

**Stormwater Phase II
Annual Report for
Permit Year 2 (2009-10)**



City of South Portland, Maine Urban Impaired Stream Watersheds

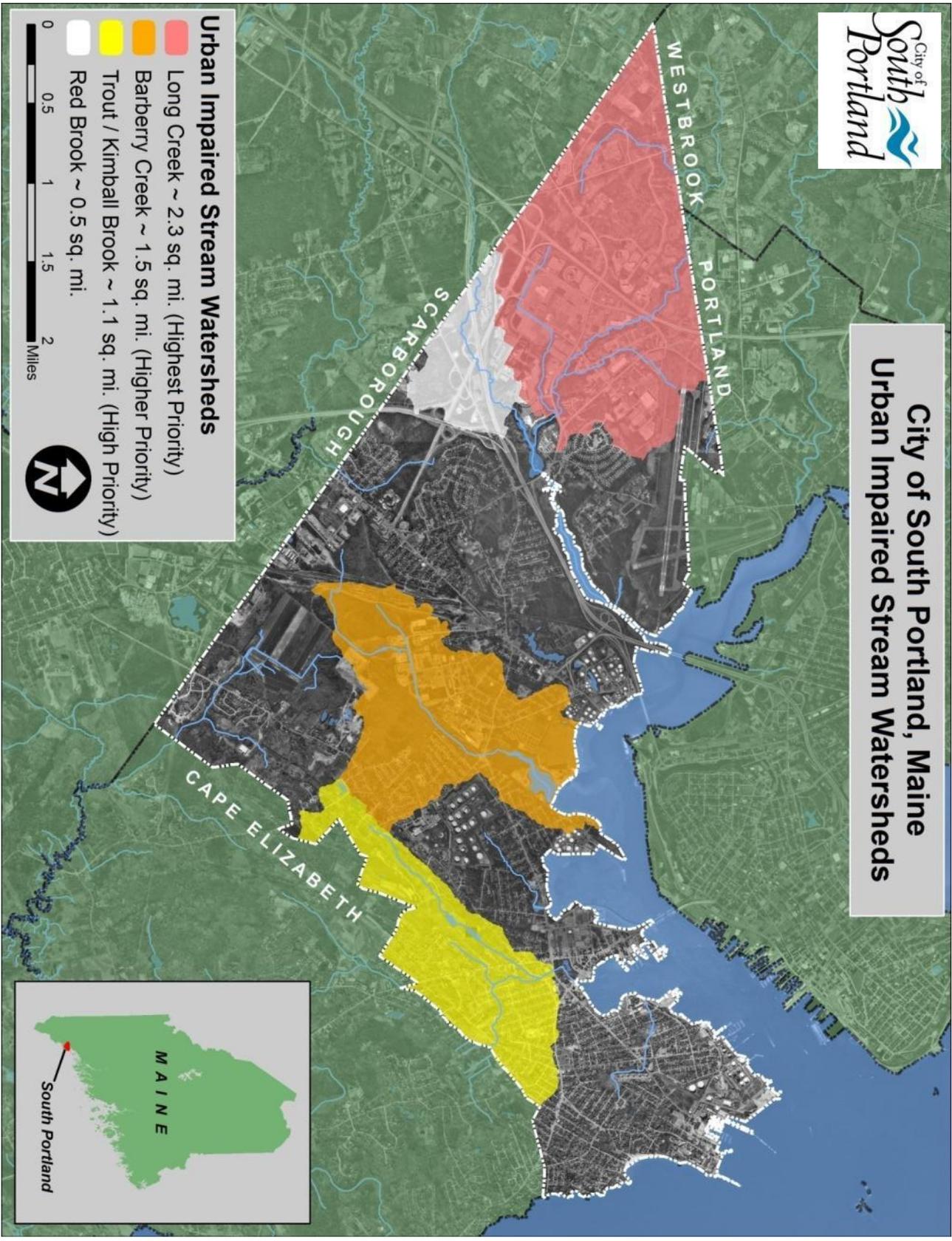


TABLE OF CONTENTS

Introduction and Report Summary	1
Minimum Control Measure 1 – Public Education and Outreach	3
BMP 1.1 Continue Awareness and Outreach Efforts from Previous Permit Cycle	3
BMP 1.2 Work with Existing Partners and Seek Out Partners to Help Raise Awareness of Stormwater Issues	4
BMP 1.3 Develop and Implement Stormwater Awareness Plan	6
BMP 1.4 Continue Targeted Best Management Practices Adoption Efforts from Previous MS4 Permit Cycle	7
BMP 1.5 Develop and Implement BMP Adoption Plan	7
BMP 1.6 School Outreach	8
BMP 1.7 Continue to Broadcast Water Quality Videos on Community Television	9
Minimum Control Measure 2 – Public Involvement and Participation	11
BMP 2.1 Public Notice Requirement	11
BMP 2.2 Host Public Event	12
BMP 2.3 Encourage Municipal Involvement in Public Outreach	14
Minimum Control Measure 3 – Illicit Discharge Detection and Elimination	15
BMP 3.1 Develop a Watershed Based Storm Sewer System Infrastructure Map	15
BMP 3.2 Non-Stormwater Discharge Ordinance	17
BMP 3.3 Develop Dry Weather Outfall Inspection Program	17
BMP 3.4 Open Ditch Illicit Discharge Program Within the Highest Priority Watershed	18
BMP 3.5 Household Hazardous Waste Collection	19
BMP 3.6 Support the Friends of Casco Bay Mobile Vessel Pumpout Service	19
BMP 3.7 Public Complaint Hotline	20
BMP 3.8 Storm Drain Stenciling	21

Minimum Control Measure 4 – Construction Site Stormwater Runoff Control	23
BMP 4.1 Notification to Construction Site Developers and Operators of Registration Requirements under Maine Construction General Permit or Chapter 500 – Management for the Discharge of Stormwater Associated with Construction Activities	23
BMP 4.2 Develop and Implement a Mechanism to Annually Document Every Construction Activity that Disturbs One or More Acres Within the Urbanized Area	24
BMP 4.3 Develop and Implement a Construction Site Inspection Program	25
BMP 4.4 Promote Certified Contractors in Erosion Control Practices	27
Minimum Control Measure 5 – Post-Construction Stormwater Management in Development and Redevelopment	28
BMP 5.1 Implement Ordinance or Similar Measure	28
BMP 5.2 Develop and Implement a Method to Track Post-Construction BMPs in the Urbanized Area and Develop and Implement a Tracking System for Annual Certifications Required by Owner or Operator of the Post-Construction BMPs	29
Minimum Control Measure 6 – Pollution Prevention / Good Housekeeping for Municipal Operations	31
BMP 6.1 Operations at Municipally Owned Grounds and Facilities	31
BMP 6.2 Municipal Employee Training	32
BMP 6.3 Street Sweeping	32
BMP 6.4 Cleaning of Stormwater Structures Including Catch Basins	33
BMP 6.5 Maintenance and Upgrading of Stormwater Conveyances and Outfalls	34
BMP 6.6 Stormwater Pollution Prevention Plans (SWPPPs)	35
Summary of Stormwater Activities for 2010-11 Reporting Year	37
Stormwater Program Budget Summaries for 2009-10 & 2010-11 Reporting Years	43
APPENDICES	44
Appendix 1: Interlocal Stormwater Working Group Permit Year 2 Summary of Minimum Control Measure 1 – Stormwater Awareness Plan Implementation	45
Appendix 2: Stormwater Pollution Slide Show Posted on City’s Website	59

Appendix 3: Results from October 17, 2009 Household Hazardous Waste Collection Day Questionnaire____68

Appendix 4: Map of Long Creek Watershed Dry Weather Outfall Inspections for PY 2009-10_____69

Appendix 5: Map of Open Drainage Ditches in Highest Priority Watershed (Long Creek)_____70

Appendix 6: Friends of Casco Bay Acknowledgement Letter for City’s Continued Support of Pumpout Program_____71

Appendix 7: Example of South Portland’s Illicit Discharge Detection & Elimination Form_____72

Appendix 8: Construction Projects 1 Acre or Greater Requiring E&SC Inspections_____75

Appendix 9: Example of E&SC Inspection Report for Project 1 Acre or Less_____76

Appendix 10: ISWG O&M Procedures for Stormwater Pollution Controls of Municipal Facilities or Operations_____79

Appendix 11: Sweeping Cost Analysis for Long Creek Watershed_____87

Appendix 12: Stormwater System Construction Projects Cost Summary for 2009-10_____88

ACKNOWLEDGEMENTS

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

- **Pat Cloutier** ~ Director of Water Resource Protection Department
- **Brad Weeks** ~ City Engineer
- **Pam McCarthy** ~ WRP Office Manager
- **Dave Thomes** ~ Collection Systems Manager
- **Jerry Collett** ~ Sewer Maintenance Foreman
- **Jeff Moulton** ~ Sewer Maintenance Worker II
- **Fred Dillon** ~ Stormwater Program Coordinator

WRPD staff would also like to thank the following individuals for their assistance in developing this report:

- **Tex Haeuser** ~ South Portland Planning & Development Department
- **Steve Puleo** ~ South Portland Planning & Development Department
- **Dave Kasik** ~ South Portland Planning & Development Department
- **Sarah Neuts** ~ South Portland Parks & Recreation Department
- **Maurice Amaral** ~ South Portland Community Television
- **Tamara Lee Pinard** ~ Cumberland County Soil and Water Conservation District
- **Jami Fitch** ~ Cumberland County Soil and Water Conservation District
- **Tom Burns** ~ GIS Mapping & Analysis

Introduction and Report Summary

The City of South Portland continued its commitment to protect and improve local water resources through its ongoing participation in Maine's Small Municipal Separate Storm Sewer Systems (MS4) program. City staff and program partners from the Interlocal Stormwater Working Group (ISWG), the Friends of Casco Bay (FOCB), the Casco Bay Estuary Partnership, and the South Portland Land Trust (SPLT) - among others - all participated in a wide variety of activities to mitigate the effects of stormwater pollution. This annual report documents these activities for the second Permit Year in the second five year General Permit Cycle (2008-2013).

A brief summary of the six required Minimum Control Measures (MCMs) along with the corresponding Best Management Practices (BMPs) is provided below. BMPs for all Minimum Control Measures were completed successfully as planned. The full report that follows includes a description of actions completed for the measurable goals of each BMP along with permit compliance status, an assessment of the appropriateness of identified BMPs, progress achieving identified measurable goals for each of the MCMs, and progress achieving the goal of reducing the discharge of pollutants to the maximum extent practicable. Also included are the results of information collected and analyzed during the reporting period, a summary of stormwater activities the City will complete in the 2010-2011 reporting cycle, and an estimate of annual expenditures for permit compliance for the reporting period and projected budget for the following year.

Minimum Control Measure 1 – Public Education and Outreach

- BMP 1.1 - Continue Awareness and Outreach Efforts from Previous Permit Cycle
- BMP 1.2 - Work with Existing Partners and Seek Out Partners to Help Raise Awareness of Stormwater Issues
- BMP 1.3 - Develop and Implement Stormwater Awareness Plan
- BMP 1.4 - Continue Targeted Best Management Practices Adoption Efforts from Previous MS4 Permit Cycle
- BMP 1.5 - Develop and Implement BMP Adoption Plan
- BMP 1.6 - School Outreach
- BMP 1.7 - Continue to Broadcast Water Quality Videos on Community Television

Minimum Control Measure 2 – Public Involvement and Participation

- BMP 2.1 - Public Notice Requirement
- BMP 2.2 - Host Public Event
- BMP 2.3 - Encourage Municipal Involvement in Public Outreach

Minimum Control Measure 3 – Illicit Discharge Detection and Elimination

- BMP 3.1 - Develop a Watershed Based Storm Sewer System Infrastructure Map
- BMP 3.2 - Non-Stormwater Discharge Ordinance

- BMP 3.3 - Develop Dry Weather Outfall Inspection Program
- BMP 3.4 - Open Ditch Illicit Discharge Program Within the Highest Priority Watershed
- BMP 3.5 - Household Hazardous Waste Collection
- BMP 3.6 - Support the Friends of Casco Bay Mobile Vessel Pumpout Service
- BMP 3.7 - Public Complaint Hotline
- BMP 3.8 - Storm Drain Stenciling

Minimum Control Measure 4 – Construction Site Stormwater Runoff Control

- BMP 4.1 - Notification to Construction Site Developers and Operators of Registration Requirements under Maine Construction General Permit or Chapter 500 – Management for the Discharge of Stormwater Associated with Construction Activities
- BMP 4.2 - Develop and Implement a Mechanism to Annually Document Every Construction Activity that Disturbs One or More Acres Within the Urbanized Area
- BMP 4.3 - Develop and Implement a Construction Site Inspection Program
- BMP 4.4 Promote Certified Contractors in Erosion Control Practices

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

- BMP 5.1 - Implement Ordinance or Similar Measure
- BMP 5.2 - Develop and Implement a Method to Track Post-Construction BMPs that are Installed Within the Urbanized Area, and Develop and Implement a System to Track Annual Certifications that are Required by the Owner or Operator of the Post-Construction BMPs

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

- BMP 6.1 - Operations at Municipally Owned Grounds and Facilities
- BMP 6.2 - Municipal Employee Training: *no measureable goals specified for Permit Year 2*
- BMP 6.3 - Street Sweeping
- BMP 6.4 - Cleaning of Stormwater Structures Including Catch Basins
- BMP 6.5 - Maintenance and Upgrading of Stormwater Conveyances and Outfalls
- BMP 6.6 - Stormwater Pollution Prevention Plans (SWPPPs)

City of South Portland Storm Water Phase II
Permit Year 2 Annual Report for Permit Cycle 2
(July 1, 2009 – June 30, 2010)

Minimum Control Measure 1 – Public Education and Outreach

The City of South Portland fulfilled its requirements for Public Education and Outreach Minimum Control Measure through participation in and collaboration with the Interlocal Stormwater Working Group (ISWG) and the continued funding to the ISWG for Public Education and Outreach services. The City also continued its partnership with the Friends of Casco Bay and collaborated with the Casco Bay Estuary Partnership, South Portland Land Trust and Maine Board of Pesticides Control on several stormwater management efforts.

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 which reduce stormwater pollution; and
3. To reduce stormwater pollution as a result of increased awareness and utilization of BMPs.

