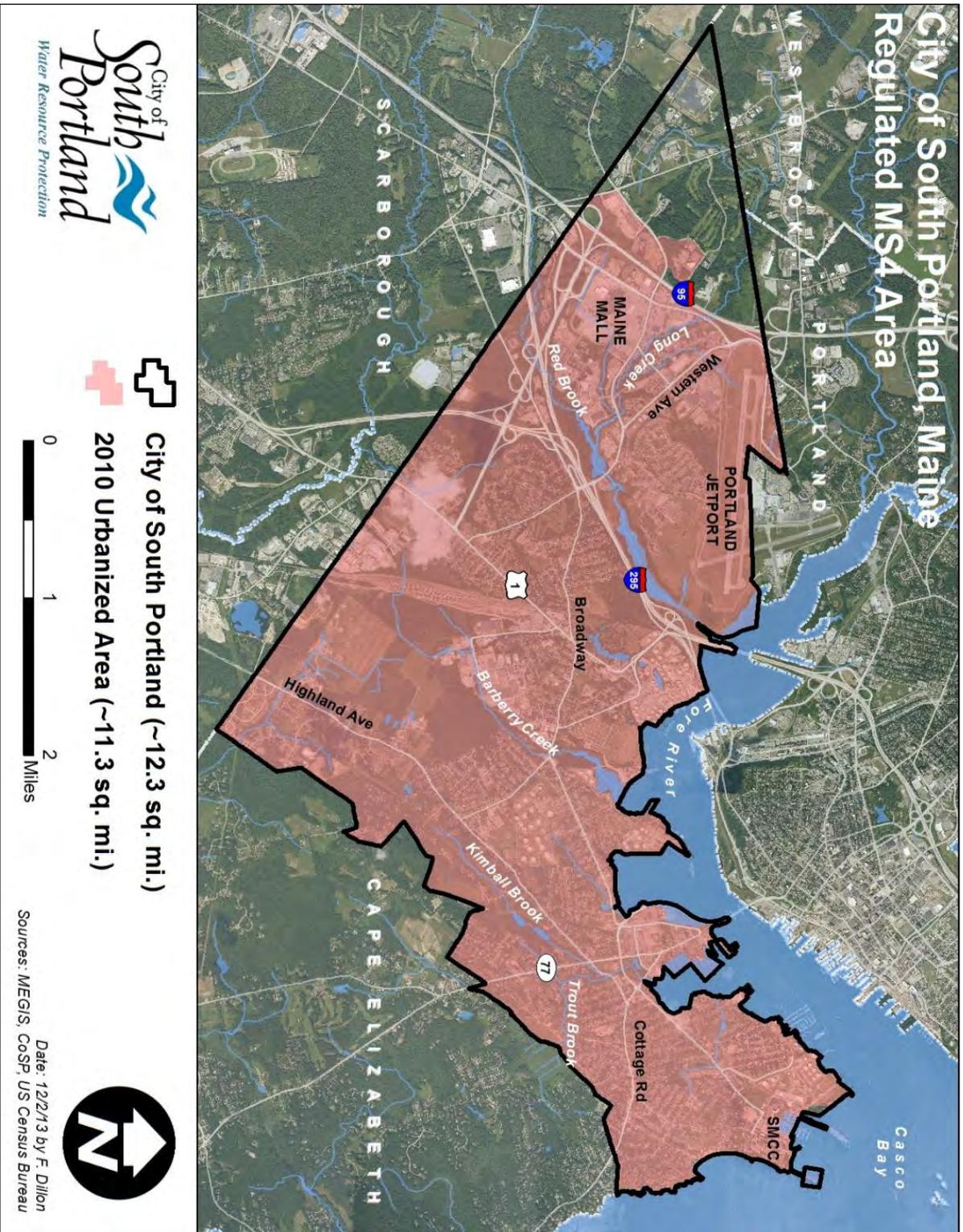


Stormwater Phase II Annual Report for Permit Year 2 (2014-15)



Submitted Electronically to MEDEP on 9/11/15



Cover Photo: stormwater system sampling to identify potential presence of human bacteria sources (June 2015)

Table of Contents

Introduction	1
Minimum Control Measure 1 – Public Education and Outreach	1
BMP 1.1 Continue Awareness Outreach Efforts from Previous MS4 Permit Cycle	2
BMP 1.2 Develop and Implement Stormwater Awareness Plan	3
BMP 1.3 Develop and Implement Permit Awareness Plan	4
BMP 1.4 Continue Targeted BMP Adoption Efforts from Previous MS4 Permit Cycle	5
BMP 1.5 Enhance Education & Outreach Effort	6
Minimum Control Measure 2 – Public Involvement and Participation	8
BMP 2.1 Comply with Public Notice Requirements	8
BMP 2.2 Host, Conduct or Participate in a Public Event	9
Minimum Control Measure 3 – Illicit Discharge Detection & Elimination	11
BMP 3.1 Continue to Keep Watershed-Based Storm Sewer System Infrastructure Map Current and Update Annually	11
BMP 3.2 Continue Implementation of Non-Stormwater Discharge Ordinance to Prohibit Unauthorized Discharges into Storm Sewer System	11
BMP 3.3 Continue Implementation of Prioritized Dry Weather Outfall Inspection Program	15
BMP 3.4 Continue Development & Implementation of Dry Weather Open Ditch Inspection Program	17
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	18
BMP 3.6 Continue Hosting Annual Household Hazardous Waste Collection Day	20
BMP 3.7 Continue Supporting the Friends of Casco Bay Mobile Vessel Pumpout Service	20
BMP 3.8 Continue Providing Confidential Public Complaint Hotline for Suspected Illicit Discharges	20
BMP 3.9 Continue Storm Drain Stenciling Program	21
Minimum Control Measure 4 – Construction Site Stormwater Runoff Control	22
BMP 4.1 Continue Notification to Construction Site Developers and Operators of Maine Construction General Permit or Chapter 500 Registration Requirements	22
BMP 4.2 Continue to Document Every Construction Activity that Disturbs One or More Acres within the Urbanized Area	24
BMP 4.3 Continue Implementation of Construction Site Inspection Program	24
BMP 4.4 – Continue Promotion of Certified Contractors in Erosion Control Practices	26
Minimum Control Measure 5 – Post-Construction Stormwater Management of Development and Redevelopment	28

BMP 5.1 Continue Implementation of Program to Address Stormwater Runoff from New Development and Redevelopment Projects _____	28
BMP 5.2 Continue Implementing Tracking Program for Post-Construction BMPs in Urbanized Area ___	28
BMP 5.3 Continue Implementing Procedures for Notifying Site Developers to Consider Incorporating Low Impact Development Techniques _____	32
Minimum Control Measure 6 – Pollution Prevention / Good Housekeeping for Municipal Operations _	33
BMP 6.1 Continue to Maintain Inventory of Municipal Properties, Facilities & Activities for Implementation of Operation & Maintenance Plans _____	33
BMP 6.2 Continue Implementation of Municipal Employee Training Program _____	35
BMP 6.3 Continue Implementation of Street Sweeping Program _____	37
BMP 6.4 Continue Cleaning of Stormwater Structures Including Catch Basins _____	37
BMP 6.5 Continue Maintenance and Upgrade of Stormwater Conveyances, Structures and Outfalls __	39
BMP 6.6 Continue Implementation of Stormwater Pollution Prevention Plans (SWPPPs) _____	40
APPENDICES _____	42
Appendix 1: ISWG Permit Year 2 Summary of MCMs 1 & 2 _____	43
Appendix 2: Household Hazardous Waste Day Questionnaire Results _____	59
Appendix 3: Maine Healthy Beaches Program 2014 Willard Beach Report _____	61
Appendix 4: Dry Weather Outfall Inspection Summaries _____	71
Appendix 5: Dry Weather Ditch Inspections for Long Creek Watershed _____	74
Appendix 6: ISWG O&M Procedures for Buildings and Grounds _____	75

ACKNOWLEDGEMENTS

This report was prepared collaboratively by the City of South Portland Water Resource Protection Department's (WRP) staff consisting of the following individuals:

- **Patrick Cloutier** ~ *Director of Water Resource Protection Department*
- **Dave Thomes** ~ *Collection Systems Manager*
- **Brad Weeks** ~ *City Engineer*
- **Paul Collins** ~ *Treatment Systems Manager*
- **Tom Wiley** ~ *Compliance Administrator*
- **Colleen Mitchell** ~ *WRP Office Manager*
- **Jeff Moulton** ~ *Sewer Maintenance Supervisor*
- **Fred Dillon** ~ *Stormwater Program Coordinator*
- **Gretchen Anderson** ~ *Stormwater Program Intern*
- **Tom Burns** ~ *City's GIS Consultant*

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

- **Linda Cohen, Claude Morgan, Patti Smith, Melissa Linscott, Brad Fox, Tom Blake & Maxine Beecher** ~ *South Portland City Council*
- **James Gailey & Sue Mooney** ~ *City Manager & City Clerk*
- **Tex Haeuser, Pat Doucette, Steve Puleo, & Dave Kasik** ~ *S. Portland Planning & Development Department*
- **Doug Howard, Mark Lorello, & Denise Michaud** ~ *South Portland Public Works Department*
- **Rick Towle, Sarah Neuts, Linky Erskine & Rick Perruzzi** ~ *South Portland Parks & Recreation Department*
- **Miles Haskell & Amy Berry** ~ *South Portland Public Safety Department*
- **Chris Dumais, Tom Carellas & Steven Levesque** ~ *South Portland Information Systems*
- **Tony Vigue & Maurice Amaral** ~ *South Portland Community Television*
- **David Critchfield, Nathan Marles & members of the South Portland Conservation Commission**
- **Curtis Bohlen, Matt Craig & Beverly Bayley-Smith** ~ *Casco Bay Estuary Partnership*
- **Chris Baldwin, Tamara Lee Pinard, Robyn Saunders, Jodie Wennemer Keene, Jami Fitch, Deb Debiegun, Kate McDonald & Jenna Martyn-Fisher** ~ *Cumberland County Soil and Water Conservation District*
- **Wendy Garland & Angela Brewer** ~ *Maine Department of Environmental Protection*
- **Sarah Plummer & Carina Brown** ~ *Portland Water District*
- **Meagan Sims & Keri Kaczor** ~ *Maine Healthy Beaches Program*
- **Tom Mikulka** ~ *Cape Elizabeth resident and retired High School Science Teacher*
- **Katherine Bock** ~ *Cape Elizabeth School Department*
- **Karen Wilson** ~ *University of Southern Maine Department of Environmental Science & Policy*
- **Dave Owen** ~ *University of Maine School of Law*
- **The many teachers & students who participated in the City's Stormwater Program Education & Outreach efforts**

Please direct questions about any aspect of this report to Fred Dillon (207-347-4138 / fdillon@southportland.org)

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 Interlocal Stormwater Working Group (ISWG), the Portland Water District, the Friends of Casco Bay (FOCB), the Casco Bay Estuary Partnership (CBEP), the Maine Healthy Beaches Program and the South Portland Conservation Commission (SPCC) - 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 second Permit Year (2014-15) in the third five year General Permit Cycle (2013-18).

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 Portland Water District, Maine Healthy Beaches Program, Friends of Casco Bay, South Portland & Cape Elizabeth Public Schools, and the University of Maine Law School to increase public awareness about stormwater pollution. WRP staff provided numerous presentations about the City’s water resource protection efforts to local schools (Figure 1), at professional conferences and workshops, and submitted articles for publication in the City’s biweekly electronic newsletter.



Figure 1: Stormwater Program Intern Gretchen Anderson describes the types of impacts from stormwater pollution to South Portland elementary school students (May 2015)

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

- **Measurable 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 [YardScape](#) links on its [website](#) and educational materials in municipal buildings to help promote public awareness of local and regional stormwater management concerns.

The City’s Stormwater Program Coordinator continued providing presentations on the sources and impacts of polluted stormwater to local school students from the elementary to the university level (Table 1). Additionally, staff from the City’s Stormwater Program continued partnering with the Portland Water District and Cumberland County Soil & Water Conservation District on a very popular and successful trout release activity at the Trout Brook Nature Preserve in South Portland (Figure 2).



Figure 2: project partners & students at the Trout Brook trout release (May 2015)

Table 1: school presentations & activities provided by City Stormwater Program staff during PY2014-15

Date	School	# Students (approx)	Contact	Subject	Comments
10/2/14	Cape Elizabeth High School	12	Kathy Bock	Senior AP Env Science	Class presentation & field work (kick netting)
11/13/14	Maine Law School	10	Dave Owen	Environmental Law	Panel on case studies of RDA
11/14/14	Aucocisco Elementary	12	Brenda Liliberte	Earth Science	Class presentation
3/24/15	USM Muskie School	10	Jack Kartez	Environmental Planning	Implications of SW regs on planning
5/6/15	Small Elementary	45	Sarah Plummer (PWD)	Earth Science	Trout release at TBNP
5/11/15	Cape Elizabeth High School	12	Kathy Bock	Senior AP Env Science	Field work only (kick netting)
5/26/15	Skillins Elementary	15	Margaret Swartz	Earth Science	Class presentation
5/27/15	Dyer Elementary	45	Sarah Plummer (PWD)	Earth Science	Trout release at TBNP
5/28/15	Skillins Elementary	45	Sarah Plummer (PWD)	Earth Science	Trout release at TBNP
6/8/15	Mahoney Middle School	30	Julie Pitt	Earth Science	Class presentation
	Total Students (approx.):	236			

In June of 2015, the City also began discussions with the Program Director for the [University of Maine's Stormwater Management Research Team \(SMART\)](#) and South Portland High School earth science faculty about incorporating elements of this exciting program into the City's ongoing urban impaired stream restoration efforts for the 2015-16 academic year. If successful, this partnership could prove to be very helpful to the City's ongoing efforts to minimize the adverse effects of polluted stormwater runoff.

Finally, the City's Stormwater Program Coordinator made numerous presentations at conferences throughout the state on what South Portland is doing to address the adverse effects of polluted stormwater runoff. These included:

- **3/31/15: Maine Sustainability & Water Conference** – *“It's All One Water: The MS4 Permit as a Driver for Integrating Local Water Resources Management” (with Zach Henderson)*
- **4/17/15: Maine Water Environment Association Spring Conference** – *“The Case for Collaboration: Creating a Framework for “One Water” Resource Protection & Restoration” (with Tamara Lee Pinard)*
- **4/30/15: E2Tech Current Events in Stormwater** – *“The MS4 Permit as a Driver for Integrating Local Water Resources Protection” (with Bill Taylor, Brad Moore and Tom Ballestero)*

BMP 1.2 Develop and Implement Stormwater Awareness Plan

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

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 Awareness Plan**.

MEASURABLE GOALS

- **Measureable Goal 1.1.1** – by February 1, 2014, develop new or revise existing **Stormwater Awareness Plan** to raise awareness of stormwater issues for target audience outside of municipal government. 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 1.1.2** – by December 1, 2013 submit draft **Stormwater Awareness Plan** to Maine DEP for review and approval; draft Plan will be considered approved by February 1, 2014 unless DEP indicates otherwise. **Stormwater 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 1.1.3** – provide review of **Stormwater 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 3: conduct cursory evaluation and assessment on both the progress of implementing the Plan and the impact on the target audience
 - Permit Year 5: provide in-depth assessment of both implementation and impact of Plan
 - **Measureable Goal 1.1.4** – include comprehensive review of **Stormwater 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 Awareness Plan** as described in [Appendix 1](#).

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 1.2.1** – 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 1.2.2** – 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 1.2.3** – 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 3: evaluate and assess both the progress of Plan implementation and impact efforts are having on target audience
 - Permit Year 5: provide in-depth assessment of both the implementation and impact of **Permit Awareness Plan**

ACTIONS COMPLETED DURING PERMIT YEAR

In addition to collaborating with ISWG to implement the **Permit Awareness Plan** as described in [Appendix 1](#), the City’s Stormwater Program Coordinator also provided presentations to the Planning Board and [City Council](#) (Figure 3) on MS4 permit compliance requirements and the potential consequences for noncompliance.



Figure 3: Stormwater Program Coordinator Fred Dillon provides MS4 permit presentation to City Council (5/4/15)

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 **BMP Adoption Plan**.

METHODOLOGY

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

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 **BMP Adoption Plan**.
- **Measureable Goal 1.4.2** – by November 1, 2013, submit draft **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 **BMP 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 **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 **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 1: assess target audience to set baseline and inform development of **BMP Adoption Plan**
 - Permit Year 3: conduct preliminary evaluation and assessment of Plan implementation progress and impact efforts are having on target audience
 - 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 **BMP Adoption Plan** as described in [Appendix 1](#).

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 **Education & Outreach Plan** as described in [Appendix 1](#). Additionally, the Water Resource Protection and Parks & Recreation Departments teamed up to create 6 pet waste management signs for Hinckley Park, a popular destination for dog owners who often fail to pick up after their canines. For PY2015-16 the WRP, Parks and Sustainability departments are planning to collaborate on developing a pet waste management outreach program.



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 (a quasi-municipal entity), 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.

Finally, the City also hosts annual public events that provide the opportunity for local residents to participate in South Portland’s Stormwater Management Program. The long-standing Household Hazardous Waste Collection event has been very popular and successful at preventing potential pollutants from entering local water resources. Likewise, the City’s collaboration with civic groups, state agencies (Maine Healthy Beaches Program) and local businesses for the “April Stools” Day has gained momentum since the inaugural event in 2014 (Figure 4).



Figure 4: Meagan Sims (left) with the Maine Healthy Beaches Program helps with the 2015 April Stools 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

- **Measurable 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 Restoration project](#) websites.
- **Measurable 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 has afforded 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 development 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

October 11, 2014 – Household Hazardous Waste Collection Day

The City continued to provide the popular annual Household Hazardous Waste Collection Day for South Portland residents and businesses (Figure 5). As with the previous year, the event was held at the Public Works Department’s O’Neil Street location and was very well-attended with approximately 175 individual participants. The types of wastes collected included petroleum products, paints, solvents, pesticides, batteries, fluorescent lights, among other materials. The City also continued to administer a participant questionnaire. The results from the questionnaire indicated that a considerable number of respondents were familiar with the City’s stormwater management efforts, YardScaping and Think Blue Maine ([Appendix 2](#)).



Figure 5: flyer for annual Household Hazardous Waste Day

April 25, 2015 – April Stools Day

The City hosted the second April Stools Day event in partnership with the Maine Healthy Beaches Program, the Friends of the Eastern Promenade (a Portland-based neighborhood group), PetLife, SoPo Dogs (a local dog-owner’s group) and the South Portland Land Trust (Figure 6). Staff and volunteers were on hand from 9AM – noon at Hinckley Park, Mill Creek Park, Bug Light Park and Willard Beach – some of the most popular destinations for dog owners from South Portland and beyond. PetLife employees provided free “doggie” bags to over 95 dog owners and reminded them why picking up after their dogs is so important and how improper pet waste management can adversely affect local water quality.



Figure 6: a canine participant in the City’s 2nd annual April Stools Day event

April 25, 2015 – Urban Runoff & Green Neighbor Family Fest

The City continued its involvement with ISWG’s 4th annual Urban Runoff & Green Neighbor Family Fest ([Appendix 1](#)). City staff assisted with event clean up and the City donated \$500 to the effort. This event has proven to be highly successful at increasing public awareness of polluted stormwater runoff impacts.

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 map layers of the publicly owned stormwater system and likely has one of the most complete and comprehensive spatial data sets for municipal stormwater infrastructure in the State. Moreover, efforts to improve this data set are ongoing continuously. The City's GIS consultant completed updates to the storm system geodatabase on 7/27/15 and added new stormwater BMPs installed as part of three recently completed infrastructure improvement projects (Thornton Heights Stormwater Separation Phase I, Gorham Road Median Stormwater System Improvements and Maine Mall Road Stormwater System Improvements).

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.
- **Measurable 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 20 incident reports of potential illicit discharges and followed up on several of these, often in cooperation with Maine DEP staff (Table 2 on next page). Reports and/or photos are available for all of these incidents.

The City also continued working with the Maine Healthy Beaches (MHB) Program on bacteria source tracking investigations in the Willard Beach watershed. Paired optical brightener and bacteria samples were collected at several strategic locations during the 2014 summer swim beach season to isolate potentially problematic subcatchment areas throughout the watershed. WRP staff provided assistance for MHB’s 2014 report which included a statistical analysis of data from 2012-14 ([Appendix 3](#)). While the results generally indicated non-point pollution sources as the most likely contributors to elevated bacteria levels in the Willard Beach storm sewer system, a new sampling location (CB 1559) added in 2014 yielded exceptionally high bacteria and optical brightener concentrations. Consequently, WRP staff conducted follow up dye testing for the sanitary and storm sewer systems in the fall of 2014 and identified and removed an inadvertent cross-connection (see [Appendix 3](#) for more details).

Water Resource Protection Department staff also helped coordinate a meeting and subsequent communications between Maine DEP, Portland Water District (PWD), and representatives from ISWG communities to develop hydrant flushing policies in the PWD’s service area. As part of this process, WRP staff developed the meeting agenda and created a detailed graphic to illustrate a hypothetical hydrant flushing discharge scenario based on actual PWD total residual chlorine field measurements (Figure 7). A detailed GIS analysis and accompanying data layer of all the PWD

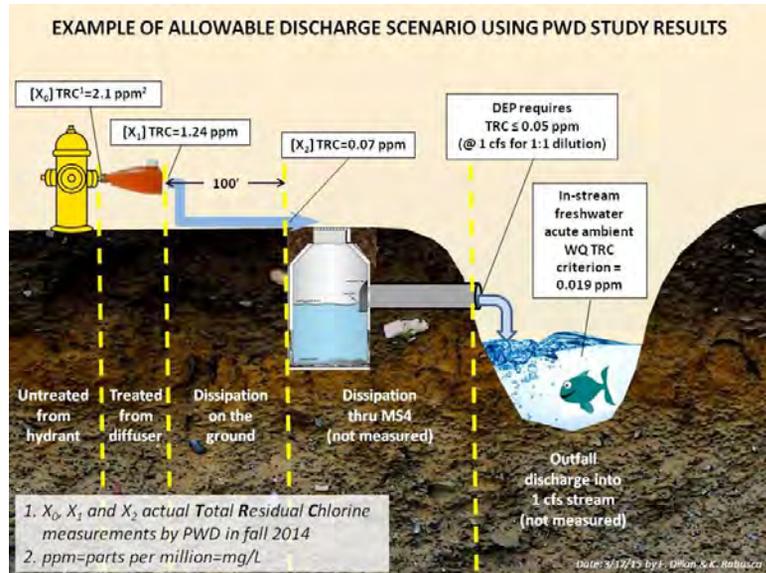


Figure 7: hypothetical hydrant flushing scenario based on actual PWD total residual chlorine measurements

hydrants located in South Portland was also developed on a watershed basis (Figure 8). To assist in prioritizing potential impacts from hydrant flushing on local water resources, the GIS attribute data includes buffer distances of 25, 50, 100, 200, 300, 400, 500, and 1,000 feet from all significant surface water resources (e.g., perennial streams, ponds, coastal waters and NWI wetlands) to PWD hydrants.

