Island	192	31.01	29.61	15.34	0.08	\$1,925	0.16	0.15	\$125.48	\$10.03
Willard Beach	105	40.57	67.97	16.56	0.16	\$2,393	0.39	0.65	\$144.54	\$22.79
<b>Totals/Averages:</b>	<b>1996</b>	<b>453.79</b>	<b>739.64</b>	<b>253.39</b>	<b>0.127</b>	<b>\$30,403</b>	<b>0.23</b>	<b>0.37</b>	<b>\$119.99</b>	<b>\$15.23</b>
					(253/1996)		(454/1996)	(740/1996)	(30403/253)	(30403/1996)

\* Assumes \$32.61 hourly labor rate; \$2.00/gal fuel cost; and \$49 / ton grit disposal cost. DOES NOT include maintenance or equipment replacement costs.

## BMP 6.5 Continue Maintenance and Upgrade of Stormwater Conveyances, Structures and Outfalls

Responsible Party: Water Resource Protection

Additional Party: N/A

### INTENT

To ensure that all municipally owned or operated stormwater conveyances and outfalls are properly functioning and maintained.

### METHODOLOGY

Conduct ongoing annual inspection and maintenance program to identify condition of stormwater conveyances and outfalls and repair, replace or install new infrastructure as needed.

### MEASURABLE GOALS

- **Measurable Goal 6.5.1** – continue repairing or upgrading MS4 system conveyances, structures, and outfalls through general maintenance, repairs and new construction, and as part of the combined sewer system separation program.
- **Measurable Goal 6.5.2** – continue to evaluate and implement a prioritized schedule, as necessary, for repairing or upgrading the conveyances, structures and outfalls of the its MS4.

### ACTIONS COMPLETED DURING PERMIT YEAR

With the implementation of the Asset Management Program VUEWorks in January 2019, the Water

Resource Protection Department has broadened data collection and tracking to incorporate more activities completed by our staff in maintaining the City’s piped infrastructure (including City-owned stormwater treatment systems). Additionally, we are now also including equipment costs based on the latest FEMA rates. As of 8/30/19, 640 work orders had been completed by the Collection Systems Division staff. Collectively, this work represents over \$300,000 of investment to operate and maintain the City’s sewer and stormwater systems (Figure 18). Approximately 50% (\$154K) of this investment was dedicated to the stormwater system. Previous data collection and tracking efforts have been mostly focused on only construction project activities and have only included materials and labor costs (not equipment). VUEWorks now also collects data on a variety of additional tasks, such as: catch basin cleaning, ditching, outfall inspections, spill response, televising to inspect pipe conditions, and traffic control, among others. Consequently, this more comprehensive approach is not fully comparable with our previous tracking methods. The ultimate goal of the Asset Management Program is to track most (or all) of our activities in conjunction with an ongoing condition assessment of our infrastructure to provide a rational basis for optimizing operations & maintenance and capital improvement planning (i.e., short and long-term budgeting).

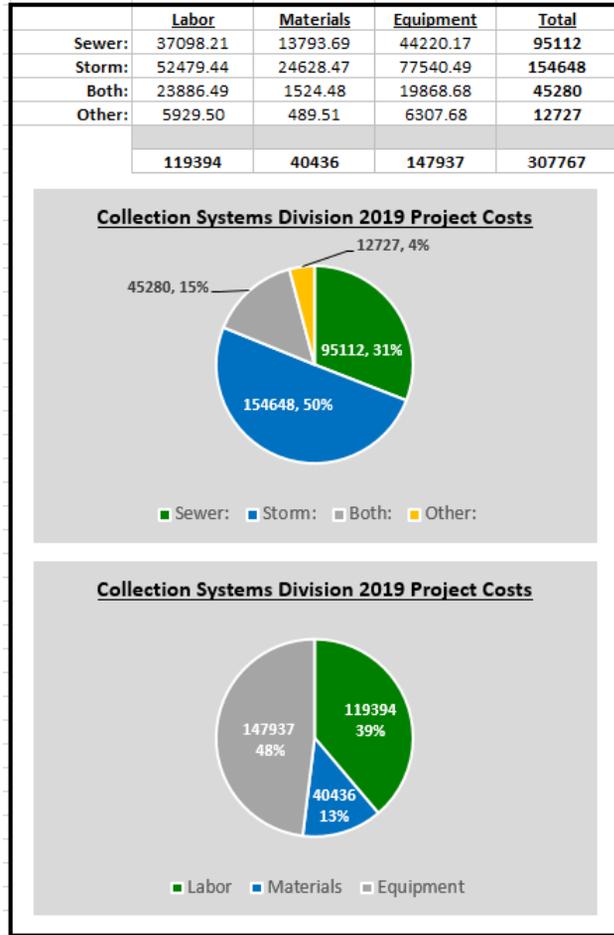


Figure 18: VUEWorks work order summary for calendar year 2019 through 8/30/19

Prior to the implementation of VUEWorks in January 2019, the Collection Systems Division continued to use the “old” construction project tracking method for our stormwater system inspection & maintenance program. To be more consistent with the VUEWorks data output, we included equipment costs using similar FEMA values. From September to December 2018, we completed 37 construction projects (20 for the sewer system, 12 for the stormwater system, 2 for the combined system and 3 for other departments). Project examples include stormwater treatment system maintenance, catch basin repair or replacement, storm drain or combined sewer line repair / replacement, culvert replacement, regrading to improve drainage, and ditch armoring with rip rap for erosion control, among others. Including equipment costs, the City expended just under \$20,000 – or approximately 28% of the construction program expenditures (\$136,481) – on a variety of stormwater system repair and replacement projects (Figure 19).

Finally, the Collection Systems Division uses a contractor each year to adjust below-ground structures (e.g., catch basins and drain manholes) for various paving projects throughout the City. Expenditures to complete

this work for calendar year 2019 were nearly \$57,000 with approximately 63% (~\$31K) allocated to the stormwater system and the remainder allocated to the sewer system.

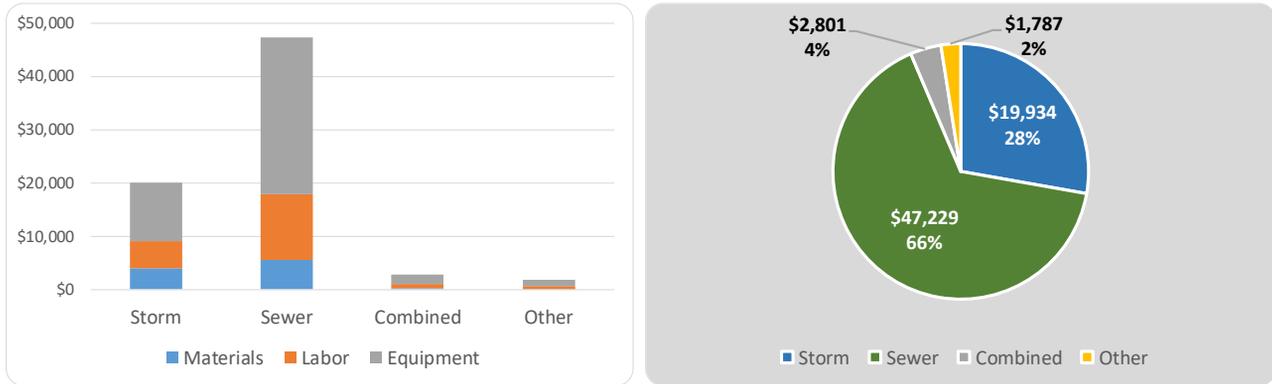


Figure 19: summary of construction project expenses for South Portland’s stormwater and sewer systems

### BMP 6.6 Continue Implementation of Stormwater Pollution Prevention Plans (SWPPPs)

*Responsible Party:* Stormwater Program Coordinator      *Additional Party:* Public Works & School Depts.

#### INTENT

To ensure that all applicable municipal facilities (public works, transfer station, school bus maintenance garage) in the urbanized area have current Stormwater Pollution Prevention Plans (SWPPP) that are being implemented accordingly.

#### METHODOLOGY

Work with department heads and other relevant staff to ensure that SWPPPs are current being implemented as specified.

#### MEASURABLE GOALS

- Measurable Goal 6.6.1** – continue implementing SWPPPs for public works facilities, transfer station and school bus maintenance facilities. Collaborate with DEP and ISWG on developing and implementing a training program for municipal facility staff informing them about the requirements of the SWPPP and how to implement it effectively. The managers for each facility will retain an up-to-date printed copy of the SWPPP on each site so affected employees can refer to it as needed.

#### ACTIONS COMPLETED DURING PERMIT YEAR

SWPPPs have been developed for the school bus maintenance garage, transfer station and public works facilities. The public works facilities are now housed in a [Municipal Services Facility](#) (MSF) that also includes operations for the Parks, City Bus and Fire Departments. Following the hiring of a new Public Works Superintendent in the fall of 2018, DEP’s Alison Moody visited the MSF in February 2019 to provide additional recommendations and technical assistance for refining the MSF SWPPP. The updated SWPPP now includes Ms. Moody’s recommendations. As described for BMP 6.2 above, staff from numerous City departments attended municipal GH/PP trainings provided by the City’s Stormwater Program Coordinator.

## Certification Statement

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.



\_\_\_\_\_  
Fred Dillon – Stormwater Program Coordinator

9/6/19

Date

# APPENDICES

## Appendix 1: ISWG Permit Year 5 Summary of MCMs 1 & 2

The following is a summary of work facilitated by the Cumberland County Soil & Water Conservation District (CCSWCD) on behalf of the Interlocal Stormwater Working Group (ISWG), and in some instances for other MS4 cluster municipalities. The 2013 MEPDES MS4 Permit expired on June 30, 2018 but was administratively continued during the period of July 1, 2018 – June 30, 2019. Guidance from the Maine Department of Environmental Protection (Maine DEP) indicated that compliance may be maintained by implementing modified Permit Year 4 activities for “Permit Year 6”.<sup>1</sup>

- **APPENDIX A** includes a summary of:
  - All four (4) education & outreach plans required under MCM 1 of the 2013 MEPDES MS4 Permit including:
    - Stormwater Public Awareness Plan
    - Targeted BMP Adoption Plan
    - Municipal Permit Awareness Plan
    - Enhanced Outreach Plan
  - Additional outreach activities that are voluntary (not required by permit)
    - ISWG Youth Education summary
  - Public event (Urban Runoff & Green Neighbor Family Fest) in fulfillment of MCM 2 of the 2013 MEPDES MS4 Permit
  - Results of the Municipal Survey

### MCM1: Public Education and Outreach on Stormwater Impacts

#### Stormwater Public Awareness Plan

Task	Status	Details <sup>2</sup>	
Summarize plan implementation to date	Complete	Plan goal: As a result of our efforts, at the end of this permit cycle, 50% of homeowners, aged 35-55, in the 30 regulated small MS4 municipalities will understand that water does run off their property, not all is absorbed, and it will carry with it pollutants, such as lawn chemicals, pet waste, and oil drops. This polluted water will enter the storm drain system and discharge, untreated, directly to water bodies used for drinking, fishing, and swimming.	
Conduct online ad campaign for a minimum of 6 months	Complete	CCSWCD coordinated an online media campaign through the placement of ads on Facebook. The original ducky ad ran for six months, from December 27, 2018 through June 30, 2019. Ads were targeted to the identified awareness audience (homeowners, aged 35-55). The following data was selected from Facebook’s advertising metrics:	
		Reach <sup>3</sup>	21,083
		Frequency <sup>4</sup>	2.93
		Impressions <sup>5</sup>	61,846
		Post Engagement <sup>6</sup>	11,219
		Unique 10-second Video Views <sup>7</sup>	2,304
		Link Clicks <sup>8</sup>	777
		Link click-through rate <sup>9</sup>	1.26%
		Based on Google Analytics, visits to the Think Blue Maine website during the online media campaign were 1.6 times higher than hits between July 1, 2018 and	

<sup>1</sup> Letter from Rhonda Poirier, MS4 Program Manager, dated November 19, 2018.

<sup>2</sup> CCSWCD maintains documentation for all MCM 1 & 2 activities detailed in this summary report.

<sup>3</sup> Reach is the number of people who saw the ad at least once.

<sup>4</sup> Frequency is the average number of times each person saw the ad.

<sup>5</sup> Impressions are the number of times the ad was on screen.

<sup>6</sup> Post engagement is the total number of actions that people take involving the ad (reacting to, commenting, sharing, viewing a photo or video, or clicking on a link).

<sup>7</sup> Unique 10-second video views are the number of people who view 10 continuous seconds of video.

<sup>8</sup> Link clicks are the number of clicks on a link within the ad that led to destinations on or off Facebook.

<sup>9</sup> Link click-through rate is the percentage of times people saw the ad and performed a link click.

		December 31, 2018 when the online ad campaign was inactive. Between July 1, 2018 and December 31, 2018, there were 776 visits. Between January 1, 2019 and June 30, 2019, there were 1,273 visits.
Promote and participate in local public event	Complete	<p><i>USM Sustainability Fair Promotion</i></p> <p>Promotion for this event was conducted by the University of Southern Maine.</p> <p><i>Participation</i></p> <p>CCSWCD sent staff to the event on September 7, 2018 to provide stormwater educational activities, demonstrations, and take-home information. Over 60 people attended the fair. The fair also featured local food samples, sustainable living giveaways like bamboo utensils, DIY workshops to make your own household cleaning and beauty products, smoothie bikes, music, and multiple vendors from USM and the community at large who are passionate about sustainability.</p>
		<p><i>Urban Runoff 5k and Green Neighbor Family Fest Promotion</i></p> <p>ISWG community members assisted CCSWCD with the promotion of their public event, the Urban Runoff 5k and Green Neighbor Family Fest, via social media, paid online ads, and direct email communication to participants. In addition, 348 posters were distributed throughout the 14 ISWG communities by ISWG representatives. Radio ads aired on 98.9 WCLZ during the month of April and WMTW/CW Channel 8 developed a 15 second ad that ran on their station throughout the month of April. They also conducted six live interviews the morning of the event and covered the race and festival on April 20, 2019.</p> <p><i>Participation</i></p> <p>Staff from the ISWG municipalities volunteered or participated at the events, on April 20, 2019. Many ISWG staff provided logistical support for the race and festival (e.g. flagging, parking, set up, etc.) while other ISWG members staffed tables at the festival to provide stormwater-related educational activities. Many additional community groups participated in the festival and provided educational activities focused on keeping water clean. Please see the MCM2 summary for more details about the events.</p>

**Targeted Best Management Practices Adoption Plan**

Task	Status	Details
Summarize plan implementation to date	Complete	Plan goal: As a result of our efforts, at the end of this permit cycle, 15% of college-educated homeowners, aged 35-55, residing in the urbanized area and/or the priority watershed within the ISWG communities and who currently apply fertilizers and pesticides to their lawns will reduce their use of lawn chemicals.