BMP 1.1 Continue Awareness Outreach Efforts from Previous Permit Cycle

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

FUNCTION

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

The City continued its collaboration with the Interlocal Stormwater Working Group (ISWG) to increase public awareness of stormwater management issues. Through these collaborations we assisted with the dissemination of education and outreach materials.

PERMIT YEAR 2 MEASURABLE GOALS

- **Measureable Goal 1.1.1** – continue education and outreach efforts from previous permit year by providing [Think Blue Maine](#) and [YardScape](#) links on [City's website](#).
- **Measureable Goal 1.1.2** – continue outreach efforts from previous permit year through ongoing partnership with ISWG, which continued to use Think Blue Maine ducky logos on all YardScaping

materials to reinforce connection between lawn care activities and stormwater issues.

- **Measureable Goal 1.1.3** – continue outreach efforts from previous permit year through ongoing partnership with ISWG by posting informational materials in municipal buildings to raise awareness of stormwater management issues.

ACTIONS COMPLETED DURING PERMIT YEAR 2

The City continued to provide the [Think Blue Maine](#) and [YardScape](#) links on its [website](#) and educational materials in municipal buildings (including schools) to help promote public awareness of local and regional stormwater management issues. The City also continued its collaboration with the ISWG in a variety of awareness outreach efforts as described in their Permit Year 2 Summary of Minimum Control Measure 1 (**Appendix 1**). Therefore, all goals associated with this BMP were completed successfully as intended.

FOLLOW THE FLOW **Where does water go?**

Not all water that falls on your property soaks into the ground. As water flows off your property, it can wash pollutants such as soil, lawn chemicals and pet waste into where we fish, what we drink and where we swim.

It's up to all of us to protect our local rivers, lakes and bay from polluted runoff.

Learn how at
www.ThinkBlueMaine.org



BMP 1.2 Work with Existing Partners and Seek Out New Partners to Help Raise Awareness of Stormwater Issues

Responsible Party: ISWG Ed. Coordinator

Additional Party: Stormwater Program Coordinator

FUNCTION

To increase impact and effectiveness of public education and outreach stormwater awareness efforts through enlistment of additional partners.

METHODOLOGY

Collaborate with Interlocal Stormwater Working Group (ISWG) and enlist additional partners such as the Friends of Casco Bay, the Casco Bay Estuary Partnership, the Maine Board of Pesticide Control and other organizations to help raise awareness of stormwater management issues.

PERMIT YEAR 2 MEASURABLE GOALS

- **Measureable Goal 1.2.1** – partner with Think Blue Maine, Casco Bay Estuary Partnership, Maine Board of Pesticide Control, MEDEP and University of Maine Cooperative Extension.

ACTIONS COMPLETED DURING PERMIT YEAR 2

The City continued its collaboration with the ISWG to enlist new partners for increased public awareness of stormwater issues as described in **Appendix 1**. Additionally, the City continued to promote public awareness through a wide variety of activities with various partner organizations committed to addressing stormwater pollution issues (Table 1). Therefore, the goal associated with this BMP was completed successfully as intended.

Table 1: City stormwater outreach activities conducted in collaboration with partner organizations

Partner Organization	Activities	Date
Friends of Casco Bay / Southern Maine Community College	Conducted storm drain stenciling with SMCC students and provided supplies to FOCB for subsequent stenciling events	November 2009
Maine Board of Pesticides Control & Friends of Casco Bay	Assisted in collection of sediment sample for pesticides analysis on Trout Brook and provided guidance for sediment sample collection in tidal portion of Long Creek (results will be used to inform targeted BayScaping activities)	December 2009
Maine Conservation Corps / Americorps	Partnered with MCC to create " Clean the Creek " video of Mahoney Middle School students for broadcast on South Portland Community Television	April 2010
U. Maine Cooperative Extension / Maine Sea Grant	Provided input for development of survey instrument to assist in determining level of municipal preparedness for coastal impacts from climate change (results will be used to administer state-wide survey to coastal communities)	April 2010
ISWG & MEDEP	Coordinated, hosted and moderated very well attended Stormwater Pollution Prevention Plan (SWPPP) training for municipal staff of ISWG member communities	May 2010
Casco Bay Estuary Partnership	Presented info to CBEP "Clam Team" on stormwater BMPs for attenuation of bacterial contamination in coastal areas	June 2010
CCSWCD / ISWG	Met with Mahoney Middle School science teacher to discuss ideas for integrating water quality considerations into curriculum for 2010-11 school year	June 2010



BMP 1.3 Develop and Implement Stormwater Awareness Plan

Responsible Party: ISWG Education Coordinator

Additional Party: N/A

FUNCTION

To increase homeowner awareness of stormwater issues through the development of a systematic and concerted program among MS4 clusters and other interested parties throughout the state.

METHODOLOGY

Continue participation in and collaboration with the ISWG to develop a variety of educational outreach materials through the implementation of a Stormwater Awareness Plan.

PERMIT YEAR 2 MEASURABLE GOALS

- **Measureable Goal 1.3.3** – receive MDEP approval for Stormwater Awareness Plan by July 1, 2009 and begin implementation immediately thereafter. This will include ongoing annual evaluations of process indicators for the remainder of the permit cycle.

ACTIONS COMPLETED DURING PERMIT YEAR 2

Through the City’s continued participation in and collaboration with the ISWG, a Stormwater Awareness Plan was developed and approved by DEP in June 2009 as described in **Appendix 1**. The report describes the implementation status of the Awareness Plan and process indicators and identifies significant milestones and any changes made to the Awareness Plan. Therefore, all goals associated with this BMP were completed successfully as intended.

BMP 1.4 Continue Targeted Best Management Practices Adoption Efforts from Previous MS4 Permit Cycle

Responsible Party: ISWG Education Coordinator

Additional Party: N/A

FUNCTION

To increase homeowner awareness about the types of Best Management Practices that can be employed to address stormwater issues at the individual parcel level.

METHODOLOGY

Continue participation in and collaboration with the ISWG to promote the use of Best Management Practices through a variety of educational outreach materials and activities.

PERMIT YEAR 2 MEASURABLE GOALS

- **Measureable Goal 1.4.1** – the ISWG will continue to refine YardScaping materials, as needed, based on either new research or feedback from users. It will offer YardScaping Adult Education classes to change lawn care practices and build local support for implementation of YardScaping practices. ISWG will also develop and streamline the Point of Sale lawn care education program by incorporating lessons learned, developing new or refining existing promotional materials, offering YardScaping classes at Point of Sale locations, refining tracking methods for products and promotional materials, and building local networks for dissemination of YardScaping materials.

ACTIONS COMPLETED DURING PERMIT YEAR 2

The City continued its collaboration with the ISWG to promote the adoption of Best Management Practices by homeowners and other interested parties as described in **Appendix 1**. Therefore, the goal associated with this BMP was completed successfully as intended.

BMP 1.5 Develop and Implement BMP Adoption Plan

Responsible Party: ISWG Education Coordinator

Additional Party: N/A

FUNCTION

To change homeowner landscaping behaviors for decreased usage of lawn fertilizers, pesticides and herbicides; and to promote the adoption of BMPs that minimize stormwater pollution (e.g., higher / less frequent mowing, water conservation, lawn seeding in the fall, etc.).

METHODOLOGY

Continue participation in and collaboration with the ISWG to implement a [MDEP-approved BMP Adoption Plan](#).

PERMIT YEAR 2 MEASURABLE GOALS

- **Measureable Goal 1.5.3** – implement MDEP-approved BMP Adoption Plan that includes annual evaluations of process indicators.

ACTIONS COMPLETED DURING PERMIT YEAR 2

The City continued its collaboration with the ISWG to implement a MDEP-approved BMP Adoption Plan as described in **Appendix 1**, which details the implementation status of the Plan and identifies significant milestones along with any changes made to the Plan. Therefore, the goals associated with this BMP were completed successfully as intended.

BMP 1.6 School Outreach

Responsible Party: ISWG Ed. Coordinator

Additional Party: Stormwater Program Coordinator

FUNCTION

To promote increased awareness about water quality and stormwater pollution issues in the City’s public school system.

METHODOLOGY

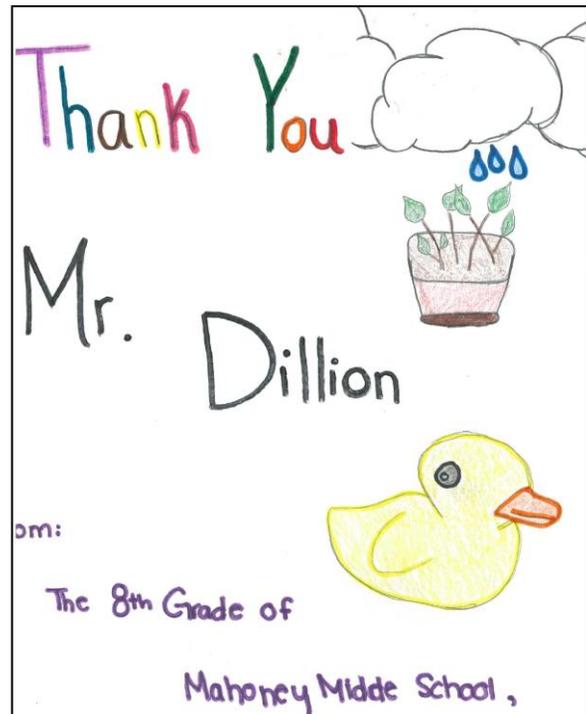
Continue participation in and collaboration with the ISWG to conduct a variety of educational outreach activities. Also attempt to build partnerships between City staff and local schools to integrate water quality and stormwater program concepts into academic curriculum.

PERMIT YEAR 2 MEASURABLE GOALS

- **Measureable Goal 1.6.1** – as funding permits, continue the incorporation and implementation of “It’s all connected” school curriculum in elementary and/or middle schools.

ACTIONS COMPLETED DURING PERMIT YEAR 2

The City continued its collaboration with the ISWG to conduct educational outreach activities as described in **Appendix 1**. We were also able to establish a very productive working relationship with Mahoney Middle School. In April of 2010, we produced a video of Mahoney Middle School students conducting a clean-up of Trout Brook in Mill Creek Park entitled “[Clean the Creek](#)”, which is posted on the South Portland Community Television website for viewing by members of the public. In May of 2010, we presented



information on watersheds, water quality, the impacts of various land uses and development on water quality and the City’s stormwater program (**Appendix 2**). We also provided a slightly modified version of this presentation entitled “[Stormwater Pollution in South Portland and What You Can Do About It](#)” for the general public on our website. Therefore, the goals associated with this BMP were completed successfully as intended.

BMP 1.7 Continue to Broadcast Water Quality Videos on Community Television

Responsible Party: Stormwater Program Coordinator

Additional Party: N/A

FUNCTION

To promote increased awareness about stormwater pollution issues among South Portland residents and other interested parties.

METHODOLOGY

Use the City’s Community Television system to broadcast educational videos about water quality issues and considerations.

PERMIT YEAR 2 MEASURABLE GOALS

- **Measurable Goal 1.7.1** – continue to air videos related to water quality on South Portland’s Community Television system.

ACTIONS COMPLETED DURING PERMIT YEAR 2

The City’s Community Television system continued to extensively air educational videos highlighting a wide variety of water quality related topics. During the permit year period, SPCTV broadcast nearly 160 hours of programming related to water quality (Table 2). Of particular note, (and as described above) City staff produced a “[Clean the Creek](#)” video of Mahoney Middle School students conducting a clean-up of Trout Brook in Mill Creek Park which is posted on the SPCTV website for viewing by the general public. We also coordinated and attended meetings with our counterparts from the City of Portland and the Executive Director of the Portland Community Television Network to discuss producing a video of stormwater program activities for airing on CTN (which reaches a much larger audience than the local access channels). These discussions are currently ongoing.

We are also still interested in producing a video that highlights recent changes in turf management practices at some of the City’s athletic fields (i.e., use of organic fertilizers, pesticides and herbicides rather than their synthetic counterparts). This video may be produced in the spring of 2011. The City is also considering the production of a video that details the importance of illicit discharges to South Portland’s surface waters and how residents can report suspected illicit discharge incidents using the City’s anonymous website and phone hotline. As a result of these various activities, the goal associated with this BMP was completed successfully as intended.

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 for improving water quality and reducing stormwater quantity via the implementation of the City's [Stormwater Program Management Plan](#) and [Stormwater Management Performance Standards](#) (Chapter 27-153.1). The City fulfilled its requirements for the Public Involvement and Participation Minimum Control Measure through its continued participation in and collaboration with the Interlocal Stormwater Working Group (ISWG) and the continued funding to the ISWG for Public Involvement and Participation services.

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.

BMP 2.1 Public Notice Requirement

Responsible Party: ISWG Stormwater Program Coordinator & LCWMD Executive Director

Additional Parties: Water Resource Protection & Planning Departments

FUNCTION

To provide appropriate public notice for meaningful involvement and participation in the planning and implementation of the City's Stormwater Management Program, Performance Standards (Chapter 27-153.1) and Long Creek Watershed Management Plan.

METHODOLOGY

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

PERMIT YEAR 2 MEASURABLE GOALS

- **Measureable Goal 2.1.1** – ISWG, the City and the Long Creek Watershed Management District will follow state and local Public Notice requirements for Stormwater Program Management Plans and Watershed Management Districts. Copies of the plans will be made available on the DEP and Long Creek Restoration project websites.
- **Measureable Goal 2.1.2** – ISWG, the City and the Long Creek Watershed Management District will follow state and local Public Notice requirements when involving stakeholders in the implementation of the MS4 General Permit, the City's Stormwater Program Management Plan, the

City’s Stormwater Management Performance Standards (Ch. 27-153.1) and the Long Creek Watershed Management Plan.

ACTIONS COMPLETED DURING PERMIT YEAR 2

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](#).

As a quasi-municipal body, 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](#). As a result of these numerous activities, the goals associated with this BMP were completed successfully as intended.

BMP 2.2 Host Public Event

Responsible Party: ISWG Education Coordinator Additional Party: Water Resource Protection Dept.

FUNCTION

To increase public awareness of stormwater pollution issues for a target audience in a segment of the urbanized area.

METHODOLOGY

Provide highly visible opportunities for members of the public to meaningfully participate in activities to reduce impacts from stormwater pollution.