Table 2: spills or IDDE incidents reported for PY2014-15

Report Date	Incident Location	Description	Did non-SW discharge enter MS4 or WOTUS?	Findings / Follow-up
7/9/2014	Thomas Knight Park	Hydraulic hose rupture from City mower onto pavement and lawn	No	Site visit & confirmed cleanup from paved areas with absorbent material; contacted DEP.
8/1/2014	Calvary Pond	Paint dumped into pond	Yes	Site visit following DEP visit; couldn't determine source of spill which entered pond either by direct dumping or private SW system
8/14/2014	Home Depot	Sewer line break	Yes	Heavy rain on 8/13 resulted in private culvert / sewer line washout; repaired within 36 hours; contacted DEP
9/18/2014	37 Romano Rd	Anonymous report of pool discharge to storm drain	Yes	Site visit & confirmed discharge into MS4; contacted resident who claimed pool had been unused for previous 3 weeks and therefore had no residual chlorine. Informed resident to discharge to sewer for subsequent pool maintenance.
9/20/2014	19 Deake St	Anonymous report of soap suds	Undetermined	Site visit 5 hrs after report received; no evidence of any kind of discharge.
9/29/2014	21 Nelson Rd - Comm. Ctr.	Oil leak from mowing equipment onto paved surface	No	Very small amount of oil promptly cleaned after spill; contacted DEP
10/3/2014	42 O'Neil St - DPW	Diesel fuel spill onto paved area while fueling school bus	No	Spill promptly cleaned up after spill; phoned DEP on 10/3 and sent report on 10/7/14
10/3/2014	61 Cottage St - Mill Crk Park	Draining park pond for maintenance	No	Contacted DEP (Dave Ladd) for OK to empty pond; grabbed sample from pond discharge and tested for settleable solids; emailed DEP results on 10/3/14
10/12/2014	Mallside Plaza	Private pump station failure resulted in sewage surcharge from private MH into Long Creek via private SW system	Yes	Multiple site visits & follow up with property manager & DEP. Confirmation of pump station repair received from property manager on 11/25/14.
10/23/2014	S. Portland WWTP	Sludge holding tank overflow into Fore River via MS4 system.	Yes	Site visit to document incident & follow up with DEP to establish remedial actions. Installed redundant high level alarm to ensure staff notification.
11/12/2014	Mildred St Stormwater Pond	Yard waste dumping adjacent to SW pond	No	Site visit to document yard waste dumping (which wasn't entirely evident given heavy leaf drop).
12/1/2014	Alton Street	Partially covered wood waste pile	No	Site visit to document incident; wood waste pile covered during inspection.
12/2/2014	Huntress St	Uncovered soil stockpiles	No	Site visit to document incident; multiple piles uncovered though no direct evidence of non-SW discharge from site
12/17/2014	Ridgeland Gardens	Sediment-laden runoff from active construction site into Calvary Pond via MS4	Yes	Site visit to document incident & follow up ESC inspection by City Engineering Inspector w/ 7 day deadline to address BMP deficiencies
12/18/2014	Meadow Lane	Heating oil spill onto paved surface	No	Site visit to confirm that heating oil company staff promptly cleaned spilled oil; notified DEP & sent report
12/18/2014	1142 Highland Ave (Coll. Sys. Div. Maint. Facilities)	Hydraulic fluid spill onto paved surface	No	Site visit to document incident; City staff promptly cleaned spill; notified DEP & sent report
12/23/2014	1 Clark St	#4 oil spill onto paved surface	No	Site visit to document incident; Clean Harbors promptly cleaned spill; staff from DEP, USCG, SPFD & WRP also present. Sent report to DEP
3/12/2015	Community Center - 21 Nelson Rd	Hydraulic line fitting failure resulted in oil spill onto parking lot during snow removal	No	Parks Dept staff promptly cleaned spill with absorbent material. Contacted Ann Hemenway / DEP on 3/16/15 and sent accompanying report.
3/26/2015	Carlisle Place	Sewer surcharge adjacent to privately owned stormwater system	No	Site visit to document incident; contractor on site to address sewer obstruction
5/6/2015	Mill Creek Park	Hydraulic oil spill on lawn area	No	Site visit to document incident; City staff promptly cleaned spill by "scalping" grass; notified DEP & sent report
5/21/2015	Mallside Plaza	Grease and trash dumping	Yes	Opportunistic inspection identified issues; contacted owner & DEP upon discovery and followed up with compliance proceedings
6/17/2015	Billy Vachon Drive	Rock salt spill from Hissong container trucks	No	Site visit to confirm incident (even though nearby SW system owned by MDOT); contacted owner / operator and informed him of noncompliance with City's ordinance; spilled material was promptly removed from roadway
6/19/2015	Stormwater outfall MC4 discharge	Unidentified milky discharge from outfall into Mill Creek tributary	Yes	Opportunistic inspection identified issue; conducted SW system inspection on day of discovery but unable to identify source; subsequent detergent and chlorine testing of outfall discharge yielded negative results.

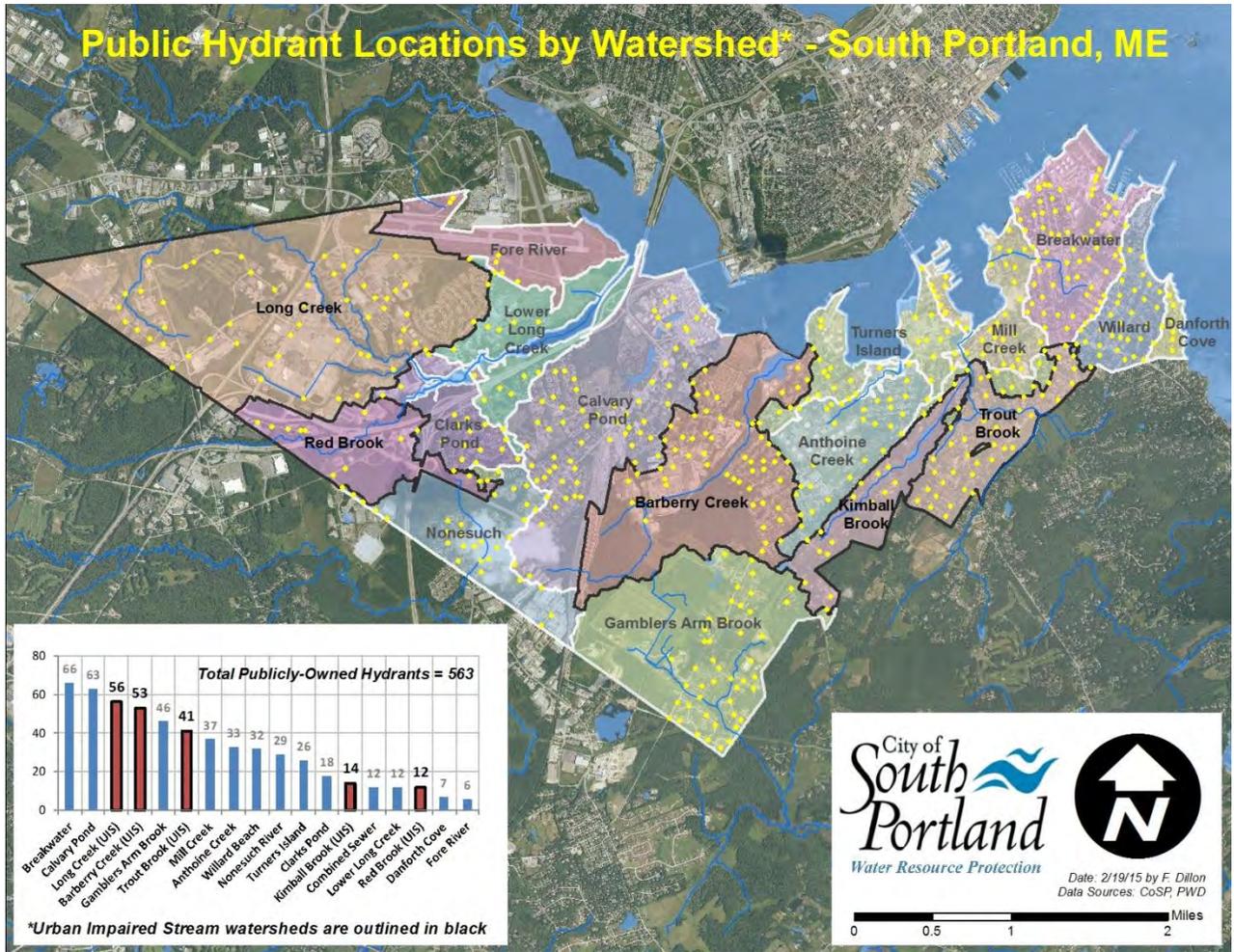


Figure 8: watershed-based map of all PWD hydrants in City of South Portland; GIS data layer attribute table includes range of buffer distances to assist in prioritizing potential impacts from flushing activities on local water resources.

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 were completed in the Long Creek and Trout Brook watersheds during late December 2014 and early January 2015 when temperatures remained well below freezing for an extended period. The summary of inspections is included in [Appendix 4](#). While there were a number of potential maintenance issues identified, no occurrences of illicit discharges were detected. Outfall inspection data was once again collected using the cloud-based application [Fulcrum](#), which allows users to create customized forms for data collection using smart phones or tablets and include photos with each inspection.

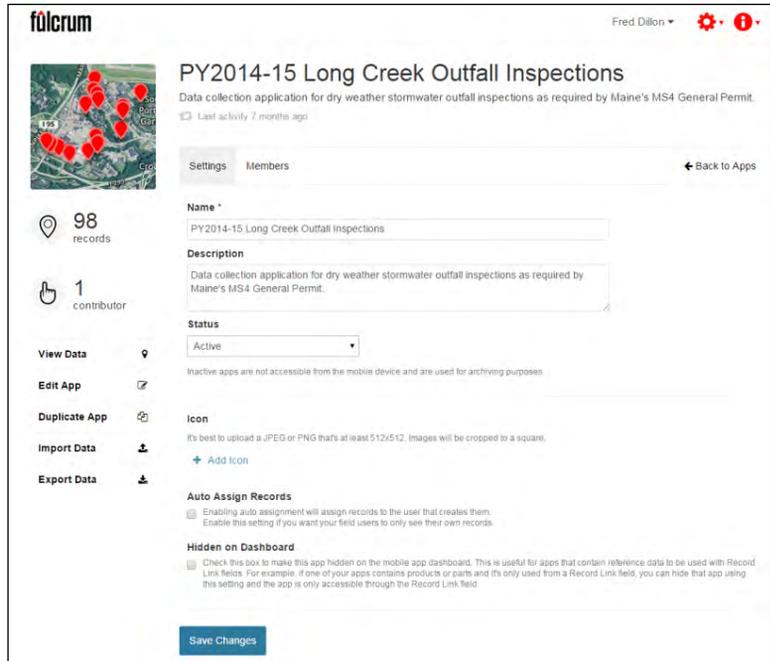


Figure 9: screen shot of cloud-based Fulcrum application used for dry weather outfall inspections

Inspection data is accessed through Fulcrum’s website where it can be viewed, edited and exported in csv, shapefile and Google Earth formats. Within the next year, data collection for the outfall inspection program will likely be migrated to [ArcGIS Online](#), which is also cloud-based and integrates seamlessly with ArcMap, the City’s long-term GIS platform.

Subwatersheds for Barberry Creek (the City’s second-highest priority urban impaired stream) were

delineated several years ago primarily by using an ArcGIS spatial modeling module with on-screen corrections to account for the stormwater and combined sewer systems. In the summer of 2015, DEP staff completed detailed on-the-ground subcatchment delineations for each stormwater outfall. The City will incorporate these enhancements into our GIS data library once DEP has finalized their data set.

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 2015, WRP staff inspected and photographed all of the open ditches in the Long Creek watershed (Figure 10). The summary of inspections is included in [Appendix 5](#). The data collection system will also likely be migrated from Fulcrum to ArcGIS Online in the next year. There were no overt signs of illicit discharges observed at the time of inspections. The Trout Brook watershed has no open ditches in the public right-of-way and consequently no inspections were completed there.

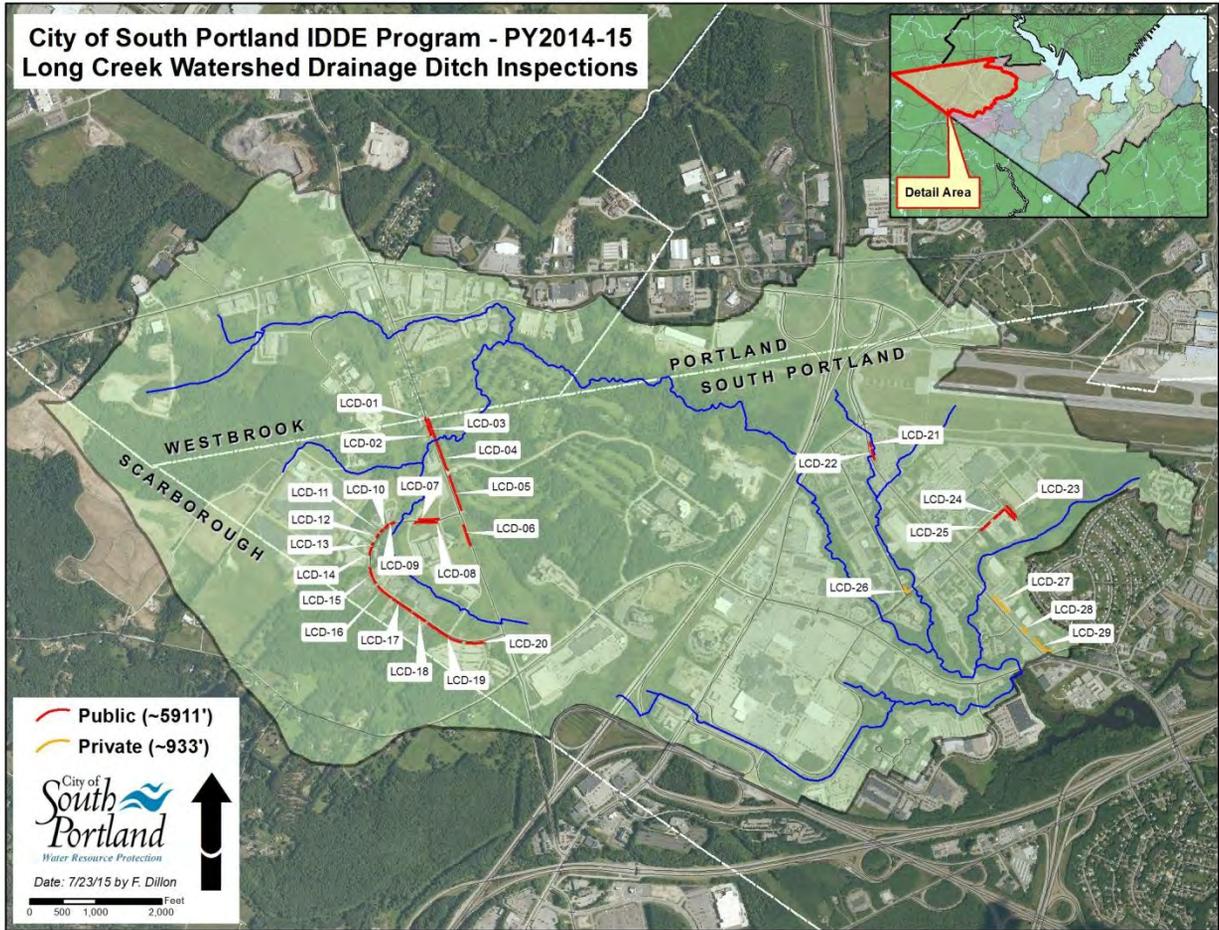


Figure 10: dry weather ditch inspection locations for the Long Creek watershed

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

- **Measurable 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

Although no actions were required for Permit Year 2, we further refined our GIS data layer of properties on septic systems to identify the locations of these parcels for the entire City (and not just the Long Creek and Trout Brook watersheds as specified in the MS4 General Permit and our Stormwater Program Management Plan). We used the following methodology to develop the most definitive list to date of parcels in the City on private septic systems:

- Thorough review of Portland Water District billing records to identify properties that receive only water bills and not sewer bills (the PWD provides sewer billing services for the City)
- Exhaustive review of City files for each “water bill only” parcel to verify accuracy of list
- Digital photos of available plan sets or documents identifying septic system locations and specifying any additional relevant information
- Creation of updated ArcMap data layer for all parcels on private septic systems
- Establish links in ArcMap data layer attribute table to image files for available plan sets and related documents that enables users to directly access site-specific information on septic systems

We were unable to confirm the existence of private septic systems for several parcels. We will send follow up letters to the owners of these properties requesting additional information and perhaps even conduct dye tests for final and definitive confirmation.

WRP staff also initiated communications on behalf of ISWG (and other Maine MS4 clusters) for guidance from DEP on the development of “drive-by” septic system evaluations, which permittees must have in place by Permit Year 4 (2016-17).

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

The City held another annual Household Hazardous Waste Collection Day on October 11, 2014. Please refer to summary of activities for BMP 2.2 and [Appendix 2](#) for more details.

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 \$5,000 to the [Friends of Casco Bay’s Boat Pumpout Program](#) for PY2014-15.

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. Two complaints were filed through the online reporting system during the permit year but both were mistakenly submitted from residents of Portland, Oregon. As summarized in Table 3 above, when illicit discharge incidents are reported by any means, follow up inspections are 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 Dig Safe utility location program. We receive over 1,500 Dig Safe requests each year and staff reapplies paint the “No Dumping Drains to Casco Bay” stencils. The City also partnered 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 construction activities from single family residential house lots to large commercial projects disturbing an acre or more of 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 BMP Manual (which refers directly to the Maine’s Erosion and Sediment Control Law, the Natural Resources Protection Act, the Maine Construction General Permit 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 (Figure 11). 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 the site-specific erosion and sediment control plan.

I certify that I have received and reviewed the following information from the City of South Portland, including:

- (1) Erosion and Sedimentation control standards for site plan and subdivision review;
- (2) The link to the Maine Erosion and Sediment Control BMP Manual at www.maine.gov/dep/land/erosion/escbmpps;
- (3) The DEP Fact Sheet on *Vernal Pools: A Significant Wildlife Habitat*; and
- (4) Statement on the values of wetlands and the effects of filling, and general description of erosion and sedimentation control options deemed acceptable by the Planning Board.

Signature (use of blue ink for signature is required) Date: _____

Print name of signer

I certify that I have received and read the packet of Erosion and Sedimentation control standards for site plan and subdivision review information from the City of South Portland, reviewed relevant sections of the Maine Erosion and Sediment Control BMP Manual applicable to the proposed project, and have attended a Pre-construction conference with the Department of Planning and Development.

Signature (use of blue ink for signature is required) Date: _____

Print name of signer

Figure 11: Planning Board Regulation #2 certification statements required for owner/developers (top) and excavation contractors (bottom)

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. Additionally, 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.

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. (We also documented inspections for projects ranging from single family residential house lots to those just under the 1 acre threshold). 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. The City's 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 were then electronically filed in a shared network folder accessible to all City staff responsible for ensuring compliance with the City's Stormwater Permit.

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 Water Resource Protection and Planning & Development Departments continued to share construction project oversight responsibilities. As described above, third party inspectors appointed by the City (or LCWMD) conducted inspections on a monthly basis and submitted the reports electronically for review by the Engineering Inspector and Stormwater Program Coordinator. Individual inspection reports for each construction project were compiled as separate Excel worksheets in a [single Excel workbook](#). Each inspection report is linked to a summary worksheet that identifies the number of ESC BMPs needing ongoing maintenance, the number of BMPs failing to provide adequate ESC protection, the expected and actual completion dates for remediation and any enforcement actions needed to ensure compliance. For PY2014-15, 80 individual inspection reports were completed by third parties and the City’s Engineering Inspector for 16 separate construction projects disturbing an acre or more of area (Figure 12). Projects with fewer than 2 or 3 inspections were either completed shortly after the beginning of PY2014-15 or started

just before the end of PY2014-15. In both cases, these projects were inspected on multiple occasions during the previous permit year (2013-14) or during the current permit year (2015-16).