**Point of Sale**

Retain 21 Point of Sale locations in the ISWG communities	Complete	The ISWG YardScaping Point of Sale Program continued to be maintained at more than the 21 locations required. Twenty-three stores participated in PY6. The distribution of the stores in PY6 is as follows:
		Biddeford: 1
		Cape Elizabeth: 0
		Cumberland: 1
		Falmouth: 3
		Freeport: 1
		Gorham: 2
		Old Orchard Beach: 0
		Portland: 3
Saco: 1		

		Scarborough: 1
		South Portland: 3
		Westbrook: 2
		Windham: 3
		Yarmouth: 2
Maintain Point of Sale program in Home Depot stores within ISWG communities	Complete	The ISWG YardScaping Point of Sale program continued to be maintained in the four Home Depot stores located in ISWG municipalities (Biddeford, Portland, South Portland, and Windham). Program components include distribution of educational materials to the general public and an educational event for customers and staff at each store. Home Depot acknowledged our YardScaping partnership in their 2019 national Responsibility Report (page 66) as a way they are educating customers about reducing polluted runoff. <sup>10</sup>

**Adult Education**

Offer a minimum of seven adult education events per year on YardScaping practices	Complete	Once again, the number of YardScaping educational events offered in the ISWG municipalities exceeded the minimum required in the Plan. In PY6, 17 YardScaping events were provided as follows:
		Portland: 8/6/19, Wayside’s Riverton Pop Up Picnic, 10 interactions
		Portland: 9/8/18, GreenFest, 63 interactions
		Yarmouth: 9/13/18, Yarmouth Water District community workshop, 4 participants
		South Portland: 9/15/18, Home Depot community education event, 4 interactions
		Scarborough: 9/19/18, adult education class, 22 participants
		Biddeford: 9/29/18, Home Depot community education event, 5 interactions
		Portland: 9/29/18, Home Depot community education event, 3 interaction
		Windham: 10/13/18, Home Depot community education event, 4 interactions
		Scarborough: 3/28/19, adult education class, 8 participants
		Portland: 3/29/19, Maine Flower Show panel presentation, 34 participants
		Windham: 4/3/19, Windham Public Library community workshop, 10 participants
		South Portland: 4/9/19, adult education class, 11 participants
		Falmouth: 4/10/19, Lunt Auditorium community workshop, 24 participants
		Old Orchard Beach: 5/1/19, adult education class, 20 participants
Portland: 6/22/19, Home Depot community education event, 2 interactions		
South Portland: 6/22/19, Home Depot community education event, 3 interactions		
Windham: 6/29/19, Home Depot community education event, 5 interactions		
Promote adult education classes	Complete	Information on YardScaping classes was published in local adult education catalogs, in local newspapers and online calendars, using social media, and through host locations.
Track behavior change	Complete	CCSWCD staff documented class evaluations and contacted past adult education class participants to determine which YardScaping practices were implemented. Please see summary of behavior change reported by participants of PY5 classes, as well as those practices participants of PY6 classes intend to implement below.

**Adult Education Behavior Change Tracking**

During the fall of 2018, phone calls were made to participants of YardScaping adult education classes held in the fall of 2017 and spring of 2018 in order to determine class participants’ level of implementation of the YardScaping practices. Follow up phone calls are made six months to one year after the class to allow participants a growing season to implement

<sup>10</sup> 2019 The Home Depot Responsibility Report (page 66) <https://cloud.3dissue.net/17127/17182/17296/18142/index.html>

the recommended practices. Our follow-up provided an anticipated rate of compliance for the YardScaping practices that class participants intended to implement.

<b>Follow up from Permit Year 5 Adult Education Classes</b>			
<b>Lawn Care Practice</b>	<b>Plan to implement</b>	<b>Implemented Practice</b>	<b>% behavior change</b>
Set Mower to a height of 3"	20	7	35.0%
Leave grass clippings	6	2	33.3%
Sharpen mower blades	29	8	27.6%
Aerate	40	7	17.5%
Topdress	47	6	12.8%
Overseed	38	9	23.7%
Use low maintenance seed	41	12	29.3%
Weed Control	50	7	14.0%
Get a soil test	47	5	10.6%
Use nitrogen-only fertilizer	39	1	2.6%
Use compost tea	48	8	16.7%

As part of follow up behavior change tracking, CCSWCD asked past participants about barriers to implementing YardScaping practices, if they did not adopt the practices as indicated on their post-class evaluation. The following were common responses:

- *Practices were too expensive*
- *Lack of time to implement practices*
- *Lawn care company would not leave clippings on the lawn, as requested*
- *Chose to not use fertilizers at all*

A total of 99 people participated in the YardScaping adult education classes in PY6. Below are the results of the Permit Year 6 post-class evaluations completed by the YardScaping class participants.

<b>Permit Year 6 Post-Class Evaluations</b>			
<b>Lawn Care Practice</b>	<b>Plan to implement</b>	<b>Currently do not implement</b>	<b>% planning to implement</b>
Set Mower to a height of 3"	32	32	100.0%
Leave grass clippings	21	22	95.5%
Sharpen mower blades	32	34	94.1%
Aerate	49	61	80.3%
Topdress	58	76	76.3%
Overseed	51	61	83.6%
Use low maintenance seed	63	76	82.9%
Outcompete weeds	65	78	83.3%
Get a soil test	51	71	71.8%
Use nitrogen-only fertilizer	49	72	68.1%
Use compost tea	44	79	55.7%

CCSWCD staff will contact the class participants from the Permit Year 6 classes in Permit Year 7 to determine which behaviors have been adopted.

**Targeted Information Distribution**

Distribute lawn care information in one targeted neighborhood	Complete	ISWG used online Facebook ads directed at the target audience for behavior change (college educated homeowners, aged 35-55) in each of the ISWG impaired watersheds. The ads discussed lawncare product impacts in watersheds, provided a YardScaping tip, and directed people to CCSWCD’s YardScaping program. The following data were selected from Facebook’s advertising metrics:
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per ISWG community		Watershed	Reach	Frequency	Impressions	Post Engagement	Link Clicks	Link Click-Through Rate
		What is a watershed? <sup>11</sup>	3,711	2.78	10,320	765	22	0.21%
		Brickyard Hollow (Yarmouth)	988	1.46	1,442	95	1	0.06%
		Capisic Brook (Portland)	921	1.42	1,306	100	2	0.15%
		Concord Gully Brook (Freeport)	1,370	1.39	1,899	108	2	0.17%
		East Brach Piscataqua River (Cumberland)	697	1.44	1,004	88	2	0.20%
		Goosefare Brook (Old Orchard Beach & Saco)	836	1.45	1,211	103	1	0.08%
		Mill Brook (Westbrook)	1,139	1.31	1,487	115	2	0.13%
		Mill Creek (Falmouth)	800	1.46	1,171	112	0	0%
		Pleasant River (Windham)	1,662	1.42	2,362	126	3	0.13%
		Red Brook (Scarborough)	853	1.36	1,156	107	2	0.17%
		Tannery Brook (Gorham & USM)	1,000	1.24	1,244	110	4	0.32%
		Thatcher Brook (Biddeford)	1,266	1.32	1,673	100	4	0.24%
		Trout Brook (Cape Elizabeth & South Portland)	1,411	1.33	1,874	115	3	0.16%

**Websites & Free Media**

Maintain and monitor CCSWCD YardScaping website	Complete	The YardScaping page on CCSWCD's website is up to date with partner stores and updated fact sheets. YardScaping event information is posted on both CCSWCD's website and Facebook page.
Newspaper coverage related to YardScaping activities and	Complete	<i>Portland Press Herald: Letter to the editor: Careful use of fertilizer helps protect ocean from harmful runoff (August 10, 2018)</i>
		<i>South Portland Sentry: Our Sustainable City-Take simple steps this fall to manage your lawn (September 14, 2018)</i>
		<i>Portland Press Herald: Portland site part of pesticide collection (September 17, 2018)</i>

<sup>11</sup> This ad was targeted to all the ISWG communities during its run time (April 2, 2019 through June 26, 2019).

healthy lawn care		<i>South Portland Sentry: Our Sustainable City-What do goats and organic yogurt have in common? (September 28, 2018)</i>
		<i>Portland Press Herald: Maine Voices: Use your voice and your vote to protect Casco Bay this election (November 2, 2018)</i>
		<i>Portland Press Herald: Wood ash from fireplaces, stove can help the soil (November 13, 2018)</i>
		<i>Portland Press Herald: Falling on the ice is bad for you. But ice-melting salt is bad for your garden. (January 20, 2019)</i>
		<i>Portland Press Herald: You can – and should – be in the clover (March 24, 2019)</i>
		<i>Portland Press Herald: Portland’s ban on synthetic pesticides goes into effect (March 25, 2019)</i>
		<i>Lancaster Farming: Native plants promote healthy landscapes in Maine (April 5, 2019)</i>
		<i>The Forecaster: South Portland considers limits on fertilizer use (April 12, 2019)</i>
		<i>The Windham Eagle: “YardScape” for a healthy, safer lawn (April 12, 2019)</i>
		<i>Portland Press Herald: Letter to the editor: Ban on chemical fertilizers in line with South Portland’s climate goals (April 18, 2019)</i>
		<i>South Portland Sentry: Letter to the editor: City pesticide ordinance should have been two-fold (April 19, 2019)</i>
		<i>The Forecaster: Algae at Falmouth Town Landing not an issue (yet) (May 14, 2019)</i>
	<i>Portland Press Herald: Letter to the editor: Pesticides pose threat to Maine’s coastal economy (May 29, 2019)</i>	

**Municipal Permit Awareness Plan**

Task	Status	Details
Summarize plan implementation to date	Complete	Plan goal: As a result of our efforts, at the end of this permit cycle, municipal councilors, managers, and directors of Planning, Public Works, and Parks & Recreation (or equivalent) departments in the ISWG communities will understand that they are subject to a Maine Pollutant Discharge Elimination System (MPDES) permit and will understand the requirements under that permit. They will also gain an understanding of stormwater pollution, how their municipal operations may contribute to stormwater pollution, and steps that can be taken to reduce stormwater pollution.

**Materials Development**

Develop permit awareness materials	Complete & ongoing	<b>Fact Sheets:</b> Fact sheets developed in PY2 were updated for ISWG municipalities as needed in PY6. These fact sheets were provided to incoming municipal staff and elected officials in ISWG municipalities.
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**Targeted Outreach**

Provide updated information on MS4 permit compliance to all ISWG nested and municipal administrators or equivalents	Complete	CCSWCD provided updated information on MS4 compliance to ISWG nested and municipal administrators or equivalent in PY6. These meetings focused on identifying ISWG member strengths and areas for improvement in MCMs 1-6. These conversations led to an increase in inter-community collaboration and sharing of ideas.
		Biddeford: 2/15/19
		Cape Elizabeth: 1/15/19
		Cumberland: 2/4/19
		Falmouth: 2/4/19
		Freeport: 1/29/19
		Gorham: 2/14/19
		Old Orchard Beach: 2/1/19
		Portland: 2/27/19
		Saco 2/1/19
		Scarborough: 2/21/19
South Portland: 1/14/19		

		Southern Maine Community College: 11/29/18, 2/11/19
		University of Southern Maine: 1/17/19
		Westbrook: 3/6/19
		Windham: 1/29/19
		Yarmouth: 1/29/19
Municipalities may have conducted additional outreach outside of the efforts tracked through the ISWG Municipal Permit Awareness Plan.		

**General Outreach**

ISWG representative outreach to municipal officials in municipally sanctioned groups	Complete	ISWG representatives provided municipal officials with information and updates regarding the municipal stormwater program at a minimum of one municipally sanctioned board, council, committee, or commission meeting.			
		Biddeford: 6/18/19			
		Cape Elizabeth: 3/21/19			
		Cumberland: 3/19/19			
		Falmouth: 6/6/19; 6/17/19			
		Freeport: 2/26/19			
		Gorham: 4/6/19			
		Old Orchard Beach: 6/18/19			
		Portland: 10/12/18			
		Saco: 5/21/19; 6/10/19			
		Scarborough: 6/10/19			
		South Portland: 4/24/19			
		Westbrook: no information provided			
		Windham: 4/2/19			
Yarmouth: 3/27/19					
Provide outreach through a minimum of one partner organization	Complete	<b>New England Environmental Finance Center</b> ISWG/CCSWCD partnered with the New England Environmental Finance Center to provide additional digital stormwater education and outreach resources on common stormwater pollutants. Attendees provided feedback on the resources at the January and May meetings. Drafts of the storymaps were live during PY6. <a href="https://neefc.org/tools-resources/">https://neefc.org/tools-resources/</a>	<b>Number of Members Participating</b>		
			<b>Municipality</b>	<b>1/17/19</b>	<b>5/16/19</b>
			Biddeford	2	1
			Cape Elizabeth	2	1
			Cumberland	2	2
			Falmouth		
			Freeport	1	1
			Gorham	2	1
			Old Orchard Beach	3	1
			Portland	1	1
			Saco	1	1
			Scarborough	2	2
			South Portland	1	
			Southern Maine Community College	1	1
			University of Southern Maine	1	1
			Westbrook	1	1
		Windham	2	1	
Yarmouth	1	1			
<b>Highway Congress</b> An interactive educational booth	<b>Municipality</b>	<b>ISWG members who visited booth</b>			
	Biddeford	0			
	Cape Elizabeth	0			

		about identifying common illicit discharges and reporting IDDE events was staffed at APWA’s annual Highway Congress, held on June 6, 2019. Time out for Training, a program coordinated by Maine Local Roads, ensured that a total of 125 people visited the booth, including 17 staff members from ISWG communities.	Cumberland	2
			Falmouth	7
			Freeport	0
			Gorham	1
			Old Orchard Beach	2
			Portland	4
			Saco	1
			Scarborough	0
			South Portland	0
			Westbrook	0
			Windham	0
			Yarmouth	0
Provide regional Good Housekeeping / Pollution Prevention Training	Complete	CCSWCD facilitated a cross training opportunity with Gretchen Anderson, Town of Windham, and Rhonda Poirier of DEP. This cross training featured an updated and interactive GHPP presentation and then a tour of the Windham Public Works Facility. <i>Note: Some municipalities did not attend this training because they choose to provide their own in-house training.</i>	<b>Municipality</b>	<b>Municipal Staff in Attendance on 6/12/19</b>
			Biddeford	1
			Cape Elizabeth	0
			Cumberland	0
			Falmouth	6
			Freeport	4
			Gorham	0
			Old Orchard Beach	2
			Portland	1
			Saco	1
			Scarborough	4
			South Portland	0
			Southern Maine Community College	1
			University of Southern Maine	0
			Westbrook	5
Windham	1			
Yarmouth	5			
<p><b>Evaluation of Good Housekeeping / Pollution Prevention Training:</b>                  A written quiz assessing attendees’ understanding of stormwater issues was given before and after the training. The quiz contains the same 8 questions for before and after the training. Fewer wrong answers given after the training indicates the level of effectiveness of the messages.                  Before the training, 5 out of the 8 questions were answered incorrectly by at least one person. After the training, only 3 out of the 8 questions were answered incorrectly by at least one person. The question “A Public Works Building should be inspected once a year to maintain good housekeeping” had 19 incorrect answers before the training and 16 incorrect answers after the training which will help guide future training content.</p>				

**Evaluation**

Conduct annual survey of ISWG municipalities to gauge awareness	Complete	The survey was administered to ISWG representatives in PY6. A summary of survey responses is provided at the end of this report.
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Task	Status	Details
Summarize plan implementation to date	Complete	Plan goal: Provide the Environment and Natural Resources Committee and the legislature with information about use and environmental impacts of coal tar sealants in the state, and the viability of potential alternative products, so they can make an informed decision about legislating the use of coal tar sealants.
Coordinate with Rep. Daughtry to plan for the 2018-19 legislative session	Complete	ISWG and SMSWG representatives coordinated electronically and via phone with LD 906 Bill sponsor, Rep. Daughtry in advance of the Environmental and Natural Resources Legislative Committee hearing to review prior efforts for the bill, update each other on research and knowledge of new studies and other states' actions, and determine next actions.
Revise outreach message with new information	Complete	Testimony from the 2015 LD1208 and 2017 LD1235 hearings were reviewed. The talking points developed in 2015 and updated in 2017 were revised to address recent data and issues, including Maine-specific data collected by USGS and the Long Creek Watershed Management District. In addition, information collected by other states and municipalities was compiled. The 2016 Coal Tar Factsheet was updated to include new information and refine the message. The new factsheet was distributed prior to the Legislative hearing to ISWG and SMSWG representatives.
Conduct outreach to Environment and Natural Resources Committee	Complete	Representatives from ISWG/CCSWCD and SMSWG attended the ENR committee hearing on the bill on 3/7/2019. Testimony (neither for nor against) the bill was provided. CCSWCD responded to a follow up request for additional information by Rep. Zeigler via email sent on 3/12/19.
Outcome: LD906 was enacted by the Legislature on 6/18/19 and signed by Governor Mills on 6/27/19. Sale of coal tar sealants will be prohibited beginning October 1, 2023 and use will be prohibited October 1, 2024.		