PERMIT YEAR 2 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 2

Household Hazardous Waste Collection

The City organized a Household Hazardous Waste Cleanup Day on October 17, 2009. This well-attended event was held at the Water Resource Protection Department’s Wastewater Treatment Facility and

resulted in the collection of a variety of wastes including pharmaceuticals, batteries (lead acid, nickel cadmium and lithium), fluorescent lights, various solvents, liquid pesticides, and paints, among other materials. To assist in improving these services to South Portland residents, the City also administered a resident questionnaire. The results indicated that a considerable number of questionnaire respondents were familiar with Think Blue Maine, the City’s stormwater management efforts and the Long Creek Restoration Project while fewer were familiar with YardScaping and the Interlocal Stormwater Working Group (**Appendix 3**). We will administer a similar questionnaire again at the Household Hazardous Waste Collection Day for PY 2010-11.

Stormwater Pollution Prevention Plan Training

In partnership with the Maine Department of Environmental Protection (MEDEP), the Cumberland County Soil & Water Conservation District (CCSWCD) and the Interlocal Stormwater Working Group (ISWG), the City coordinated, hosted and moderated a Stormwater Pollution Prevention Plan Training event on May 7, 2010. This event was attended by municipal officials from several ISWG member communities. In addition to providing a location for the didactic portion of the training, the City also provided a host site for the field portion of the training (school bus maintenance facilities).

Philbrook Avenue Riparian Buffer Planting

In September of 2009, the City partnered with the MDEP, CCSWCD and ISWG to complete a buffer planting along the South Branch of Long Creek in support of restoration efforts there. Over a dozen volunteers from local businesses and nonprofit groups also assisted in planting 2,000 feet of streamside vegetation to provide wildlife habitat and food for aquatic animals, while also providing shade and temperature control for the stream.



As a result of these numerous activities, the goals associated with this BMP were completed successfully as intended.

BMP 2.3 Encourage Municipal Involvement in Public Outreach

Responsible Party: Stormwater Program Coordinator

Additional Party: N/A

FUNCTION

To increase the role of other City departments in promoting awareness of local and regional stormwater pollution issues.

METHODOLOGY

Continue communications with and provide educational materials to other municipal departments (e.g., Planning & Development, Code Enforcement, Public Services, School, etc.) to disseminate to the public, contractors, developers and other interested parties.

PERMIT YEAR 2 MEASURABLE GOALS

- **Measurable Goal 2.3.1** – continue to participate in public outreach (e.g. serving on local water resource committees, participating in public/school events, writing water quality/stormwater articles) or encourage other municipal involvement, as appropriate.

ACTIONS COMPLETED DURING PERMIT YEAR 2

Members of the Water Resource Protection Department (WRPD) staff continued their close involvement in and commitment to local water resource protection concerns by serving in various capacities on the boards of regional organizations. The Director of the Water Resource Protection Department is currently serving on the Casco Bay Estuary Partnership’s (CBEP) Executive Board. The mission of CBEP is to protect and restore the water quality, and fish and wildlife habitat of the Casco Bay ecosystem, while ensuring compatible human uses.

Additionally, the Collection Systems Manager and Stormwater Program Coordinator serve on the Interlocal Stormwater Working Group (ISWG), which consists of 14 communities in the Greater Portland metropolitan area working in collaboration to address stormwater management concerns in the region. In early 2010, the Collection Systems Manager began serving a 3 year term on the Long Creek Watershed Management District (LCWMD) Governing Board. The LCWMD is responsible for overseeing the restoration of Long Creek through the implementation of the Watershed Management Plan. The Stormwater Program Coordinator is serving on the LCWMD’s Technical Committee, which will provide guidance to the Board for the implementation of stormwater management practices.

Educational brochures are available at several municipal locations throughout the City. The Planning & Development, Code Enforcement and Public Services departments all provide Maine Erosion and Sedimentation Control Law brochures to contractors, construction site owners or operators, members of the general public and other interested parties. The City has also provides informational materials on stormwater management and water resource protection at numerous locations throughout South Portland. As a result of these numerous and varied activities, the goal associated with this BMP was completed successfully as intended.

Minimum Control Measure 3 – Illicit Discharge Detection & Elimination

The City of South Portland fulfilled its requirements for the Illicit Discharge Detection & Elimination (IDDE) Minimum Control Measure through a variety of activities as described below. The overall goal of this MCM is to implement and enforce a program to detect and eliminate illicit discharges and non-stormwater discharges.

BMP 3.1 Develop a Watershed Based Storm Sewer System Infrastructure Map

Responsible Party: Water Resource Protection

Additional Party: N/A

FUNCTION

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

METHODOLOGY

Continue to contract with consultant and hire summer intern for GPS data collection and GIS mapping of all stormwater related infrastructure in the City.

PERMIT YEAR 2 MEASURABLE GOALS

- **Measurable Goal 3.1.2** – continue to field verify / locate any stormwater infrastructure (e.g., catch basins, drain manholes, culverts under public roadways, etc.) that has not yet been added to the GIS spatial database. Continue developing / refining digital stormwater infrastructure map for the entire City including a target schedule for completing mapping of the highest priority watershed (Long Creek).
- **Measurable Goal 3.1.3** – by the end of Permit Year 5, develop watershed-based stormwater infrastructure map showing the location of all catch basins, connecting surface and subsurface infrastructure with in-flow and out-flow pipe direction, and locations of all discharges of stormwater outfalls.

Each catch basin will be uniquely identified to facilitate control of potential illicit discharges, and to ensure proper operation and maintenance of the structures. For each outfall, the following information will be included: type, material, and size of conveyance; outfall or channelized flow (e.g. 24" concrete pipe); and the name and location of the immediate surface water body or wetland to which the stormwater runoff discharges (or, if an outfall does not discharge directly to a named water body, the name and location of the nearest named water body to which the outfall eventually discharges).

ACTIONS COMPLETED DURING PERMIT YEAR 2

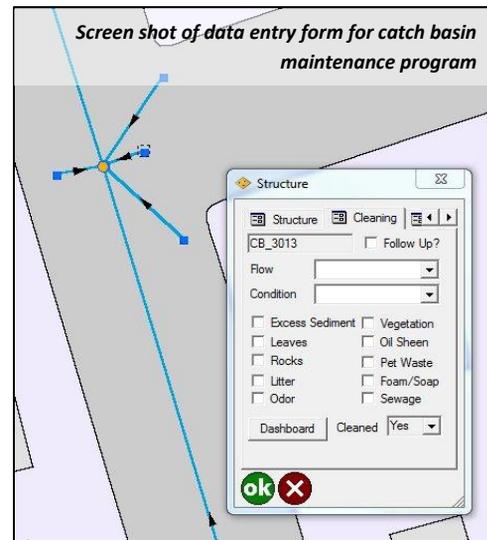
The Water Resource Protection Department (WRPD) has employed a watershed framework to complete nearly all of the digital mapping (~90%) for the publicly-owned stormwater infrastructure throughout the

entire City. Unique identifiers have been assigned to nearly all located¹ publicly-owned outfalls, catch basins and drain manholes for the entire City and flow directions have been assigned to nearly all located stormwater pipes. Extensive attribute information has been collected for each outfall in the Long Creek watershed (Table 3), and the City will be collecting similar information for the remaining urban impaired stream watersheds for the duration of the permit period.

Table 3: Attribute information collected for each stormwater outfall

Inspector	Odor
Approx. Temperature	Water clarity
Wind Present	Pipe flow
Recent Precip. (in.)	Seepage flow
Inspection Date	Flow color
Inspection Time	Sediment condition
Outfall Id	Structure condition
Submerged	Trash / litter present
Pipe material	Yard waste present
Pipe shape	Inspection status
Pipe size	Follow-up needed
Debris / pollution present	General comments

Additionally, in the summer of 2010 the City implemented a GIS-based asset management system for our catch basin maintenance program. While cleaning catch basins, maintenance crews use a Toughbook laptop computer to collect key attribute information for each structure that will be integrated into an asset management program to assist in optimizing system performance. WRPD staff also coordinated a meeting and facilitated ongoing communications between the City’s GIS consultant and the MEDEP to ensure consistency and data sharing for continued refinement of the Long Creek watershed delineation. As a result of these activities, the City continues to be considerably ahead of schedule for the goals of this BMP.



¹ While the City has expended considerable time and effort to locate and identify all publicly-owned stormwater infrastructure, there may still be undocumented portions of the system that have yet to be discovered.

BMP 3.2 Non-Stormwater Discharge Ordinance

Responsible Party: Stormwater Program Coordinator

Additional Party: N/A

FUNCTION

To prohibit unpermitted or un-allowed 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.

PERMIT YEAR 2 MEASURABLE GOALS

- **Measurable Goal 3.2.1** – continue to enforce the Non-Stormwater Discharge Ordinance.

ACTIONS COMPLETED DURING PERMIT YEAR 2

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 passed on September 8, 2004. Therefore, the goal for this BMP was completed as intended. (Please see BMP 3.7 for a summary of IDDE inspections conducted for the permit year).

BMP 3.3 Develop Dry Weather Outfall Inspection Program

Responsible Party: Stormwater Program Coordinator

Additional Party: N/A

FUNCTION

To identify potential sources of illicit non-stormwater discharges for elimination.

METHODOLOGY

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

PERMIT YEAR 2 MEASURABLE GOALS

- **Measurable Goal 3.3.6** – continue dry weather outfall inspections in the additional sub-watersheds within the highest priority watershed (Long Creek). A minimum of 25 dry weather inspections will be conducted per year, which may include opportunistic inspections.

ACTIONS COMPLETED DURING PERMIT YEAR 2

The City continued its dry weather outfall inspection program in the Long Creek watershed based on the recommendations made in the Long Creek Watershed Management Plan, which prioritized subwatersheds for restoration activities as determined by the best opportunities for structural stormwater retrofits.

As with last year, the field data collection form for conducting dry weather inspections of stormwater outfalls was derived directly from the format provided in *Guidelines and Standard Operating Procedures for Stormwater Phase II Communities in Maine*. This form has been converted into a digital format for use with a handheld Trimble Juno GPS unit, which City staff employed to conduct all stormwater outfall inspections. Data from the Juno can be exported in a variety of formats for seamless integration with traditional electronic document formats (e.g., Excel, Access, etc.).

City staff used the Juno to inspect 33 of the approximately 80 stormwater outfalls in the Long Creek watershed during the months of September and November of 2009 and June of 2010 (**Appendix 4**). The number of outfalls inspected this permit year was fewer than last year since the documentation process was more extensive (photos were taken of each outfall) and the total number of outfalls in the watershed decreased from 97 to 80 based on the use of the MEDEP’s watershed delineation rather than the City’s delineation, which previously included the area below Clark’s Pond. As discussed above, the City and MEDEP have since reconciled the differences between the watershed delineations for Long Creek. Therefore, the City completed the goals for this BMP as intended.



Trimble Juno GPS unit for dry weather outfall inspection data entry and transfer

BMP 3.4 Open Ditch Illicit Discharge Program Within the Highest Priority Watershed

Responsible Party: Stormwater Program Coordinator

Additional Party: N/A

FUNCTION

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 the Long Creek watershed in relation to the City’s stormwater collection system and develop an IDDE strategy for all relevant ditches.

PERMIT YEAR 2 MEASURABLE GOALS: none specified / required

- **Measurable Goal 3.4.1** – by the end of Permit Year 2, identify the approximate length of open ditch that is located within its highest priority watershed (Long Creek).

ACTIONS COMPLETED DURING PERMIT YEAR 2

All of the open ditches in the Long Creek watershed that the City must maintain within the public right-of-way were located through a combination of GIS analysis and field verification. According to these estimates, there are approximately 1,870' of open drainage ditches that will eventually be incorporated into the City's IDDE program (**Appendix 5**). Illicit discharges detected in any of these open ditches along with any subsequent actions taken will be reported under MCM 3, BMP 3.2, Non-Stormwater Discharge Ordinance. As a result of these activities, the goal associated with this BMP was completed successfully as intended.

BMP 3.5 Household Hazardous Waste Collection

Responsible Party: Water Resources Protection

Additional Party: N/A

FUNCTION

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

METHODOLOGY

Host an annual Household Hazardous Waste collection day.

PERMIT YEAR 2 MEASURABLE GOALS

- **Measurable Goal 3.5.1** – 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 2

As described above, the City organized a Household Hazardous Waste Cleanup Day on October 17, 2009. The event was held at the Water Resource Protection Department's Wastewater Treatment Facility and resulted in the collection of a variety of wastes including pharmaceuticals, batteries (lead acid, nickel cadmium and lithium), fluorescent lights, various solvents, liquid pesticides, and paints, among other materials. The cost to the City for this one day event was \$11,874. The City's Household Hazardous Waste (HHW) Collection Day for 2010 will take place on October 16th and will include a participant survey questionnaire similar to the one administered last year (**Appendix 3**) to measure residential awareness of general HHW considerations and to help gauge the effectiveness of the program. Therefore, the goal associated with this BMP was completed successfully as intended.

BMP 3.6 Support the Friends of Casco Bay Mobile Vessel Pumpout Service

Responsible Party: Water Resources Protection

Additional Party: N/A

FUNCTION

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

METHODOLOGY

Annual financial contribution to pumpout program.

PERMIT YEAR 2 MEASURABLE GOALS

- **Measureable Goal 3.6.1** – as funding is available, continue to financially support the mobile vessel pumpout service.

ACTIONS COMPLETED DURING PERMIT YEAR 2

In recognition of the valuable role the mobile vessel pumpout service plays for South Portland’s coastal community, the City continued its ongoing support of the Friends of Casco Bay’s program (**Appendix 6**). Therefore, the goal associated with the BMP was completed successfully as intended.

BMP 3.7 Public Complaint Hotline

Responsible Party: Water Resources Protection

Additional Party: N/A

FUNCTION

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.

PERMIT YEAR 2 MEASURABLE GOALS

- **Measureable Goal 3.7.1** – 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 2

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. While no complaints were filed through the online system during the permit year, several Illicit Discharge Detection & Elimination (IDDE) inspections were conducted in response to calls placed to the Hotline. WRPD staff created an IDDE inspection form based on a template provided by the Center for Watershed Protection (**Appendix 7**). In most cases, the reported incident was determined not to be an actual IDDE event (Table 4).