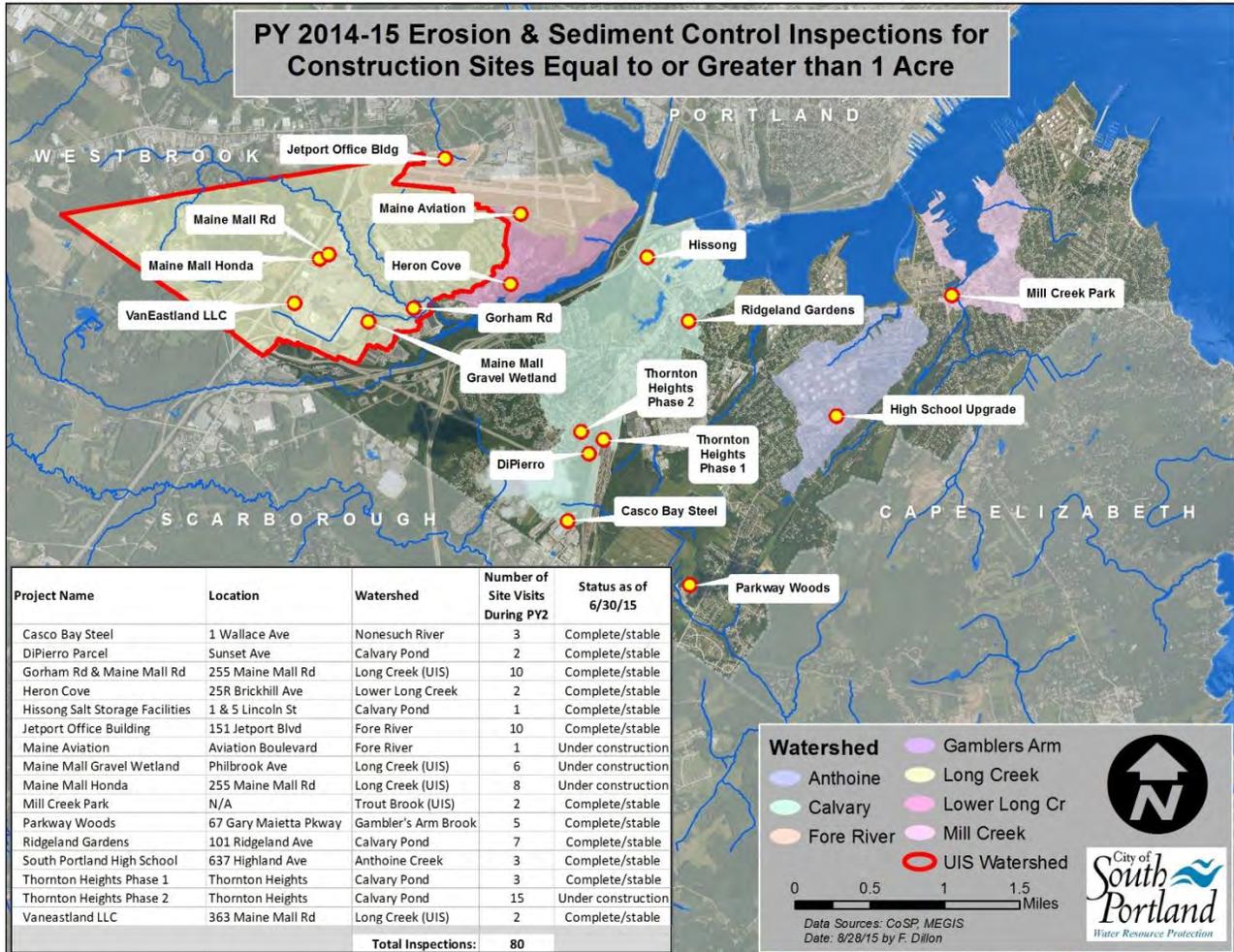


Figure 12: PY2014-15 erosion and sediment control (ESC) inspections for sites greater than 1 acre

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 materials (Maine Erosion and Sedimentation Control Law) to contractors as part of the project proposal and site plan review process. The City also provided an [electronic version of our Erosion & Sediment Control Inspection form](#) to ISWG for use by other member communities (Figure 13). Finally, the City created an [Erosion & Sediment Control for Construction Projects webpage](#) with information for the general public, owner/developers and contractors.

GENERAL INSPECTION DETAILS			COMPLIANCE STATUS					ENFORCEMENT STATUS								
Inspection Date	Weather / temp	Date / in. last precip	No. BMPs needing maint.	No. fails identified	Remedial actions needed?	Expected completion date	Actual completion date	Contractor / Owner Call Date	Deficiencies Adequately Addressed?	Contractor / Owner NOV Date	Deficiencies Adequately Addressed?	Enforcement Action Date	Enforcement Action Type	Deficiencies Adequately Addressed?	DEP Contact Date	Deficiencies Adequately Addressed?
7/7/14	Sunny / 62F	7/2-7/4/14: 2.96"	2	0												
7/15/14	Cldy-showers / 78F	7/14-7/15/14: 0.67"	2	0												
7/29/14	Sunny / 71F	7/27-28/14: 0.65"	1	0												
8/12/14	Foggy / 70F	7/27-28/14: 0.65"	0	0												
8/18/14	Sunny / 74F	8/13/14: 6.43"	2	0												
8/27/14	Sunny / 68F	8/17/14: 0.02"	0	0												
9/16/14	lt rain / 58F	9/13/14: 0.09"	0	0												
10/7/14	Cloudy / 58F	10/4/14: 0.31"	0	0												
10/17/14	Sunny / 52	10-16-14/1.80"	0	0												
11/21/14	Sunny/low 40's	11-17-14/0.87"	0	0												
13			0	0												
14			0	0												
15			0	0												
16			0	0												
17			0	0												
18			0	0												
19			0	0												
20			0	0												
21			0	0												
22			0	0												
23			0	0												
24			0	0												
25			0	0												
26			0	0												
27			0	0												

Figure 13: screen shot of inspection summary worksheet for Jetport Office Building PY2014-15 ESC reports. Yellow shaded cells indicate BMPs in need of ongoing maintenance (BMP failures would have shown up as red shaded cells).

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.

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 and ensure the submittal of certified 3rd party inspection reports for all qualifying properties. 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.). As of 6/30/15, the properties or projects requiring stormwater BMP inspections was as follows (Figure 14):

- **21 privately owned properties / projects** (some of which are under construction or in the planning phase)
- **10 properties / projects managed by the Long Creek Watershed Management District** (some under construction or in the planning phase)
- **7 City-owned properties / projects** (some under construction or in the planning phase)

The City sent notification letters to all qualifying property owners not participating in the Long Creek General Permit as well as City-certified third party inspectors informing them of the annual

post-construction BMP inspection requirements specified in the MS4 permit and City’s ordinance. By late August 2014, inspection reports for all but three qualifying properties had been submitted to the City (Table 4). All of the reports were completed by City-certified 3rd party inspectors and all of the systems inspected were functioning properly with mostly minor maintenance actions in a few cases. The City has been and will continue to follow up with the owner/operators of the three stormwater BMPs that have not yet been inspected to ensure that these systems are being properly maintained and function as intended.

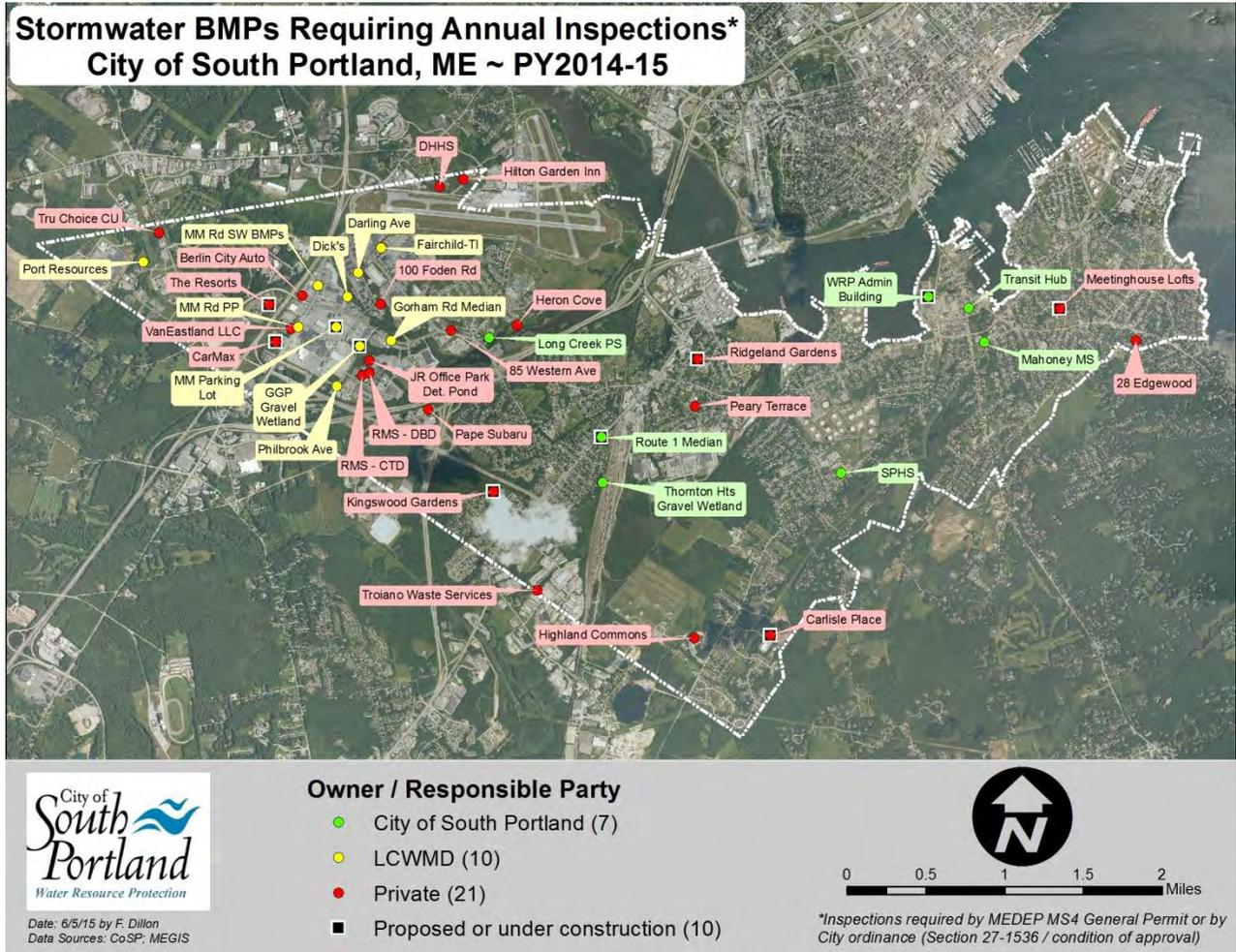


Figure 14: locations of qualifying post-construction structural stormwater BMPs in South Portland for PY2014-15

Table 3: PY2014-15 properties requiring post-construction 3rd party inspections for stormwater treatment BMPs

INSPECTIONS	3PI Report Received	Follow-up Needed?	Comments
Private			
100 Foden Road	Y	N	Filterra will be cleaned & woody veg removed fall 2015; systems functioning as intended
Highland Commons	Y	N	1st year for 3PI requirement; some sediment from construction activities on adjacent property; otherwise StormTreat systems functioning as intended
Hilton Garden Inn	N	Y	Manager unresponsive to inspection requirement notice; will follow up with legal as needed
John Roberts Rd Office Park	N	Y	Prelim inspection identified needed maint; final report will be provided upon completion in fall 2015
Osprey Circle	Y	N	1st year for 3PI (doesn't drain to MS4); systems functioning as intended.
Pape Subaru	Y	N	System fully operational; Vortech units & CBs cleaned last summer
Peary Terrace	Y	N	All infiltration systems fully operational and in good condition
RMS 28 Chris Toppi Drive	Y	N	Tree filter system well maintained and fully operational; roof line drip edge functioning as designed
RMS 30 Donald Dean Drive	Y	N	1st year for 3PI requirement; pervious pavement & roof line drip edge clean and well maintained
Troiano Waste Services	Y	N	All CBs OK but will be cleaned in fall 2015 along with det. pond sediment forebay; stone added to ditch to prevent erosion
Tru Choice Credit Union	Y	N	Riprap relaced where filter fabric exposed; CBs cleaned summer 2015
VanEastland LLC	Y	N	All CBs cleaned summer 2015; invasive veg removal for StormTreat units; all systems fully operational
Western Ave Crossing	Y	N	Riprap relaced where filter fabric exposed and repaired areas of bare soil; minimal sediment in CBs
City of South Portland			
City Hall / Transit Hub	Y	N	CBs clean; biocell sediment forebay may need cleaning before next year
Long Creek PS	Y	N	CBs fairly clean; bioretention system properly functioning; porous pavers look good; porous asphalt may need attention by next year
Mahoney Middle School	Y	Y	Underdrained grass filter needs reseeding; will be done in fall 2015
South Portland High School	N	Y	Inspection scheduled for Sept. 2015
Sunset Ave Gravel Wetland	Y	N	1st year for 3PI requirement; new system functioning as intended though areas on sidewalls needed reseeding
LCWMD			
Darling Ave	N	-	LCWMD will provide reports when completed by their contractor(s).
Dick's Sporting Goods	N	-	" "
Fairchilds-Texas Instruments	N	-	" "
Gorham Rd Median	N	-	" "
Maine Mall Rd Porous Asphalt	N	-	" "
Maine Mall Rd SW BMPs	N	-	" "
Philbrook Ave	N	-	" "
Port Resources	N	-	" "

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 most recent South Portland cadastral records (November 2013) identified 205 parcels that are owned by the City (Figure 15). Various municipal departments are responsible for maintaining these properties in accordance with the recently updated Operations & Maintenance Plans developed by the Interlocal Stormwater Working Group ([Appendix 6](#)).

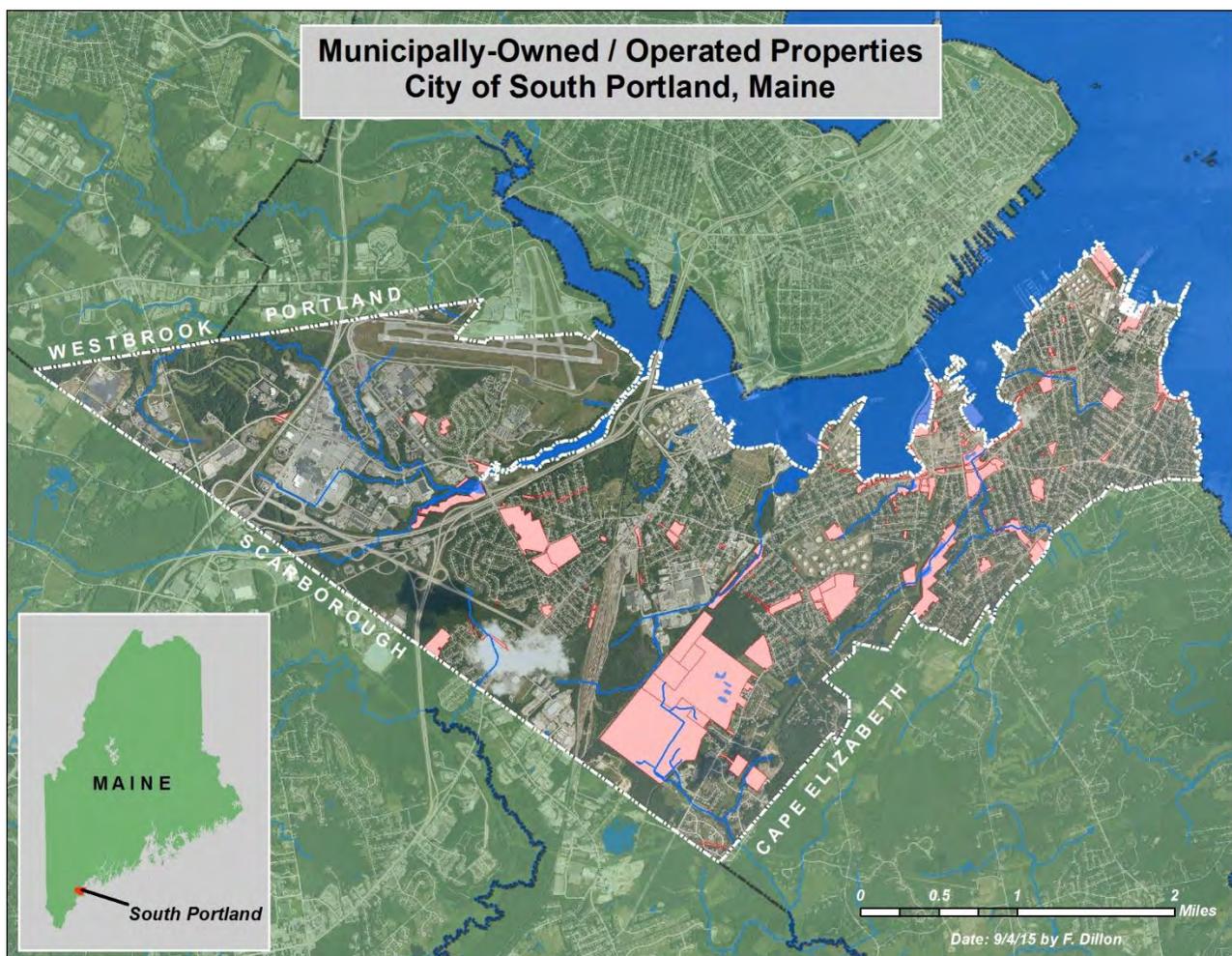


Figure 15: properties owned and operated by the City and subject to O&M plans to minimize / prevent polluted stormwater runoff

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 participated in or provided a number of good housekeeping / pollution prevention training events in PY2014-15. On May 14, 2015, the City partnered with Maine DEP and the Interlocal Stormwater Working Group (ISWG) to provide Stormwater Pollution Prevention Plan (SWPPP) training to 94 staff members from MS4 communities throughout the greater Portland area including 30 South Portland employees from various municipal departments (Figure 16). For the past several years, the City of South Portland has hosted this



annual event at our Community Center. The City’s Stormwater Program Coordinator also held a number of “tailgate” training sessions to review the City’s updated O&M procedures ([Appendix 6](#)) with staff from the Parks & Recreation, municipal golf course and Wainwright Field Athletic Complex (Table 4). In addition to the City’s commitment to partner with MEDEP and ISWG for ongoing annual SWPPP training, we will also continue providing additional O&M Plan training directly to various municipal departments to ensure that relevant staff understand how they are the first line of defense in preventing polluted stormwater runoff.

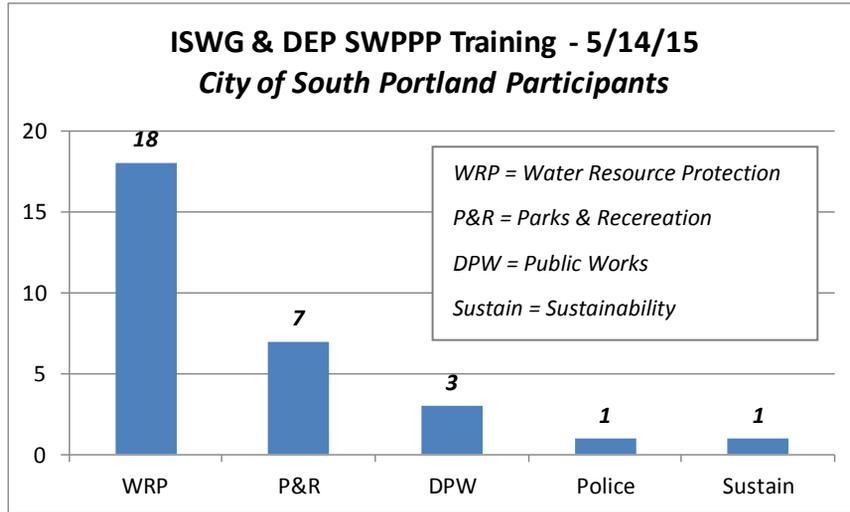
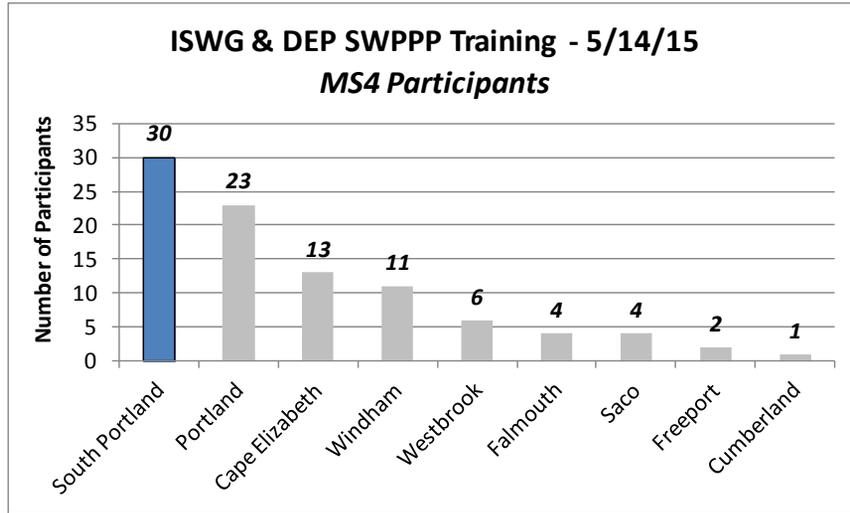


Figure 16: 5/14/15 MEDEP & Interlocal Stormwater Working Group SWPPP training event participants

Table 4: “Tailgate” O&M Plan training sessions for South Portland municipal staff

O&M Plan Training Date	Municipal Department	Number of Attendees
5/18/15	Parks & Recreation	9
5/19/15	Wainwright Field	3
6/30/15	Municipal Golf Course	4

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 along with a more intensive sweeping regimen for the Long Creek watershed in support of restoration efforts there. Long Creek was swept twice during the permit year – once shortly after final leaf drop in the fall of 2014 and once shortly after final snow melt in the late winter / early spring of 2015.

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

In March of 2015, the City migrated from an ArcPad-based catch basin cleaning application to an [ArcGIS Online](#) (AGOL)-based application using iPads for data entry (Figure 17). The ArcPad application had been used successfully for several years but could only provide cleaning status / completion rate data on an intermittent basis. In contrast, the AGOL application provides real-time data that allows field crews and managers to track catch basin cleaning status on a continuous basis. As a result, by the end of PY2014-15 (6/30/15) well over 50% of the City's ~2,800 municipally-owned catch basins had been cleaned (not including the basins cleaned in the fall of 2014). By 9/1/15 the catch basin cleaning completion rate was ~95% and we expect all the basins to be cleaned by the end of September 2015. The AGOL application has greatly aided our goal to efficiently clean all accessible municipally-owned catch basins on an annual basis.