**Additional Outreach Activities not identified in the Permit or Outreach Plans**

**Maine Stormwater Conference**

The Maine Stormwater Conference Planning Committee, which includes representatives from ISWG, reconvened to begin planning the 2019 conference. Committee activities include releasing the call for abstracts, selecting presentations, securing the conference venue, soliciting sponsorships, and building the preliminary agenda. The 2019 Maine Stormwater Conference will be held on December 2 and 3 in Portland.

**Maine Water Environment Association (MEWEA)**

ISWG/CCSWCD continues to serve on MEWEA’s Stormwater Committee, attend meetings, and assist with the Committee’s technical and outreach efforts. ISWG outreach materials are being used as a basis to educate MEWEA’s membership about stormwater.

**ISWG Youth Education**

Although not a permit requirement, ISWG provides funding to deliver clean water education to K-12 students in each municipality. CCSWCD staff provide the education on behalf of ISWG. Portland Water District (PWD) provides information on their clean water lessons to supplement ISWG’s efforts. A summary of students reached, contact hours, and topics covered is provided below.

**Overall:**

- Total students:
  - CCSWCD total: 1,792
  - PWD total: 1,609
- Total contact hours:
  - CCSWCD total: 7,490
  - PWD total: 8,837
- Total Youth Education:
  - Students: 3,401
  - Hours: 16,326.5

### **Educator contact information**

**CCSWCD:** Ali Clift, Education & Outreach Coordinator, Cumberland County Soil & Water Conservation District, aclift@cumberlandswcd.org, 207-892-4700 x 102

**CCSWCD:** Jenna Martyn-Fisher, Educator & Technical Specialist, Cumberland County Soil & Water Conservation District, jfisher@cumberlandswcd.org, 207-892-4700 x 101

**PWD:** Sarah Plummer, Environmental Education Coordinator, Portland Water District, splummer@pwd.org, 207-774-5961 x 3324

**PWD:** Carina Brown, Environmental Educator, Portland Water District, cbrown@pwd.org, 207-774-5961 x 3320

### **Biddeford**

Total students: 18 (CCSWCD)

Total contact hours: 90 (CCSWCD)

Lesson topics: Watershed ecology: Students evaluated the health of Thatcher Brook during a field trip to two Maine DEP monitoring sites where they conducted the following research: water quality parameters and testing; bioassessment using macro-invertebrate sampling; river characteristic observations; and compared data from the two sites to develop their ideas about human impact on the river ecosystem.

School: Biddeford High School

### **Cape Elizabeth**

Total students: 161 (CCSWCD: 121; PWD: 40)

Total contact hours: 624 (CCSWCD: 484; PWD: 140)

Lesson topics: Water cycle, amount of water in the world, conservation; water movement and watersheds; watershed models; water quality; nonpoint source pollution and impacts; transport of nonpoint source pollutants; stormwater, storm drains and cumulative impact; impervious/pervious surfaces, runoff, and best management practices<sup>12</sup>; watershed protection; drinking water and wastewater treatment facility tours

Schools: Cape Elizabeth Middle School, Cape Elizabeth High School

### **Cumberland**

Total students: 362 (CCSWCD: 209, PWD: 153)

Total contact hours: 809.5 (CCSWCD: 249.5, PWD: 560)

Lesson topics: Honeybee life cycle and adaptations, pollination, pollinator importance, pesticides impact; water movement and watersheds; nonpoint source pollution; water quality and nonpoint source pollution and prevention; groundwater model; groundwater resources and pollution prevention<sup>13</sup>; TroutKids Program: nonpoint source pollution and impacts, water quality, brook trout habitat requirements and life cycle, macroinvertebrate identification and bioassessments, stewardship, water chemistry, biological, and streamside assessments

Schools: Mabel I. Wilson Elementary School, Greely High School, Greely Middle School

### **Falmouth**

Total students: 166 (CCSWCD)

Total contact hours: 166 (CCSWCD)

Lesson topics: Ocean currents, ocean influence on climate, ocean acidification

Schools: Falmouth Middle School

### **Freeport**

Total students: 28 (CCSWCD)

Total contact hours: 28 (CCSWCD)

Lesson topics: Soil nutrient cycles; weathering & erosion; nonpoint source pollution; water quality; eutrophication

Schools: Freeport Middle School

### **Gorham**

Total students: 297 (CCSWCD: 80, PWD: 217)

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<sup>12</sup> CCSWCD implemented PWD WaterWays Systems Theme on PWD's behalf. Additional funding for WaterWays lessons provided by PWD.

<sup>13</sup> Additional funding for groundwater lessons provided by the Yarmouth Water District

Total contact hours 1,353: (CCSWCD: 160, PWD: 1,193)

Lesson topics: Soil nutrient cycles; weathering & erosion; nonpoint source pollution; water quality; eutrophication; local foods, agriculture, nutrition, environmental & economic impacts of food production; TroutKids Program: nonpoint source pollution and impacts, water quality, brook trout habitat requirements and life cycle, macroinvertebrate identification and bioassessments, stewardship, water chemistry, biological, and streamside assessments; WaterWays Program: water cycle, healthy and polluted water, water movement, watersheds, nonpoint source pollution and impacts, best management practices, impervious/pervious surfaces, brook trout habitat requirements, stewardship; drinking water and wastewater treatment facility tours

Schools: Gorham Middle School, Gorham High School

### **Old Orchard Beach**

Total students: 71 (CCSWCD: 51; PWD: 20)

Total contact hours: 203 (CCSWCD:153; PWD: 50)

Lesson topics: Amount of water in the world, conservation, and the water cycle; watersheds, watershed models, water movement and branching patterns; transport of nonpoint source pollutants; nonpoint source pollution, stormwater, storm drains and cumulative impact; impervious/pervious surfaces, runoff and best management practices; Southern Maine Children's Water Festival: Day-long field trip at USM with theme "Clean Water: It's all about ME!"

Schools: Loranger Middle School

### **Portland**

Total students: 917 (CCSWCD: 323, PWD: 594)

Total contact hours: 4,367.5 (CCSWCD: 2201.5, PWD: 2,166)

Lesson topics: Watersheds, watershed models, water movement and branching patterns; transport of nonpoint source pollutants; types of erosion, best management practices for erosion control; nonpoint source pollution, stormwater, storm drains, and cumulative impact; amount of water in the world, conservation, and the water cycle; reducing impact on waterways by changing lawn care practices (Youth YardScaping); Water quality monitoring, bioassessment; rain gardens; environmental stewardship<sup>14</sup>; TroutKids Program: nonpoint source pollution and impacts, water quality, brook trout habitat requirements and life cycle, macroinvertebrate identification and bioassessments, stewardship, water chemistry, biological, and streamside assessments; drinking water treatment facility tours; watersheds and pollution; water quality parameters and sampling; healthy and polluted water; WaterWays Program: water cycle, healthy and polluted water, water movement, watersheds, nonpoint source pollution and impacts, best management practices, impervious/pervious surfaces, brook trout habitat requirements, macroinvertebrate identification and bioassessments, stewardship; Southern Maine Children's Water Festival: Day-long field trip at USM with theme "Clean Water: It's all about ME!"

Schools: Lincoln Middle School, Longfellow Elementary School, Rowe Elementary School, King Middle School, Riverton Elementary School, Casco Bay High School, Portland High School, Lyman Moore Middle School, Lyseth Elementary School, Spurwink Glickman Academy, University of Southern Maine, Reiche Community School

### **Saco**

Total students: 329 (CCSWCD: 114; PWD: 215)

Total contact hours: 766 (CCSWCD: 228; PWD: 538)

Lesson topics: Amount of water in the world, conservation, and the water cycle; water quality; water testing; nonpoint source pollution; stormwater, storm drains, and cumulative impacts; Southern Maine Children's Water Festival: Day-long field trip at USM with theme "Clean Water: It's all about ME!"

Schools: Saco Middle School

### **Scarborough**

Total students: 280 (CCSWCD)

Total contact hours: 2638 (CCSWCD)

Lesson topics: Brook trout habitat requirements and life cycle; Healthy water habitat requirements; Non-point source pollution; Watersheds, water movement and branching patterns; Types of erosion; best management practices for erosion control; water quality<sup>15</sup>;

Schools: Wentworth Elementary School, Scarborough Middle School

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<sup>14</sup> Additional funding for Portland Schools provided by the City of Portland

<sup>15</sup> Additional funding for trout program and erasing erosion lessons provided by Scarborough School Department

### **South Portland**

Total students: 184 (CCSWCD: 48, PWD: 136)

Total contact hours: 1,183 (CCSWCD: 96, PWD: 1087)

Lesson topics: Water quality and nonpoint source pollution and prevention; Salmon habitat requirements and life cycle; honey bee life cycle and adaptations, pollination, pollinator importance, pesticides impact; TroutKids Program: nonpoint source pollution and impacts, water quality, brook trout habitat requirements and life cycle, macroinvertebrate identification and bioassessments, stewardship, water chemistry, biological, and streamside assessments; water cycle and global water distribution; healthy and polluted water; water movement and watersheds; nonpoint source pollution and impacts; best management practices, impervious/pervious surfaces, and stewardship; Southern Maine Children's Water Festival: Day-long field trip at USM with theme "Clean Water: It's all about ME!"

Schools: Dora E. Small Elementary School, Holy Cross School, Mahoney Middle School

### **Westbrook**

Total students: 150 (CCSWCD)

Total contact hours: 750 (CCSWCD)

Lesson topics: Watershed ecology: Students evaluated the health of the Presumpscot River during a field trip to two sites on the River, one rural and one urban; water quality parameters and testing; bioassessment using macro-invertebrate sampling; river characteristic observations; compared data from the two sites to develop their ideas about human impact on the river ecosystem.<sup>16</sup> PWD educators provided extra staffing support and resources for this field trip.

Schools: Westbrook High School

### **Windham**

Total students: 298 (CCSWCD: 64, PWD: 234)

Total contact hours: 3,231 (CCSWCD: 128, PWD: 3,103)

Lesson topics: Water quality; wetlands; estuaries; macroinvertebrate identification & bioassessment; water quality and nonpoint source pollution and prevention; WaterWays Program: water cycle, healthy and polluted water, water movement, watersheds, nonpoint source pollution and impacts, best management practices, impervious/pervious surfaces, brook trout habitat requirements, stewardship; watershed protection; bioassessment and chemical water quality testing; Southern Maine Children's Water Festival: Day-long field trip at USM with theme "Clean Water: It's all about ME!"

Schools: Windham Middle School, Windham Adult Education

### **Yarmouth**

Total students: 140 (CCSWCD)

Total contact hours: 117.5 (CCSWCD)

Lesson topics: Watersheds; transport of nonpoint source pollutants; stormwater, storm drains, and cumulative impact; impervious/pervious surfaces, runoff, and best management practices; water quality and nonpoint source pollution and prevention; groundwater model; groundwater resources and pollution prevention<sup>17</sup>

Schools: Yarmouth Public Works Day, Frank H. Harrison Middle School

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<sup>16</sup> Additional funding for student field trip provided by the Westbrook Environmental Improvement Corporation

<sup>17</sup> Additional funding for groundwater lessons provided by the Yarmouth Water District

## MCM2: Public Involvement and Participation

### Urban Runoff & Green Neighbor Family Fest

2019 marked the eighth year ISWG supported, promoted, and participated in the Urban Runoff and Green Neighbor Family Fest, a day-long community event that promotes clean water and raises awareness of water pollution. In addition to raising awareness, funds raised from the Urban Runoff help support in-school youth education programs in Cumberland and part of York Counties. The race and festival, held on April 20, 2019, served as the Public Involvement and Participation event for all ISWG communities. Participation by each ISWG municipality is summarized in the table below.

Despite the (appropriately) rainy weather, over 650 runners and walkers registered for the race. Many local businesses supported the race through sponsorships, in-kind donations, and employee participation as race participants and volunteers. Local media outlets advertised the events, including the donation of radio advertisement during the month of April by 98.9 WCLZ. Channel 8 WMTW/CW developed and ran a 15-second ad promoting the events throughout the month of April, and they attended the race and festival to provide news coverage of the events, including six live interviews on the morning of April 20, 2019. Social media, paid online advertising, posters, and direct mail and email were also used to promote the race and included a clean water message. Additional clean water messages were included on the event website, social media, eblasts, and other marketing tools that were sent to all registered participants, sponsors, and partners.

The *Green Neighbor Family Fest* (GNFF) was held after the race at Deering High School. The event ran for two and a half hours and was attended by approximately 850 people. Scheduled events included the awards ceremony and live music. A total of 34 exhibits were set up by local nonprofit, governmental organizations, and businesses to provide hands-on, educational activities for children and families. These activities included a scavenger hunt, paper making, visiting with baby goats, experimenting with stormwater runoff, and more. Children also took part in face painting, a moon bounce, and water-related giveaways.