Table 4: Reports of IDDE incidents for 2009-10 permit year

Report Date	Incident Location	Reported Problem	Findings / Follow-up
4/1/10	Huntress Ave	Liquid discharging from basement to City stormwater system	Foundation drain discharge of clear water / no follow-up needed
4/2/10	Maine Mall Rd	Potential concerns with sediment discharge to City stormwater system	1 CB had inadequate ESC; notified contractor for corrective action
4/5/10	Victory Ave	Liquid discharging from basement to City stormwater system	Foundation drain discharge of clear water / no follow-up needed
5/26/10	Veteran’s Bridge at 295 Interchange	Strong petroleum odor from near shoreline	No detectable odor upon first inspection or during second visit
6/25/10	Sears parking lot	Small oil spill to storm drain from vehicle maintenance garage	Confirmed occurrence of spill and monitored DEP oil boom
6/30/10	Maine Turnpike Spur	Tractor trailer rollover	Small amount of fuel spilled contained by Fire Dept.

To further strengthen our program, we are still considering the production of a video or PowerPoint presentation for airing on the local Community Access Television station emphasizing the importance of Illicit Discharge Detection and Elimination for the 2010-11 reporting year. Therefore, the goal associated with this BMP was completed successfully as intended.

BMP 3.8 Storm Drain Stenciling

Responsible Party: Water Resources Protection

Additional Party: N/A

FUNCTION

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

METHODOLOGY

Continue ongoing annual catch basin stenciling program.

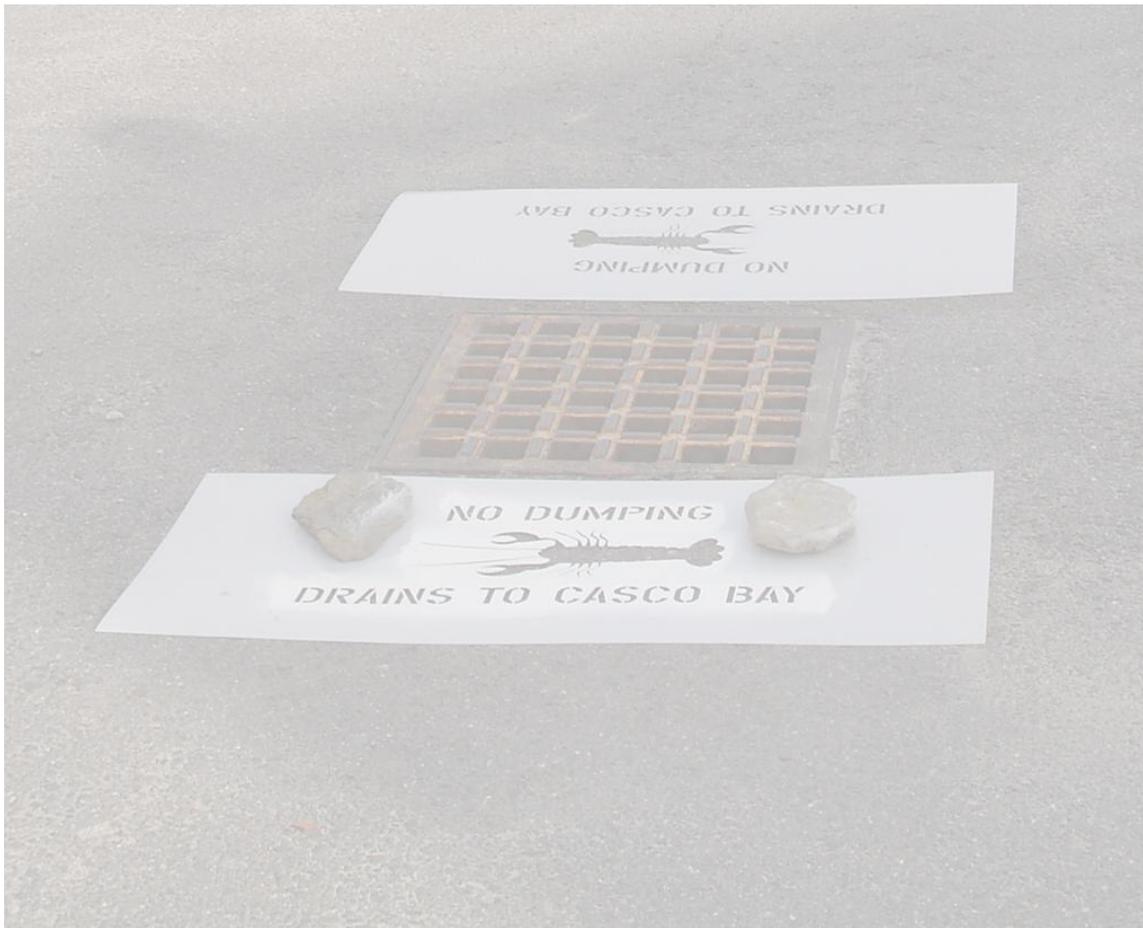
PERMIT YEAR 2 MEASURABLE GOALS

- **Measureable Goal 3.8.1** – continue to annually stencil catch basins in conjunction with catch basin cleaning.

ACTIONS COMPLETED DURING PERMIT YEAR 2

The City continued to stencil catch basins as part of its annual catch basin cleaning program (e.g., half of the catch basins that were cleaned were also stenciled). Nearly all of the City’s approximately 2,800 catch basins are cleaned on an annual basis and approximately 50% of these are stenciled depending on how

worn the paint is from previous stencil applications. Additionally, (and as discussed above) the City partnered with the Friends of Casco Bay and Southern Maine Community College to complete storm drain stenciling on the SMCC campus. We also hope to partner with the local schools to conduct storm drain stenciling activities with students. Therefore, the goal associated with this BMP was completed successfully as intended.



Minimum Control Measure 4 – Construction Site Stormwater Runoff Control

The City of South Portland fulfilled its requirements for the Construction Site Stormwater Runoff Minimum Control Measure through a variety of activities as described below. 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 greater than or equal to one acre.



*Construction site in South Portland
(Photo by F. Dillon)*

BMP 4.1 Notification to Construction Site Developers and Operators of Registration Requirements under Maine Construction General Permit or Chapter 500 – Management for the Discharge of Stormwater Associated with Construction Activities

Responsible Party: Water Resources Protection Dept.

Additional Party: Planning Dept.

FUNCTION

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.

PERMIT YEAR 2 MEASURABLE GOALS

- **Measureable Goal 4.1.2** – annually evaluate current system and modify, if necessary.

ACTIONS COMPLETED DURING PERMIT YEAR 2

During the site plan review process the City confirmed that projects needing 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 MEDEP 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.

Also, all projects that triggered the one acre threshold went through site plan review; these applicants were provided with an information packet on appropriate erosion and stormwater control practices from the City. The City’s Stormwater Performance Standards (Ch. 27-153.1) also required any project with more than 15,000 square feet of disturbed area to receive approval from the Planning Board. These projects were subject to a modified site plan approval process, which carefully considered sediment and erosion control practices.

The City hired third party engineers to evaluate proposed site plans. Each site plan was reviewed to ensure that proposed construction phasing included soil erosion and sedimentation control components. Site plans that lacked appropriate soil erosion and sediment control components were brought to the attention of the City and design engineer for further action. As a result of these numerous and varied activities, the goals associated with this BMP were completed successfully as intended.

BMP 4.2 Develop and Implement a Mechanism to Annually Document Every Construction Activity that Disturbs One or More Acres within the Urbanized Area

Responsible Party: Water Resource Protection Dept.

Additional Party: Planning Dept.

FUNCTION

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) and thereby reduce the amount of stormwater pollution entering the City’s water resources.

METHODOLOGY

Establish documentation procedures to ensure conformance with local and state stormwater laws (South Portland Ordinance § 27-153.1 and Maine Construction General Permit and Chapter 500, respectively).

PERMIT YEAR 2 MEASURABLE GOALS

- **Measurable Goal 4.2.1** – implement a tracking system to record every activity that disturbs greater than or equal to one acre. 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.

ACTIONS COMPLETED DURING PERMIT YEAR 2

The City documents construction activities disturbing one or more acres through a notification process involving the Planning Department and third party inspectors hired by the City or the Long Creek Watershed Management District. Planning Department personnel and third party inspectors routinely submit site inspection report forms with accompanying photos which are then filed electronically in a secure folder on the City’s intranet. The Stormwater Program Coordinator reviews the site inspection reports to identify the watersheds in which the construction activities are occurring and develops an Excel file to facilitate project tracking and reporting. Therefore, the goal for this MCM was completed successfully as intended.

BMP 4.3 Develop and Implement a Construction Site Inspection Program

Responsible Party: Water Resources Protection Dept.

Additional Party: Planning Dept.

FUNCTION

To establish a program for conducting regular and consistent construction site inspections to reduce the amount of stormwater pollution entering the City's water resources.

METHODOLOGY

Develop and implement construction site inspection program in accordance with local and state stormwater laws (South Portland Ordinance § 27-153.1, Maine Construction General Permit, Chapter 500, and General Permit for Small MS4s, respectively).

PERMIT YEAR 2 MEASURABLE GOALS

- ***Measurable Goal 4.3.3*** – develop a process for tracking and notifying the site developer or contractor of noncompliance 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 Planning and Development Department requiring the site to come into compliance within a specified time period. If the violation continues, following the inspection by City staff or duly designated person, a recommendation to the Planning Board would be made to call (use) the performance guarantee to correct the problem. Continued non-compliance will be reported to the DEP with supporting documentation.
- ***Measurable Goal 4.3.4*** – inspect 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.

ACTIONS COMPLETED DURING PERMIT YEAR 2

The City continued to use third party consultants (Wright-Pierce and Sebago Technics) to perform erosion and sediment control inspections on construction sites greater than or equal to 1 acre of disturbed area. There were also several construction projects in the Long Creek and Fore River watersheds for which third party inspection services were provided by the Cumberland County Soil & Water Conservation District. Third party inspectors were notified about qualifying projects following site plan approval and instructed to begin the site inspection process once construction activities commenced. Site contractors also occasionally conducted self-inspections.

Ten projects were inspected 89 times over the course of the permit year (Table 5). Two of these projects were not located in urban impaired stream watersheds: the Carlisle Place project is located in the Gambler's Arm Brook watershed; and all of the Jetport projects are located in the Fore River watershed.

The eight remaining projects were all located in Urban Impaired Stream watersheds and are not on the State’s 303(d) list (**Appendix 8**).

Table 5: Construction projects requiring erosion & sediment control inspections per the MS4 General Permit

Project Name	Location	Watershed	Number of Site Visits During PY2	Status as of 6/30/10
Carlisle Place	Carlisle Rd	Gambler's Arm Br.	4	Under construction
Darling Ave SW Retrofits	Darling Ave	Long Creek	10	Complete
Dick's Sporting Goods SW Retrofits	Dick's Sporting Goods	Long Creek	20	Complete
Jetport Deicing Facility	Portland Jetport	Fore River	21	Under construction
Jetport Parking / Terminal Expansion	Portland Jetport	Fore River	14	Under construction
Jetport Runway Expansion	Portland Jetport	Fore River	3	Under construction
Ocean Place	Summer Lane	Trout/Kimball	2	Under construction
Peary Terrace	Peary Terrace	Barberry Cr.	1	Under construction
TruChoice Credit Union	Cummings Rd	Long Creek	6	Complete
Wyndham Hotel	Maine Mall Rd	Long Creek	11	Under construction
Total Inspections:			89	

Inspections were conducted monthly, after every 1/2 inch 24-hour storm event or as directed by the City Planner. Inspectors generally used the field data form developed by Wright-Pierce and then adapted by the City to document potential sources of stormwater pollution and recommend follow up actions. Following each site visit, individual inspection reports and supporting photographs were transmitted to the City in electronic format for any necessary follow up actions. City staff then incorporated all field inspection forms into an electronic database for record keeping and project tracking. Additionally, in August 2009 City staff began using the same inspection protocols to document construction activities occurring on sites less than 1 acre per the local Stormwater Performance Standards (Ch. 27-153.1).

The inspections identified a variety of erosion and sediment control issues at some sites, including inadequate protection of catch basins, improper installation of silt fence, the presence of sediment-laden trackout from the site entrance / exit, and the inadequate stabilization of stockpiles, among others. All of these issues were corrected by the site contractors following notification from the inspectors.

Additionally, 26 follow-up inspections (**Appendix 9**) were also conducted for 9 construction project sites with an acre or less of disturbed area as specified in the City’s Stormwater Performance Standards (Ch. 27-153.1). In these cases, the Building Inspector identified that additional erosion and sediment control measures were needed for the project (Table 6). As a result of these various activities, the goals associated with this BMP were completed successfully as intended.

Table 6: Construction projects requiring erosion & sediment control follow-up inspections per the City’s Ch. 27-153.1

Project Name / Location	Number of Site Visits During PY2	Status as of 6/30/10
70 Mussey Street	2	Complete
347 Ocean Street	2	Complete
389 Sawyer Street	4	Complete
40 Preble Street	2	Under construction
Cumberland Rd	5	Under construction
Marshview	3	Under construction
Memory Lane	3	Complete
Mulberry Lane	3	Under construction
Parkway Woods	2	Complete
	26	

BMP 4.4 – Promote Certified Contractors in Erosion Control Practices

Responsible Party: Water Resources Protection Dept.

Additional Party: Planning Dept.

FUNCTION

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.



SPWRP crew installing stormwater infiltration system (Photo by F. Dillon)

PERMIT YEAR 2 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 2

The City continued to provide information materials (Maine Erosion and Sedimentation Control Law) to contractors on the as part of the project proposal and site plan review process. Therefore, the goal associated with this BMP was completed successfully as intended.

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

The City of South Portland fulfilled its requirements for the Post-Construction Stormwater Management of Development and Redevelopment Minimum Control Measure through a variety of activities as described below. 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 Implement Ordinance or Similar Measure

Responsible Party: Water Resources Protection Dept.

Additional Party: Planning Dept.

FUNCTION

To develop local regulations that support and enhance state stormwater pollution regulations (MEDEP Chapter 500 and *General Permit for the Discharge of Stormwater From Small Municipal Separate Storm Sewer Systems*) by ensuring the appropriate and adequate use of structural and nonstructural BMPs for new development and redevelopment projects.

METHODOLOGY

Create a local regulatory mechanism or ordinance 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.

PERMIT YEAR 2 MEASURABLE GOALS

- ***Measurable Goal 5.1.4*** – implement post-construction stormwater ordinance to ensure long-term operation and maintenance of post-construction BMPs.