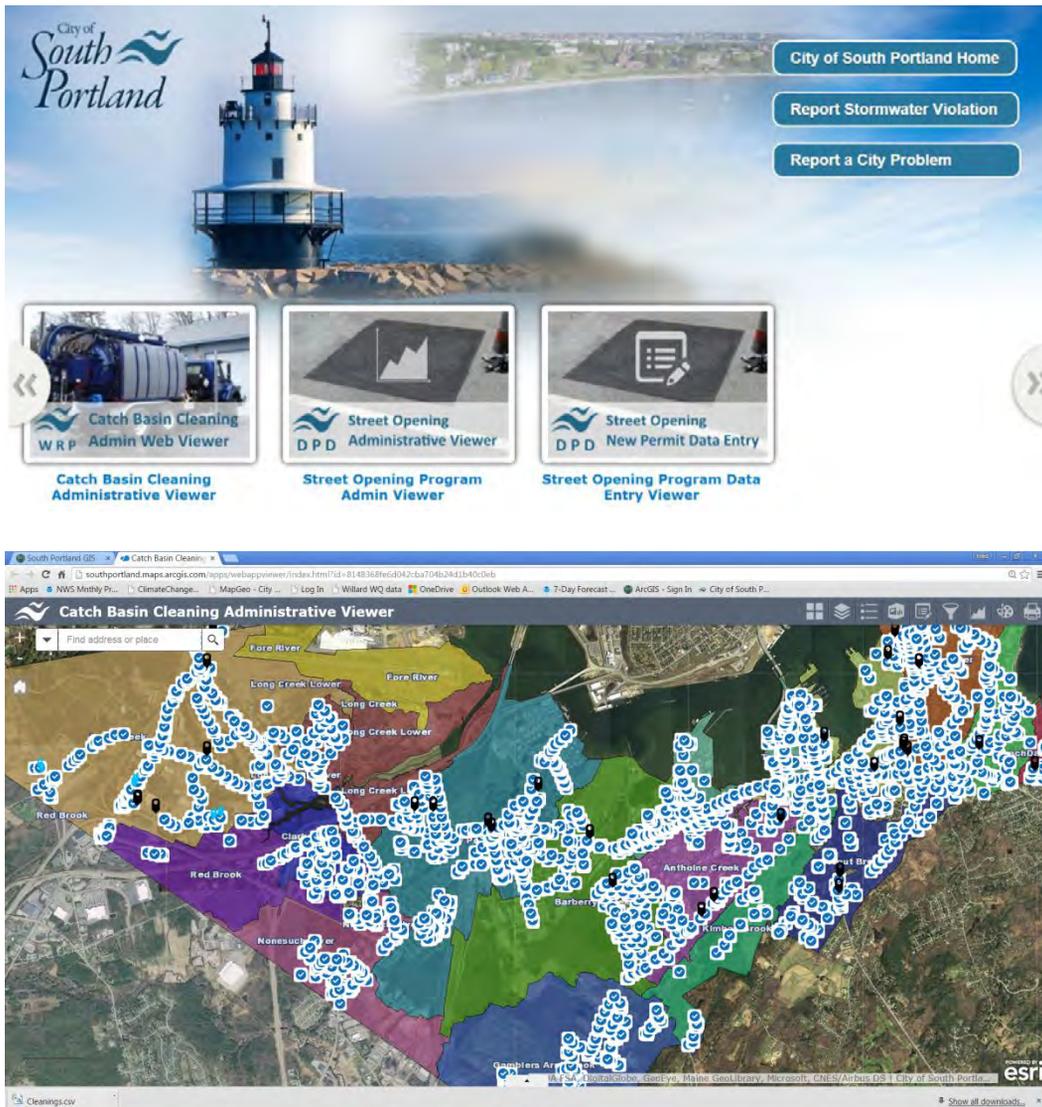


Figure 16: screen shots of City's ArcGIS Online catch basin cleaning application

For PY2014-15, approximately 223 tons of material was removed and disposed of at Commercial Recycling in Scarborough (by 9/1/15 the total tonnage was 341). The total operational cost to complete this work through the end of PY2014-15 was nearly \$21,000 while for the 2015 calendar year through 9/1/15 it was just under \$32,500 (Table 5).

Table 5: summary of catch basin cleaning costs by permit and calendar years

	Grit Tons	Disposal Cost (\$49/ton)	Labor Hrs	Labor Cost (\$25/hr)	Fuel (gal)	Fuel Cost (\$2.50/gal)	Totals
6/30/15	223	\$10,927	340	\$8,500	578	\$1,445	\$20,872
9/1/15	341	\$16,709	539	\$13,475	917	\$2,293	\$32,477

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

The City continued its ongoing inspection and maintenance program for stormwater conveyances and completed 84 construction projects for PY2014-15. 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. Excluding equipment replacement and maintenance costs, the City spent just under \$50,000 – or approximately 20% of the total construction program budget (\$231,781) – on a variety of stormwater system repair and replacement projects for the 2014-15 permit year. As part of the City’s Combined Sewer Overflow (CSO) reduction plan, we also completed a number of small stormwater separation projects amounting to \$56,000, or 24% of total construction project expenditures (Figure 17).

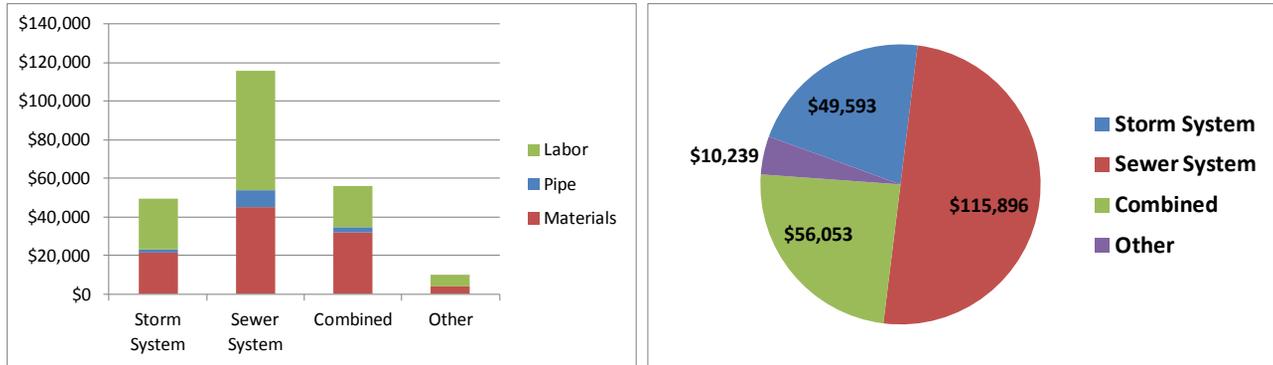


Figure 17: summary of construction project expenses for PY2014-15

The [Thornton Heights Stormwater Separation Project](#) is perhaps the most notable and significant upgrade to the City’s stormwater system ever completed. Phase 1, which was finished in June 2015, consisted of removing 15 combined catch basins from a 30-acre catchment area and installing nearly a mile of new storm drain discharging to a large gravel wetland treatment system (Figure 18). Phase 2, which is currently in progress, will remove 43 combined catch basins from a 44-acre catchment area and install ~10,500’ of new storm drain discharging to a larger scale stormwater treatment system along with numerous streetscape scale BMPs. The City adopted a “complete streets” approach to this infrastructure improvement project that will also include significant traffic calming and landscaping elements along with bicycle and pedestrian amenities to enhance the “human-scaled” experience. Once completed, the frequency and severity of CSO events from Thornton Heights will be greatly reduced as will be the adverse impacts from polluted stormwater runoff. The total cost to install this new stormwater infrastructure will be approximately \$6.4 million.



Figure 18: gravel wetland constructed for Phase 1 of Thornton Heights Stormwater Separation Project

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 public works facilities, school bus maintenance garage and transfer station. Staff from numerous City departments attended a municipal pollution prevention training provided by MEDEP and ISWG in May 2015. Each SWPPP is reviewed and revised as needed to reflect any changes or updates to facility operations. A notable change to the School Bus Maintenance Facility's SWPPP was made in April 2015 with the removal of the 2,000 gallon bulk heating oil tank and conversion to liquid propane as a heating fuel source. On 4/27/15, the City provided MEDEP and USEPA with a termination notice for the facility's Spill Prevention Control and Countermeasure (SPCC) Plan since the total petroleum product storage capacity fell below the 1,320 gallon SPCC threshold.

APPENDICES

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



ISWG Permit Year 2 Summary of Minimum Control Measures 1 & 2

APPENDIX A-1: Permit Year 2 (PY2) Summary of Minimum Control Measures 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 all statewide municipalities.

MCM1: Public Education and Outreach on Stormwater Impacts

Stormwater Public Awareness Plan

Task	Status	Details ¹						
Summarize plan implementation to date	complete	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 awareness media campaign utilizing television and online advertising	complete	CCSWCD coordinated a statewide television and online media campaign through Time Warner Cable. The original ducky and devil ducky ads ran two weeks per month from August through October 2014 in PY2. The ads were shown on cable television stations most likely to reach the target audience (e.g. HGTV, The Weather Channel, ESPN, Fox News, DIY).						
		The following television campaign data were provided by Time Warner Cable:						
		<table border="1"> <thead> <tr> <th>Television Airplay</th> <th>Est. Reach²</th> <th>Est. Frequency³</th> </tr> </thead> <tbody> <tr> <td>762</td> <td>23.65%</td> <td>2.4</td> </tr> </tbody> </table>	Television Airplay	Est. Reach ²	Est. Frequency ³	762	23.65%	2.4
		Television Airplay	Est. Reach ²	Est. Frequency ³				
		762	23.65%	2.4				
CCSWCD developed online ads with a clean water message that directed viewers to www.ThinkBlueMaine.org . Time Warner Cable placed the ads on websites most likely to reach the target audience (e.g. local and national news websites, outdoor-themed sites). The online ad campaign ran continuously from August through October 2014.								
The following online campaign data were provided by Time Warner Cable:								
		<table border="1"> <tbody> <tr> <td>Impressions</td> <td>383,872</td> </tr> <tr> <td>Click thru rate⁴</td> <td>0.05% (national average is 0.04%)</td> </tr> </tbody> </table>	Impressions	383,872	Click thru rate ⁴	0.05% (national average is 0.04%)		
Impressions	383,872							
Click thru rate ⁴	0.05% (national average is 0.04%)							
		Based on analytical software installed on the Think Blue Maine website, hits during the online media campaign increased by more than 60% over the same three month period in 2013. Between August and October 2014, there were 1,127 visits to www.ThinkBlueMaine.org . Between August and October 2013, there were 672 visits, which is almost a twofold increase in PY3.						
Promote and participate in local public event	complete	<i>Promotion</i> With the help of all ISWG representatives, CCSWCD promoted ISWG's 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, 340 posters were distributed throughout the 14 ISWG communities by ISWG representatives; radio ads aired on 98.9 WCLZ during the months of March and April; and WMTW News Channel 8 attended the event and covered the events leading up to April 25, 2015.						

¹ CCSWCD maintains a documentation notebook for all MCM 1&2 activities.

² Reach is the percentage of the viewing audience that saw the ads.

³ Frequency is the number of times the target audience saw the ads.

⁴ Click-through rate is the number of users that click on a specific link out of the total users that view a page, email, or advertisement.



ISWG Permit Year 2 Summary of Minimum Control Measures 1 & 2

		<p><i>Participation</i> Representatives from the ISWG municipalities volunteered or participated at the events, on April 25, 2015. Many representatives provided logistical support for the race (e.g. flagging, parking set up, etc.). In addition, the City of Portland and other organizations 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	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	Three additional Point of Sale locations joined ISWG's YardScaping program in 2015 (Home Depot in Portland, South Portland and Biddeford), one store closed (Estabrook's in Scarborough) bringing the total number of stores participating in the program to 23. The distribution of the stores is as follows:
		Biddeford: 1
		Cape Elizabeth: 0
		Cumberland: 1
		Falmouth: 2
		Freeport: 1
		Gorham: 2
		Old Orchard Beach: 0
		Portland: 3
		Saco: 1
		Scarborough: 1
		South Portland: 4
		Westbrook: 2
Windham: 3		
Yarmouth: 3		
Establish Point of Sale program in Home Depot stores	complete	In the spring of 2015, ISWG implemented the Point of Sale program in the four Home Depot stores located in ISWG municipalities (Biddeford, Portland, South Portland, and Windham). Program components include a staff training, distribution of educational materials to the general public, and an educational event for customers at each store.

Adult Education

Offer a minimum of seven adult education events per year on YardScaping practices	complete	Gorham: 7/12/2014, Table at Farmer's Market, 22 interactions
		Portland: 7/23/2014, Table at Farmer's Market, 13 interactions
		Scarborough: 8/1/2014, YardScaping Social at Broadturn Farm, 12 interactions
		Windham: 8/23/2014, Home Depot Educational Table Event, 18 interactions
		Portland: 9/13/14, Portland Greenfest, 52 interactions
		Gorham: 9/27/2014, 7 participants
		Scarborough: 3/26/2015, 12 participants



ISWG Permit Year 2 Summary of Minimum Control Measures 1 & 2

		Falmouth: 4/10/2015, 6 participants (Falmouth Middle School Teacher Training) South Portland: 4/13/2015, 10 participants (Home Depot Staff Training) Biddeford: 4/14/2015, 3 participants (Home Depot Staff Training) Portland: 4/20/2015, 8 participants (Home Depot Staff Training) Windham: 5/1/2015, 3 participants (Home Depot Staff Training) Windham: 5/10/2015, Home Depot Educational Event, 16 interactions Portland: 5/16/2015, Home Depot Educational Event, 20 interactions Biddeford: 5/16/2015, Home Depot Educational Event, 19 interactions South Portland: 5/17/2015, Home Depot Educational Event 18 interactions Falmouth: 6/9/2015, 32 participants (Falmouth Middle School Youth YardScaping presentation) Falmouth: 6/9/2015, 35 participants (Falmouth Middle School Youth YardScaping presentation)
Promote adult education classes	complete	Information on YardScaping practices was published in local adult education brochures, via direct mail, 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 PY1 classes, as well as those practices participants of PY2 classes intend to implement below.

Adult Education Behavior Change Tracking

During the spring of 2015, phone calls were made to participants of YardScaping adult education classes held in the fall of 2013 and spring of 2014 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 the recommended practices. As expected, it was difficult to reach people, but the information gleaned from those who were reached provided an anticipated rate of compliance for the YardScaping practices that class participants intended to implement.

Permit Year 1 Post-Class Evaluations			
Lawn Care Practice	Plan to implement	Implemented Practice	% behavior change
Set Mower to a height of 3"	4	3	75.0%
Leave grass clippings	5	4	80.0%
Sharpen mower blades	10	6	60.0%
Aerate	22	13	59.1%
Topdress	21	12	57.1%
Overseed	16	10	62.5%
Use low maintenance seed	15	10	66.7%
Get a soil test	19	8	42.1%
Use nitrogen-only fertilizer	16	3	60.0%
Use compost tea	20	5	25.0%



ISWG Permit Year 2 Summary of Minimum Control Measures 1 & 2

Below are the results of the Permit Year 2 post-class evaluations completed by the YardScaping class participants.

Permit Year 2 Post-Class Evaluations			
Lawn Care Practice	Plan to implement	Currently do not implement	% planning to implement
Set Mower to a height of 3"	4	4	100.00%
Leave grass clippings	4	4	100.00%
Sharpen mower blades	3	3	100.00%
Aerate	7	7	100.00%
Topdress	7	7	100.00%
Overseed	7	7	100.00%
Use low maintenance seed	6	6	100.00%
Get a soil test	5	5	100.00%
Use nitrogen-only fertilizer	7	8	87.50%
Use compost tea	8	9	88.89%

CCSWCD staff will contact the class participants from the Permit Year 2 classes in the fall of 2015 and/or spring of 2016 to determine which behaviors have been adopted.

Targeted Information Distribution

Distribute lawn care information in one targeted neighborhood per ISWG community	complete	YardScaping information was distributed throughout priority neighborhoods in each ISWG community. The following number of households received information:
		Biddeford: 122
		Cape Elizabeth: 79
		Cumberland: 112
		Falmouth: 95
		Freeport: 40
		Gorham: 68
		Old Orchard Beach: 77
		Portland: 203
		Saco: 107
		Scarborough: 110
		South Portland: 86
		Westbrook: 205
		Windham: 92
Yarmouth: 61		

Websites & Free Media

Maintain and monitor CCSWCD YardScaping website	ongoing	CCSWCD is in the process of updating their website as the current format is no longer supported. YardScaping information will be updated once the website redesign is complete, which is scheduled for fall 2015.
Newspaper coverage of YardScaping activities and healthy lawn care	complete	<i>Portland Press Herald</i> : Good for you if you live by water, good for all if you don't pollute (September 7, 2014)
		<i>Portland Press Herald</i> : Chemical Lawns a Formula for Trouble (October 5, 2014)
		<i>Portland Press Herald</i> : Maine Gardener: Put lawn and garden to bed for the



ISWG Permit Year 2 Summary of Minimum Control Measures 1 & 2

	winter (November 2, 2014)
	<i>Portland Press Herald: Lawn Chemicals Threaten Health of Children, Environment (December 24, 2014)</i>
	<i>Portland Press Herald: Fertilizing for a Perfect Lawn Harms Coastal Waters (January 7, 2015)</i>
	<i>Portland Press Herald: Pause to understand hazards before using pesticides (March 15, 2015)</i>

Municipal Permit Awareness Plan

Task	Status	Details
Summarize plan implementation to date	complete	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	<p>Fact Sheets: CCSWCD worked with representatives from each municipality to finalize fact sheets tailored to municipal councils and staff. Fact sheets were customized for each municipality and print and electronic copies provided. The fact sheets serve as talking points for newly elected municipal officials and are included in new member packets for each community.</p> <p>PowerPoint: CCSWCD prepared a template PowerPoint presentation that was customized for the four municipalities receiving targeted outreach. The Presentation serves as a companion to the municipal fact sheet, since it is intended for a similar audience. The presentation also provides similar information about permit obligations and emphasizes the role of interdepartmental communication.</p> <p>Informational Poster: In lieu of creating a fact sheet tailored to public works crews, CCSWCD created a poster that outlines important good housekeeping and pollution prevention practices, including proper vehicle washing, chemical storage, etc. The posters, entitled “Clean Water is Everyone’s Job”, were printed in PY2 and distributed to municipalities in PY3.</p>
Develop survey to gauge municipal awareness	complete	CCSWCD coordinated with each of the 14 ISWG representatives to finalize a survey determine their municipal councils’ awareness of their stormwater program. PY2 results will be compared to future years’ data.

Targeted Outreach

Provide targeted outreach to four to five ISWG communities.	complete	CCSWCD provided targeted outreach to municipal staff and elected officials in Biddeford, Old Orchard Beach, Saco, and Scarborough. Each municipality received an initial meeting or consultation between CCSWCD staff and the MS4 Stormwater Coordinator to plan and facilitate three trainings/meeting sessions with relevant municipal staff (representative from planning & code, public safety, engineering, etc.). The goal of the meetings was to understand the needs of the municipality, provide an overview of each departments’ role in permit
---	----------	---



ISWG Permit Year 2 Summary of Minimum Control Measures 1 & 2

		implementation, promote interdepartmental coordination, and prepare for a presentation to the municipal council. Finally, CCSWCD provided a presentation to each municipal council about stormwater, their MS4 program, and the requirements that must be met by the municipality.	
	Biddeford	Interdepartmental meeting: 12/10/14	Depts. represented: Public Works, Engineering, Planning, Waste Water, Environmental Compliance
		Compliance documentation support: 03/11/15	
		O&M/SWPPP/SPCC training: 04/09/15	Depts. represented: Codes, Waste Water, Environmental Compliance, School Maintenance, School Administration, Police Department, Recycling Complex, Fire Department, Public Works, City Hall, Planning, Fire Department, Community Center, Recreation, Engineering, Streets
		City Council presentation: 02/17/15	
	Old Orchard Beach	Initial meeting: 12/15/14	
		Interdepartmental meeting: 01/23/15	Depts. represented: Public Works, Planning, Code Enforcement, Town Manager, Fire Department, Ball Park Commission, Waste Water
		Town Council presentation: 02/03/15	
		O&M/SWPPP/SPCC training: scheduled for PY3	
	Saco	Initial meeting: 11/05/14	
		Interdepartmental meeting: 11/12/14	Depts. represented: Public Works, Parks and Rec, Engineering, Code Enforcement, Planning, Water Resources Recovery Division, Police, School
		Senior staff meeting: 02/24/15	Depts. represented: Police, City Clerk, Assessing, Fire, Police, Code Enforcement,



ISWG Permit Year 2 Summary of Minimum Control Measures 1 & 2

				Finance Department, IT, Planning, Public Works, Engineering, Water Resources Recovery District, Parks and Rec, Economic Development
			City Council presentation: 03/02/15	
		Scarborough	Interdepartmental meeting: 02/11/15	Depts. represented: Town Manager, Public Works, GIS, Beach Inspection, Community Services, Code Enforcement, Planning, Police, Fire, Finance, IT, Human Resources
			Meeting to prepare for presentation: 03/11/15	
			Presentation run through: 03/24/15	
			Town Council & Planning Board presentation: 03/25/15	

General Outreach

Provide presentation to municipal councils about municipal stormwater program	complete	Under ISWG’s Municipal Permit Awareness Plan, each municipality not receiving targeted outreach is required to provide a presentation to their municipal council about their MS4 program during each permit year. Councils in targeted municipalities received presentations by CCSWCD, as detailed above.
		Cape Elizabeth: 01/05/2015
		Cumberland: 06/15/15
		Falmouth: 05/27/15
		Freeport: 05/19/15
		Gorham: 04/14/15
		Portland: 01/21/15
		South Portland: 05/04/15
		Westbrook: 11/17/14
Windham: 04/21/15		
Yarmouth: 05/14/15		

Cooperative Outreach

Provide outreach through a minimum of one partner organization	complete	An educational display about common sources of water pollution, focusing on Illicit Discharge Detection and Elimination, was presented at APWA’s annual Highway Congress, held on June 4, 2015. Time out for Training, a program coordinated by Maine Local Roads, ensured that 74 people visited the booth.
--	----------	--

Evaluation

Conduct annual survey of ISWG municipalities to gauge awareness	complete	The survey was administered to ISWG representatives in PY2. See summary of survey responses in Appendix A-2.
---	----------	--



ISWG Permit Year 2 Summary of Minimum Control Measures 1 & 2

Additional Activities not Identified in the Plan

Additional materials developed	complete	CCSWCD worked with targeted municipalities to revise Operation & Maintenance (O&M) Plan templates for municipal operations relating to police, fire, and buildings and grounds activities. The plan templates were distributed electronically to ISWG communities for them to customize for their municipalities' facilities as per MCM6.
--------------------------------	----------	---

MS4 Enhanced Outreach Plan

Task	Status	Details
Develop MS4 enhanced outreach plan	complete	ISWG worked with the York County MS4s to develop a regional MS4 Enhanced Outreach Plan. The plan was approved by Maine DEP on December 30, 2014.
Summarize plan implementation to date	complete	Please see summary below.

LR22 – An Act to Promote Asphalt and Latex Pavement Sealing Products was drafted by Representative Matthea Daughtry in January 2015. The Legislative revisers office adjusted the bill and issued it in draft on 3/11/2015. Rep. Daughtry met with the revisers office on 3/17 and adjusted the language. The bill, LD 1208 was drafted and issued on 4/7/2015, with a hearing scheduled for the Environment and Natural Resources Committee on 4/23/2015.

Representatives from ISWG and the York County MS4s held several conference calls (1/6/2015, 4/16/2015 and 4/27/2015) and meetings (12/11/2014) to review and adjust the language, conduct research on the issue and how other states and municipalities have addressed bans on coal tar-based sealants.

A fact sheet was drafted and reviewed by ISWG representatives and the York County MS4s. The fact sheet was reviewed by Ms. Daughtry and revised based on all comments received. The fact sheet was provided to the Environment and Natural Resources Committee members via email and as part of their informational packet for consideration. Phone calls were also made to representatives on the committee to discuss the bill and fact sheet. A small number of committee members were reached directly, and messages were left for those that were not reached. No phone calls were returned before the Committee met to consider the bill.