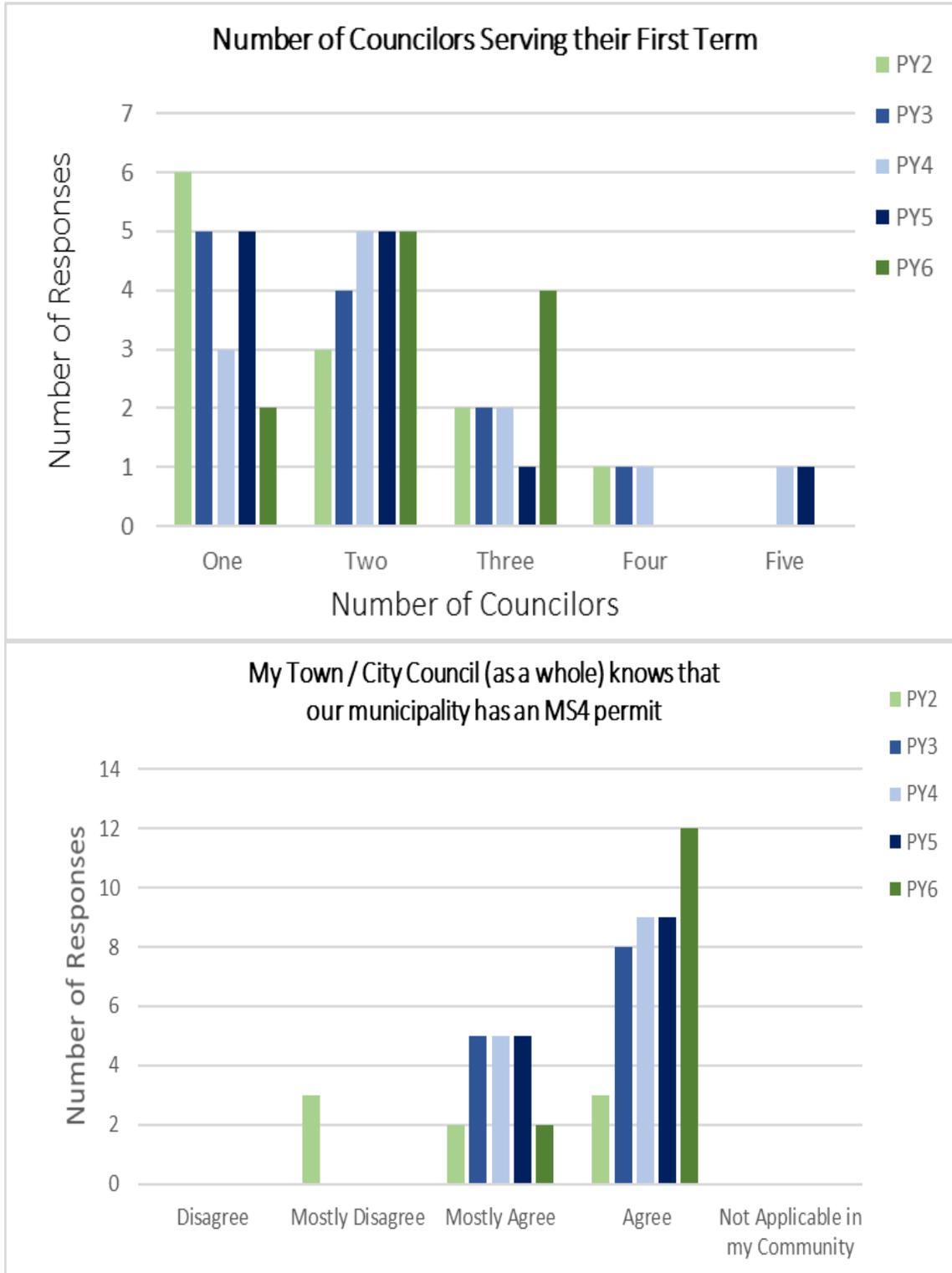
Plans are underway to host the ninth annual *Urban Runoff* 5K and *Green Neighbor Family Fest* on Saturday, April 25, 2020.

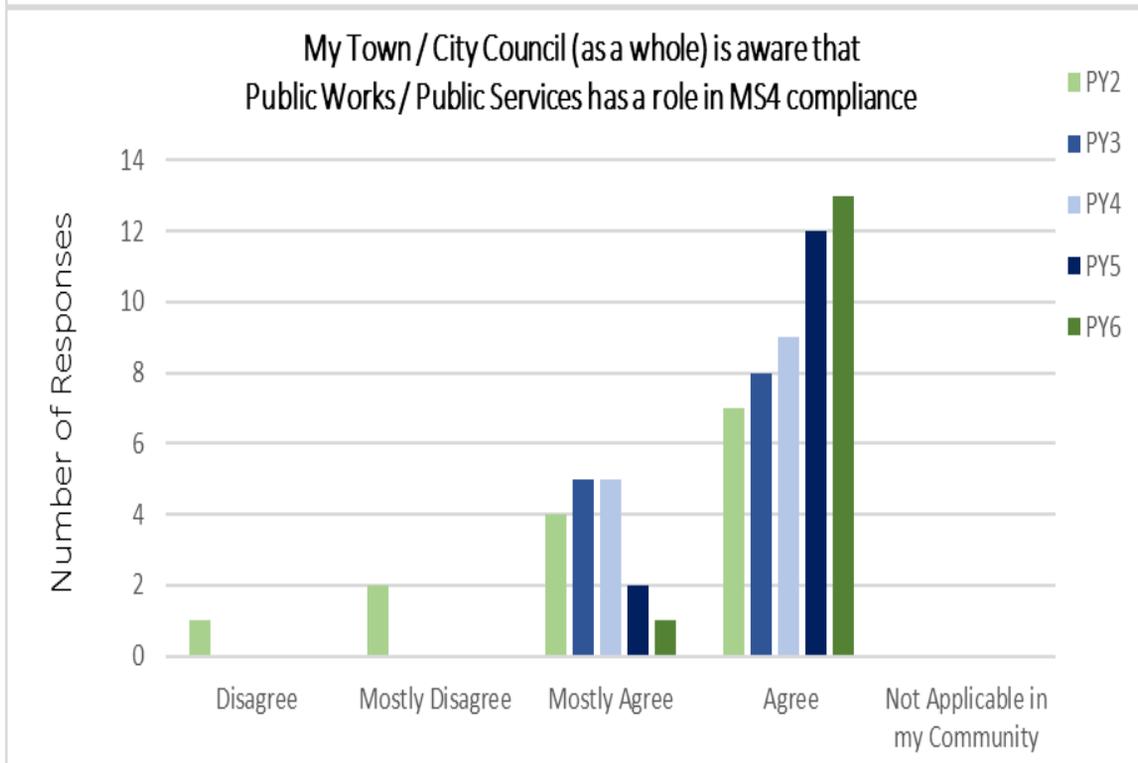
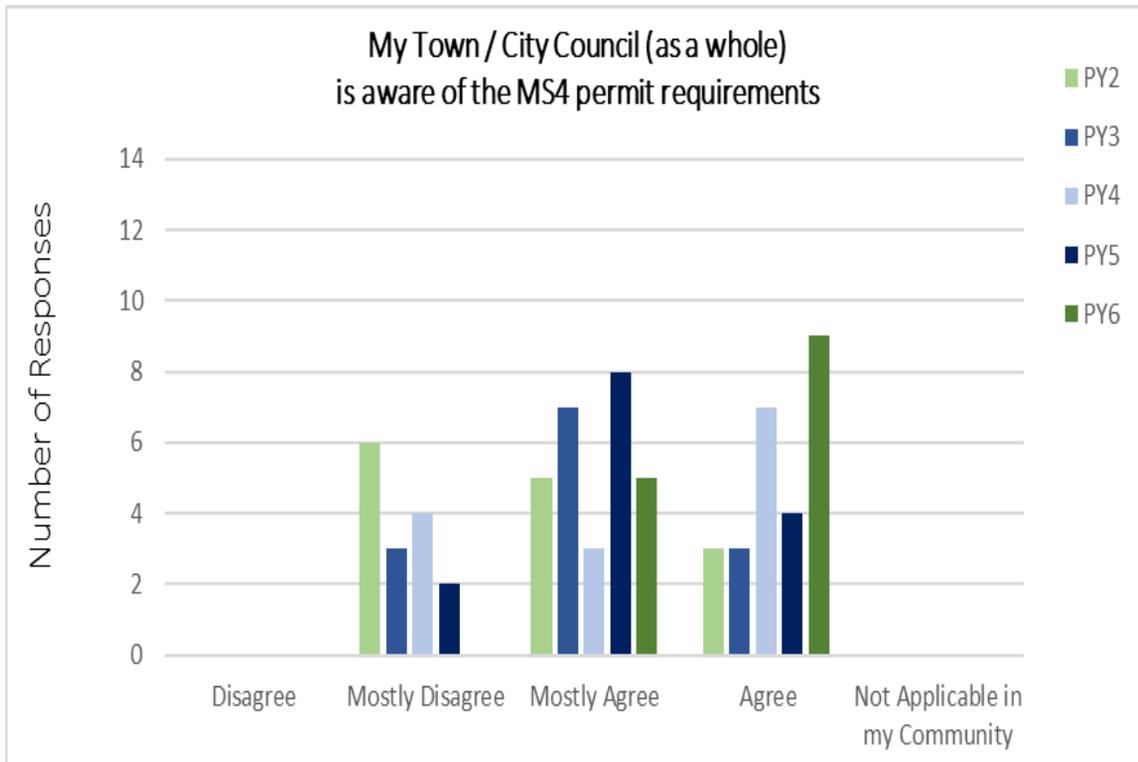
### Summary of ISWG Involvement in the 2019 Urban Runoff & Green Neighbor Family Fest

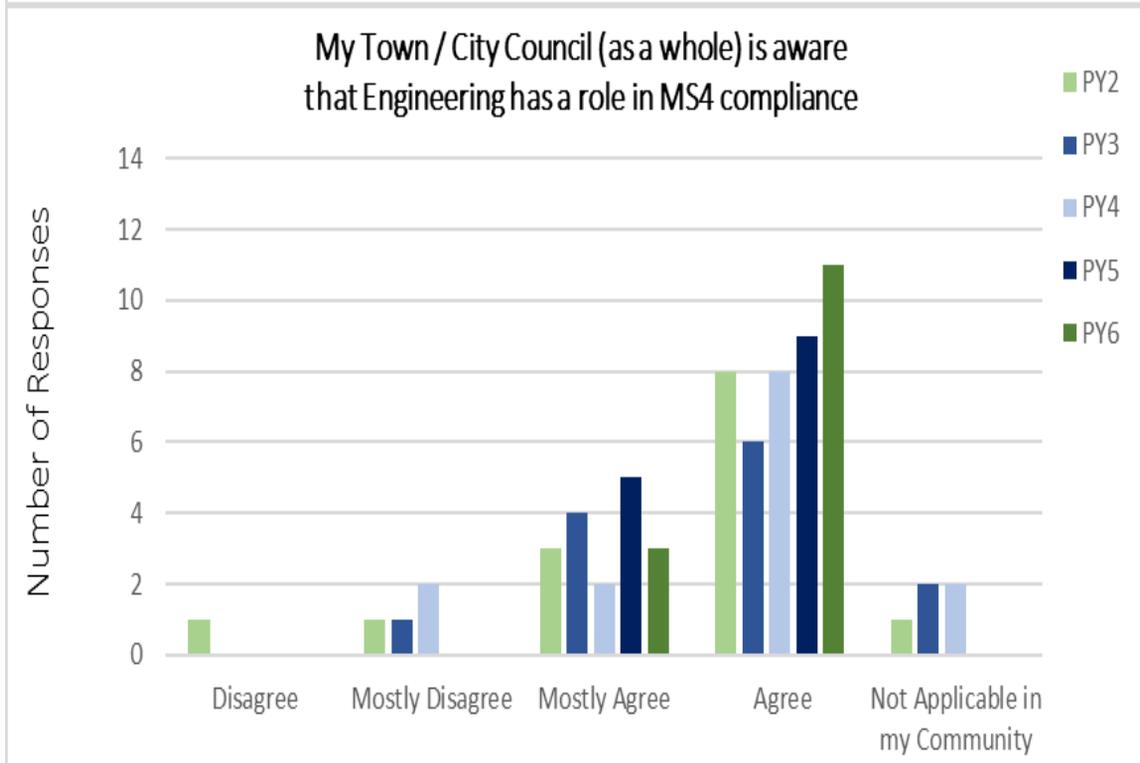
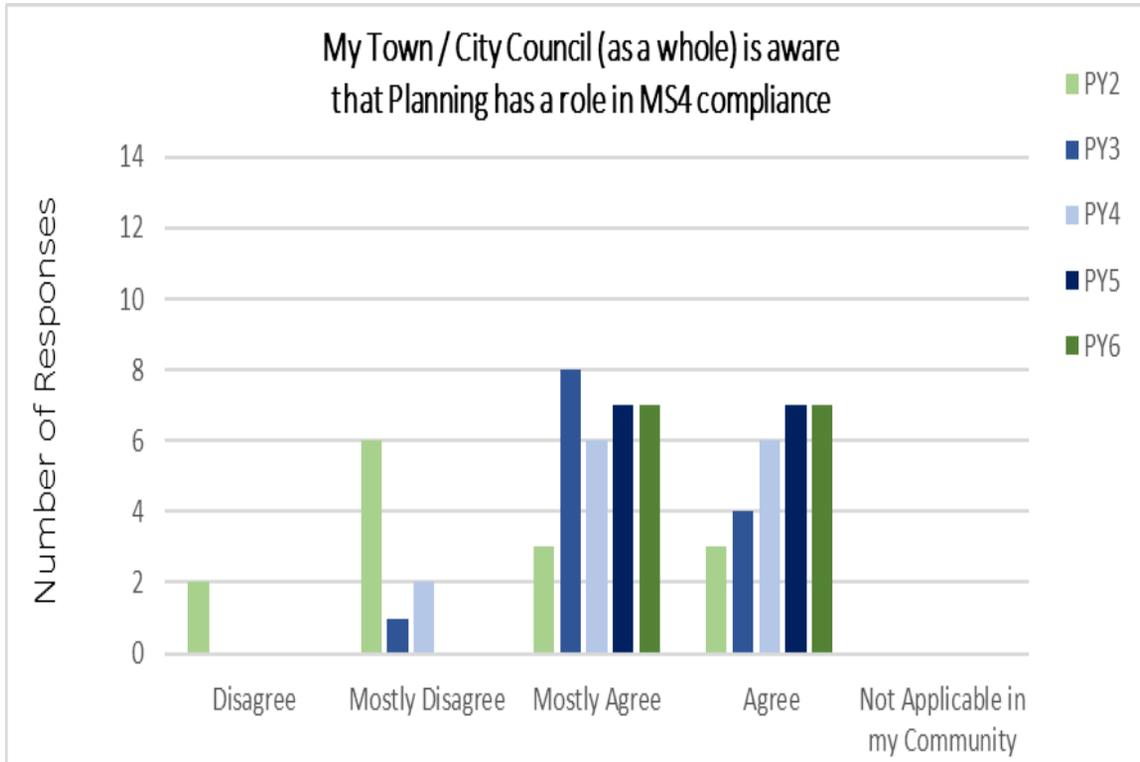
	Race Participants	Municipal Volunteers	Municipal Team Members	Posters Provided for Distribution	Additional Contribution
Biddeford	5	1		25	
Cape Elizabeth	6	1		18	
Cumberland	17	1		15	Assembled street closure letters
Falmouth	11	3		20	
Freeport	3			24	
Gorham	27	1		18	
Old Orchard Beach	2	1		20	
Portland	135	2	3	57	Permit fees waived; provided additional funding for the organization of GNFF and entertainment; display at festival
Saco	18	1		29	Staffed ISWG table at festival
Scarborough	31	2	7	23	Slowest team
South Portland	26	1		27	\$500 Splash Sponsorship; staffed ISWG table at festival
SMCC		1		11	Assembled street closure letters
USM		2		20	Festival display
Westbrook	122	2	98	21	Largest municipal team
Windham	25	1	3	22	Additional local advertisements
Yarmouth	5	1		18	Additional local advertisements