ACTIONS COMPLETED DURING PERMIT YEAR 2

In April of 2009 the City amended its Zoning Ordinance ([Chapter 27-153.1](#)) to require stormwater performance standards for new development and redevelopment projects. Specifically, the local ordinance now requires construction projects exceeding 15,000 square feet to have an accompanying Post-Construction Stormwater Management Plan that adequately addresses the quantity and quality of stormwater runoff from the site. The ordinance provides site developers of qualifying projects with the option of either meeting the MEDEP’s Chapter 500 standards or City performance standards. The City has also incorporated provisions for stormwater management into its Subdivision Ordinance (Chapter 24) and other applicable sections of its zoning ordinance. The MEDEP has referenced the City’s ordinance

amendments as a possible model for other ISWG communities.

Additionally, in May of 2010 the City hired a consultant to develop a Coastal Communities Stormwater Management Manual that will supplement Ch. 27-153.1 by providing guidance to landowners on the use of Low Impact Development (LID) practices for small new development or redevelopment projects. This web-based manual will promote stormwater-integrated site design and LID concepts unique to the constraints of coastal soils that have the potential to provide financial and aesthetic incentives to developers/landowners while enhancing stormwater management. To the best of our knowledge, this manual is the first of its kind in the state and is applicable to other communities that are interested in developing stormwater water quality ordinances for small development and redevelopment projects (<1 acre of disturbance) in coastal communities. As a result of these activities, the goals associated with this BMP were completed successfully as intended.

BMP 5.2 Develop and Implement a Method to Track Post-Construction BMPs in the Urbanized Area and Develop and Implement a Tracking System for Annual Certifications Required by Owner or Operator of the Post-Construction BMPs

Responsible Party: Water Resources Protection Dept.

Additional Party: Planning Dept.

FUNCTION

To develop a method to ensure that post-construction BMPs are adequately operated and maintained.

METHODOLOGY

Use site plan review process to impose post-construction BMP inspection and O&M requirements as specified in the recently amended municipal ordinance (Chapter 27-153.1).

PERMIT YEAR 2 MEASURABLE GOALS

Measurable Goal 5.2.1 – within one year of adopting local stormwater ordinance with provisions for post-construction stormwater management, develop tracking systems for post-construction BMPs and annual certifications to document that owners / operators are adequately operating and maintaining approved stormwater BMPs on their sites.

ACTIONS COMPLETED DURING PERMIT YEAR 2

The City adopted stormwater management performance standards into its ordinance in April 2009 and has established systems to track post-construction BMPs and annual certifications from owners / operators to document their proper functioning, operation and maintenance. Specifically, the site plan review process requires the use of post-construction BMPs for qualifying projects as a condition of approval. Site owners or operators are required to submit certified annual reports documenting the proper functioning and maintenance of stormwater BMPs by July 15th each year. Additionally, Drainage Maintenance Agreements are established for all privately owned stormwater management facilities that legally obligate site owners or operators to properly maintain these facilities in perpetuity. As a result of these activities, the goal

associated with this BMP has been completed successfully as intended.



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

The City of South Portland fulfilled its requirements for the Pollution Prevention / Good Housekeeping for Municipal Operations Minimum Control Measure through a variety of activities 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 Operations at Municipally Owned Grounds and Facilities

Responsible Party: Stormwater Program Coordinator

Additional Party: N/A

FUNCTION

To identify all applicable activities at municipally owned or operated facilities that have the potential to generate stormwater pollution.

METHODOLOGY

Develop a GIS-based inventory of all City properties with a list of associated municipal activities that have the potential to generate stormwater pollution.

PERMIT YEAR 2 MEASURABLE GOALS

- **Measurable Goal 6.1.2** – develop and implement 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 the highest priority watershed (Long Creek). As specified in the General Permit for Small MS4s, the O&M procedures will address, 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 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 2

The City collaborated with the Interlocal Stormwater Working Group (ISWG) to develop written O&M procedures that include maintenance schedules and inspection protocols to ensure the ongoing and proper functioning of structural and non-structural stormwater pollution controls in Long Creek, our highest priority watershed (**Appendix 10**). Currently, there are 3 properties owned or operated by the City residing in the Long Creek watershed (one fire station and 2 wastewater pump station) to which these O&M procedures apply. Therefore, the City has successfully completed the goal associated with this BMP as intended.

BMP 6.2 Municipal Employee Training

Responsible Party: Water Resources Protection

Additional Party: N/A

FUNCTION

To provide relevant and timely training for all applicable municipal employees to assist in the effective implementation of the City’s Stormwater Program Management Plan and ultimately the elimination of stormwater pollutants from all municipal operations.

METHODOLOGY

Develop and deliver targeted training materials and resources for all relevant municipal operations (e.g., street and pavement maintenance, landscaping, vehicle maintenance, snow removal, etc.).

PERMIT YEAR 2 MEASURABLE GOALS – none specified

BMP 6.3 Street Sweeping

Responsible Party: Water Resources Protection

Additional Party: N/A

FUNCTION

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.

PERMIT YEAR 2 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.



*SPDPW staff sweeping with mechanical broom truck
(Photo by D. Thomes)*

ACTIONS COMPLETED DURING PERMIT YEAR 2

The City continued its ongoing sweeping program for all municipally owned or operated streets and parking areas. For the 2009-10 permit year, approximately 876.9 tons of sweeping materials were recovered from City streets following the final snow melt in early 2010. Additionally, with the final snow melt of 2010 the City began a more intensive sweeping regimen for the Long Creek watershed in support of restoration efforts there. For the first year of the Long Creek General Permit, we will be conducting targeted “hotspot” sweeping (**Appendix 11**) twice annually – once shortly after snow melt and once shortly after final leaf drop. In subsequent permit years we will be sweeping targeted hotspots four times annually from April until November and perhaps more frequently depending on funding availability and observed effectiveness. Therefore, the goal associated with this BMP has been completed successfully as planned.

BMP 6.4 Cleaning of Stormwater Structures Including Catch Basins

Responsible Party: Water Resources Protection

Additional Party: N/A

FUNCTION

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.

PERMIT YEAR 2 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 2

The City continued its ongoing stormwater structure and catch basin cleaning program for all municipally owned or operated stormwater infrastructure. For the 2009 calendar year, all of the approximately 2,800 City-owned catch basins were cleaned and 346 tons of material were disposed of at Commercial Recycling in Scarborough. The tipping fee for grit disposal was \$49 / ton (at a cost of nearly \$17,000). Therefore, the City exceeded the goal associated with this BMP by cleaning twice as many catch basins as specified in the Stormwater Program Management Plan.

BMP 6.5 Maintenance and Upgrading of Stormwater Conveyances and Outfalls

Responsible Party: Water Resources Protection

Additional Party: N/A

FUNCTION

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.

PERMIT YEAR 2 MEASURABLE GOALS

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

ACTIONS COMPLETED DURING PERMIT YEAR 2

The City continued its ongoing inspection and maintenance program for its stormwater conveyances. For the 2009-10 reporting year, the City spent nearly \$250,000 on a variety of stormwater system repair and replacement activities (Table 6). Examples include catch basin replacement, installation of curb inlets, pipe repair, installation of new storm drain structures, replacement of rip rap, and drainage ditch maintenance, among many others (**Appendix 12**). Labor costs for ongoing television inspection and hydraulic cleaning activities are not included in these summaries, so the City's stormwater infrastructure maintenance expenditures likely exceed \$250,000 for PY 2009-10. We will continue to refine our cost accounting systems to more accurately reflect actual expenditures for the City's stormwater program. As a result of

these extensive activities, the goal associated with this BMP has been completed successfully as intended.

Table 7: Actual stormwater program costs for construction projects

Expenditure Type	Storm System	Sewer System	Total Cost
Construction Materials ¹	\$86,387	\$33,472	\$119,859
Construction Labor ²	\$59,992	\$28,692	\$88,684
Equipment Replacement ³	\$77,445	\$33,191	\$110,636
Equipment Fuel ⁴	\$7,501	\$3,215	\$10,715
Equipment Maintenance ⁵	\$10,341	\$4,432	\$14,772
Totals:	\$241,666	\$103,002	\$344,667
% Totals:	70%	30%	

NOTES

1. Determined from actual documented materials costs for each project
2. Determined from actual staff labor hours allocated for each project
3. Determined by applying 2.5% inflation rate to initial equipment costs over 10 year period and assigning 70% of capital costs to storm-related projects and 30% to sewer-related projects (as determined by actual proportions of construction project costs for materials and labor)
- 4 & 5. Estimated by allocating 70% of actual fuel and maintenance costs to storm system projects and 30% to sewer system projects (as determined by actual proportions of construction project costs for materials and labor)

BMP 6.6 Stormwater Pollution Prevention Plans (SWPPPs)

Responsible Party: Water Resources Protection

Additional Party: N/A

FUNCTION

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

METHODOLOGY

Conduct an inventory of applicable municipal facilities to determine which ones need updated or new SWPPPs. Develop SWPPPs for all applicable facilities.

PERMIT YEAR 2 MEASURABLE GOALS

- **Measurable Goal 6.6.2** – develop and implement a SWPPP for each applicable facility (e.g., public works, school bus maintenance and transfer station) and collaborate with DEP to establish a training program for municipal facility staff to keep them adequately informed of SWPPP requirements on an ongoing basis.

ACTIONS COMPLETED DURING PERMIT YEAR 2

As noted above, in early May the City coordinated, hosted and moderated a very well-attended SWPPP training event in partnership with DEP, CCSWCD and ISWG. Several City maintenance staff from each of the facilities for which SWPPPs are required attended this training. Additionally, the City completed draft SWPPPs for the School Bus Maintenance Facilities, the Public Works Vehicle and Equipment Maintenance Facilities and the Transfer Station Facilities. As of this writing (September 15th), the School Bus SWPPP was being reviewed by DEP for completeness and the remaining SWPPPs were undergoing internal review before submittal to DEP for final approval. Therefore, the goal associated with this BMP has been completed successfully as intended.



Summary of Stormwater Activities for 2010-11 Reporting Year

BMP 1.1 Continue awareness outreach efforts from the previous MS4 permit cycle.

Responsible Party: Water Resource Protection in cooperation with ISWG Education Coordinator.

BMP 1.2 Work with existing partners and seek out partners to help raise awareness of stormwater issues.

Responsible party: ISWG Education Coordinator

BMP 1.3 Develop and implement Stormwater Awareness Plan.

Responsible party: ISWG Education Coordinator

Measurable Goal 1.3.3: implement the Awareness Plan and conduct annual evaluation of process and impact indicators.

BMP 1.4 Continue targeted best management practices adoption efforts from previous MS4 permit cycle.

Responsible party: ISWG Education Coordinator

BMP 1.5 Develop and implement BMP Adoption Plan.

Responsible party: ISWG Education Coordinator

Measurable Goal 1.5.3: implement the BMP Adoption Plan including annual evaluation of process and impact indicators.

BMP 1.6 School outreach

Responsible party: ISWG Education Coordinator

Measurable Goal 1.6.2: In Permit Years 2-5, as funding permits, continue the incorporation and implementation of “It’s all connected” school curriculum in elementary and/or middle schools.

BMP 1.7 Continue to broadcast water quality videos on Community Television.

Responsible party: Collection System Manager, Water Resource Protection

Measureable Goal 1.7.1: In Permit Years 1-5, the City will continue to air related to water quality issues on South Portland's Community Television.

BMP 2.1 Public notice requirement.

Responsible party: ISWG Stormwater Program Coordinator or Water Resource Protection

Reporting: The annual report will describe compliance with public notice requirements including documentation of meetings and attendance, where applicable.

BMP 2.2 Host public event.

Responsible party: ISWG Stormwater Program Coordinator or Water Resource Protection

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.

BMP 2.3 Encourage municipal involvement in public outreach.

Responsible Party: Water Resource Protection

Measurable Goal 2.3.1: During Years 1-5, the City will continue to participate in public outreach (e.g. serving on local water resource committees, participating in public/school events, writing water quality/stormwater articles) or encourage other municipal involvement, as appropriate.

BMP 3.1 Develop a watershed based storm sewer system infrastructure map.

Responsible Party: Engineer, Water Resource Protection

Reporting: The annual report will include a status update of mapping efforts undertaken during the Permit Year.

BMP 3.2 Non-stormwater discharge ordinance.

Responsible Party: Water Resource Protection

Measureable Goal 3.2.1: In Permit Years 1-5, the City will continue to enforce the Non-Stormwater Discharge Ordinance. This ordinance is referenced in the South Portland Code of Ordinances as Chapter 27 Performance Standards with Respect to Stormwater Management (**§§27-153.1 22-209**) which was adopted in April 2009.

BMP 3.3 Develop dry weather outfall inspection program.

Responsible Party: Water Resource Protection

Measureable Goal 3.3.6: In Permit Years 2-5, the City will continue dry weather outfall inspections in additional sub-watersheds within the highest priority watershed. After which the City will begin outfall inspections in the second highest priority watershed. By the end of Permit Year 5, outfall inspections will have been conducted in all subwatersheds of the highest priority watershed and

in one or more subwatersheds of the second highest priority watershed. As additional outfalls are identified or if follow-up is needed, these outfalls will be added to the inspection list. The City will document and make use of opportunistic inspections.

BMP 3.4 Open ditch illicit discharge program within the highest priority watershed.

Responsible Party: Water Resource Protection

Measureable Goal 3.4.2: During Permit Years 3-5, develop a strategy for detecting illicit discharges in its open ditch system within its highest priority watershed.

BMP 3.5 Household hazardous waste collection.

Responsible Party: Water Resource Protection

Measureable Goal 3.5.1: In Permit Years 2-5, as funding allows, the City will provide a reasonable means for residents to dispose of hazardous materials by continuing to host its Annual Household Hazardous Waste (HHW) collection day.

BMP 3.6 Support the Friends of Casco Bay mobile vessel pumpout service.

Responsible Party: Water Resource Protection

Measureable Goal 3.6.1: During Permit Years 1-5, or as funding is available, the City will continue to financially support the mobile vessel pumpout service.

BMP 3.7 Public Complaint Hotline.

Responsible Party: Water Resource Protection

Measureable Goal 3.7.1: During Permit Years 1-5, the City will continue to provide an easy and confidential method for individuals to report suspected illicit connections or illegal dumping via the voice mail system for the Water Resource Protection Department and the online complaint form.

BMP 3.8 Storm drain stenciling.

Responsible Party: Water Resource Protection

Measureable Goal 3.8.1: During Permit Years 1-5, the City will continue to annually stencil its catch basins in conjunction with catch basin cleaning.

BMP 4.1 Notification to construction site developers and operators of the requirements for registration under the Maine Construction General Permit or Chapter 500, Stormwater Management for the discharge of stormwater associated with construction activities.