ISWG and the York County MS4s reached out to the Long Creek Watershed Management District, the Falmouth Conservation Commission, Environmental Health Strategy Center, MEWEA, and the US Geologic Survey (who has done much of the research on coal-tar based sealants). In addition, ISWG and York County MS4s reached out their MMA Legislative committee members to encourage them to vote to support the bill (the MMA Legislative committee is the entity that decides what bills MMA will support).

The hearing for the bill was conducted on 4/23/2015. The Falmouth Conservation Commission, Environmental Health Strategy Center, MEWEA, and MMA all testified for the bill. The Long Creek Watershed Management District testified neither for nor against the bill. The Pavement Coatings Technology Council and Maine DEP testified against the bill. A work session was held on 4/20/2015, and the US Geologic Survey attended this work session. At the end of the session, a majority of the Environment and Natural Resources Committee voted "ought not to pass." On May 26, 2015, the House and Senate accepted the majority committee's recommendation to not pass the bill, by a vote of 5 to 4.

Ms. Daughtry has stated she will revise and re-issue the bill in 2016. ISWG and the York County MS4s are obtaining a full copy of all testimony, and anticipate making some revisions to our proposed plan or outreach materials for enhanced public education to provide better public education to the legislators for this issue.



Summary: ISWG Youth Education Activities

Overall:

Total students: 3,763
Total contact hours: 11,274

Biddeford

Total students: 198
Total contact hours: 198
Lesson topics: Watersheds, watershed models, water movement; transport of nonpoint source pollutants
Schools: Biddeford Middle School
Educator: CCSWCD

Cape Elizabeth

Total students: 61 (CCSWCD: 48, PWD: 13)
Total contact hours: 133 (CCSWCD: 68, PWD: 65)
Lesson topics: Macroinvertebrate sampling and identification & bioassessment; water quality and nonpoint source pollution and prevention; marine debris and ocean currents, nonpoint source pollution and prevention, treatment and laboratory analysis of drinking water and wastewater
Schools: Cape Elizabeth High School, Pond Cove Elementary School
Educator: CCSWCD, PWD

Cumberland

Total students: 404 (CCSWCD: 235, PWD: 169)
Total contact hours: 1,555 (CCSWCD: 235, PWD: 1,320)
Lesson topics: Marine debris and ocean currents; watersheds, nonpoint source pollution, and water quality parameters; in-class water quality testing; groundwater resources and pollution prevention⁵; global water distribution, conservation, and the water cycle; branching patterns, water systems/movement, watersheds; runoff, stormwater, nonpoint source pollutants, solutions; habitat requirements and life cycle of Maine's brook trout; impervious/pervious surfaces, nonpoint source pollutants, shorefront landscape design, vegetated buffers; water quality monitoring, macroinvertebrates, mock bioassessment; erosion, best management practices, landscape evaluation and redesign; trout releases at Collyer Brook: water quality testing, macroinvertebrate sampling, streamside assessment hike
Schools: Greely High School, Greely Middle School
Educator: CCSWCD, PWD

Falmouth

Total students: 160
Total contact hours: 480
Lesson topics: Runoff, nonpoint source pollutants and their impact on water quality; reducing impact on waterways by changing lawn care practices (Youth YardScaping); techniques for more environmentally-friendly lawn care: mowing, aerating, topdressing, overseeding, watering, soil testing, fertilizing, compost tea application, soil food web, weed control, pest control
Schools: Falmouth Middle School
Educator: CCSWCD

Freeport

Total students: 105
Total contact hours: 105
Lesson topics: Watersheds, define water pollution; nonpoint source pollution, stormwater, storm drains, and cumulative impact; nonpoint source pollution, impervious/pervious surfaces, runoff, and best management practices
Schools: Mast Landing School

⁵ Additional funding for groundwater lessons provided by Yarmouth Water District



ISWG Permit Year 2 Summary of Minimum Control Measures 1 & 2

Educator: CCSWCD

Gorham

Total students: 589 (CCSWCD: 75, PWD: 514)

Total contact hours: 1,829 (CCSWCD: 150, PWD: 1,679)

Lesson topics: Nonpoint source pollution, stormwater, storm drains, cumulative impact, and wastewater; sustainable development to minimize impact on river; global water distribution, conservation, and the water cycle; branching patterns, water systems/movement, watersheds; runoff, stormwater, nonpoint source pollutants, solutions; Maine's brook trout: habitat requirements, life cycle, anatomy, field trip to Casco Hatchery, classroom tank set-up and maintenance; impervious/pervious surfaces, nonpoint source pollutants, shorefront landscape design, vegetated buffers; water quality monitoring, macroinvertebrates, mock bioassessment; erosion, best management practices, landscape evaluation and redesign; trout release and water quality field trips at the Presumpscot River: water quality testing, macroinvertebrate sampling, streamside assessment hike, local history; forests' ecology and ability to filter water; Maine's frogs and vernal pools; treatment and laboratory analysis of drinking water and wastewater; benefits of tap water and tap water/bottled water taste test

Schools: Gorham Middle School, Great Falls Elementary School, Gorham High School, University of Southern Maine

Educator: CCSWCD, PWD

Old Orchard Beach

Total students: 50

Total contact hours: 150

Lesson topics: Amount of water in the world, conservation, and the water cycle; watersheds and water movement; nonpoint source pollution, stormwater, storm drains, cumulative impact, and wastewater

Schools: Loranger Middle School

Educator: CCSWCD

Portland

Total students: 752 (CCSWCD: 286, PWD: 466)

Total contact hours: 1,857 (CCSWCD: 1,430, PWD: 427)

Lesson topics: Nonpoint source pollution, stormwater, storm drains, and cumulative impact; sources of marine debris; marine debris, nonpoint source pollution, and ocean currents (additional funding was secured for these high school lessons); reducing impact on waterways by changing lawn care practices (Youth YardScaping)⁶; global water distribution, conservation, and the water cycle; branching patterns, water systems/movement, watersheds; runoff, stormwater, nonpoint source pollutants, solutions; Maine's brook trout: habitat requirements, life cycle, anatomy, field trip to Casco Hatchery, classroom tank set-up and maintenance; impervious/pervious surfaces, nonpoint source pollutants, shorefront landscape design, vegetated buffers; water quality monitoring, macroinvertebrates, mock bioassessment; erosion, best management practices, landscape evaluation and redesign; treatment and laboratory analysis of wastewater; benefits of tap water and tap water/bottled water taste test

Schools: Lincoln Middle School, McAuley High School, Deering High School, Longfellow Elementary School, Lyman Moore Middle School, Glickman Academy (Spurwink Services), Southern Maine Community College, University of New England

Educator: CCSWCD, PWD

Saco

Total students: 10

Total contact hours: 10

Lesson topics: Watersheds, water holding capacity of soil, filtering capacity of different soils

Schools: Thornton Academy

Educator: CCSWCD

⁶ Additional funding for Youth YardScaping provided by the City of Portland



ISWG Permit Year 2 Summary of Minimum Control Measures 1 & 2

Scarborough

Total students: 318 (CCSWCD: 230, PWD: 88)

Total contact hours: 741 (CCSWCD: 230, PWD: 511)

Lesson topics: Marine debris, nonpoint source pollution, and ocean currents⁷; global water distribution, conservation, and the water cycle; branching patterns, water systems/movement, watersheds; runoff, stormwater, nonpoint source pollutants, solutions; Maine's brook trout: habitat requirements, life cycle, anatomy, field trip to Casco Hatchery, classroom tank set-up and maintenance; impervious/pervious surfaces, nonpoint source pollutants, shorefront landscape design, vegetated buffers; water quality monitoring, macroinvertebrates, mock bioassessment; erosion, best management practices, landscape evaluation and redesign

Schools: Wentworth Intermediate School, Scarborough High School, Scarborough Middle School

Educator: CCSWCD, PWD

South Portland

Total students: 320 (CCSWCD: 49, PWD: 271)

Total contact hours: 1,669 (CCSWCD: 147, PWD: 1,522)

Lesson topics: Watersheds and watershed models; water cycle, water movement; bioassessment process to determine water quality; global water distribution, conservation, and the water cycle; branching patterns, water systems/movement, watersheds, runoff, stormwater, nonpoint source pollutants, solutions; Maine's brook trout: habitat requirements, life cycle, anatomy, field trip to Casco Hatchery, classroom tank set-up and maintenance; impervious/pervious surfaces, nonpoint source pollutants, shorefront landscape design, vegetated buffers; water quality monitoring, macroinvertebrates; erosion, best management practices, landscape evaluation and redesign; trout releases in Trout Brook: water quality testing, macroinvertebrate sampling, streamside assessment hike

Schools: Small Elementary School, Memorial Middle School, Mahoney Middle School, Skillin Elementary School, Dyer Elementary School

Educator: CCSWCD, PWD

Westbrook

Total students: 244 (CCSWCD: 8, CCSWCD & PWD: 160, PWD: 76)

Total contact hours: 900 (CCSWCD: 8, CCSWCD & PWD: 800, PWD: 92)

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 macroinvertebrate sampling; river characteristic observations; compared data from the two sites to develop their ideas about human impact on the river ecosystem⁸; ocean currents and marine debris; chemical water quality tests, macroinvertebrate sampling, and water quality assessment on the Presumpscot River

Schools: Westbrook High School, Westbrook Community Center After-School Program

Educator: CCSWCD, PWD

Windham

Total students: 310 (CCSWCD: 53, PWD: 257)

Total contact hours: 1,405 (CCSWCD: 150, PWD: 1,255)

Lesson topics: Water cycle, water movement; water quality parameters and testing, bioassessment using macroinvertebrate sampling, river characteristic observations; sustainable development to minimize impact on river; global water distribution, conservation, and the water cycle; branching patterns, water systems/movement, watersheds; runoff, stormwater, nonpoint source pollutants, solutions; Maine's brook trout: habitat requirements, life cycle, anatomy, field trip to Casco Hatchery, classroom tank set-up and maintenance; impervious/pervious surfaces, nonpoint source pollutants, shorefront landscape design, vegetated buffers; water quality monitoring, macroinvertebrates, mock bioassessment; erosion, best management practices, landscape evaluation and redesign; trout release in the Pleasant River: water quality testing, macroinvertebrate sampling, streamside assessment hike; "Discovering Water" book project: Book about various water topics produced by WHS students for a middle school audience, finalized and printed book, hosted publication party

⁷ Additional funding for ocean currents lessons provided by Scarborough School Department

⁸ Additional funding for student field trip provided by the Westbrook Environmental Improvement Corporation



ISWG Permit Year 2 Summary of Minimum Control Measures 1 & 2

Schools: Manchester Elementary School, Windham High School, Windham Middle School
Educator: CCSWCD, PWD

Yarmouth

Total students: 242

Total contact hours: 242

Lesson topics: Water pollution, nonpoint source pollution, soil as pollutant; impervious/pervious surfaces, runoff, and best management practices; groundwater resources and pollution prevention¹

Schools: Yarmouth Elementary School, Yarmouth Middle School

Educator: CCSWCD

Educator contact information

CCSWCD: Deb Debiegun, District Educator, Cumberland County Soil & Water Conservation District, ddebiegun@cumberlandswcd.org, 207-892-4700 x 101.

PWD: Sarah Plummer, Environmental Education Coordinator, Portland Water District, splummer@pwd.org, 207-774-5961 x3324.



MCM2: Public Involvement and Participation

Urban Runoff & Green Neighbor Family Fest

2015 marked the fourth year ISWG supported, coordinated, 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 and Green Neighbor Family Fest support ISWG’s in-school youth education program. With approval from Maine DEP, the race and festival, held on April 25, 2015, served as the Public Involvement and Participation event for all ISWG communities. Each community’s participants are summarized in the table below.

By all accounts, the event was a huge success. Approximately 700 runners and walkers registered for the race, and 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 months of March and April by 98.9 WCLZ. WMTW News Channel 8 promoted the events prior to April 25th, and they attended the race and festival to provide news coverage of the events. 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.

Anecdotes as well as a post-race survey completed by race participants demonstrate the success of the race’s planning and implementation. Many survey respondents indicated the race’s cause: clean water and youth education, was a major reason why they chose to participate.

The *Green Neighbor Family Fest* was held after the race at Deering High School. The event ran for three hours and was attended by approximately 700 people. Scheduled events included the awards ceremony and a live music. A total of 21 exhibits were set up by local nonprofit and governmental organizations, universities, and businesses to provide hands-on, educational activities for children. These activities included a marine touch tank, making “seed bombs” (seeds rolled in compost), water quality experiments, and many more. Children also took part in face painting and water related prize giveaways.

Plans are underway to host the fifth annual *Urban Runoff* 5K and *Green Neighbor Family Fest* on Saturday, April 23, 2016.

Summary of ISWG Municipal Involvement in the 2015 Urban Runoff & Green Neighbor Family Fest

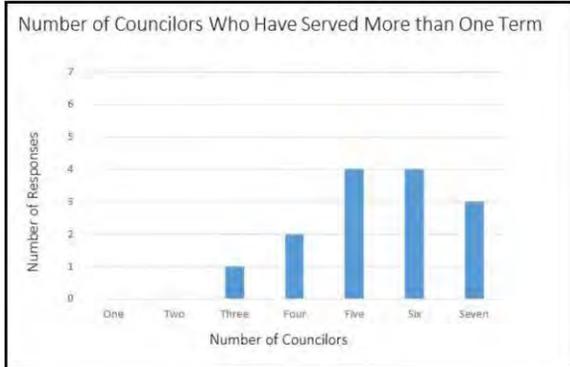
	Race Participants	Volunteers	Municipal Team (number of members)	Posters Provided for Distribution	Additional Contribution
Biddeford	2			25	
Cape Elizabeth	10			16	
Cumberland	27			19	
Falmouth	17			21	
Freeport	3	1		25	
Gorham	35			19	
Old Orchard Beach	2	2		21	
Portland	194	15		50	Permit fees waived; display at festival
Saco	24	4	18	28	



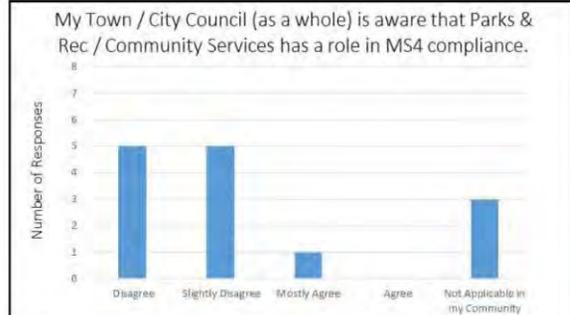
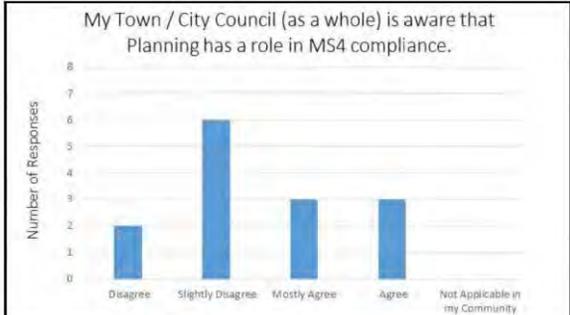
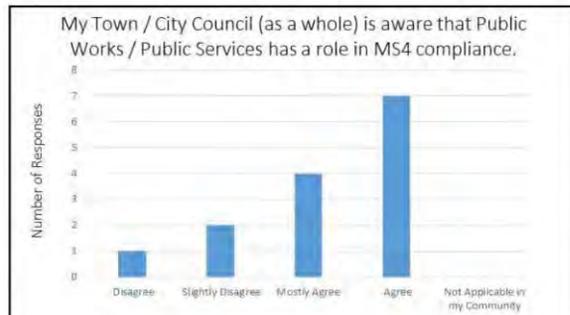
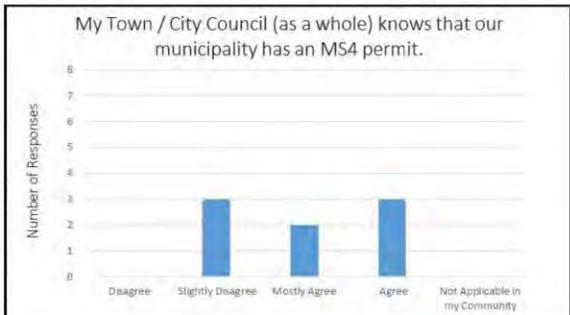
ISWG Permit Year 2 Summary of Minimum Control Measures 1 & 2

Scarborough	42	7		24	
South Portland	62	5		28	\$500
Westbrook	39	3	5	22	
Windham	19	5		23	
Yarmouth	10	3		19	

APPENDIX A-2: Permit Year 2 Summary of Municipal Survey Responses



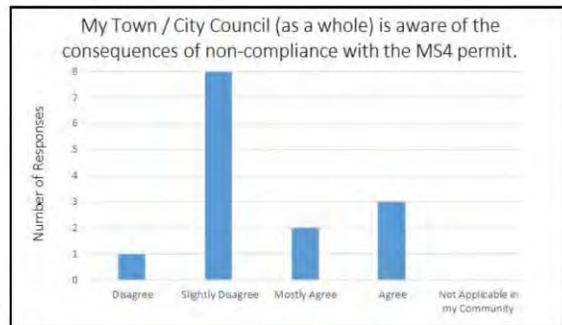
1 | Page



2 | Page



ISWG Permit Year 2 Summary of Municipal Survey Responses

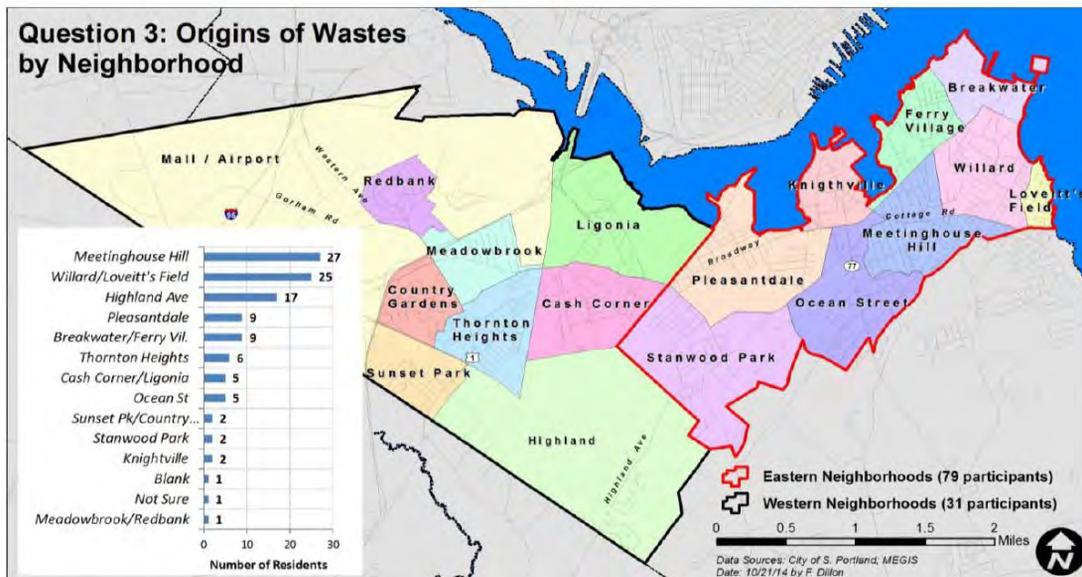
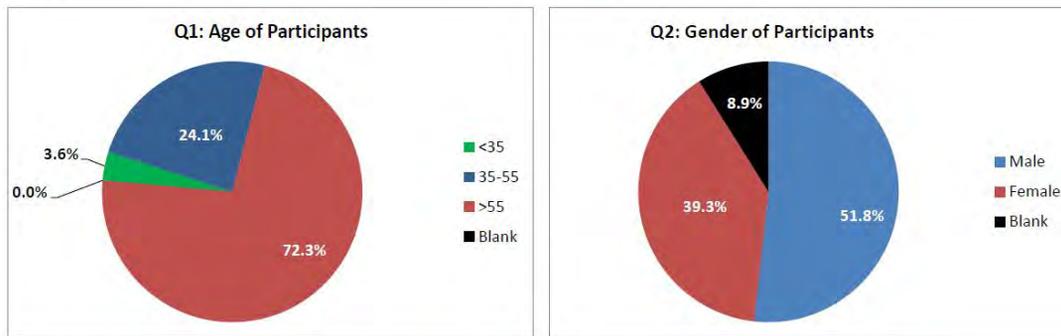


Appendix 2: Household Hazardous Waste Day Questionnaire Results

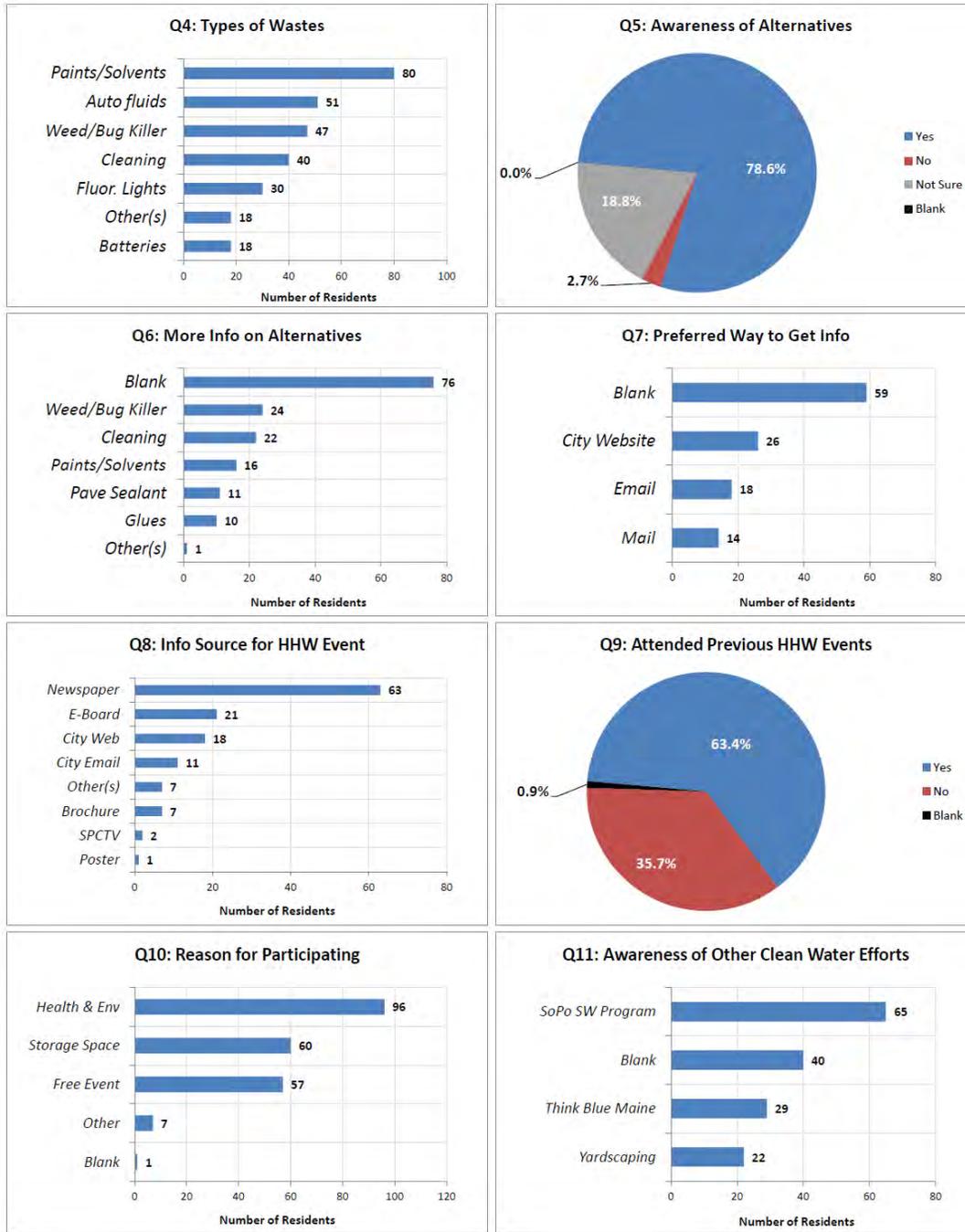
Household Hazardous Waste Collection Day ~ 10/11/14