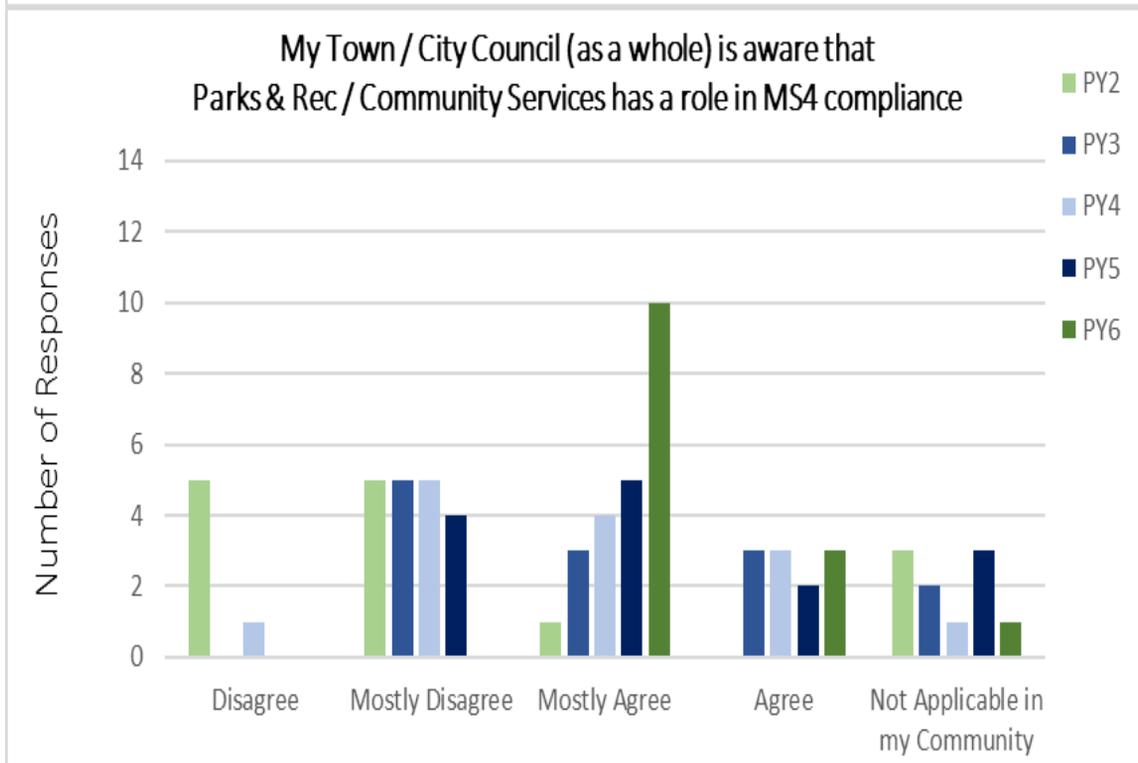
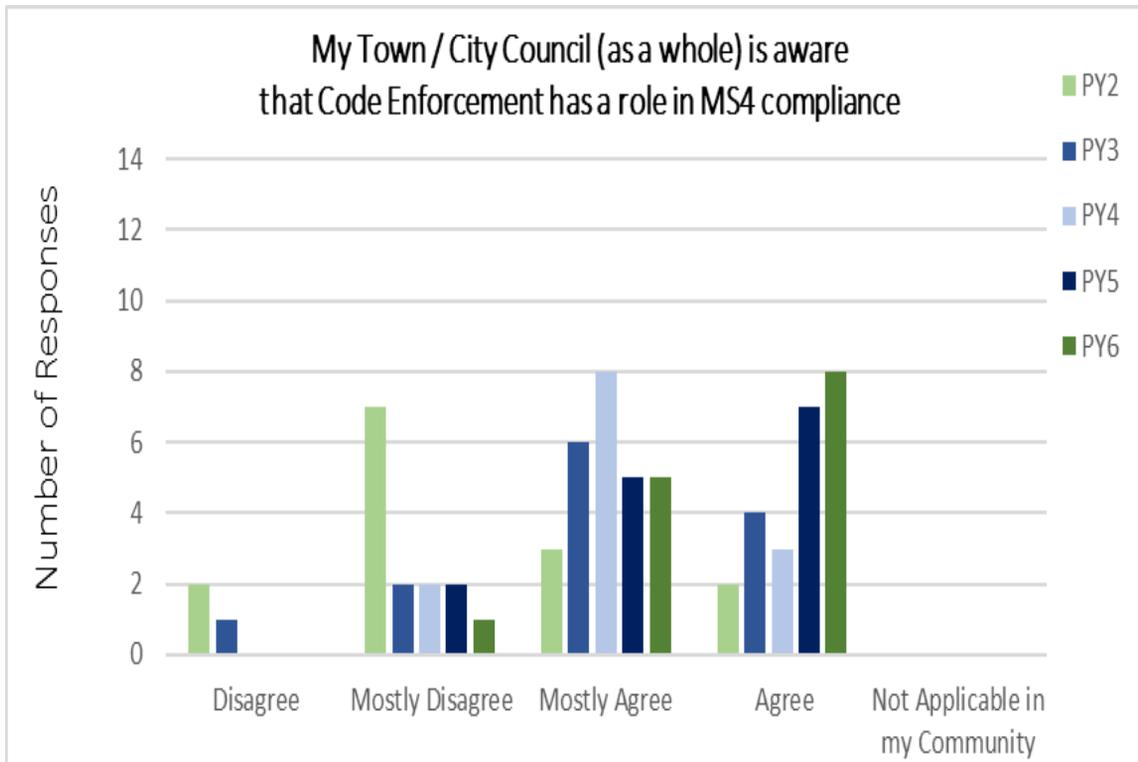
### Permit Year 6 (PY6) Summary Municipal Survey Responses

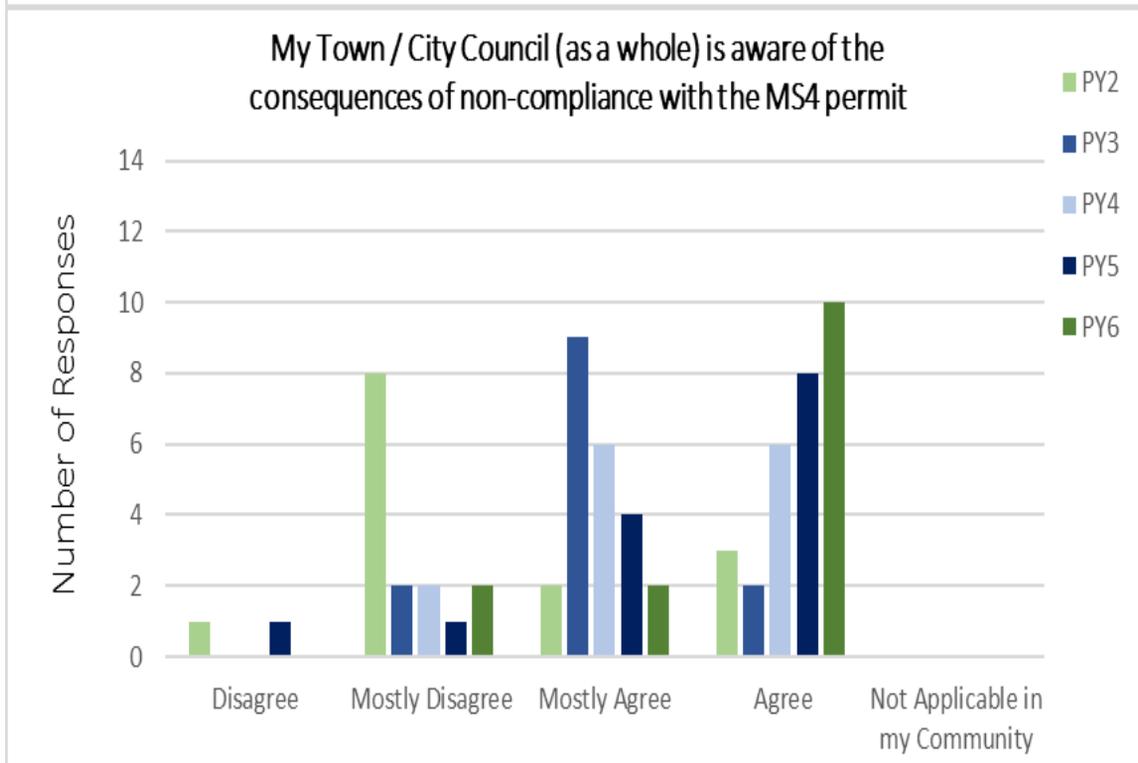
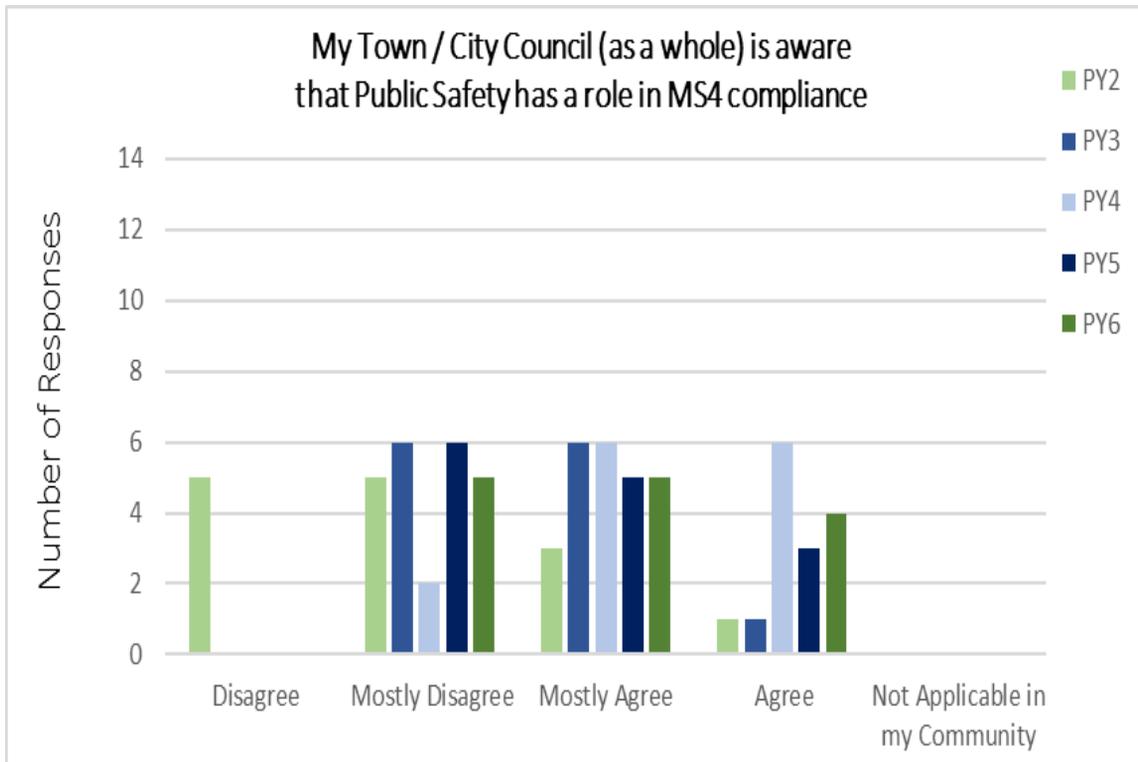
The following graphs summarize the responses to the annual municipal survey that was conducted in the fourth quarter of PY6. This survey is used to gauge municipal councilors’ awareness of their municipal stormwater program.









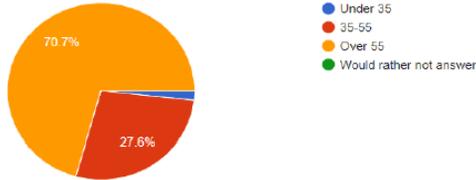


## Appendix 2: Household Hazardous Waste Event Questionnaire Results

### South Portland Household Hazardous Waste Collection Event - 10/6/18 Participant Questionnaire Results Summary

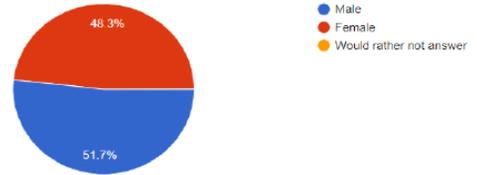
What is your age?

58 responses



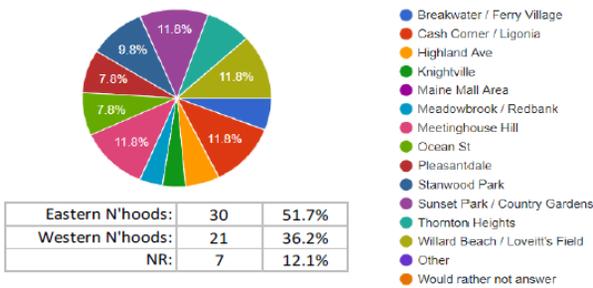
What is your gender?

58 responses



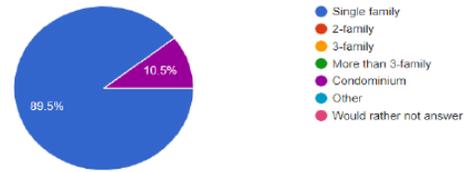
In which neighborhood do you live?

51 responses



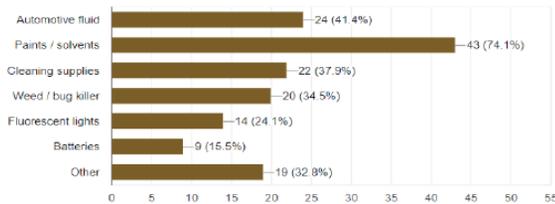
In which type of residence do you live?

57 responses



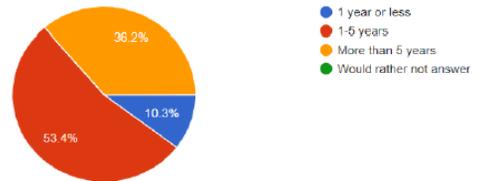
What types of Household Hazardous Wastes did you drop off for the 10/6/18 event?