Responsible party: Water Resource Protection

Measurable Goal 4.1.2: By the end of Permit Year 1, evaluate current system and modify, if necessary.

BMP 4.2 Develop and implement a mechanism to annually document every construction activity that disturbs one or more acres within the Urbanized Area.

Responsible party: Water Resource Protection

Reporting: The number of construction activities disturbing greater than or equal to one acre will be included under MCM 4, BMP 4.3, Develop and implement a construction site inspection program.

BMP 4.3 Develop and implement a construction site inspection program.

Responsible party: Water Resource Protection

Measurable Goal 4.3.4: During Permit Years 1-5, the City will inspect construction sites located in the watershed of an urban impaired stream a minimum of three times, and will 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.

BMP 4.4 Promote certified contractors in erosion control practices.

Responsible party: Community Planner, Planning and Development

Measurable Goal 4.4.1: During Permit Years 1-5, the City will 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.

BMP 5.1 Implement ordinance or similar measure

Responsible Party: Community Planner, Planning and Development

Measurable Goal 5.1.4: In Permit Years 2-5, the City will implement the post-construction ordinance or other DEP approved measure.

BMP 5.2 Develop and implement a method to track post-construction BMPs that are installed within the Urbanized Area, and develop and implement a system to track annual certifications that are required by the owner or operator of the post-construction BMP(s).

Responsible Party: Water Resource Protection

Measurable Goal 5.2.2: In Permit Years 3-5, continue to implement the method of tracking and conduct yearly evaluations of the method, and modify as necessary.

In Permit Years 3-5, 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 to the DEP:

- The cumulative number of sites that have post-construction BMPs discharging into the MS4.
- A summary of the number of sites that have post-construction BMPs discharging into the MS4 that were reported to the municipality.
- The number of sites with documented functioning post-construction BMPs.
- The number of sites that required routine maintenance or remedial action to ensure that the post-construction BMP were functioning as intended.

BMP 6.1 Operations at municipally owned grounds and facilities.

Responsible Party: Water Resource Protection

Measurable Goal 6.1.2: By the end of Permit Year 2, the City will develop and implement 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 its **highest priority watershed**.

Measurable Goal 6.1.3: By the end of Permit Year 3, develop and implement O&M procedures for the remaining watersheds within the Urbanized Area.

BMP 6.2 Municipal employee training.

Responsible Party: Water Resource Protection

Measurable Goal 6.2.1: By end of Permit Year 3, identify training needs and materials.

BMP 6.3 Street sweeping.

Responsible Party: Water Resource Protection

Measurable Goal 6.3.1: During Permit Years 1-5, the City will continue or modify, a program to sweep all publicly accepted paved streets and publicly owned paved parking lots maintained by the City at least once a year as soon as possible after snowmelt.

Reporting: The annual report will include a status update on street sweeping.

BMP 6.3 Street sweeping.

Responsible Party: Water Resource Protection

Measurable Goal 6.3.1: During Permit Years 1-5, the City will continue or modify, a program to sweep all publicly accepted paved streets and publicly owned paved parking lots maintained by the City at least once a year as soon as possible after snowmelt.

Reporting: The annual report will include a status update on street sweeping.

BMP 6.4 Cleaning of stormwater structures including catch basins.

Responsible Party: Water Resource Protection

Measurable Goal 6.4.1: During Permit Years 1-5, the City will continue or modify, a program to evaluate and, if necessary, clean catch basins and other stormwater structures that accumulate sediment at least once every other year and dispose of the removed sediments in accordance with current state law. The City will clean catch basins more frequently, if inspections indicate excessive accumulation of sediment. Excessive accumulation is considered when the sump is greater than or equal to 50 percent filled.

Reporting: The annual report will include a status update on cleaning of stormwater structures.

BMP 6.5 Maintenance and upgrading of stormwater conveyances and outfalls.

Responsible Party: Water Resource Protection

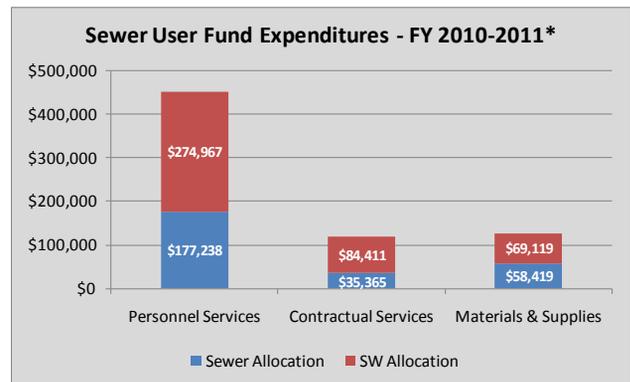
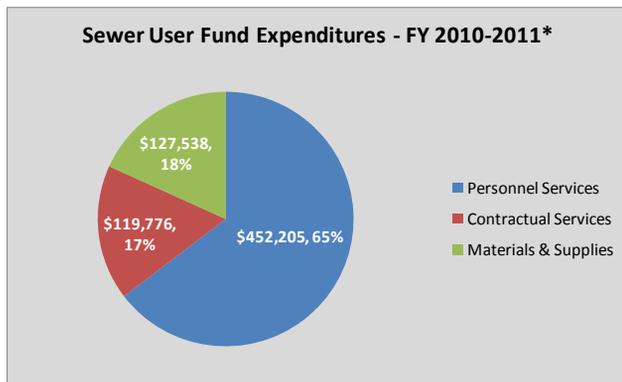
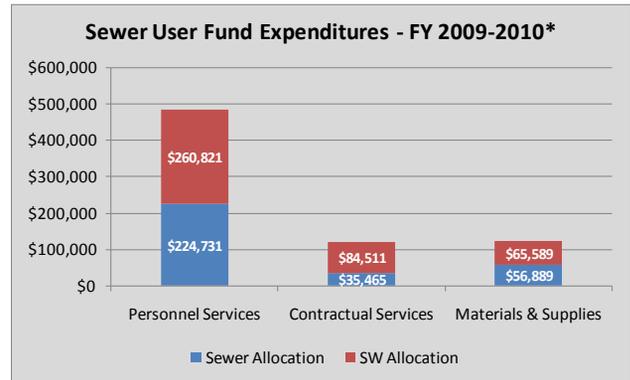
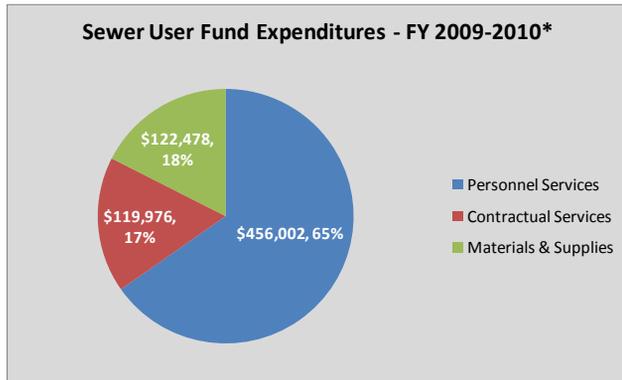
Measurable Goal 6.5.2: During Permit Years 2-5, the City will evaluate and implement a prioritized schedule, as necessary, for repairing or upgrading the conveyances, structures and outfalls of the its MS4.

BMP 6.6 Stormwater Pollution Prevention Plans (SWPPPs)

Responsible Party: Water Resource Protection

Measurable Goal 6.6.2: By the end of Permit Year 2, the City will develop and implement a SWPPP for each applicable facility as determined under Measurable Goal 6.6.1. In Permit Years 3-5, the City will continue to implement its facility SWPPP(s). The City will collaborate with DEP on developing a training program to provide to municipal facility staff informing them on the requirements of the SWPPP, and how to effectively implement it.

Stormwater Program Budget Summaries for 2009-10 and 2010-11 Reporting Years



APPENDICES

Appendix 1: Interlocal Stormwater Working Group Permit Year 2 Summary of Minimum Control Measure 1 – Stormwater Awareness Plan Implementation

Outreach Tool	Status	Details
Exposure - to be in compliance, implement A1 and one activity utilizing printed media (A2, A3 or A4) or other activity (A6).		
A 1 - Run the ducky ad for 3 weeks	complete	The ducky ad ran on local television stations from August 10th through August 28th. The ad's estimated reach was 99% and frequency was 6.2.
A2 - Distribute posters at municipal offices, libraries, local hotspots (coffee/sandwich shops)	complete	Each ISWG community received 39 "Follow the Flow" posters, which were distributed throughout their community.

Retention - to be in compliance, implement B1 & B2; no additional activities required.		
B1 - prominent links established on municipal and partner websites	complete	All websites for ISWG communities feature a link to www.thinkbluemaine.org .
B2 - article in local newspaper and/or town newsletter	complete	A press release about "following the flow" of spring runoff was submitted to the following publications: <i>Northern Forecaster</i> (Freeport, Yarmouth, Falmouth & Cumberland), <i>Portland Daily Sun</i> (Portland), <i>Southern Forecaster</i> (Cape Elizabeth, South Portland & Scarborough), <i>Independent</i> (Windham), <i>American Journal</i> (Gorham & Westbrook), <i>Courier</i> (Biddeford, Saco & OOB)

Acceptance - no implementation of acceptance measures required for compliance in Permit Year II.		
---	--	--

Stormwater Managers' Toolbox - CCSWCD developed stormwater managers' toolbox on behalf of the 28 regulated communities.		
Develop toolkit - poster, brochure, door hangers, print ads, PowerPoint presentation, and storm drain stencil (at a minimum)	complete	All outreach materials are available in the watershed managers' toolbox on www.thinkbluemaine.org
Compile partner network contact list (water districts, NGOs, conservation commissions, etc.)	complete	CCSWCD staff compiled a list of partners for each MS4 cluster/area. The list was distributed to MS4s in May. The individual communities/clusters/areas are now responsible for maintaining their list.
Coordinate media buy for the ducky ad	complete	CCSWCD staff worked with Burgess Advertising to coordinate the ducky media campaign. All MS4 communities contributed to the buy.

Refine awareness materials and tracking mechanisms, coordinate printing.	complete	New awareness materials were developed and existing materials were refined; CCSWCD staff tracked web hits on the www.thinkblumaine.org website (an increase in hits was seen when the ducky ads were running); printing of the "Follow the Flow" posters was coordinated by CCSWCD, and posters were distributed to MS4 clusters/areas in September 2009.
Refine website toolbox	complete	New and updated outreach materials were uploaded to the www.thinkblumaine.org toolbox as they became available.

Best Management Practices Adoption Plan Implementation

Task	Status	Details
<i>Reporting</i>		
Summarize plan implementation to date	complete	

Point of Sale

Enlist additional stores into the YardScaping Point of Sale program (goal is 21 stores in 14 ISWG communities)	complete	Eleven of the 14 ISWG communities now have Point of Sale locations. The exceptions include Biddeford (the two stores contacted declined the invitation to participate), Cape Elizabeth (no relevant retail locations in this community) and Old Orchard Beach (the store contacted initially said they were interested but failed to follow through with numerous attempts to meet). There are currently 19 Point of Sale locations in the ISWG communities, distributed as follows:
		Biddeford: 0
		Cape Elizabeth: 0
		Cumberland: 1
		Falmouth: 2
		Freeport: 1
		Gorham: 2
		Old Orchard Beach: 0
		Portland: 2
		Saco: 1

		Scarborough: 2
		South Portland: 3
		Westbrook: 1
		Windham: 1
		Yarmouth: 3
Program tracking	complete	CCSWCD staff requested sales information from all point of sale stores. Please see the summary of sales information below.

Adult Education

Offer a minimum of six adult education classes per year	complete	South Portland: 8/4/09, lunch & learn at National Semiconductor, 20 participants
		Scarborough: 9/9/09, class cancelled due to low registration
		Yarmouth: 9/16/09, seven participants
		Cape Elizabeth: 9/23/09, class cancelled due to low registration
		Buxton Garden Club (includes members from Gorham, Saco & Scarborough): 10/8/09, 11 participants
		South Portland Garden Club: 10/14/09, 19 participants
		Scarborough: 3/24/10, seven participants
		Gorham: 4/7/10, class cancelled due to low registration
		Old Orchard Beach: 4/14/10, eight participants
		Windham: 6/9/10, eight participants
Promote adult education classes	complete	Press releases publicizing the available classes were submitted to local publications, additional information was published on CCSWCD's YardScaping website and in local adult education brochures. Point of sale partner stores also posted fliers advertising the classes in their stores.

Task	Status	Details
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.

Targeted Information Distribution

Distribute information to priority neighborhoods (minimum of 50-100 households in size) in each ISWG community.	complete	YardScaping information was distributed throughout priority neighborhoods in each ISWG community. The following number of households received information:
		Biddeford: 62
		Cape Elizabeth: 56
		Cumberland: 74
		Falmouth: 51
		Freeport: 50
		Gorham: 131
		Old Orchard Beach: 88
		Portland: 537
		Saco: 87
		Scarborough: 58
		South Portland: 57
		Westbrook: 67
		Windham: 50
Yarmouth: 61		

Websites & Free Media

maintain CCSWCD YardScaping website	complete	CCSWCD maintained the YardScaping website and tracked hits. Increased hits were seen after targeted neighborhood outreach efforts, storm drain stenciling events, and the Portland Flower Show.
Newspaper coverage of YardScaping activities and healthy lawn care	complete	<i>Portland Press Herald</i> : After disappointing season, partnership will sow wildflowers in the snow (November 9, 2009)
		<i>Portland Press Herald</i> : Film on pesticides worth being seen by all Mainers (January 18, 2010)
		<i>Portland Press Herald</i> : New ideas on nourishing the lawn (February 28, 2010)
		<i>Portland Press Herald</i> : For a bloomin' beautiful Maine garden this season, go native, of course (March 28, 2010)
		<i>The Forecaster</i> : Saving the environment, one chemical-free lawn at a time (March 11, 2010)
		<i>Portland Press Herald</i> : Green wave washes over America's backyards (May 16, 2010)
		<i>Portland Press Herald</i> : Talk about peer pressure: It's a bug-eat-bug world out there today (May 30, 2010)
<i>Portland Press Herald</i> : Landscaping with a desire for a healthy planet (June 20, 2010)		

Neighborhood YardScape Socials

Hold a minimum of zero neighborhood socials in the ISWG communities	complete	No neighborhood socials were done this permit year.
---	----------	---

Point of Sale – Program Tracking

During the fall of 2009, CCSWCD staff requested sales information from the 13 point of sale partner stores. Only three stores were equipped to provide the sales information requested. Below is a summary of the relevant sales information from Freeport True Value, Goff's Hardware and Drillen Hardware.