QUESTIONS (125 questionnaires were distributed and 112 were returned; ~50 more residents participated after questionnaires ran out)

1. What is your age? *Most participants (72%) were over 55 years old (only ~4% of participants were less than 35 years old).*
2. Are you male or female? *~52% of participants were men, 39% were women and ~9% opted not to indicate their gender.*
3. Origins of wastes by neighborhood? *The majority of participants (71%) came from the the City's eastern neighborhoods.*
4. Please indicate the types of wastes you dropped off today. *Paints/solvents were once again the most common type of HHW.*
5. Are you aware of less potentially harmful alternatives? *Most participants (79%) were aware of less harmful alternatives.*
6. Would you like more info on alternatives? *Most participants (76) didn't respond to the question; those who did requested info on multiple waste types.*
7. How would you like to get this info? *Most participants (59) didn't respond; those who did want info electronically or by mail.*
8. How did you hear about today's event? *Newspapers were by far the most common source of info for participants.*
9. Have you participated in the City's previous HHW Collection Days? *~63% of attendees participated in previous events.*
10. Why did you participate in this year's HHW event? *Environment & health were the most common reasons for participating.*
11. Are you aware of the following SW management efforts? *The City's SW Program was the most common effort with which participants were aware.*



Household Hazardous Waste Collection Day ~ 10/11/14



Appendix 3: Maine Healthy Beaches Program 2014 Willard Beach Report

**MAINE HEALTHY BEACHES PROGRAM
SUMMARY REPORT OF ENHANCED MONITORING AND
POLLUTION SOURCE TRACKING EFFORTS
IN THE WILLARD BEACH WATERSHED
SOUTH PORTLAND, MAINE
2012-2014**



Photo: Maine Healthy Beaches

Meagan Sims – Maine Healthy Beaches Program Field Coordinator
with assistance from
Fred Dillon – South Portland Stormwater Program Coordinator

April 2015

Acknowledgements

South Portland's commitment to clean water and their willingness to work with partners to transform the collected data to actions to improve water quality is commendable. Special thanks to the Water Resource Protection Department, which provided staff to collect all samples for this analysis and review the report.

Background

Willard Beach is a popular, year-round recreation area located in South Portland. Elevated bacteria results on the beach prompted the need for enhanced monitoring to determine the nature and extent of potential bacteria inputs. Although the waste of domestic and wild animals can contribute to impaired water quality, efforts have focused primarily on identifying and removing human sources (e.g. malfunctioning septic systems, faulty sewer lines) of fecal pollution.

As part of this effort, Maine Healthy Beaches (MHB) partnered with the City to conduct paired enterococci (ENT) and optical brightener (OB) monitoring of the stormwater system from 2012 to 2014. Enterococci bacteria indicate the presence of fecal contamination from warm-blooded animals and the possible presence of disease-causing microorganisms. However, fecal indicator bacteria like enterococci do not differentiate the source(s) of bacterial pollution.

Optical brighteners are commonly used in commercial/retail products such as clothing detergents, dishwashing agents, and personal care products to brighten the whiteness of materials. These products are typically flushed down the drain; therefore, when optical brightener concentrations are coupled with elevated fecal bacteria levels, this can be indicative of human-sourced fecal contamination.

There are 6 stormwater outfalls that discharge directly to the beach and drain stormwater from ~ 1 km² of residential, commercial, and institutional areas (Figure 1). Of particular concern are outfalls WB-15, which collects stormwater from the SMCC athletic fields, and WB-17 and WB-18, which collect stormwater from a predominantly residential area with several interspersed commercial enterprises. Outfalls WB-11, WB-12, and WB-16 typically have very low discharge volumes and were not monitored as part of this study.

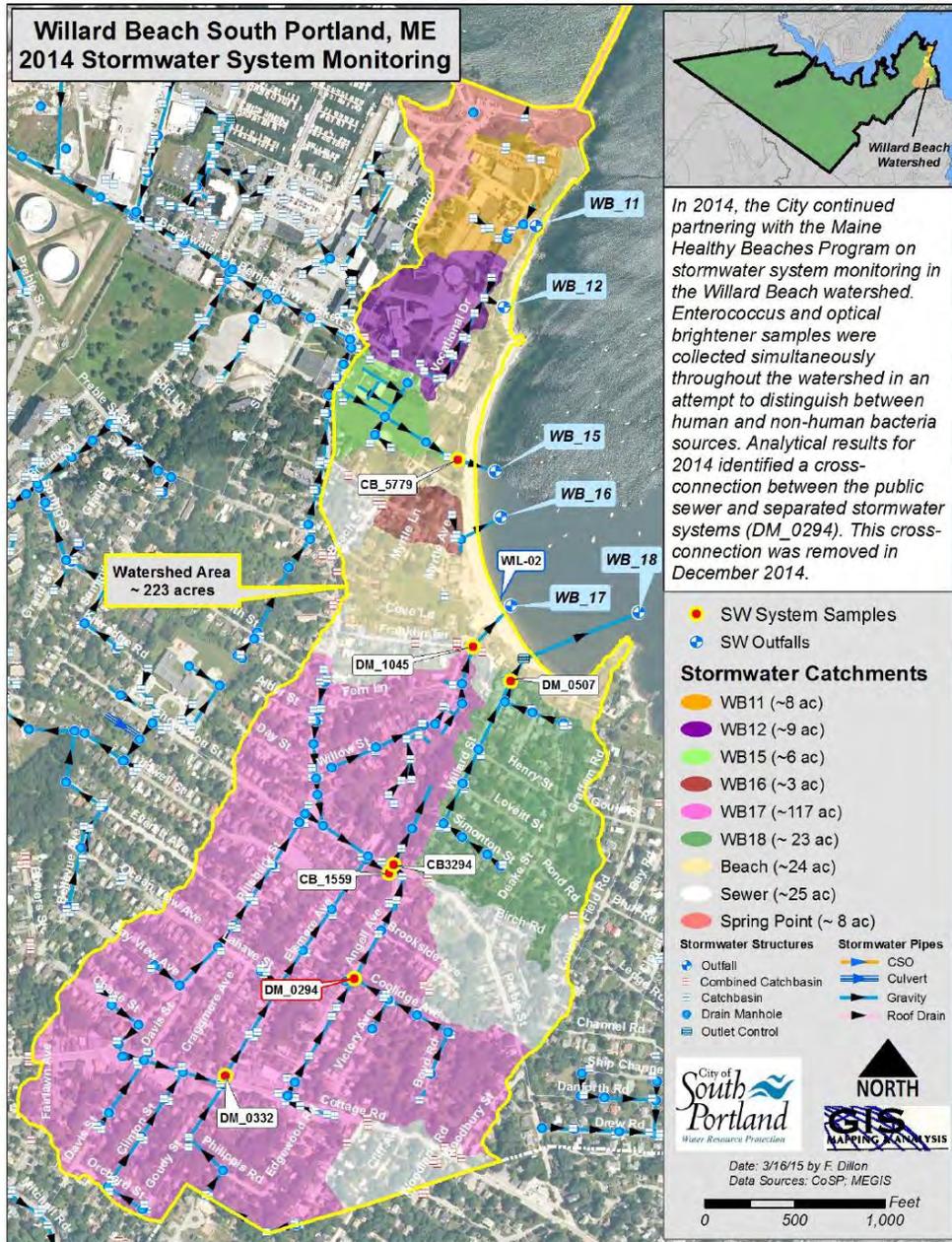


Figure 1. Willard Beach stormwater drainage area (yellow outline) and stormwater sampling stations monitored by MHB and City of South Portland Water Resource Protection Department 2012-14.

Project Methods

Enterococci and Optical Brighteners

Monitoring for the 2012 season targeted wet weather events throughout September and October to ensure presence of adequate water flow and samples for the 2013 season were collected bi-monthly from June through early September. Monitoring in 2014 was conducted throughout August and September. As a part of this effort, 87 ENT samples and 62 OB samples were analyzed at 10 subsurface sites located within the stormwater system in 2014.

Canine Detection Services

As part of a separate study, the City employed FB Environmental Associates and Environmental Canine Detection services to “sniff out” human sources contributing to elevated bacteria impacting Willard Beach. This event occurred in May 2014 and involved the collection of enterococci data in tandem with 2 sewage-sniffing dogs. The dogs are trained to alert to the presence of human sources at distinct locations or in water samples collected from suspect areas. The dogs visited 10 stormwater structures in the lower portion of sub-catchment WB-17 (Figure 5).

Results/Discussion

Enterococci and Optical Brighteners

ENT geometric mean results ranged from 19-908 MPN/100mL and from 6-108 µg/L for mean optical brighteners (Table 1). All but one site (DM 0507) exceeded the US EPA-recommended ENT geometric mean safety threshold of 35 MPN/mL while all sites except CB3294 exhibited OB concentrations below 100µg/L, the level that MHB typically considers as a lower threshold of potential human wastewater contamination (Figures 2-3).

Table 1. Mean enterococci counts (MPN/100mL), mean optical brightener values (µg/L), and sample size of 10 sites monitored (2012-14).

Station	GeoMean ENTERO	Mean OB	Sample Size
DM0507	19	6	16
WIL-02	81	10	14
CB5779	59	39	13
CB3294	908	108	12
DM1045	83	34	11
DM0332	245	83	6
WB-17	181	42	6
ANGELL-CB*	128	72	2
DM0294*	380	62	2
CB1559**	7270	394	1
Total	105	46	83

*Note small sample size (mean value given)

**Single sample value

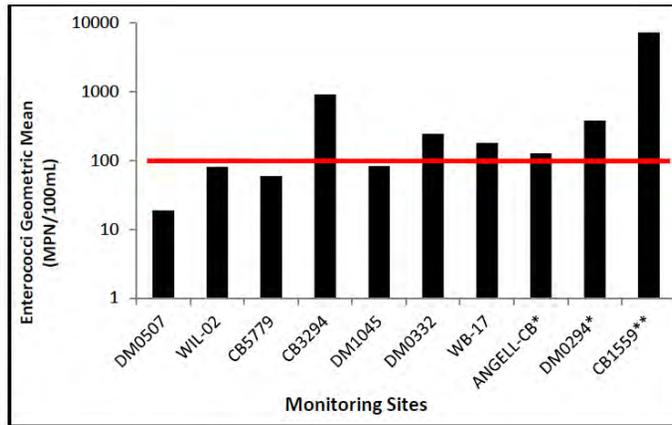


Figure 2. The geometric mean enterococci (MPN/100mL) values by monitoring site in the stormwater system impacting Willard Beach from 2012-14. Red solid line indicates EPA-recommended enterococci geometric mean safety threshold of 104 MPN/100mL of marine sample water.

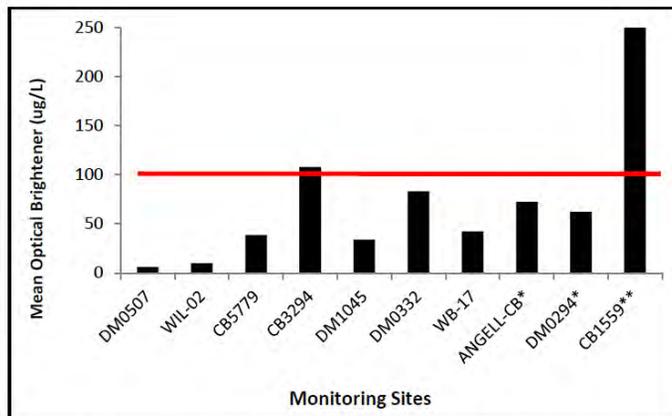


Figure 3. Mean optical brightener (ug/L) concentrations by monitoring site in the stormwater system impacting Willard Beach from 2012-14. Red solid line indicates the lower threshold level considered by MHB as a “red-flag” for potential human wastewater contamination (100 ug/L).

One site (CB3294) exhibited consistently elevated geomean ENT and mean OB levels, suggesting the potential for human-sourced fecal contamination. Site CB 1559 was monitored for the first time in 2014, and the single sample ENT result of 7,270 (MPN/100mL) was nearly seventy times the EPA recommended single sample maximum value.¹ Likewise, the optical

¹ US Environmental Protection Agency (EPA) recommend single sample maximum value for enterococci in marine waters is 104 (MPN/100 mL) and 61 (MPN/100 mL) for fresh water sites. EPA recommended geometric mean values are 35 (MPN/100 mL) and 33 (MPN/100 mL) respectively.

brightener value of 394 (µg/L) was nearly four times greater than the 100 µg/L lower threshold (Table 1).

A Pearson’s Product Moment correlation combining data from all sites from 2012-2014 revealed a significant moderate relationship ($R^2=0.5256$, $p< 0.0000$) between ENT and OB concentrations (Figure 4). Optical brightener mean values were relatively low at 8 of the 10 sites monitored (2012-2014) suggesting non-human sources (wildlife, pets) are likely the principal contributors to stormwater bacterial pollution. However, human sources cannot be entirely ruled out due to the significant moderate correlation between enterococci and optical brighteners (Table 1, Figures 2-4) for all sites. Additional monitoring of the stormwater system is needed to better understand the source(s) of bacteria impacting water quality on Willard Beach.

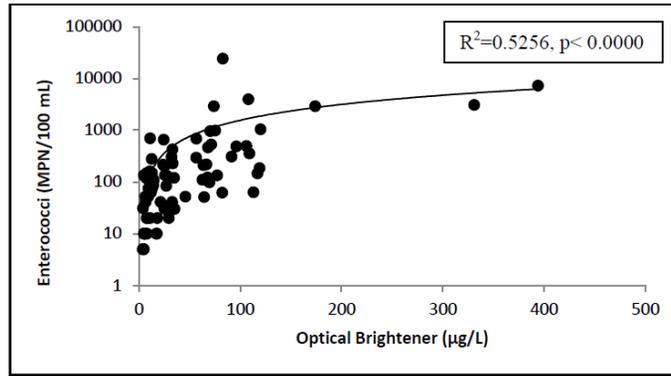


Figure 4. Relationship between enterococci (MPN/100mL) and optical brighteners (µg/L) for all sites monitored throughout the stormwater system impacting Willard Beach from 2012-14.

Canine Detection Study

Enterococci levels were not analyzed for all 10 sites visited by the canine sewage-sniffing dogs. Of the 6 sites monitored during the canine detection event, none exceeded 104 MPN/100mL. Human sourced bacteria was detected by both dogs at WB 17, CB 1482, DM 0979, and DM 0978. One dog alerted to the presence of human sourced bacteria at the remaining six sites (Figure 5). The apparent presence of human sourced bacteria in the separated stormwater system may be originating from nearby leaking sewer pipes. Much of the sewer system in the Willard Beach watershed (and indeed throughout New England) has been in service for well over 50 years. Consequently, as this infrastructure ages it becomes more prone to exfiltration and can potentially result in inadvertent cross-contamination of separated stormwater systems.

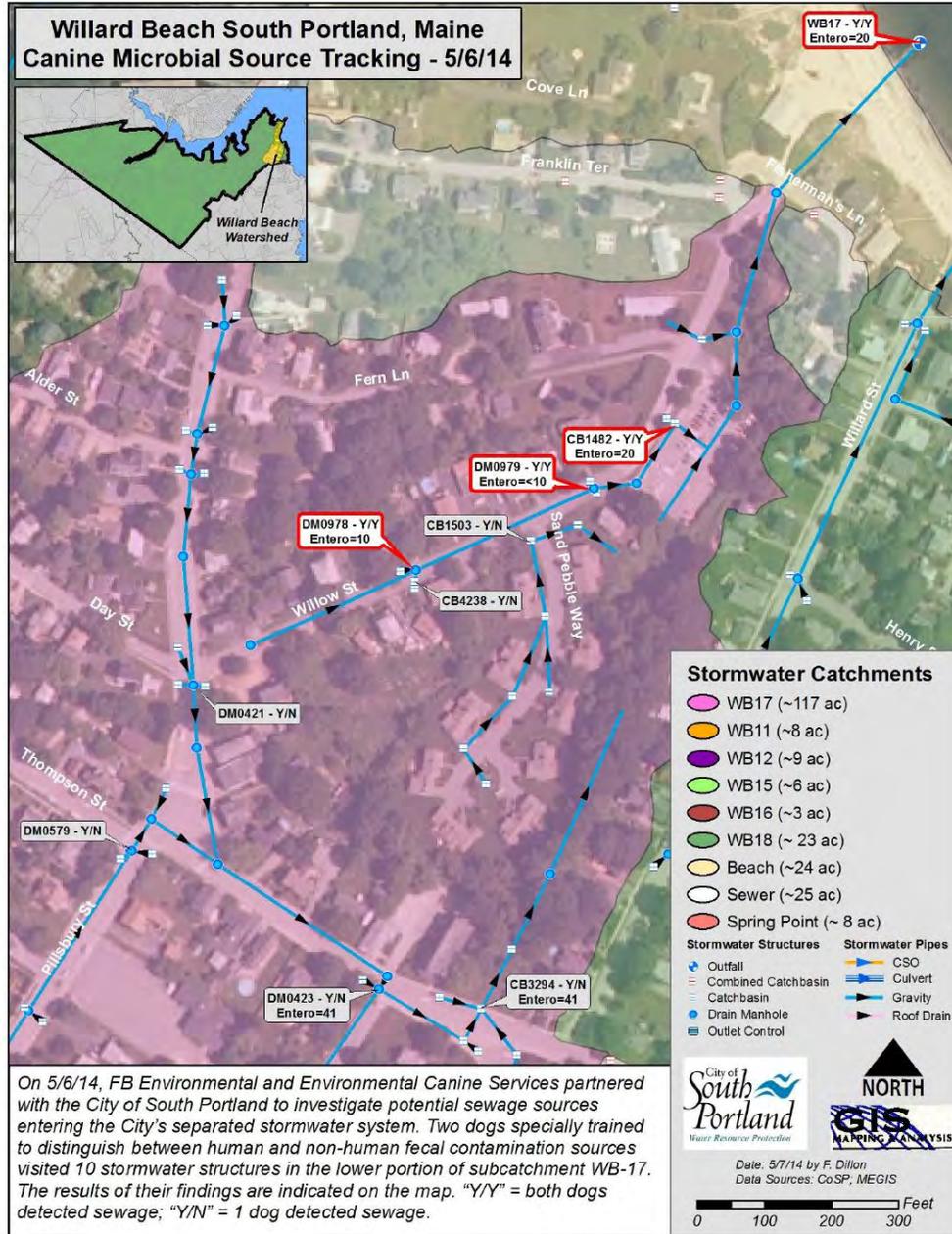


Figure 5. Willard Beach Canine Source Tracking Results (May 2014).

Analyzing ENT results in conjunction with other parameters (i.e. optical brighteners, canines) may assist the town in better understanding the contributing sources of fecal contamination in the watershed. While results suggest primarily non-point sources impacting Willard Beach with the potential for point source contributions, it is important to consider that the Willard Beach Watershed is a densely developed residential area. Impervious surfaces, such as roads, houses and driveways cover approximately 41% of the total watershed area (Figure 6). The prevalence of impervious surfaces has been strongly correlated to bacteria concentrations in downstream surface waters. Therefore, continuing to educate residents about the effects of land use activities on water quality will be a critical component in any attempts to reduce bacteria loadings to Willard Beach.

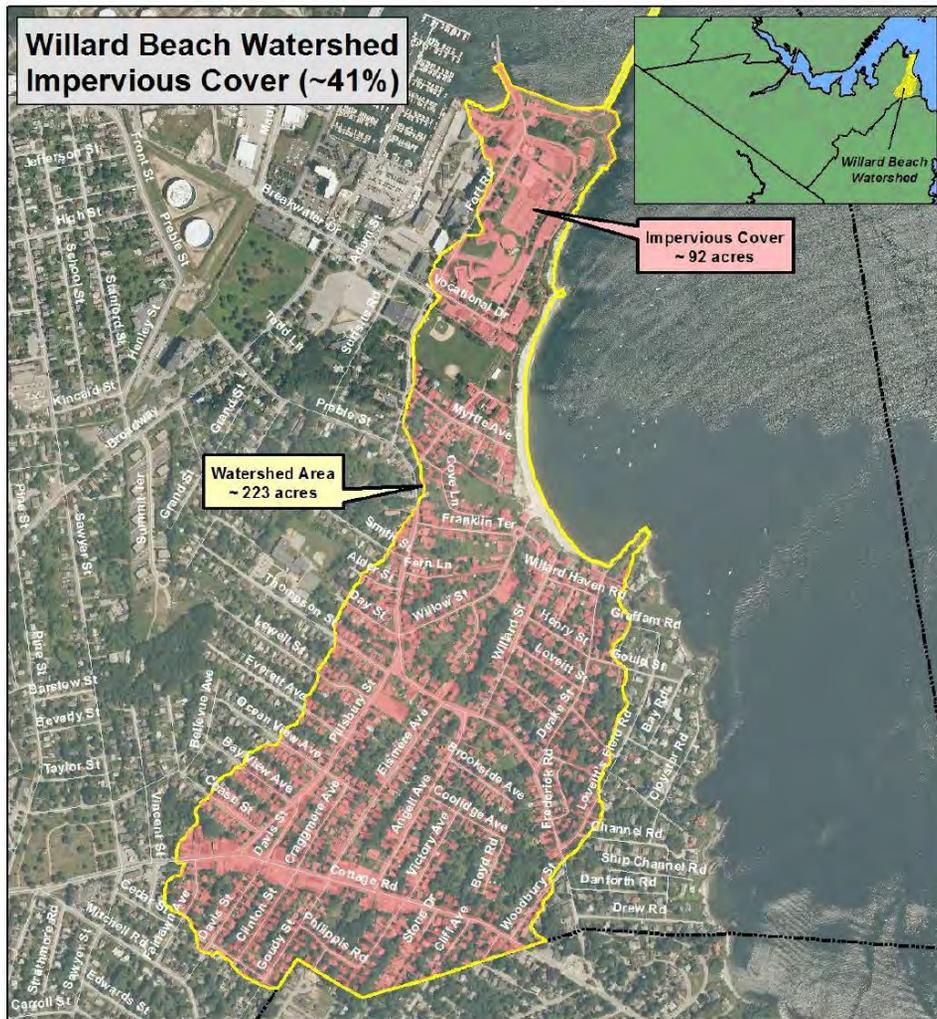


Figure 6. Willard Beach Watershed drainage area (yellow line) and percent impervious coverage within the watershed.