58 responses



How long have you had these waste items?

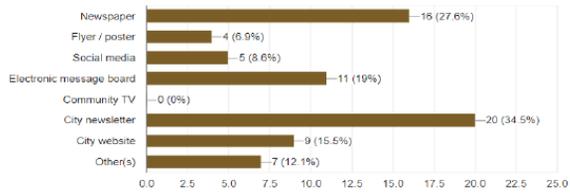
58 responses



## South Portland Household Hazardous Waste Collection Event - 10/6/18 Participant Questionnaire Results Summary

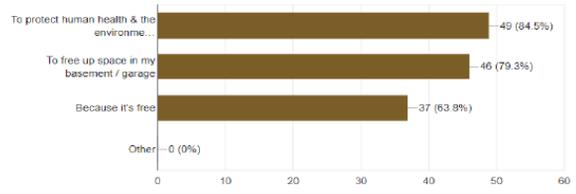
### How did you learn about the 10/6/18 HHW event?

58 responses



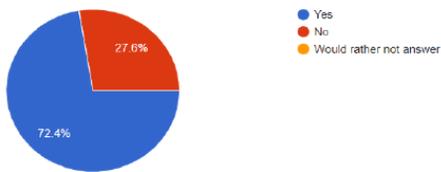
### Why did you participate in the 10/6/18 HHW event?

58 responses



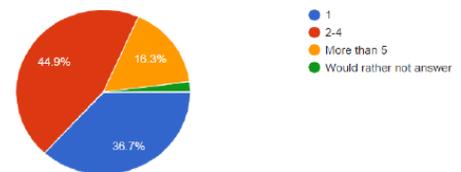
### Have you participated in previous HHW events?

58 responses



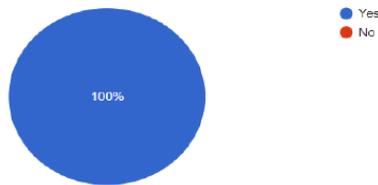
### About how many previous HHW events have you attended?

49 responses



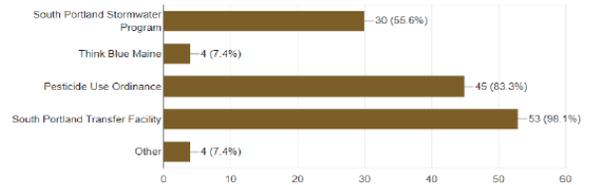
### Will you participate in future events?

58 responses

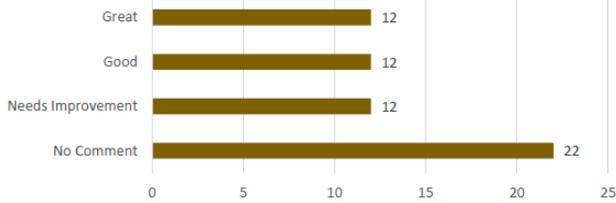


### Are you aware of any of the following sustainability efforts?

54 responses



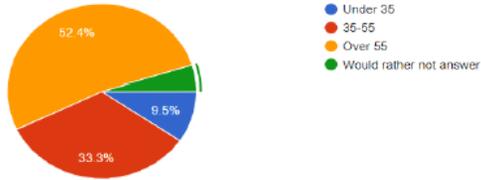
### How Did We Do?



## South Portland Household Waste Collection Event - 4/13/19 Participant Questionnaire Results

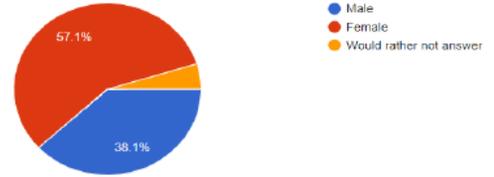
What is your age?

21 responses



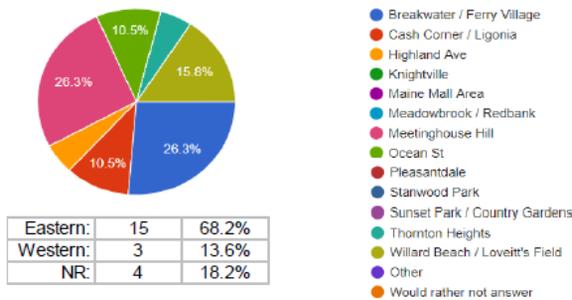
What is your gender?

21 responses



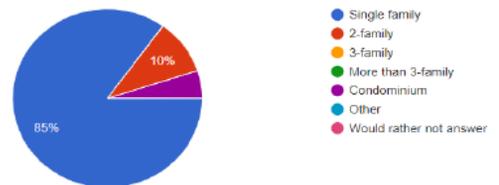
In which neighborhood do you live?

19 responses



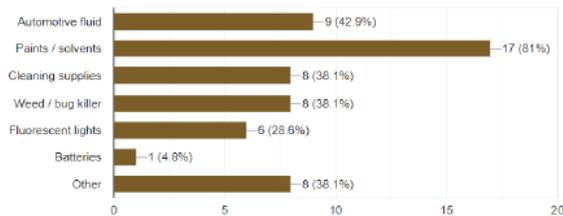
In which type of residence do you live?

20 responses



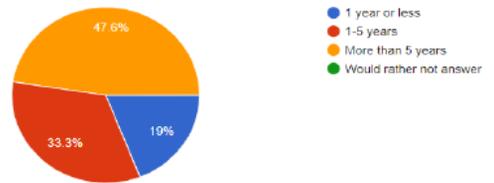
What types of Household Hazardous Wastes did you drop off for the 4/13/19 event?

21 responses



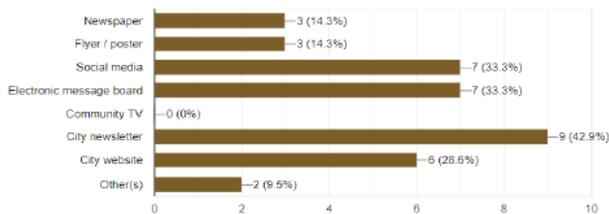
How long have you had these waste items?

21 responses



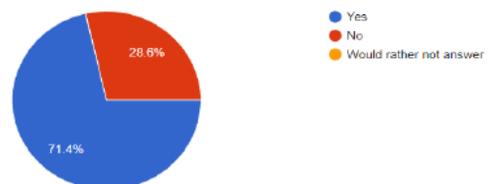
How did you learn about the 4/13/19 HHW event?

21 responses



Have you participated in previous HHW events?

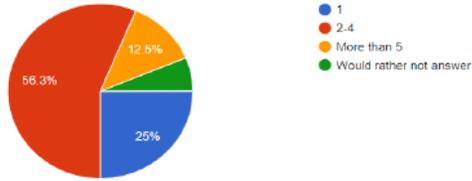
21 responses



## South Portland Household Waste Collection Event - 4/13/19 Participant Questionnaire Results

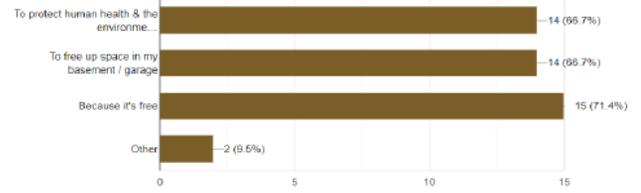
About how many previous HHW events have you attended?

16 responses



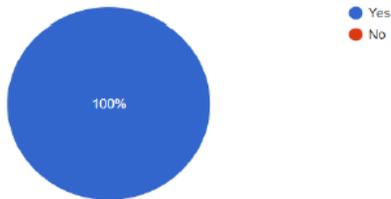
Why did you participate in the 4/13/19 HHW event?

21 responses



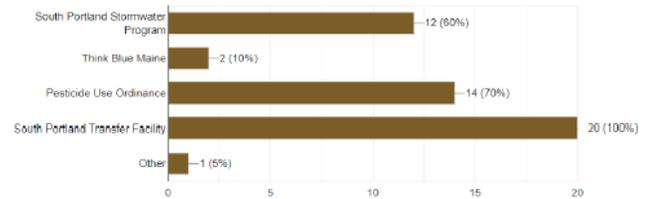
Will you participate in future events?

21 responses

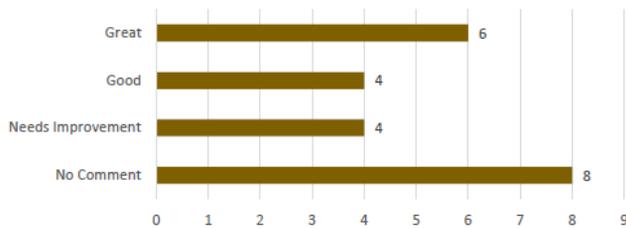


Are you aware of any of the following sustainability efforts?

20 responses



### How Did We Do?



## Appendix 3: Portland Water District Memo on BMPs for MS4 Requirements



**Portland Water District**  
*FROM SEBAGO LAKE TO CASCO BAY*

To: Frederick Dillion – Stormwater Program Coordinator,  
South Portland Water Resource Protection Department  
From: James Wallace – Director of Water Services  
Date: July 3, 2019  
Re: Summary of Portland Water District BMP for Addressing MS4 Requirements

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### **Introduction**

It is our understanding that a requirement of your MS4 permit is to provide a summary of Best Management Practices (BMPs) to address chlorinated water discharges from hydrant flushing. This memo will summarize the BMPs currently used by the District as part of our Unidirectional Flushing Program.

During the months of July through October of 2018, the District performed hydrant flushing in Portland, South Portland, and Westbrook. In addition, in the months of April through June of 2019, the District performed hydrant flushing in Cumberland, Gorham, and Scarborough.

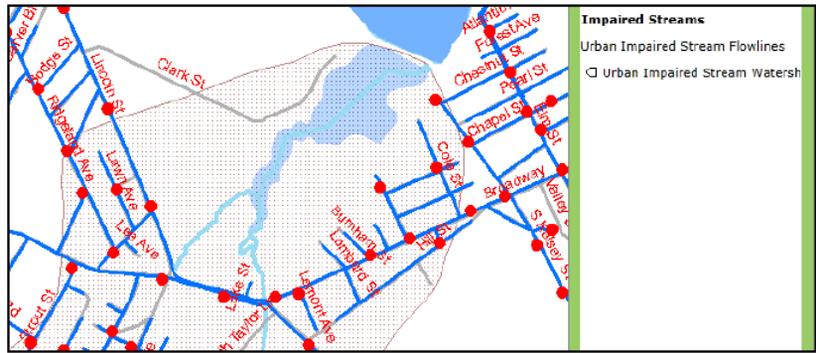
### **Dechlorination**

The District's primary BMP for hydrant discharges is dechlorination. Currently the District has four types of dechlorination devices. The District is using ascorbic acid, in both granular and tablet forms, as the de-chlorinating agent for the devices. These devices and this product are achieving total residual chlorine concentrations that are consistently below the detection limit of our field chlorine analyzers, currently the Hach Colorimeter II.



**Identifying Points of Concern**

In early 2017, PWD staff implemented GIS mapping that incorporates hydrant locations with watershed boundaries and stream locations. This mapping provides our staff an understanding of how these watersheds surround our water system.



**Land Application**

In instances where the discharge is a significant distance from any stream or water body, District crews may choose to discharge water directly to the ground, if they are certain the residual will degrade before mixing with a water body.

**Dilution**

In one instance during 2015, our engineering staff determined that a river flow was sufficient to dilute the total chlorine residual below the acute toxicity level of 0.019 mg/L. The discharge flow rate into the river included a significant safety factor. To date, the District has not used this option a second time. The final DEP MS4 drinking water system discharge issue profile of 11/18/16 does include a formula for calculating dilution into a stream. If the District considers this option again, qualified staff will determine the streamflow and discharge rates to ensure final dilution includes a significant safety factor.

**Statewide BMP's**

In 2017, Maine Rural Water Association and Maine Water Utilities Association received a grant to create statewide BMP's for de-chlorination, and then provided training to water operators across the state. The District was involved in the review of DEP's hydrant flushing profile and had input in the creation of BMP's. The BMP Manual of Public Water System Discharges to Water Resources was published in January 2018, and District is working to incorporate these into our processes.

**Staff Training**

In December of 2014, Cumberland County Soil and Water Conservation District staff trained our field crews on the requirements of the MS4 program. Staff training includes Basic Contractor Erosion and Sediment Control certification by the Maine DEP Nonpoint Source Pollution program.

In addition, a number of District staff attended training by Maine Rural Water on the statewide BMP's during the summer of 2017.