		Units sold		
Freeport True Value		2007	2008	2009
	Weed & Feed	46	33	30
	Low Maintenance Seed	35	37	41
Goff's Hardware				
	Weed & Feed	32	30	30
	Low Maintenance Seed	27	27	32
	Corn Meal Gluten	0	1	2
Drillen Hardware				
	Weed & Feed	41	39	40
	Low Maintenance Seed	49	44	53
	Corn Meal Gluten	4	7	9
	Bagged Compost	32	33	36

While there seems to be a slight declining trend in the sale of weed and feed products and an increase in the sale of YardScape recommended products, it is unclear if these trends can be associated with YardScaping outreach efforts.

Adult Education – Behavior Change Tracking

During the fall of 2009, CCSWCD staff made follow up phone calls with participants of YardScaping adult education classes held in the fall of 2008 and spring of 2009 (PY1 who provided their contact information on class evaluations in order to determine the level of follow through of the YardScaping practices class participants intended to use. 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.

Follow up from Permit Year 1 YardScaping Classes			
Lawn Care Practice	Plan to implement	Implemented practice	% behavior change
Set Mower to a height of 3"	42	42	100.0%
Leave grass clippings	27	25	92.6%
Sharpen mower blades	35	31	88.6%
Aerate	58	33	56.9%

Topdress	63	37	58.7%
Overseed	63	37	58.7%
Use low maintenance seed	67	52	77.6%
Get a soil test	62	42	67.7%
Use nitrogen-only fertilizer	54	37	68.5%
Use compost tea	47	16	34.0%

Follow up phone calls are made six months to a year after the class to allow participants a growing season to implement the recommended practices. Below are the results of the post-class evaluations completed by the YardScaping class participants.

Permit Year 2 YardScaping Class Statistics			
Lawn Care Practice	Plan to implement	Currently do not implement	% planning to implement
Set Mower to a height of 3"	19	19	100.0%
Leave grass clippings	15	19	78.9%
Sharpen mower blades	20	20	100.0%
Aerate	34	41	82.9%
Topdress	35	47	74.5%
Overseed	35	36	97.2%
Use low maintenance seed	43	45	95.6%
Get a soil test	35	44	79.5%
Use nitrogen-only fertilizer	37	44	84.1%
Use compost tea	33	49	67.3%

CCSWCD staff will contact the class participants from the Permit Year 2 classes in the fall of 2010 to determine which behaviors have been adopted.

Additional language for communities as specified below:

Biddeford

- *Nothing additional through projects I track*

Cape Elizabeth

- *Nothing additional through projects I track*

Cumberland

- May 8, 2010 – Screening of *A Chemical Reaction* was held at the Congregational Church in Cumberland. Approximately 55 people attended the event, which was coordinated by the church's Green Team.

Falmouth

- June 2, 2010 – Falmouth Middle School presented their independent research on YardScaping to parents and members of the community. Approximately 45 people attended the event.

Freeport

- June 23, 2010 – YardScaping class, sponsored by the Town of Freeport and CCSWCD, was offered at the Freeport Community Center. The class was promoted through a press release in the local paper; postings in online calendars; information distributed at the weekly farmers' market; posters displayed at the library, post office, town office, community center, and local retailers; notification sent to the Freeport Land Trust; and outreach done to Freeport's Conservation Commission and Shellfish Conservation Commission. Despite all of the outreach done, no one attended the class.

Gorham

- June 29, 2010 – The Casco Bay Youth Conservation Corps and local volunteers assisted the Gorham Public Works Department by stenciling 258 storm drains throughout the Town. In addition, 78 door hangers were distributed to houses in the neighborhoods where the storm drains were located.

Old Orchard Beach

- *Nothing additional through projects I track*

Portland

- July 9, 2009 – The Casco Bay Youth Conservation Corps stenciled 257 storm drains. The event was covered by Channel 8.
- July 19, 2009 – CCSWCD staff provided a YardScaping Display at Cultivating Community's Boyd Street Bash. Approximately 50 people attended the event.
- January 28, 2010 – A public meeting was held as part of the Capisic Brook Watershed Planning Project. Approximately 35 people attended.
- May 10, 2010 – 90 students from Lincoln Middle School distributed 537 YardScaping door hangers to residents in the Capisic Brook Watershed.

Saco

- *Nothing additional through projects I track*

Scarborough

- September 26, 2009 – Open house at the Scarborough Public Works Department, which offered residents the opportunity to meet the staff and learn about what the Department does. Approximately xx people attended.
- May 18, 2010 – Public stakeholder meeting held as part of the Red Brook Watershed Planning Project. Approximately 45 people attended.

South Portland

- September 18, 2009 – Water quality buffer planting on Philbrook Ave. Approximately 20 people

participated in the event, which was done as part of the Long Creek Restoration Project.

Westbrook

- *Nothing additional through projects I track*

Windham

- July 2009 – Town distributed 8.5x11 fliers of the “Follow the Flow” posters to all residents in the community through their municipal recycling pick up.
- July 2009 – All municipal vehicles display Think Blue Maine ducky logo stickers.
- September 12, 2009 – Community Watershed Forum held for residents of Highland Lake to discuss conservation issues and update the Lake’s watershed management plan. Approximately 50 people attended.
- June 9, 2010 – YardScaping presentation provided at the Windham Public Library as part of the water-themed adult summer reading series. Approximately 8 people attended.
- June 30, 2010 – Casco Bay Youth Conservation Corps and local volunteers stenciled 100 storm drains in South Windham and in residential neighborhoods throughout the Town.

Yarmouth

- April 1, 2010 – Screening of *A Chemical Reaction* and a panel discussion with Paul Tukey was held at Yarmouth High School. Approximately 50 people attended.

Permit Year 2 Summary: Stormwater Classroom Education Activities

The following is a summary of education activities completed in each ISWG community during the 2009-2010 school year. Activities were provided by the following and are noted by the organization’s acronym:

CCSWCD: Sarah Plummer, Education Coordinator, Cumberland County Soil & Water Conservation District, sarah-plummer@cumberlandsxcd.org, 207-892-4700 x 107

YCSWCD: Melissa Brandt, District Manager, York County Soil & Water Conservation District, melissabrandt@yorkswcd.org, 207-324-0888 x 214

PWD: Lynne Richard, Education Coordinator, Portland Water District, lrichard@pwd.org, 207-774-5961 x 3324

Biddeford

Total students: potentially 45

Total contact hours: unknown

Lesson topics: Sent teachers lesson plans for lessons about runoff, nonpoint source pollution, and best management practices, and the amount of water in the world, conservation, and the water cycle.

Note: Many attempts were made to work in the Biddeford Intermediate School with teachers whom we have worked with successfully in the past. The teachers expressed interest in working together again but

then did not have time. Contact has been made with a new teacher for next year, and more contacts will be pursued during the 2010-2011 school year. If you know of any teachers that would be interested in these lessons, please pass their information along to Sarah Plummer at CCSWCD.

Schools: Biddeford Intermediate School

Educator: YCSWCD

Cape Elizabeth

Total students: 151

Total contact hours: 1,013

Lesson topics: Amount of water in the world, conservation, and the water cycle; nonpoint source pollution and best management practices; topography, contour lines, watersheds, water movement and transport of nonpoint source pollutants; various lessons included information about nonpoint source pollution, human impact, watershed characteristics, stormwater, low impact development, and behavior change.

Schools: Cape Elizabeth Middle School, Pond Cove Elementary School

Educators: CCSWCD, PWD

Cumberland

Total students: 177

Total contact hours: 1,390

Lesson topics: Water quality parameters; groundwater contamination; various lessons included information about nonpoint source pollution, human impact, watershed characteristics, stormwater, low impact development, and behavior change; Envirothon**.

Schools: Greely Middle School, Greely High School

Educators: CCSWCD, PWD

Falmouth

Total students: 46

Total contact hours: 580

Lesson topics: Watersheds and water flow, local water bodies, and watersheds; stormwater pollution and cumulative impact; nonpoint source pollution and behavior change; experiments and independent research projects where students formed a yard care company based on the YardScaping program (healthy lawn care without the use of chemicals) and presented their research to the public.

Schools: Falmouth Middle School

Educator: CCSWCD

Freeport

Total students: 96

Total contact hours: 314

Lesson topics: Water flow and watersheds; adaptations of salt marsh species; amount of water in the world, conservation, and the water cycle; bioaccumulation from a pesticide runoff in an aquatic food web; Southern Maine Children’s Water Festival*.

Schools: Mast Landing School

Educator: CCSWCD

Gorham

Total students: 197

Total contact hours: 709

Lesson topics: Erosion, erosion control laws, history of conservation districts, and BMP slideshow; various lessons included information about nonpoint source pollution, human impact, watershed characteristics, stormwater, low impact development, and behavior change.

Schools: Gorham Middle School, Narragansett Elementary School

Educators: CCSWCD, PWD

Old Orchard Beach

Total students: 61

Total contact hours: 366

Lesson topics: Build landscape models to learn about impervious/pervious surfaces, nonpoint source pollution, and best management practices; bioaccumulation from a pesticide runoff in an aquatic food web; stormwater, stormdrains, and wastewater; amount of water in the world, conservation, and the water cycle.

Schools: Loranger Middle School

Educator: YCSWCD

Portland

Total students: 892

Total contact hours: 2,961

Lesson topics: Presumpscot River presentation and field trip; hydropower; nonpoint source pollution; amount of water in the world, conservation, and the water cycle; stormwater; tide pools; water quality testing; waste water treatment and combined sewer outfalls; trout field study and release event including education about nonpoint source pollution, water quality, and watersheds; Southern Maine Children’s Water Festival*; Envirothon**.

Schools: King Middle School, Lincoln Middle School, Lyman Moore Middle School, Portland West School, Hall Elementary School, Peaks Island Summer Rovers, Casco Bay High School, East End Community School, Riverton Elementary School, Reiche School, Nathan Clifford School

Educators: CCSWCD, PWD

Saco

Total students: 92

Total contact hours: 368

Lesson topics: Water quality field day included water quality sampling, macroinvertebrates, bioaccumulation from a pesticide runoff in an aquatic food web, and stormwater runoff.

Schools: Saco Middle School

Educator: YCSWCD

Scarborough

Total students: 407

Total contact hours: 941

Lesson topics: Macroinvertebrates as indicators of water quality; water quality testing and macroinvertebrate sampling on a local stream; watersheds; groundwater; various lessons included information about nonpoint source pollution, human impact, watershed characteristics, stormwater, low impact development, and behavior change.

Schools: Scarborough High School, Scarborough Middle School, Ocean Park Summer Camp

Educators: CCSWCD, PWD

South Portland

Total students: 413

Total contact hours: 2,623

Lesson topics: Amount of water in the world, conservation, and the water cycle; where rivers begin, how they flow and watersheds; stormwater sources and effects; build landscape models to learn about impervious/pervious surfaces, nonpoint source pollution, and best management practices; macroinvertebrate/water quality field day; trout field study and release event including education about nonpoint source pollution, water quality, and watersheds; various lessons included information about nonpoint source pollution, human impact, watershed characteristics, stormwater, low impact development, and behavior change; Southern Maine Children’s Water Festival*.

Schools: Skillin Elementary School, Dyer Elementary School, Mahoney Middle School, Southern Maine Community College, Small Elementary School, Greater Portland Christian School, Holy Cross School

Educators: CCSWCD, PWD

Westbrook

Total students: 134

Total contact hours: 470

Lesson topics: Hydropower stakeholder meeting; water cycle; various lessons included information about nonpoint source pollution, human impact, watershed characteristics, stormwater, low impact development, and behavior change; Envirothon**.

Schools: Westbrook Middle School, Westbrook High School

Educators: CCSWCD, PWD

Windham

Total students: 486

Total contact hours: 2,954

Lesson topics: Planning and conducting “Ecocentricity” event where high school students taught lessons to middle schoolers – included lessons about geology, water, soil, atmosphere, and ecology with a conservation focus on each topic; trout field study and release event including education about nonpoint source pollution, water quality, and watersheds; wetlands; various lessons included information about nonpoint source pollution, human impact, watershed characteristics, stormwater, low impact development, and behavior change.

Schools: Windham High School, Windham Middle School

Educators: CCSWCD, PWD

Yarmouth

Total students: 120

Total contact hours: 150

Lesson topics: Water quality testing; amount of water in the world and conservation; stormwater and effects of nonpoint source pollution.

Schools: Harrison Middle School

Educator: YCSWCD

* The **Southern Maine Children's Water Festival** is a one-day event occurs that annually each May, drawing about 700 middle school students from all over Southern Maine to learn about different aspects of water. Students attend classroom presentations, a water-based stage show, "Dripial Pursuit" competitions, and tour many exhibits in the exhibit hall. Activities focus on nonpoint source pollution and ways that students can be part of the solution.

** The **Envirothon** is an environmental competition conducted throughout Maine each spring. High school students test their knowledge of natural resources and current environmental issues in an outdoor setting. Teams of three to five students are tested at five stations: Wildlife, Aquatics, Forestry, Soils, and a Current Natural Resources Issue. The top three teams at each regional competition compete in the State competition, with the advancement to a national competition for top-placing teams.

Appendix 2: Stormwater Pollution Slide Show Posted on City's Website

Stormwater Pollution in South Portland And What You Can Do About It



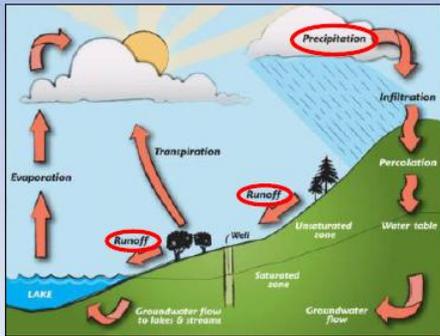
Fred Dillon
Stormwater Program Coordinator



Presentation Overview

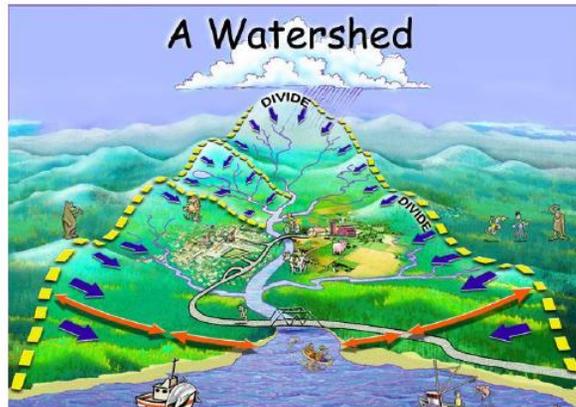
- Some Basic Water Science Concepts
- Stormwater 101 (basic stormwater stuff)
- Why Stormwater is Important
- What You Can Do to Prevent Stormwater Pollution
- Questions / Discussion

The Water Cycle



The Water Cycle is a key factor and consideration for managing impacts from stormwater. The amount of stormwater runoff generated from any particular storm directly affects the ability of stormwater collection and treatment systems to attenuate pollutants.