Local Actions to Improve Water Quality & Next Steps

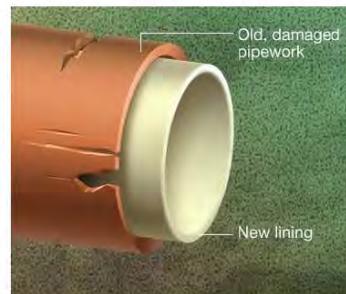
Following the August 2014 discovery of significantly elevated bacteria results in a portion of the separated stormwater system, City staff conducted closed-circuit television inspections in September 2014 to identify potential cross-connections with the public sewer (Figure 7). While no direct connections of sewer service laterals from residences into the separated stormwater system were observed, there were three instances of the public sewer main crossing directly through separated stormwater structures (Figure 7).



Figure 7. City of South Portland’s closed-circuit television inspection van assessing the condition of the sewer and stormwater systems in the Willard Beach watershed.

Subsequent dye testing by City staff identified and eliminated an illicit cross connection between the sewer and stormwater infrastructure at site DM 0294 (Figure 8). Additionally, South Portland continued stormwater education/outreach initiatives including a pet waste and water quality campaign involving televised segments and participating in an April Stools Day event hosted by PetLife and Friends of the Eastern Promenade to educate the public about responsible pet waste management and efforts to protect the city’s water resources (Figure 9). As part of this event, the city distributed a pet waste brochure co-developed with MHB that educates citizens about stormwater and best practices for discarding of pet waste within the Willard Beach watershed. South Portland also continued upgrades to sewer and stormwater infrastructure and continued posting precautionary rainfall advisories at Willard Beach when local rainfall levels exceeded 1 inch.

In 2015, South Portland Water Resources Protection (WRP) Department will post this report on the City’s website. The City will continue enhanced monitoring and pollution source tracking efforts in the Willard Beach watershed, including dye testing of sewer lines to identify potential sources of cross-contamination with the separated stormwater system. The condition of sewer lines that pass through separated stormwater structures will be assessed and repaired as needed. Potential repair options include cured in place pipe lining or pipe replacement and



relocation. The City will also expand its efforts to inform dog owners about the impacts from improper pet waste disposal, particularly in the Willard Beach and Hinckley Park areas. South Portland will also continue upgrading sewer and stormwater infrastructure as needed and will participate in the 2015 April Stools Day event in partnership with PetLife, Friends of the Eastern Promenade, SoPoDog and MHB promoting responsible management of pet waste.

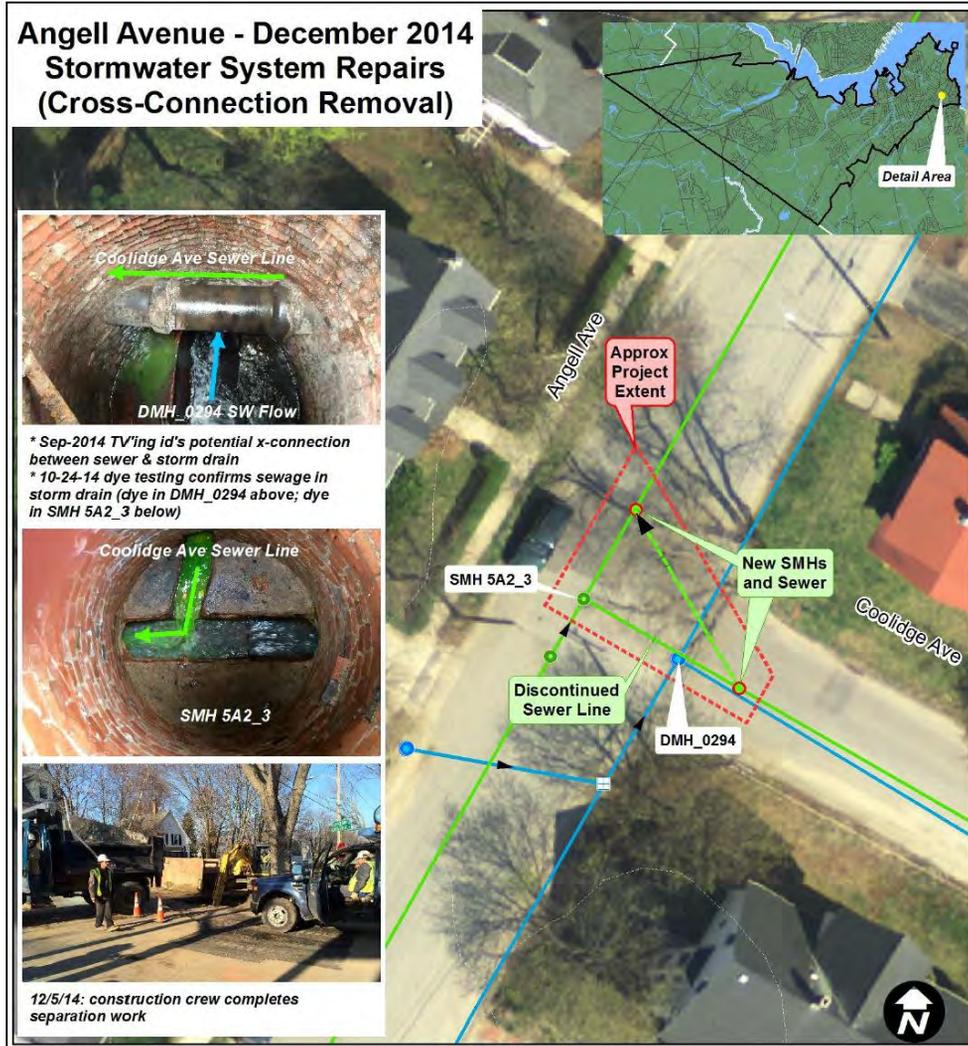


Figure 8. Stormwater system repairs including the removal of a cross connection within the Willard Beach Watershed along Angell Avenue (December 2014).

Appendix 4: Dry Weather Outfall Inspection Summaries

PY2014-15 Long Creek Outfall Inspection Results

Outfall Id	Watershed	Inspector	Date	Time	Pipe Size	Pipe Material	Pipe Shape	Submerged	Pollution	Odor	Pipe Flow	Clarity	Color	Sediment	Condition	Trash	Yard Waste	Follow up	Comments
LC_2	Long Creek	Jarrod Eskine	2014-12-31	12:54	12	Steel	Round	No	None	None	None	No flow	None	None	Good	Yes	No	No	Quarter pipe of ice
LC_3	Long Creek	Jarrod Eskine	2014-12-31	11:11	12	PVC	Round	No	None	None	None	Clear	Clear	None	Good	No	No	No	
LC_4	Long Creek	Jarrod Eskine	2015-01-02	1:11	12	Asbestos	Round	No	None	None	Trickle	Clear	Clear	None	Good	No	No	No	
LC_5	Long Creek	Jarrod Eskine	2014-12-31	1:51	18	PVC	Round	No	None	None	Steady	Clear	Clear	None	Needs attention	No	No	Yes	Soil is washing out from around pipe
LC_7	Long Creek	Jarrod Eskine	2015-01-02	1:56	18	RCP	Round	No	Foam, oil sheen, rusty	Musty	Steady	Clear	Opaque	None	Good	No	No	No	Very rusty stains all around
LC_8	Long Creek	Jarrod Eskine	2015-01-02	1:58	12	PVC	Round	No	None	None	None	No flow	None	Hanging solvent	Good	No	No	Remove shopping cart	
LC_9	Long Creek	Jarrod Eskine	2015-01-02	9:01	36	RCP	Round	No	None	None	Trickle	Clear	Clear	1/8	Good	Yes	No	Yes	
LC_10	Long Creek	Jarrod Eskine	2015-01-02	8:58	8	RCP	Round	No	Foam	None	Steady	Clear	Clear	None	Good	Yes	No	No	
LC_12	Long Creek	Jarrod Eskine	2015-01-02	11:21	18	HDPE	Round	No	None	None	No flow	No flow	None	None	Good	Yes	No	No	
LC_13	Long Creek	Jarrod Eskine	2015-01-02	12:52	12	RCP	Round	No	None	None	Trickle	Clear	Clear	None	Good	No	No	No	
LC_14	Long Creek	Jarrod Eskine	2015-01-02	1:01	12	RCP	Round	No	None	None	No flow	No flow	None	None	Good	No	No	No	
LC_15	Long Creek	Jarrod Eskine	2015-01-02	1:06	12	Asbestos	Round	No	None	None	Trickle	Clear	Clear	None	Fair	No	No	Yes	Rip rap end of pipes to stop erosion
LC_16	Long Creek	Fred Dillon	2015-01-32	11:57	12	PVC	Round	No	None	None	Can't tell	Can't tell	Can't tell	None	Fair	No	No	See comments Pipe is dangling and almost completely filled with ice. Looks like considerable flow has been coming from it. Consider stabilizing area around pipe. Notify LCWMD or property owner.	
LC_17	Long Creek	Fred Dillon	2015-01-22	12:39	12	RCP	Round	No	None	None	Trickle	Clear	Clear	None	Poor	No	No	See comments There are four pipes at this location. One is a 12 inch RCP, 2 are CMP 12 inch, and one is CMP 18 inch. Review plans to determine flow patterns.	
LC_19	Long Creek	Jarrod Eskine	2015-01-02	1:14	12	RCP	Round	No	None	None	None	No flow	No flow	None	Good	No	No	No	
LC_20	Long Creek	Fred Dillon	2015-01-22	11:48	12	CMP	Round	No	None	None	Trickle	Clear	Clear	None	Good	No	No	No	
LC_21	Long Creek	Fred Dillon	2015-01-22	11:47	12	CMP	Round	No	None	None	Steady	Clear	Clear	None	Good	No	No	No	
LC_22	Long Creek	Fred Dillon	2015-01-22	12:12	36	RCP	Round	No	None	None	None	No flow	No flow	None	Needs attention	No	No	Yes	Contact LCWMD or Kimco Realty to inform about disconnected pipe section
LC_23	Long Creek	Jarrod Eskine	2015-01-02	1:28	Unknown	Steel	Round	Failed	None	None	None	No flow	No flow	Full	Needs attention	Yes	No	Yes	Failed sinkhole developed
LC_24	Long Creek	Jarrod Eskine	2014-12-31	2:38	8	PVC	Round	No	None	None	None	No flow	No flow	None	Good	No	No	No	
LC_25	Long Creek	Jarrod Eskine	2014-12-31	2:18	24	Steel	Round	No	Algae	None	Trickle	Clear	Clear	None	Needs attention	No	No	Yes	End of pipe is about 3/4 full of growth
LC_28	Long Creek	Jarrod Eskine	2014-12-31	2:00	18	Steel	Round	No	None	None	Steady	Clear	Clear	1/8	Good	No	No	No	
LC_29	Long Creek	Jarrod Eskine	2015-01-02	2:25	18	Steel	Round	No	None	None	Trickle	Clear	Clear	None	Good	No	No	No	
LC_30	Long Creek	Jarrod Eskine	2015-01-02	2:30	12	Steel	Round	No	None	None	None	No flow	No flow	3/4	Needs attention	Yes	Yes	Yes	lots of soil and yard waste
LC_32	Long Creek	Jarrod Eskine	2015-01-02	10:47	30	RCP	Round	No	Foam	None	Steady	Clear	Clear	None	Good	No	No	No	
LC_33	Long Creek	Jarrod Eskine	2015-01-02	10:51	36	RCP	Round	Yes - almost fully	None	None	None	No flow	No flow	None	Fair	No	No	No	
LC_34	Long Creek	Fred Dillon	2015-01-22	12:56	See comments	See comments	See comments	Yes - almost fully	See comments	None	Can't tell	See comments	See comments	Full	Needs attention	No	No	Yes	Outfall inaccessible. Heavy vegetative growth/phragmites. Notify property owner that drainage swale needs to be cleared out.
LC_35	Long Creek	Fred Dillon	2015-01-22	10:27	12	RCP	Round	Yes - almost fully	Oil sheen	None	Trickle	Clear	Clear	3/4	Poor	No	No	Yes	Contact property owner or LCW MD about removing Woody debris next to outfall.
LC_36	Long Creek	Jarrod Eskine	2015-01-02	2:17	12	Steel	Round	No	None	None	Steady	Clear	Clear	None	Good	No	No	No	
LC_38	Long Creek	Fred Dillon	2015-01-22	13:29	48	CMP	Round	Yes - partially	None	None	Steady	Clear	Clear	None	Fair	No	No	Yes	This may not be an outfall. Instead, it is probably a foundation drain.
LC_41	Long Creek	Fred Dillon	2015-01-22	13:17	12	RCP	Round	No	None	None	None	No flow	No flow	None	Fair	No	No	No	
LC_42	Long Creek	Fred Dillon	2015-01-22	13:14	4	HDPE	Round	No	None	None	None	No flow	No flow	None	Fair	No	No	No	
LC_43	Long Creek	Fred Dillon	2015-01-22	13:47	36	HDPE	Round	No	None	None	Trickle	Clear	Clear	None	Fair	No	No	No	
LC_44	Long Creek	Fred Dillon	2015-01-22	13:42	18	HDPE	Round	No	None	None	Steady	Clear	Clear	None	Fair	No	No	No	
LC_45	Long Creek	Fred Dillon	2015-01-22	13:44	36	HDPE	Round	No	None	None	Trickle	Clear	Clear	None	Fair	No	No	No	
LC_46	Long Creek	Fred Dillon	2015-01-22	13:09	36	CMP	Round	No	None	None	Can't tell	Can't tell	Can't tell	None	Fair	No	No	See comments Three pipes at this location. One is a 60 inch RCP pipe, one is a 36 inch RCP pipe, and the other is a 12 inch HDPE pipe. Pipe extends about 3/4 across brook need rip rap to sure up banking.	
LC_51	Long Creek	Jarrod Eskine	2015-01-02	2:01	18	Steel	Round	Yes - partially	None	None	Can't tell	Can't tell	Can't tell	None	Needs attention	No	No	Yes	2 inches of ice
LC_54	Long Creek	Jarrod Eskine	2014-12-31	2:35	18	Steel	Round	No	None	None	None	No flow	No flow	None	Good	No	No	No	Half inch of ice in pipe
LC_55	Long Creek	Jarrod Eskine	2014-12-31	1:17	12	PVC	Round	No	None	None	None	Clear	Clear	None	Good	No	No	No	Carrier is dangling a little bit and bottom is corroded
LC_56	Long Creek	Fred Dillon	2015-01-22	10:32	36	Round	Round	No	None	None	Steady	Clear	Clear	None	Poor	No	No	No	Contact property owner or LCWMD to excavate around and of pipe which is mostly submerged
LC_57	Long Creek	Fred Dillon	2015-01-22	11:31	18	CMP	Round	Yes - almost fully	None	None	Can't tell	Can't tell	Can't tell	3/4	Needs attention	No	No	Yes	
LC_58	Long Creek	Fred Dillon	2015-01-22	11:19	12	CMP	Round	No	None	None	Steady	Clear	Clear	None	Fair	No	No	No	

8/27/2015

1 of 2

PY2014-15 Long Creek Outfall Inspections.xlsx

PY2014-15 Long Creek Outfall Inspection Results

Outfall/Id	Watershed	Inspector	Date	Time	Pipe Size	Pipe Material	Pipe Shape	Submerged	Pollution	Odor	Pipe Flow	Clarity	Color	Sediment	Condition	Trash	Yard Waste	Follow up	Comments
LC_80	Long Creek	Fred Dillon	2015-01-22	10:54	12	PVC	Round	Yes - partially	None	None	Can't tell	Can't tell	Can't tell	1/8	Good	No	No	No	
LC_81	Long Creek	Fred Dillon	2015-01-22	11:00	12	HDPE	Round	No	None	None	Trickle	Clear	Clear	None	Good	No	No	No	
LC_82	Long Creek	Fred Dillon	2015-01-22	11:04	10	PVC	Round	No	None	None	No flow	No flow	No flow	None	Fair	No	No	No	See comments below outfall
LC_84	Long Creek	Jarrod Eskine	2015-01-02	2:14	3	PVC	Round	No	None	None	Steady	Clear	Clear	Hanging culvert	Good	No	No	No	
LC_85	Long Creek	Jarrod Eskine	2015-01-02	1:50	12	RCP	Round	No	None	None	None	No flow	No flow	None	Good	No	No	No	Quarter pipe of ice
LC_86	Long Creek	Jarrod Eskine	2015-01-02	10:07	18	PVC	Round	No	Oil Sheen	Misty	None	No flow	No flow	None	Needs attention	No	No	Yes	Cut broken end of pipe
LC_87	Long Creek	Jarrod Eskine	2015-01-02	10:33	30	RCP	Round	Yes - almost fully	None	None	None	No flow	No flow	None	Fair	Yes	No	No	Pipe is almost fully underwater
LC_88	Long Creek	Jarrod Eskine	2015-01-02	12:43	18	PVC	Round	No	Oil Sheen	None	Trickle	Clear	Clear	None	Good	No	No	No	
LC_89	Long Creek	Jarrod Eskine	2015-01-02	2:34	12	Steel	Round	Yes - partially	Oil Sheen	None	Steady	Clear	Clear	None	Good	Yes	No	No	
LC_90	Long Creek	Fred Dillon	2015-01-22	11:11	36	RCP	Round	Yes - partially	None	None	Steady	Clear	Clear	None	Good	No	No	No	
LC_91	Long Creek	Fred Dillon	2015-01-22	11:17	24	RCP	Round	No	None	None	Steady	Clear	Clear	1/8	Fair	No	No	No	
LC_92	Long Creek	Jarrod Eskine	2015-01-02	1:27	24	RCP	Round	No	None	None	Steady	Clear	Clear	None	Good	Yes	No	No	Water is clear but rip rap and bottom of pipe stained rust color
LC_98	Long Creek	Jarrod Eskine	2014-12-31	1:30	18	PVC	Round	No	None	None	Steady	Clear	Clear	1/8	Good	No	No	Yes	Need some riprap. A few trees have fallen across stream but don't seem to block flow
LC_100	Long Creek	Fred Dillon	2015-01-22	11:48	8	HDPE	Round	No	None	None	Trickle	Clear	Clear	None	Good	No	No	No	See comments for LC105
LC_101	Long Creek	Jarrod Eskine	2015-01-02	12:55	12	HDPE	Round	No	None	None	No flow	No flow	No flow	None	Good	No	No	No	Some question about identity of pipes. There are two pipes at this location. One is an 8 inch pipe, and the other is a 12 inch pipe. Both are HDPE.
LC_103	Long Creek	Fred Dillon	2015-01-22	11:54	12	HDPE	Round	No	None	None	Trickle	Clear	Clear	None	Good	No	No	No	Some question about outfall I D. There is a large RCP 36 inch pipe next to the 28 inch HDPE pipe's not sure where flow comes from for larger pipe. Perhaps parking lot
LC_105	Long Creek	Fred Dillon	2015-01-22	11:45	8	HDPE	Round	No	None	None	None	No flow	No flow	None	Good	No	No	Yes	
LC_106	Long Creek	Jarrod Eskine	2015-01-02	10:28	12	HDPE	Round	No	None	None	None	No flow	No flow	None	Good	Yes	No	No	
LC_108	Long Creek	Jarrod Eskine	2015-01-02	10:26	6	PVC	Round	No	None	None	None	No flow	No flow	None	Good	Yes	No	No	
LC_109	Long Creek	Jarrod Eskine	2015-01-02	10:24	12	HDPE	Round	No	None	None	None	No flow	No flow	None	Good	Yes	No	No	
LC_110	Long Creek	Jarrod Eskine	2015-01-02	10:20	2	PVC	Round	No	None	None	None	No flow	No flow	None	Good	Yes	No	No	Frozen silt
LC_111	Long Creek	Jarrod Eskine	2015-01-02	10:22	12	HDPE	Round	No	None	None	None	No flow	No flow	None	Good	Yes	No	No	
LC_112	Long Creek	Jarrod Eskine	2015-01-02	9:35	8	PVC	Round	No	Algae	None	Trickle	Clear	Clear	None	Good	No	No	No	
LC_113	Long Creek	Jarrod Eskine	2015-01-02	9:08	12	HDPE	Round	No	None	None	None	No flow	No flow	None	Good	Yes	No	No	