## Appendix 4: Dry Weather Outfall Inspection Summaries

Feature ID	Watershed	Inspection Date	Precip in Past 3 Days?	Precip Amount	Approx Temp	Wind Present?	Pipe Submerged ?	Debris Foam	Debris Floating Green Scum	Debris Oil / Film	Debris Veg Mat	Debris Sewage Solids	Odor	Water Clarity	Pipe Flow	Seepage Flow	Flow Color	Sediment Condition	Structure Condition	Trash / Litter	Yard Waste	Comments
LC_36	Long Creek	12/10/18	No		25	No	No	No	No	No	No	No	None	Clear	Steady	Steady	No Flow	Open	Fair	No	No	Running water
LC_28	Long Creek	12/10/18	No		33	Yes	No	No	No	No	No	No	None	Clear	None	None	No Flow	Open	Good	No	No	
LC_86	Long Creek	12/10/18	No		33	Yes	No	No	No	No	No	No	None	Clear	None	None	No Flow	Open	Good	No	No	
LC_31	Long Creek	12/10/18	No		33	Yes	No	No	No	No	No	No	None		None	None	No Flow	Open		No	Yes	Buried under brush pile
LC_75	Long Creek	12/10/18	No		30	No	No	No	No	No	Yes	No	None		None	None	No Flow	Plugged	Needs Attention	No	No	Fully covered in vegetation
LC_72	Long Creek	12/10/18	No		30	No	No	No	No	No	No	No	None	Clear	Trickle	Trickle	No Flow	Open	Fair	No	No	
LC_74	Long Creek	12/10/18	No		30	No	No	No	No	No	No	No	None	Clear	Trickle	Trickle	No Flow	Open	Fair	No	No	
LC_29	Long Creek	12/11/18	No			Yes	No	No	No	No	No	No	None		None	None	No Flow	Open	Good	No	No	
LC_30	Long Creek	12/11/18	No		18	Yes	No	No	No	No	No	No	None		None	None	No Flow	Open		Yes	No	
LC_29	Long Creek	12/11/18	No		18	Yes	No	No	No	No	No	No	None	Clear	None	None	No Flow	Open	Good	No	No	
LC_54	Long Creek	12/11/18	No		18	Yes	No	No	No	No	No	No	None	Clear	None	None	No Flow	Open	Good	No	No	
LC_24	Long Creek	12/11/18	No		18	Yes	No	No	No	No	No	No	None	Clear	None	None	No Flow	Open	Good	No	No	
LC_85	Long Creek	12/11/18	No		18	No	Fully	No	No	No	No	No			None	None	No Flow	Open		No	No	Completely covered
LC_84	Long Creek	12/11/18	No		18	Yes	No	No	Yes	No	Yes	No	None	Clear	Steady	None	Clear	Open	Fair	Yes	No	
LC_83	Long Creek	12/11/18	No		18	No	No	No	No	No	No	No	None	Clear	Trickle	Trickle	No Flow	Open	Fair	No	No	
LC_25	Long Creek	12/11/18	No		18	Yes	Partially	No	No	No	Yes	No	None	Clear	None	None	No Flow	Open	Fair	No	No	
LC_26	Long Creek	12/11/18	No		18	Yes	Partially	No	No	No	No	No	None	Clear	Steady	None	Clear	Open	Good	No	No	
LC_22	Long Creek	12/11/18	No		29	Yes	No	No	No	Yes	No	No	None	Opaque	Trickle	None	No Flow	Open	Needs Attention	Yes	No	
LC_98	Long Creek	12/11/18	No		23	Yes	Partially	No	No	No	No	No	None	Clear	Steady	None	Clear	Open	Fair	No	No	Some erosion downstream
LC_55	Long Creek	12/11/18	No		25	No	No	No	No	No	No	No	None		None	None	No Flow	Open		No	No	
LC_2	Long Creek	12/11/18	No		23	Yes	No	No	No	No	No	No			None	None	No Flow	1/2 Full	Fair	No	No	
LC_3	Long Creek	12/11/18	No			No	No	No	No	No	No	No	None		None	None	No Flow	Open		No	No	
LC_44	Long Creek	12/11/18	No		23	Yes	No	No	No	No	No	No	None	Clear	Steady	None	Clear	Open	Good	No	No	
LC_45	Long Creek	12/11/18	No		23	Yes	No	No	No	No	Yes	No	None	Clear	Steady	None	Clear	Open	Good	No	No	
LC_43	Long Creek	12/11/18	No		23	Yes	No	Yes	No	No	Yes	No	None	Clear	Steady	None	Clear	Open	Good	No	No	
LC_89	Long Creek	12/11/18	No		23	Yes	No	No	No	No	No	No	None	Clear	None	None	No Flow	Open	Good	No	No	
LC_71	Long Creek	12/13/18	No		23	No	No	No	No	No	No	No	None	Opaque	None	None	No Flow	Open	Good	No	No	
LC_37	Long Creek	12/13/18	No		25	No	Partially	No	No	No	No	No	None	Clear	None	None	No Flow	1/4 Full	Good	No	No	
LC_34	Long Creek	12/13/18	No		25	No	Fully	No	No	No	No	No			None	None	No Flow	3/4 Full	Fair	No	No	Completely buried unable to locate exactly where
LC_20	Long Creek	12/13/18	No		25	No	No	No	No	No	No	No	None	Clear	Trickle	None	No Flow	Open	Good	No	No	
LC_21	Long Creek	12/13/18	No		25	No	No	No	No	No	No	No	None	Clear	Trickle	Trickle	No Flow	Open		No	No	
LC_18	Long Creek	12/13/18	No		25	No	No	No	No	No	No	No	None	Clear	Trickle	Trickle	Clear	Open	Good	No	No	
LC_119	Long Creek	12/13/18	No		25	No	No	No	No	No	No	No	None	Clear	Trickle	Trickle	Clear	Open	Good	No	No	
LC_118	Long Creek	12/13/18	No		25	No	No	No	No	No	No	No	None		None	None	No Flow	Open	Poor	No	No	
LC_17	Long Creek	12/13/18	No		25	No	No	No	No	No	No	No			None	None	No Flow	Open		No	No	Completely covered cannot locate
LC_114	Long Creek	12/13/18			25	No	No	No	No	No	No	No			None	None	No Flow	Open		No	No	Completely covered unable to locate exact location
LC_117	Long Creek	12/13/18	No		25	No	No	No	No	No	No	No	None	Clear	Trickle	None	Clear	Open		No	No	
LC_57	Long Creek	12/13/18	No		25	No	Partially	No	No	No	No	No	None		None	None	No Flow	1/4 Full		No	No	
LC_58	Long Creek	12/13/18	No		28	No	No	No	No	No	No	No	None	Clear	Trickle	Trickle	Clear	Open		No	No	
LC_91	Long Creek	12/13/18	No		28	No	No	No	No	No	No	No	None	Clear	Trickle	Trickle	Clear	Open	Good	No	No	
LC_62	Long Creek	12/13/18	No		25	No	No	No	No	No	No	No	None	Clear	None	None	No Flow	Open	Good	No	No	
LC_61	Long Creek	12/13/18	No		25	No	No	No	No	No	No	No	None	Clear	None	None	No Flow	Open	Good	No	No	
LC_60	Long Creek	12/13/18	No		25	No	Partially	No	No	No	No	No	None		None	None	No Flow	Open	Good	No	No	
LC_90	Long Creek	12/13/18	No		25	Yes	Partially	No	No	No	No	No	None	Clear	None	None	No Flow	1/4 Full		No	No	
LC_35	Long Creek	12/13/18	No		25	No	No	No	No	No	No	No	None	Clear	None	None	No Flow	Open	Fair	No	Yes	Structure is ok yard debris all inside of ditches
LC_56	Long Creek	12/13/18	No			No	No	No	No	No	No	No	None		None	None	No Flow	1/4 Full	Fair	No	No	
LC_59	Long Creek	12/13/18	No		25	Yes	No	No	No	No	No	No	None	Clear	None	None	No Flow	1/4 Full	Good	No	No	
LC_115	Long Creek	12/13/18	No		25	Yes	Fully	No	No	No	No	No	None	Clear	None	None	No Flow	Plugged		No	No	Completely buried can not officially locate
LC_32	Long Creek	12/13/18	No		25	No	Partially	No	No	No	No	No	None	Clear	Steady	Steady	No Flow	1/2 Full	Good	No	No	
LC_67	Long Creek	12/14/18	No		16	No	Partially	No	No	No	No	No	None	Clear	None	None	No Flow	3/4 Full	Good	No	No	
LC_1	Long Creek	12/14/18	No		16	No	No	No	No	No	No	No	None	Clear	None	None	No Flow	3/4 Full	Good	No	No	
LC_33	Long Creek	12/14/18	No		16	No	Partially	No	No	No	No	No	None	Clear	None	None	No Flow	1/2 Full	Poor	No	No	Structure failing see photos holes in piping.
LC_112	Long Creek	12/14/18	No		16	No	No	No	No	No	No	No	None	Clear	None	None	No Flow	Open	Good	No	No	
LC_69	Long Creek	12/14/18	No		16	No	No	No	No	No	No	No	None		None	None	No Flow	Open	Good	No	No	
LC_70	Long Creek	12/14/18	No		16	No	Partially	No	No	No	No	No	None	Clear	None	None	No Flow	1/2 Full	Good	No	No	
LC_66	Long Creek	12/14/18	No		16	No	No	No	No	No	No	No	Musty	Clear	None	None	Clear	Open	Poor	No	No	
LC_110	Long Creek	12/14/18	No		16	No	No	No	No	No	No	No	None		None	None	No Flow	Open	Good	No	No	
LC_111	Long Creek	12/14/18	No		16	No	No	No	No	No	No	No	None		None	None	No Flow	Open	Good	No	No	
LC_109	Long Creek	12/14/18	No		16	No	No	No	No	No	No	No	None		None	None	No Flow	Open		No	No	

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LC_108	Long Creek	12/14/18	No		16	No	No	No	No	No	No	No	None		None	None	No Flow	Open		No	No	
LC_107	Long Creek	12/14/18	No		16	No	No	No	No	No	No	No	None		None	None	No Flow	Open	Good	No	No	
LC_106	Long Creek	12/14/18	Yes		16	No	No	No	No	No	No	No	None		None	None	No Flow	Open		No	No	Pipe is completely cover unable to locate at this time
LC_68	Long Creek	12/14/18	No		16	No	No	No	No	No	No	No	None	Clear	Trickle	Trickle	Clear	Open	Good	No	No	
LC_99	Long Creek	12/14/18	No		17	No	Partially	No	No	No	No	No	None		None	None	No Flow	1/2 Full	Good	No	No	
LC_120	Long Creek	12/14/18	No		18	No	No	No	No	No	No	No	None		None	None	No Flow	1/4 Full	Good	No	No	
LC_9	Long Creek	12/14/18	No		18	No	No	Yes	No	Yes	No	No	Musty	Opaque	Trickle	Trickle	Orange	Open	Good	Yes	No	
LC_10	Long Creek	12/14/18	No		18	No	No	Yes	No	Yes	No	No	Musty	Opaque	Steady	Steady	Orange	Open	Good	Yes	No	
LC_121	Long Creek	12/14/18	No		18	No	Partially	No	No	No	No	No	None		None	None	No Flow	1/2 Full	Good	No	No	
LC_113	Long Creek	12/14/18	No		18	No	No	No	No	No	No	No	None		None	None	No Flow	Open		Yes	No	
LC_11	Long Creek	12/14/18	No		18	No	No	No	No	No	No	No	None	Opaque	None	None	No Flow	1/4 Full	Good	Yes	No	
LC_87	Long Creek	12/14/18	No		22	No	No	No	No	No	No	No	None	Clear	Trickle	Trickle	No Flow	Open	Good	Yes	No	
LC_12	Long Creek	12/14/18	No		22	No	No	No	No	No	No	No	None	Clear	Trickle	Trickle	Clear	Open	Good	Yes	No	
LC_19	Long Creek	12/14/18	No		22	No	No	No	No	No	No	No	None	Clear	Trickle	Trickle	Clear	Open	Good	Yes	No	
LC_92	Long Creek	12/14/18	No			No	No	No	No	No	No	No	Musty	Clear	Steady	Steady	Clear	Open		Yes	No	
LC_15	Long Creek	12/14/18	No		22	No	No	No	No	No	No	No	None		None	None	No Flow	Open		No	No	
LC_4	Long Creek	12/14/18	No		22	No	No	No	No	No	No	No	None		None	None	No Flow	Open	Fair	No	No	
LC_23	Long Creek	12/14/18	No		22	No	No	No	No	No	No	No	None		None	None	No Flow	Open	Good	No	No	
LC_16	Long Creek	12/14/18	No		22	No	No	No	No	No	No	No	None	Clear	None	None	No Flow	Open	Good	No	No	
LC_101	Long Creek	12/14/18	No		22	No	Partially	No	No	No	No	No	None		None	None	No Flow	1/4 Full	Good	No	No	
LC_13	Long Creek	12/14/18	No		22	No	No	No	No	No	No	No	None	Clear	Trickle	Trickle	Clear	Open		No	No	
LC_14	Long Creek	12/14/18	No		22	No	No	No	No	No	No	No	None	Clear	Trickle	Trickle	Clear	Open		Yes	No	
LC_51	Long Creek	12/19/18	Yes	2	22	No	No	No	No	No	No	No	None	Clear	Trickle	None	Clear	Open	Good	No	No	
LC_8	Long Creek	12/19/18	Yes	2	22	No	No	No	No	No	No	No	None		None	None	No Flow	Open	Good	No	No	
LC_7	Long Creek	12/19/18	Yes	2	22	No	No	No	No	Yes	No	No	Musty	Cloudy	Trickle	None	Orange	Open	Good	No	No	
LC_65	Long Creek	12/19/18	Yes	2	25	No	No	No	No	No	No	No	None	Opaque	None	None	No Flow	Open	Good	No	No	
LC_88	Long Creek	12/19/18	Yes	2	25	No	No	No	No	No	No	No	None	Clear	Trickle	None	Clear	Open	Good	No	No	
LC_64	Long Creek	12/19/18	Yes	2	25	No	No	No	No	No	No	No	None	Clear	Steady	None	Clear	Open	Good	No	No	
LC_6	Long Creek	12/19/18	Yes	2	25	No	No	No	No	No	No	No	None		None	None	No Flow	Open	Good	No	No	
LC_5	Long Creek	12/19/18	Yes	2	25	No	No	No	No	No	No	No	None	Clear	Trickle	None	Clear	Open	Good	No	No	
LC_39	Long Creek	12/19/18	Yes	2	25	No	No	No	No	No	No	No	None	Clear	Steady	None	Clear	Open	Good	No	No	
LC_63	Long Creek	12/19/18	Yes	2	28	No	No	No	No	No	Yes	No	None	Clear	Trickle	None	Clear	Open	Good	No	No	
LC_40	Long Creek	12/19/18	Yes	2	25	No	No	No	No	No	No	No	None		None	None	No Flow	Open		No	No	Could not locate
LC_104	Long Creek	12/19/18	Yes	2	25	No	Partially	No	No	No	No	No	None		None	None	No Flow	1/4 Full	Good	No	No	Bamboo has built up in front of pipe
BC_3	Barberry Creek	12/20/18	No			No	Partially	No	No	No	No	No	None	Clear	None	None	No Flow	Open	Good	No	No	
BC_2	Barberry Creek	12/20/18	No		25	No	Partially	No	No	No	No	No	None	Clear	Steady	None	Clear	Open	Fair	No	No	
BC_5	Barberry Creek	12/20/18	No		25	No	No	No	No	No	No	No	None		None	None	No Flow	Open		No	No	Could not locate
BC_14	Barberry Creek	12/20/18	No		25	No	No	No	No	No	No	No	None		None	None	No Flow	Open	Good	No	No	
BC_4	Barberry Creek	12/20/18	No			No	No	No	No	No	No	No	None		None	None	No Flow	Open		No	No	Could not locate
BC_1	Barberry Creek	12/20/18	No		25	No	Partially	No	No	No	No	No	None		None	None	No Flow	Plugged	Needs Attention	No	No	Rip rap is built up in front of outlet
BC_10	Barberry Creek	12/20/18	No		25	No	No	No	No	No	No	No	None	Clear	Trickle	None	Clear	Open	Good	No	No	
BC_9	Barberry Creek	12/20/18	No		25	No	Partially	No	No	Yes	No	No	None	Clear	Steady	None	Clear	Open	Good	No	No	
BC_16	Barberry Creek	12/20/18	No		25	No	Partially	No	No	Yes	No	No	None	Opaque	Trickle	None	Other	Open	Good	No	No	
BC_13	Barberry Creek	12/20/18	No		30	No	Partially	No	No	No	No	No	Musty		Steady	None	Orange	Open	Good	No	No	
BC_11	Barberry Creek	12/20/18	No		30	No	No	No	No	No	No	No	None		None	None	No Flow	Open	Good	No	No	
BC_12	Barberry Creek	12/20/18	No		35	No	No	No	No	No	No	No	None	Clear	Steady	None	Clear	Open	Good	No	No	
BC_6	Barberry Creek	12/20/18	No		32	No	Partially	No	No	No	No	No	None	Clear	Steady	None	Clear	Open	Good	No	No	
BC_8	Barberry Creek	12/20/18	No		32	No	No	No	No	Yes	No	No	None	Clear	None	None	Clear	Open	Good	No	No	
BC_15	Barberry Creek	12/20/18	No		32	No	No	No	No	No	No	No	Musty	Opaque	Trickle	None	Other	Open	Good	No	No	
KB_1	Trout Brook	12/20/18	No		32	No	No	No	No	No	No	No	None	Clear	Steady	None	Clear	Open	Good	No	No	
TB_7	Trout Brook	12/20/18	No		32	No	No	No	Yes	No	No	No	None	Clear	None	None	No Flow	Open	Good	No	No	
TB_9	Trout Brook	12/20/18	No		32	No	No	No	No	No	No	No	None		None	None	No Flow	Open	Good	No	No	
LC_103	Long Creek	12/27/18	No		22	No	No	No	No	No	No	No	None		None	None	No Flow	Open	Good	Yes	No	
LC_116	Long Creek	12/27/18	No		22	No	No	No	No	No	No	No	None		None	None	No Flow	Open	Good	Yes	No	
LC_102	Long Creek	12/27/18	No		22	No	No	No	No	No	No	No	None		None	None	No Flow	Open	Good	No	No	
LC_100	Long Creek	12/27/18	No		22	No	No	No	No	No	No	No	None	Clear	None	None	No Flow	Open	Good	No	No	
LC_105	Long Creek	12/27/18	No		22	No	No	No	No	No	No	No	None		None	None	No Flow	Open	Good	No	No	
LC_41	Long Creek	12/27/18	No		22	No	No	No	No	No	No	No	None		None	None	No Flow	Open	Fair	Yes	No	
LC_42	Long Creek	12/27/18	No		22	No	No	No	No	Yes	No	No	None	Cloudy	None	None	Orange	1/2 Full	Poor	Yes	No	
LC_49	Long Creek	12/27/18	No		22	Yes	No	Yes	No	Yes	No	No	None	Clear	Steady	None	Clear	Open	Fair	Yes	No	
LC_46	Long Creek	12/27/18	No		22	Yes	Partially	No	No	Yes	No	No	None		None	None	No Flow	Open	Fair	Yes	No	
LC_48	Long Creek	12/27/18	No		22	Yes	No	No	No	Yes	No	No	None	Clear	Trickle	None	Clear	1/4 Full	Fair	Yes	No	
LC_38	Long Creek	12/27/18	No		22	Yes	No	No	No	No	No	No	None	Clear	Steady	None	Clear	Open	Good	No	No	
TB_2	Trout Brook	12/27/18	No		24	No	No	No	No	No	No	No	None	Clear	Steady	None	Clear	Open	Good	No	No	
TB_3	Trout Brook	12/27/18	No		24	No	Partially	No	No	Yes	No	No	None	Clear	Trickle	None	Clear	Open	Needs Attention	No	No	
TB_1	Trout Brook	12/27/18	No		25	No	No	No	No	No	No	No	None	Clear	Steady	None	Clear	Open	Needs Attention	No	No	Big stump is falling into ditch
TB_8	Trout Brook	12/27/18	No		24	No	No	No	No	No	No	No	None		None	None	No Flow	Open	Fair	No	No	
TB_5	Trout Brook	12/27/18	No		25	No	Fully	No	No	No	No	No	None		None	None	No Flow	Open	Needs Attention	No	No	Pipe is under water only can see the top
TB_6	Trout Brook	12/27/18	No		25	No	Fully	No	No	No	No	No	None		None	None	No Flow	3/4 Full	Poor	No	No	
BC_4	Trout Brook	12/27/18	No			No	No	No	No	No	No	No	None		None	None	No Flow	Open	Needs Attention	No	No	Cannot locate