PY2014-15 Trout Brook Outfall Inspections

Outfall ID	Watershed	Inspector	Date	Time	Pipe Size	Pipe Material	Pipe Shape	Submerged	pollution	Odor	Flow	Clarity	Color	Sediment	Condition	Trash	Yard Waste	Follow up	Comments
KB_1	Trout Brook	Fred Dillon	2014-12-31	1:03	36	RCP	Round	Yes - partially	None	None	1/4 Full	Clear	Clear	None	Good	No	No	No	
MC_4	Trout Brook	Fred Dillon	2014-12-31	9:30	24	RCP	Round	No	None	None	Steady	Clear	Clear	None	Good	No	No	No	Steel pipe uns alongside of beak
MC_15	Trout Brook	Mike Adrance	2014-12-31	9:40	18	RCP	Round	Yes - partially	None	None	Trickle	Clear	Clear	1/8	Needs attention	No	No	Yes	Replace rip rap
MC_16	Trout Brook	Randy Rafuse	2014-12-31	9:55	48"	RCP	Round	Yes - partially	None	None	Steady	Clear	Clear	1/4	Good	No	No	No	
TB_1	Trout Brook	Fred Dillon	2014-12-31	11:56	36	RCP	Round	Yes - almost fully	None	None	Steady	Clear	Clear	1/8	Fair	No	No	Yes	Contact homeowner about removing some of the brush around the outfall
TB_2	Trout Brook	Fred Dillon	2014-12-31	11:46	8	PVC	Round	Yes - almost fully	None	None	Steady	Clear	Clear	3/4	Needs attention	No	No	Yes	
TB_3	Trout Brook	Jarrod Eskin	2014-12-31	10:08	24	Steel	Round	No	None	None	Trickle	Clear	Clear	None	Needs attention	No	No	Yes	Bottom missing. Part of pipe broken off
TB_5	Trout Brook	Fred Dillon	2014-12-31	1:30	10	RCP	Round	Yes - almost fully	None	None	Can't tell	Clear	Clear	1/2	Needs attention	No	Yes	Yes	Pipe almost fully submerged may need to relay or move further upland
TB_6	Trout Brook	Fred Dillon	2014-12-31	1:38		RCP	Round	Yes - almost fully	None	None	Can't tell	Clear	Clear	3/4	Needs attention	No	No	Yes	Resident said the nearby catch basin backs up on occasion
TB_8	Trout Brook	Fred Dillon	2014-12-31	1:15	8	CMP	Round	No	None	None	None	NA	NA	None	Fair	No	No	No	
TB_9	Trout Brook	Fred Dillon	2014-12-31	12:51	10	PVC	Round	No	None	None	Trickle	Clear	Clear	None	Fair	No	No	No	
TB_10	Trout Brook	Fred Dillon	2014-12-31	1:19	10	PVC	Round	No	None	None	None	No flow	No flow	None	Fair	No	Yes	No	
TB_99	Trout Brook	Fred Dillon	2014-12-31	1:09	24	RCP	Round	No	None	None	Trickle	Clear	Clear	None	Fair	No	No	No	

Appendix 5: Dry Weather Ditch Inspections for Long Creek Watershed

8/28/2015

PV2014-15 Long Creek Watershed Dry Weather Ditch Inspections

Ditch ID	Inspector	Date	Time	Weather	Z2hr Precip	Geometry	Depth	Profile	Banking	Yard Waste	Trash	Pool/Trap	Odor	Standing Water	Base Flow	Water Clarity	Inlet-Outlet	Sediment	Condition	Vegetation Extent	Vegetation Height	Vegetation Type	Erosion / Scouring	Additional Comments
LCD-01	Fred Dillon	6/11/2015	2:04	Clear 80 F	0	Parabolic	>24"	Moderate	Vegetated	Yes	Yes	None	None	No	None	N/A	Partly obstructed	<2"	Stable	>90%	Lawn	Normal grass	Yes	Some erosion in downstream ditch
LCD-02	Gretchen Anderson	6/11/2015	1:58 PM	Sunny 80 F	0	Parabolic	>24"	Moderate	Vegetated	No	No	Bank	None	No	None	N/A	Stable	<2"	Stable	>90%	N/A	Normal grass	No	
LCD-03	Gretchen Anderson	6/11/2015	2:10 PM	Sunny 80	0	Trapezoidal	>24"	Flat	Vegetated	No	Yes	Algae	None	No	None	N/A	Unobstructed	<2"	Stable	>90%	5-12"	Invasive	No	Major invasive growth on portion of ditch
LCD-04	Gretchen Anderson	6/11/2015	2:24 PM	Sunny 80	0	Parabolic	>24"	Flat	Vegetated	No	Yes	None	None	No	None	N/A	Unobstructed	<2"	Stable	>90%	3-6"-5-12"	Normal grass, invasives	No	Major invasive growth on portion of ditch
LCD-05	Fred Dillon	6/11/2015	2:27	Clear 80 F	0	Parabolic	<24"	Flat	Vegetated	No	Yes	Trash	None	No	None	N/A	Unobstructed	<2"	Woody vegetation	>90%	Excusive	Invasive	No	Ditch outside ROW?
LCD-06	Fred Dillon	6/11/2015	3:19	Clear 80 F	0	Triangular	<24"	Flat	Vegetated	No	Yes	Trash	None	No	None	N/A	Stable, outlet to wetland	<2"	Stable	>90%	3-6"	Normal grass w/ wetland veg on discharge end	No	
LCD-07	Fred Dillon	6/11/2015	2:39	Clear 80 F	0	Parabolic	<24"	Flat	Vegetated	No	Yes	Trash	None	No	None	N/A	Stable	<2"	Stable	>90%	6-12"	Shrubs & grasses	No	
LCD-08	Gretchen Anderson	6/11/2015	2:39 PM	Sunny 80	0	Parabolic	<24"	Moderate	Vegetated	No	No	None	None	No	None	N/A	Stable	<2"	Stable	>90%	3-6"	Normal grass	Slight	
LCD-09	Fred Dillon	6/11/2015	2:44	Clear 80 F	0	Parabolic	>24"	Flat	Vegetated	No	Yes	Trash	None	No	None	N/A	Unobstructed	<2"	Stable	>90%	3-6"	Normal grass	No	
LCD-10	Gretchen Anderson	6/11/2015	2:44 PM	Sunny 80	0	Trapezoidal	>24"	Flat	Vegetated	No	No	None	None	Yes	None	Clear	Slightly obstructed	<2"	Stable	>90%	3-6"-5-12"	Normal grass w/ woody shrubs	No	
LCD-12	Gretchen Anderson	6/11/2015	2:48 PM	Sunny 80	0	Trapezoidal	>24"	Flat	Vegetated	No	No	None	None	Yes	None	Clear	Unobstructed	<2"	Stable	>90%	3-6"-5-12"	Normal grass w/ woody shrubs	Slight	
LCD-13	Fred Dillon	6/11/2015	2:50	Clear 80 F	0	Parabolic	<24"	Flat	Vegetated	Yes	No	Vegetative mass	None	No	None	N/A	Stable, very slight obstruction	<2"	Stable	>90%	3-6"	Normal grass	No	
LCD-14	Gretchen Anderson	6/11/2015	2:52 PM	Sunny 80	0	Trapezoidal	<24"	Flat	Vegetated	Slight	No	None	None	No	None	N/A	Unobstructed	<2"	Stable	>90%	3-6"	Normal grass	Slight	
LCD-15	Gretchen Anderson	6/11/2015	2:57 PM	Sunny 80	0	Parabolic	>24"	Moderate	Vegetated	No	No	None	None	No	None	Clear	Slightly obstructed	<2"	Stable	>90%	3-6"-5-12"	Normal grass, invasives, cat tails	No	
LCD-16	Fred Dillon	6/11/2015	2:57	Clear 80 F	0	Parabolic	>24"	Flat	Vegetated	No	No	None	None	Yes	None	Clear	Partly blocked	<2"	Stable	>90%	Excusive	Shrubs & small trees	No	
LCD-17	Gretchen Anderson	6/11/2015	3:02 PM	Sunny 80	0	Trapezoidal	<24"	Flat	Vegetated	No	No	None	None	Yes	None	Clear	Unobstructed	<2"	Stable, woody vegetation [?27m]	>90%	3-6"-5-12"	Normal grass, invasives, woody veg	No	
LCD-18	Fred Dillon	6/11/2015	3:05	Clear 80 F	0	Parabolic	<24"	Flat	Vegetated	No	No	None	Musty	Yes	None	Clear	Stable, very obstructed	<2"	Stable	>90%	3-6"	Normal grass w/ woody veg	No	
LCD-19	Gretchen Anderson	6/11/2015	3:14 PM	Sunny 80	0	Trapezoidal	<24"	Flat	Vegetated	No	No	None	None	Yes	None	Clear	Slightly obstructed	<2"	Stable	>90%	3-6"-5-12"	Normal grass, invasives, woody veg	No	
LCD-20	Fred Dillon	6/11/2015	3:10	Clear 80 F	0	Parabolic	<24"	Flat	Vegetated	No	No	None	None	Yes	None	Clear	Stable, upstream obstruction	<2"	Stable	>90%	3-6"	Normal grass	Slight	
LCD-21	Gretchen Anderson	6/11/2015	3:30 PM	Sunny 80	0	Parabolic	>24"	Steep	Vegetated	No	No	None	None	Yes	None	Clear	Unobstructed	<2"	Stable, woody vegetation	>90%	3-6"-5-12"	Normal grass, invasives	No	Ditch is rocky part of long Creek North branch
LCD-22	Fred Dillon	6/11/2015	3:31	Clear 80 F	0	Parabolic	>24"	Flat	Vegetated	No	Yes	Trash	None	Yes	None	Clear	Obstructed	<2"	Stable	>90%	Excusive	Cat tails	No	
LCD-23	Fred Dillon	6/11/2015	3:40	Clear 80 F	0	Triangular	<24"	Moderate	Vegetated	No	Yes	Trash	None	Yes	None	Opague	Downstream culvert nearby submerged	<2"	Stable	>90%	3-6" (cat tails?)	Normal grass, cat tails	No	
LCD-24	Gretchen Anderson	6/11/2015	3:40 PM	Sunny 80	0	Trapezoidal	<24"	Moderate	Vegetated	Yes	Yes	Oil/film, debris	Musty	Yes	None	Cloudy	Slightly obstructed	<2"	Stable	>90%	3-6"-5-12"	Normal grass, invasives	Yes	
LCD-25	Gretchen Anderson	6/11/2015	3:46 PM	Sunny 80	0	Trapezoidal	<24"	Flat	Vegetated	Yes	Yes	None	None	No	None	N/A	Stable	<2"	Stable	>90%	3-6"-5-12"	Normal grass, invasives, woody veg	Slight	
LCD-26	Fred Dillon	6/11/2015	3:52	Clear 80 F	0	Parabolic	<24"	Flat	Vegetated	No	Yes	Trash	None	No	None	N/A	Stable	<2"	Stable	>90%	3-6"	Normal grass	Slight	
LCD-27	Fred Dillon	6/11/2015	4:13	Clear 80 F	0	Triangular	>24"	Flat	Vegetated	No	Yes	Trash, sediment	None	Yes	None	Cloudy	Partly obstructed	<2"	Stable	>90%	Excusive	Wetlands plants	Yes	Bank needs attention in front of Western Avenue crossing
LCD-28	Fred Dillon	6/11/2015	4:07	Clear 80 F	0	Parabolic	>24"	Flat	Vegetated	No	Yes	Trash	None	No	None	N/A	Partly obstructed	<2"	Stable	>90%	Excusive	Mix of wetland plants and woody debris	No	

PV2014-15 LC Ditch Inspections.xlsx

Appendix 6: ISWG O&M Procedures for Buildings and Grounds

Interlocal Stormwater Working Group
Operations and Maintenance Plan
Buildings & Grounds

ORIGINAL DATE: June 2010
REVISED DATE: March 2015
Page | 1

POINTS OF CONTACT (POC)

**Parks
Department
Primary POC
Rick Towle
767-7650**

**Facilities
Maintenance
Primary POC
Charles Buteau
767-7652**

**Stormwater
Coordinator
Fred Dillon
321-9437**

Stormwater Management Operation & Maintenance Procedures

Buildings & Grounds



← Call immediately in the event of a
SPILL, RELEASE, or OBSERVATION OF POLLUTANTS in
STORMWATER CONVEYANCES or WATER BODY

← Call immediately in the event of a
SPILL, RELEASE, or OBSERVATION OF POLLUTANTS entering
MUNICIPAL SEWER or a DRAIN

TRAINING

The Federal Clean Water Act requires annual training for all municipal personnel working in facilities or performing activities that have the potential to contribute to stormwater pollution.

Annually:

- Train all employees (and subcontractors) on these O&M Procedures.
- Train new employees on these O&M Procedures within six (6) months of their date of hire, and annually thereafter.

Always:

- Maintain training records at your facility and send a copy of annual training records to **Fred Dillon, South Portland's Stormwater Program Coordinator.**

FLOOR DRAINS

Always:

- Make sure floor drains are connected to:
 - Municipal sewer system; or
 - An oil-water separator or holding tank.
- Know where to find spill materials (located on the Fire Department's response vehicles) in case of spills. Kits should include:
 - Drain mats to cover the floor drain;
 - Absorbent booms to keep larger spills contained;
 - Speedy dry or other absorbent material; and
 - Equipment (shovel, broom, dust pan, etc.) and a receptacle to clean up and properly dispose of contaminated materials.
- Maintain a regular schedule for inspecting and cleaning out:
 - Floor drains and drain traps;
 - Oil/water separators; and
 - Holding tanks.

Never:

- Never dump anything outside, like mop water.
- Never dump chemicals down floor drains or store hazardous materials near floor drains.
- Never connect floor drains directly to the storm sewer or to the environment.

Whenever Possible:

- Minimize water use or run a dry shop.
- Use secondary containment when storing liquids near a drain.

PAINTING

Always:

- Keep work area clean by:
 - Sweeping paint chips and other residues every day; and
 - Performing a thorough cleanup at the end of the project.
- Use impermeable ground cloths, such as plastic sheeting, during painting.
- Store paint buckets and barrels of materials away from contact with storm water at the end of the work day.
- Treat paint spills as a chemical spill and capture before it flows to the storm drain.
- Clean up paint promptly using dry methods.
- **Clean water based** paint brushes and equipment in a sink connected to the sanitary sewer.
- **Clean oil based** paint materials where the waste paint and solvents can be collected to be handled as small quantity hazardous waste - do not pour it to the sink or to a storm drain.
- Hang tarps or drop cloths to minimize the spread of windblown materials.
- Control sand blasting areas to keep particles off of paved surfaces and out of storm drains.
- Clean up any spilled chemicals promptly.

CLEANING PROCEDURES

Always:

- Use the least amount of product (detergent, wax, degreaser, etc.) to get the job done.
- Use only products approved by your facilities manager.
- Store cleaning products in their original containers, in good condition, in a designated area (storage cabinet, etc.)
- Properly dispose of cleaning tools (rags, mop heads, sponges, paper towels).
- Dump mop water, chemicals, or cleaners into a sink or tub connected to the sanitary sewer.

Never:

- Dump mop water, chemicals, or cleaners outside or into a storm drain or sump.
- Dump mop water, chemicals, or cleaners into a floor drain.

SPILLS: CLEAN UP, RESPONSE, REPORTING & NOTIFICATION

Maine is a “zero tolerance” State for uncontrolled spills that reach the environment. Spills of gasoline, various heating & motor oils, lubricating & hydraulic oil, asphaltic residuals, pesticides & fertilizers, and other pollutants should be properly cleaned up, documented and reported.

Always:

- Stop the source of the spill and contain any liquids, **only if it is safe to do so!**
- Report the spill to local emergency officials: **Fire Chief Kevin Guimond (first POC) or Deputy Chief Miles Haskell (second POC)**, who will be responsible for contacting **Fred Dillon, South Portland’s Stormwater Coordinator at 321-9437** and/or **Maine DEP:**
 - Maine DEP Petroleum Products Spill Response: 1-800-482-0777
 - Maine DEP Hazardous Material (non-oil spill): 1-800-452-4664
- Report any discharge of hazardous materials/waste immediately to **Fire Chief Kevin Guimond (first POC) or Deputy Chief Miles Haskell (second POC)**, who will be responsible for contacting **Fred Dillon, South Portland’s Stormwater Coordinator at 321-9437** and/or **Maine DEP** (as described above).
- Hazardous materials spills involve non-oil spills that pose a threat to human health or the environment, such as chemical releases.
- Hazardous materials spills must be reported to Maine DEP within one hour.
- Cover the spill with absorbent material such as Speedy dry, kitty litter, sawdust, or oil absorbent pads.
- Do not use straw (to cover or absorb spills) or water (to wash away spills)!
- Clean up all contaminated materials in a timely manner (before it rains).
- Properly dispose of all contaminated absorbents and materials.



A secondary containment tray or pallet helps to minimize spills to drains and the environment.

VEHICLES & EQUIPMENT FUELING

Always:

- Fuel vehicles at a central fueling station located at the Public Works Garage.
- Fuel carefully to minimize drips to the ground surface.
- When fueling occurs away from the central fueling station:
 - Choose a level, paved or concrete area away from any catch basins, storm drains, ditches, drinking water wells, or water bodies;
 - Keep absorbent material handy for incidental spillage; and
 - Inspect the area for drips, and (if needed) clean up any spillage immediately and properly, before leaving the fueling site.
- When pouring fuel from a jerry can or other mobile container:
 - Use a funnel or drip pan; and
 - Choose a level, paved surface that is not near a catch basin or water body.
- Maintain all fueling equipment in good working order by:
 - Conducting preventive maintenance on vehicles and equipment;
 - Conducting regular inspections of parked equipment and vehicles for evidence of spills or leaks; and
 - Parking leaking equipment indoor with a drip pan while awaiting maintenance or repair.

Never:

- Never allow “topping off” of fuel tanks.
- Never allow drivers or operators to leave their vehicles or equipment unattended while fueling.
- Never dump gas, wastes or contaminated water down storm drains or anywhere outside.
- Never fuel vehicles or equipment near any catch basins, storm drains, ditches, drinking water wells, or water bodies.



VEHICLES & EQUIPMENT WASHING

Always:

- Wash vehicles and equipment in an area approved by **Fred Dillon, South Portland's Stormwater Coordinator**.
- Wash equipment inside, where wash water is directed to the floor drain.
- Discharge all was water containing additives, such as degreasers, acids, bases, metal brighteners, or other agents (polishes, etc.) to:
 - An approved holding tank; or
 - The sanitary sewer in agreement and accordance with the City's sewer discharge ordinance.

Whenever Possible:

- Rinse vehicles and equipment **in a grassed area** outside, before washing inside.
- Use a commercial car wash for light duty vehicles.
- Obtain and use drain guards (filter inserts) to catch sediments and other pollutants that might enter the storm drains as a result of vehicle washing.

Never:

- Never perform engine or undercarriage washing outside.
- Never wash vehicles over a storm drain or near drinking water wells.

PLEASE REMEMBER:

**STEAM CLEANING &
PRESSURE WASHING OF
VEHICLE UNDERCARRIAGES,
ENGINES OR OILY EQUIPMENT
IS ONLY ALLOWED ON
DESIGNATED WASH PAD**

The City's Stormwater Permit prohibits the discharge of toxic substances from outside washing activities to protected water resources

FMI please contact the City's Stormwater Program Coordinator

VEHICLES & EQUIPMENT STORAGE & MAINTENANCE

Always:

- Completely drain oil filters before disposal by poking a hole in the top and allowing it to drain in a clearly marked container for 24 hrs.
- Keep “clean-up supplies” such as a containment drum, kitty litter, sand, sawdust, a shovel, a broom and dustpan in your storage facility and ready to use.
- Clean up all spills and leaks immediately with absorbent materials.
- Keep others away from the spill and make sure it does not run off into other areas.
- Scoop all into a leak-proof container and properly dispose of it.

When Possible:

- Conduct maintenance within a building or covered area.
- Park vehicles/equipment indoors or under a roof.
- Drain fluid from stored/salvaged vehicles/equipment.

Never:

- Never conduct maintenance, refuel or change oil near storm drains.
- Never hose down the work area.



Inspect area for leaks on a regular basis. Address any known leaks immediately.

LANDSCAPING PRACTICES (mowing, irrigation, materials storage, etc.)

Always:

- Mow only as low as needed for the area's intended use. If areas are not being used, allow to return to meadow or field and mow once or twice per year rather than every week.
- Keep mower blades sharpened to avoid damaging grass leaf tissue.
- Remove any grass clippings off of paved surfaces and return to the grassed area.
- Water at appropriate times (when no rain is forecasted and in the morning).
- Place stockpiled materials (such as stone and mulch) away from ledge or rock outcrops, storm drains, ditches and surface waters.



When Possible:

- Keep stockpiles under cover or use erosion control mulch to contain.
- Use mulching type mowers if available.
- Re-seed and mulch area where soils are exposed.
- Mow when the grass is dry to prevent spread of turf diseases.

Never:

- Never use leaf blowers to blow waste into storm drains or ditches. Only blow into streets when it will be picked up within 24-48 hours or prior to a rain or heavy wind event.
- Never irrigate based on timers or schedules instead of monitoring for rainfall.
- Never deposit accumulated grass clippings on stream banks or other environmentally-sensitive areas.

BEACH MAINTENANCE

Always:

- Regularly empty trash containers and pick up any trash from the area.
- Report any erosion issues to **Fred Dillon, South Portland's Stormwater Program Coordinator**.
- Follow practices detailed in the "Wildlife" section of this plan.
- Use dry sweeping to clean up walkways and parking areas.

Never:

- Wash down walkways or parking areas.

FERTILIZERS

Always:

- Keep records/documentation of all materials applied, including when and where.
- Check the weather forecast and apply according to product instructions as to whether to apply dry or lightly with water.
- Store in closed containers labeled with contents and purchase date.
- Keep containers in a secure building enclosure and clean as needed.
- Always routinely inspect storage area for leaks, spills, residue, and trash.
- If fertilizer accidentally ends up on pavement, always sweep it up and put it back in the bag for reuse.

Whenever possible:

- Consider a low or no fertilizer approach to maintain turf.
- Perform a soil test to determine actual fertilization needs and application rate.
- Calibrate fertilizer spreaders to avoid excessive application.
- When fertilizer is needed, use slow or timed release nitrogen sources.

Never:

- Never apply fertilizers within five (5) feet of pavement, 25 feet of a storm drain inlet, or 50 feet of a stream or water body.

PESTICIDES

Always:

- Use a licensed commercial pesticide company or licensed personnel for pesticide application, storage and disposal.
- Keep records/documentation of all materials applied, including when and where.
- Check the weather forecast and apply according to product instructions as to whether to apply dry or lightly with water.
- Store in closed containers labeled with contents and purchase date.
- Keep containers in a secure building enclosure and clean as needed.
- Always routinely inspect storage area for leaks, spills, residue, and trash.

DE-ICING

Always:

- Clear snow as soon as possible from driveways, sidewalks, and pathways to minimize the likelihood of ice forming.
- Store deicing agents (rock salt or liquid solutions) in closed containers and/or buildings to avoid exposure to the elements and minimize runoff in stormwater or snow melt.

Whenever Possible:

- Use the minimum amount of salt and sand needed to get the job done.

WILDLIFE

Facts:

- Wildlife always have plenty of natural food source.
- They do not need human food, which has little to no nutritional value to wildlife.
- Birds and other animals that have a steady diet of human food are overweight and undernourished.
- Wildlife instinct is “fear of humans.” If this instinct is lost, wildlife could be hurt or killed and humans put themselves at risk too.

Never:

- Never feed wild animals and birds.



DUMPSTERS

Always:

- Locate dumpsters on concrete or paved areas.
- Only use dumpsters for disposal of non-liquids.
- Keep lids closed and drains plugged.
- Report any damaged or leaking dumpster to **Fred Dillon, South Portland's Stormwater Program Coordinator.**