## Appendix 5: Dry Weather Ditch Inspection Summary

Ditch ID	Date	Wind Present (Y/N)	Temp (deg F)	Precip past 2 days?	Precip Amount	Yard Waste (Y/N)	Trash / Litter (Y/N)	Debris / Pollution Types	Odor	Standing Water	Water Clarity	Water Color	Inlet Status	Outlet Status	Sediment Depth	Stability	Veg Cover	Veg Height	Veg Type	Erosion / Scouring	Follow Up Required	Follow Up Reason	Comments
BCD-14	6/28/19	Yes	75	Yes	0.02	No	No	None	None / Natural	No	NA	NA	Stable	Stable	Natural	Stable	Grass	3-6"	Normal Grass	No	No		
BCD-13	6/28/19	Yes	75	Yes	0.02	No	Yes	None	None / Natural	Yes	Clear Water	Clear	Stable	Stable	<2"	Stable	10% > bare soil	<3"	Natural	No	No		
BCD-17	6/28/19	Yes	75	Yes	0.02	No	Yes	None	None / Natural	Yes	Clear Water	Clear	Stable	Stable	<2"	Stable	10% > bare soil	excessive	Natural	No	No		
BCD-16	6/28/19	Yes	75	Yes	0.02	No	Yes	None	None / Natural	No	NA	NA	Stable	Stable	<2"	Stable	10% > bare soil	excessive	Weeds	No	Yes	Weedy vegetation growing in rip rap	
BCD-4	6/28/19	Yes	75	Yes	0.02	No	No	None	None / Natural	No	NA	NA	Stable	Stable	<2"	Stable	10% > bare soil	<3"	Weeds	No	No		
BCD-5	6/28/19	Yes	75	Yes	0.02	No	No	None	None / Natural	No	NA	NA	Stable	Stable	<2"	Stable	10% > bare soil	excessive	Weeds	No	Yes	Remove weedy vegetation	
BCD-6	6/28/19	Yes	75	Yes	0.02	No	No	None	None / Natural	No	NA	NA	Stable	Stable	<2"	Stable	10% > bare soil	<3"	Normal Grass	No	No		
BCD-10	6/28/19	Yes	75	Yes	0.02	No	Yes	None	None / Natural	No	NA	NA	Stable	Stable	<2"	Stable	10% > bare soil			No	No	Length of ditch needs to be extended in GIS data layer. Ditch needs to be longer.	
BCD-11	6/28/19	Yes	75	Yes	0.02	No	Yes	None	None / Natural	Yes	Clear Water	Clear	Stable	Stable	<2"	Stable	10% > bare soil			No	Yes	Remove trash from ditch	
BCD-8	6/28/19	Yes	75	Yes	0.02	No	Yes	None	None / Natural	No	NA	NA	Stable	Stable	>2"	Stable	10% > bare soil	6-12"	Weeds	No	No		
BCD-12	6/28/19	Yes	75	Yes	0.02	No	Yes	None	None / Natural	Yes	Clear Water	Clear	Stable	Stable	<2"	Stable	Natural	6-12"	Normal Grass	No	No		
BCD-9	6/28/19	Yes	75	Yes	0.02	No	Yes	None	None / Natural	No	NA	NA	Stable	Stable	<2"	Stable	10% > bare soil	excessive	Weeds	No	Yes	Remove weedy vegetation	
LCD-29	6/28/19	Yes	75	Yes	0.02	No	Yes	None	None / Natural	No	NA	NA	Stable	Obstructed	Natural	woody veg present	grass > 90%	excessive	Invasive	No	Yes	Ditch overgrown with phragmites and Woody veg	Ditch may be privately owned
LCD-28	6/28/19	Yes	75	Yes	0.02	No	Yes	None	None / Natural	No	NA	NA	Stable	Obstructed	Natural	woody veg present	Natural	excessive	Weeds	No	Yes	Remove vegetation from ditch	Ditch may be privately owned
LCD-27	6/28/19	Yes	75	Yes	0.02	No	Yes	None	None / Natural	Yes	Clear Water	Clear	Stable	Obstructed	Natural	Stable	grass > 90%	excessive	Weeds	No	Yes	Remove vegetation from ditch	Ditch may be privately owned
LCD-25	6/28/19	Yes	75	Yes	0.02	No	Yes	None	None / Natural	Yes	Clear Water	Clear	Stable	Stable	>2"	woody veg present	grass > 90%	excessive	Woody	No	Yes	Remove vegetation from ditch	
LCD-24	6/28/19	Yes	75	Yes	0.02	No	No	None	None / Natural	Yes	Clear Water	Clear	Stable	Stable	<2"	Stable	grass > 90%	<3"	Normal Grass	No	No		
LCD-23	6/28/19	Yes	75	Yes	0.02	No	Yes	None	None / Natural	Yes	Clear Water	Clear	Stable	Stable	<2"	Stable	grass > 90%	<3"	Normal Grass	No	No		
LCD-26	6/28/19	Yes	75	Yes	0.02	No	No	None	None / Natural	No	NA	NA	Stable	Stable	Natural	Stable	Grass	<3"	Normal Grass	No	No		
LCD-22	6/28/19	Yes	75	Yes	0.02	No	Yes	None	None / Natural	Yes	Clear Water	Clear	Stable	Stable	>2"	Stable	grass > 90%	excessive	Natural	No	Yes	Remove vegetation from ditch?	
LCD-21	6/28/19	Yes	75	Yes	0.02	No	Yes	None	None / Natural	Yes	Clear Water	Clear	Stable	Stable	<2"	woody veg present	grass > 90%	excessive	Natural	No	Yes	Remove vegetation from ditch	
LCD-05	6/28/19	Yes	75	Yes	0.02	No	Yes	None	None / Natural								Natural	excessive	Natural	Yes	Yes	Remove vegetation from ditch	On able to see ditch due to excess of vegetation
LCD-04	6/28/19	Yes	75	Yes	0.02	No	Yes	None	None / Natural								Natural	excessive	Natural	Yes	Yes	Remove vegetation from ditch	Unable to inspect ditch due to excessive vegetation
LCD-03	6/28/19	Yes	75	Yes	0.02	No	Yes	None	None / Natural								Natural	excessive	Natural	Yes	Yes	Remove vegetation from ditch	Unable to inspect ditch due to excessive vegetation
LCD-01	6/28/19	Yes	75	Yes	0.02	Yes	Yes	None	None / Natural	No	NA	NA	Stable	obstruct	<2"	Stable	10% > bare soil	<3"		No	Yes	Remove accumulated debris from ditch	

LCD-02	6/28/19	Yes	75	Yes	0.02	No	Yes	None	None / Natural	Yes	Clear Water	Clear	Stable	Stable	<2"	Stable	grass > 90%	<3"	Normal Grass	Yes	No		Ditch erosion slight; most of ditch covered with grass
LCD-07	6/28/19	Yes	75	Yes	0.02	No	No	None	None / Natural	No	NA	NA	Stable	Stable	<2"	Stable	grass > 90%	<3"	Normal Grass	No	No		
LCD-08	6/28/19	Yes	75	Yes	0.02	No	No	None	None / Natural	Yes	Clear Water	Clear	Stable	Stable	<2"	Stable	grass > 90%	6-12"	Normal Grass	No	No		
LCD-09	6/28/19	Yes	75	Yes	0.02	No	No	None	None / Natural	Yes	Clear Water	Clear	Stable	Stable	<2"	Stable	grass > 90%	<3"	Normal Grass	No	No		
LCD-10	6/28/19	Yes	75	Yes	0.02	No	No	ing Green	None / Natural	Yes	Cloudy Water	Green	Stable	Stable	<2"	Stable	grass > 90%	<3"	Normal Grass	No	No		
LCD-11	6/28/19	Yes	75	Yes	0.02	No	No	None	None / Natural	Yes	Clear Water	Clear	Stable	Stable	<2"	Stable	grass > 90%	<3"	Normal Grass	Yes	No		Slight ditch erosion mostly covered with grass
LCD-12	6/28/19																			Yes		GIS data layer inaccurate; ditch does not exist	
LCD-13	6/28/19	Yes	75	Yes	0.02	No	No	None	None / Natural	Yes	Clear Water	Clear	Stable	Stable	<2"	Stable	10% > bare soil	excessive	Natural	No	No		Small stand of cat tails in rip rap ditch; no need for a follow up
LCD-14	6/28/19	Yes	75	Yes	0.02	No	Yes	None	None / Natural	Yes	Cloudy Water	Brown	Stable	Stable	<2"	Stable	grass > 90%	6-12"	Normal Grass	No	Yes		Cat tails obstructing inlet culvert
LCD-15	6/28/19	Yes	75	Yes	0.02	No	No	None	None / Natural	Yes	Clear Water	Clear	Stable	Stable	<2"	Stable	grass > 90%	excessive	Normal Grass	No	No		
LCD-16	6/28/19	Yes	75	Yes	0.02	No	No	None	None / Natural	Yes	Clear Water	Clear	Stable	Stable	<2"	Stable	10% > bare soil			No	No		Ditch maintained recently entirely lined with riprap
LCD-17	6/28/19	Yes	75	Yes	0.02	No	No	ing Green	None / Natural	Yes	Cloudy Water	Green	Stable	Stable	<2"	Stable				No	No		Ditch Maintained recently; entirely lined with rip rap
LCD-18	6/28/19	Yes	75	Yes	0.02	No	No	None	None / Natural	Yes	Clear Water	Clear	Stable	Stable	<2"	Stable	grass > 90%	6-12"	Normal Grass	No	No		
LCD-20	6/28/19	Yes	75	Yes	0.02	No	No	ing Green	None / Natural	Yes	Cloudy Water	Brown	Stable	Stable	<2"	Stable	grass > 90%	3-6"	Normal Grass	No	No		
LCD-19	6/28/19	Yes	75	Yes	0.02	No	No	None	None / Natural	No	NA	NA	Stable	obstruct	<2"	Stable	grass > 90%	excessive	Normal Grass	No	Yes		Remove vegetation from in front of culvert
LCD-06	6/28/19	Yes	75	Yes	0.02	No	Yes	None	None / Natural	No			Stable	Stable	<2"	Stable	grass > 90%	excessive	Weeds	No			May need to return to cut grass and weeds Ditch filled with vegetation unable to inspect
LCD-30	6/28/19	Yes	75	Yes	0.02	No	No	None	None / Natural								Natural	excessive	Invasive		Yes		Remove vegetation from ditch
BCD-1	7/16/19	Yes	80	No	0	No	No	None	None / Natural	No	NA	NA	Stable	Stable	Natural	Stable	grass > 90%	<3"	Normal Grass	No	No		
BCD-2	7/16/19	Yes	80	No	0	No	Yes	None	None / Natural	No	NA	NA	Stable	Stable	>2"	woody veg present	Natural	excessive	Woody	Yes	Yes		Remove vegetation from ditch
BCD-3	7/16/19	Yes	80	No	0	No	Yes	None	None / Natural	No	NA	NA	Stable	Stable	<2"	woody veg present	Natural	excessive	Woody	Yes	Yes		Remove vegetation from ditch
BCD-15	7/16/19	Yes	80	No	0	No	Yes	None	None / Natural	No	NA	NA	Stable	Stable	<2"	Stable	grass > 90%	<3"	Normal Grass	No	No		
BCD_18	7/16/19	Yes	80	No	0	No	Yes	None	None / Natural	No	NA	NA	Stable	Stable	>2"	woody veg present	Natural	excessive	Woody	No	Yes		Remove vegetation from ditch