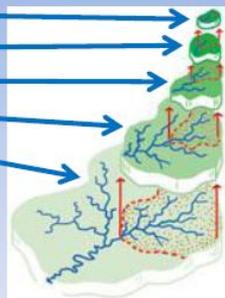
A Watershed



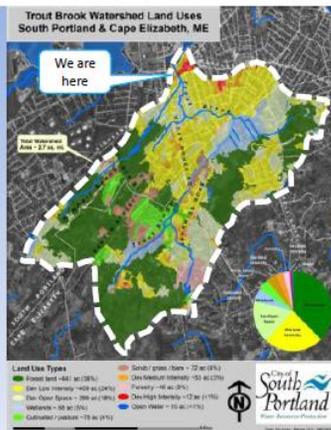
A watershed is also a key concept for stormwater management since it defines the drainage area from which potential pollutants will flow into adjacent receiving waters. In simple terms, the boundaries of a watershed are defined by the highest points (indicated by the yellow dashed line above) surrounding a particular water body (stream, river, lake, pond, or coastal waters).

“Nested” W’sheds

- Trout Brook
- Fore River
- Casco Bay
- Gulf of Maine
- Atlantic Ocean



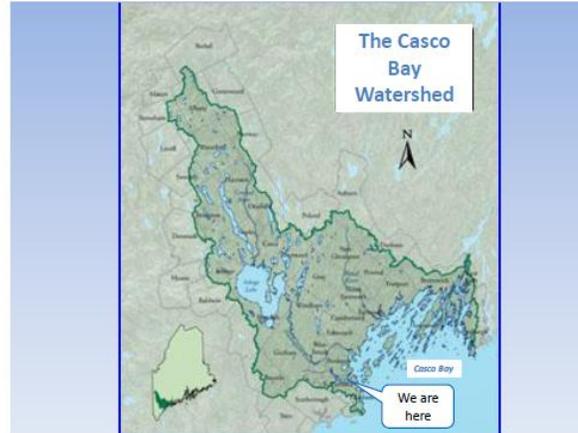
“Nested” watersheds are simply watersheds that contain other watersheds (similar to the nested bowls shown in this slide). The several slides that follow further illustrate this concept.



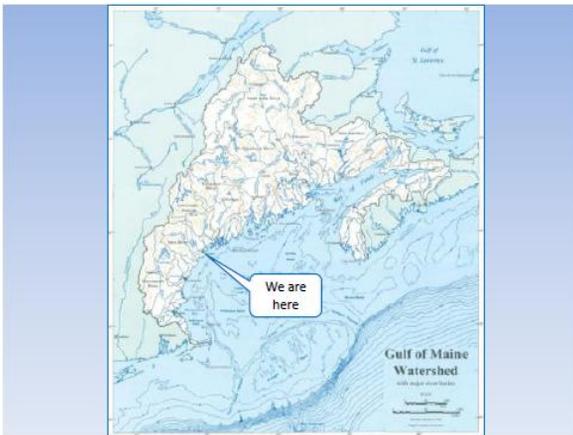
The Trout Brook watershed encompasses South Portland and Cape Elizabeth.



Trout Brook discharges into and is part of the Fore River watershed.



The Fore River discharges into and is part of the Casco Bay watershed.



The Casco Bay watershed is part of the Gulf of Maine watershed.



The Gulf of Maine watershed is part of the Atlantic Ocean watershed.

Water Quality & Quantity

- **QUALITY** = *what's in the water* that defines conditions under which critters can live (temperature is also an important factor)
- **QUANTITY** = *how much* and *how quickly* water *flow changes* also directly affects which critters can live in surface waters

Two key concepts in considering the effects of stormwater on natural water bodies are water quality and water quantity. Water quality is generally defined by chemical and physical properties while water quantity consists both of total volume and how quickly that volume moves through a hydrologic system.

Common Water Quality Measures

- Dissolved Oxygen
- pH / Conductivity
- Turbidity
- Nutrients
- Toxics
- Bacteria
- Temperature
- Bugs (macroinvertebrates)



For a brief discussion of each of these parameters see Water on the Web's Understanding Water Quality at:

<http://waterontheweb.org/under/waterquality/index.html>

Water Quantity Measurements

- Water flow is measured in **Cubic Feet per Second (cfs)**
- Amount of flow depends on size of watershed and amount of **impervious cover**

One of the more common methods for measuring stream flow (as shown in the slide on the left) was developed by the U.S. Geologic Survey (USGS) and uses a device similar to an anemometer (that measures air speed). For more information see: <http://ga.water.usgs.gov/edu/streamflow2.html>

A key consideration regarding the effects of flow on stream systems is the amount of impervious cover (IC) in the contributing watershed. (IC is any surface that restricts or prevents the infiltration of precipitation). The size and shape of the hydrograph shown in the slide on the left is directly affected by the amount of IC in the contributing watershed.

What is Stormwater?

- Storm water is precipitation running or flowing over land plus anything carried along with it.
- Storm water comes from all forms of precipitation - rain, snow, sleet or ice melt.

FOLLOW THE FLOW

Where does water go?

Not all water that falls on your property soaks into the ground. As water flows off your property, it can wash pollutants such as oil, lawn chemicals and pet waste into where we fish, what we drink and where we swim.

It's up to all of us to protect our local rivers, lakes and bay from polluted runoff.

Learn how at www.ThinkBlueMaine.org

What's In Stormwater?

- Sediment
- Organics
- Nutrients
- Toxics
- Bacteria
- Trash

The CULPRITS

When it rains, water that is not absorbed into the ground, intercepted by vegetation, or evaporated flows into surface waters such as rivers, canals and coastal waters. This flow is called runoff. As the runoff flows over the roads and fields, it picks up pollutants.

Runoff water can be polluted through groundwater.

Things get this absorbent and so do some cars and so do our trash cans & mailboxes.

Storm water can pick up pollutants from cars & garages when it rains & flows into surface waters.

Roads are a source of pollution. The gravel, sand & asphalt that is used to build roads wash off roads when it rains.

Things get this absorbent and so do some cars and so do our trash cans & mailboxes.

Storm water can pick up pollutants from cars & garages when it rains & flows into surface waters.

The kinds of pollutants that can be picked up and carried by stormwater depend on the kinds of land uses and human activities that occur in a particular watershed. More intensive uses generally contribute greater quantities and varieties of pollutants. When pollutants are delivered in quantities greater than the assimilative capacity of a receiving water, adverse effects can occur to aquatic organisms.



All of these photos illustrate the ways in which stormwater pollutants can be discharged to receiving waters.

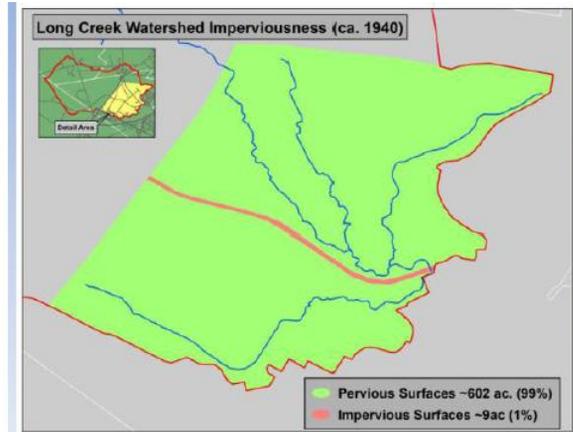
How Development Affects Stormwater Quantity

There is a general correspondence between the amount of impervious cover (IC) and the level of development intensity. As development intensity and IC increase, the amount of precipitation that can soak into the ground generally decreases. Greater runoff rates due to high levels of IC can result in excess erosion in streams / rivers and increased volumes of pollutants. Reduced infiltration can also adversely affect groundwater levels.

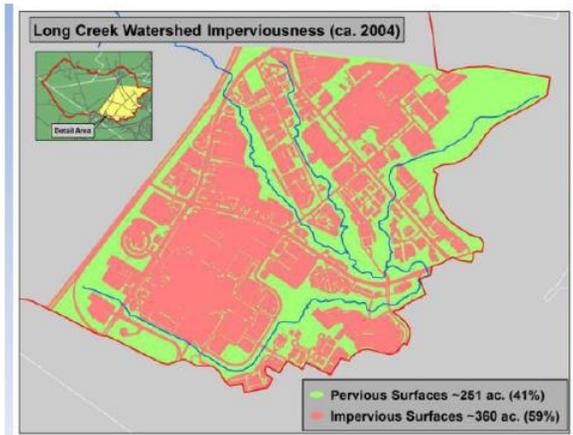


Build the road and they will come. Development happens on a landscape scale that makes it difficult to detect, and on a time frame that makes it easy to forget that these impacts are cumulative. Conservation and development plans along with the zoning and ordinances to implement the plan can protect local water resources. South Portland has stormwater performance standards that are among the most protective to local water bodies in the State.





This slide illustrates the Maine Mall area in around 1940 when nearly all of the land allowed precipitation to soak into the ground. (The road in the center is present-day Gorham Road).



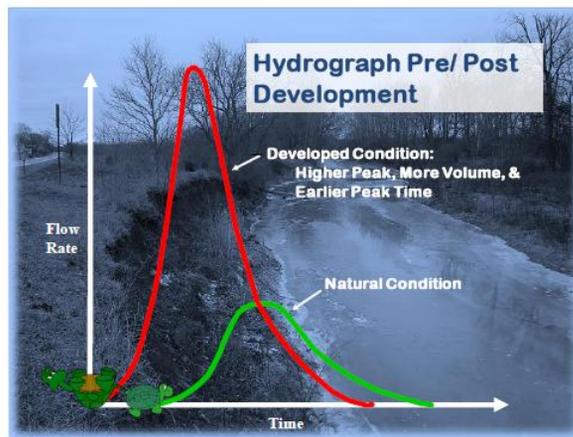
This slide illustrates the extent of development (IC) in around 2004 when most of the land area would not allow precipitation to soak into the ground. Consequently, Long Creek and its tributaries do not meet State water quality standards and the streams are listed as “urban impaired” by the Maine Department of Environmental Protection (MEDEP).



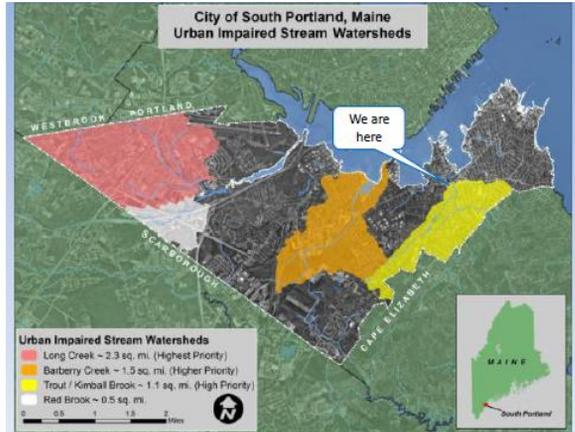
The two upper photos illustrate how precipitation is directed into underground stormwater pipes from large expanses of impervious cover. The lower photo illustrates how sudden and large influxes of stormwater from areas with high amounts of IC can scour and erode adjacent streams.



This photo illustrates the noticeable difference between the amount of sediment in Long Creek and Red Brook. Long Creek has a significantly greater amount of development (and IC) as compared to Red Brook.



These hydrographs illustrate the difference between a watershed before (green line) and after (red line) development. Note that the area under the red line is much larger and more compressed than under the green line. As a consequence, the post-development stream system is more susceptible to erosion and increased pollutant loads.



South Portland has four streams designated as “urban impaired” by the MDEP. As of spring 2010, Long Creek had a watershed management plan to identify restoration strategies and Red Brook was in the process of developing such a plan. Trout Brook will likely receive funding later in 2010 to develop a watershed management plan and Barberry Creek will likely go through a similar process in the next couple years.

Restoration Strategies

- **RESTORE BUFFERS** in **STREAM CORRIDORS** (a.k.a. “riparian” areas)
- **REDUCE POLLUTION** from **DEVELOPED AREAS** (a.k.a. *pavement, buildings and landscaped areas*)
- **INCREASE PUBLIC AWARENESS**

Buffer restoration for riparian areas consists of re-establishing vegetation around a stream system. Depending on the types of plantings and the width of the buffer area, significant amounts of pollutants in stormwater runoff can be reduced through infiltration and entrapment by vegetation. There are a variety of strategies for reducing pollutants from developed areas, as illustrated in the following slides. Increasing public awareness about stormwater pollution is essential in working to reduce its adverse impacts.



These photos illustrate various efforts to restore stream buffers and habitat by removing trash and planting stream-side vegetation.



These photos illustrate the close link between residential landscaping activities and local water quality. Excess synthetic fertilizer placed too close to surface waters can adversely affect aquatic health. There are a number of lawn care and landscaping alternatives that are more environmentally benign. For more information see <http://www.yardscaping.org/>. The storm drain stenciling photo in the lower left illustrates how local citizens can help raise awareness about stormwater pollution.



There are a variety of other practices that can be used for residential (and commercial) properties to reduce the impacts of stormwater runoff. The rain barrel photos on the left and rain garden photos on the right illustrate how these practices can be used to decrease stormwater volume and increase stormwater quality from individual properties.



This photo illustrates what the stream might look like with riparian plantings. Restoring vegetation in these areas throughout the Long Creek watershed would likely result in improvements to water quality and aquatic habitat.

FOR MORE INFO:

<http://extension.usu.edu/waterquality/htm/urbanstormwater/stormwaterkidspages/>

<http://www.oceansidecleanwaterprogram.org/kids.asp>

<http://www.epa.gov/nps/kids/>

<http://www.maine.gov/dep/blwq/docstand/stormwater/index.htm>

<http://www.stormwatercenter.net/>

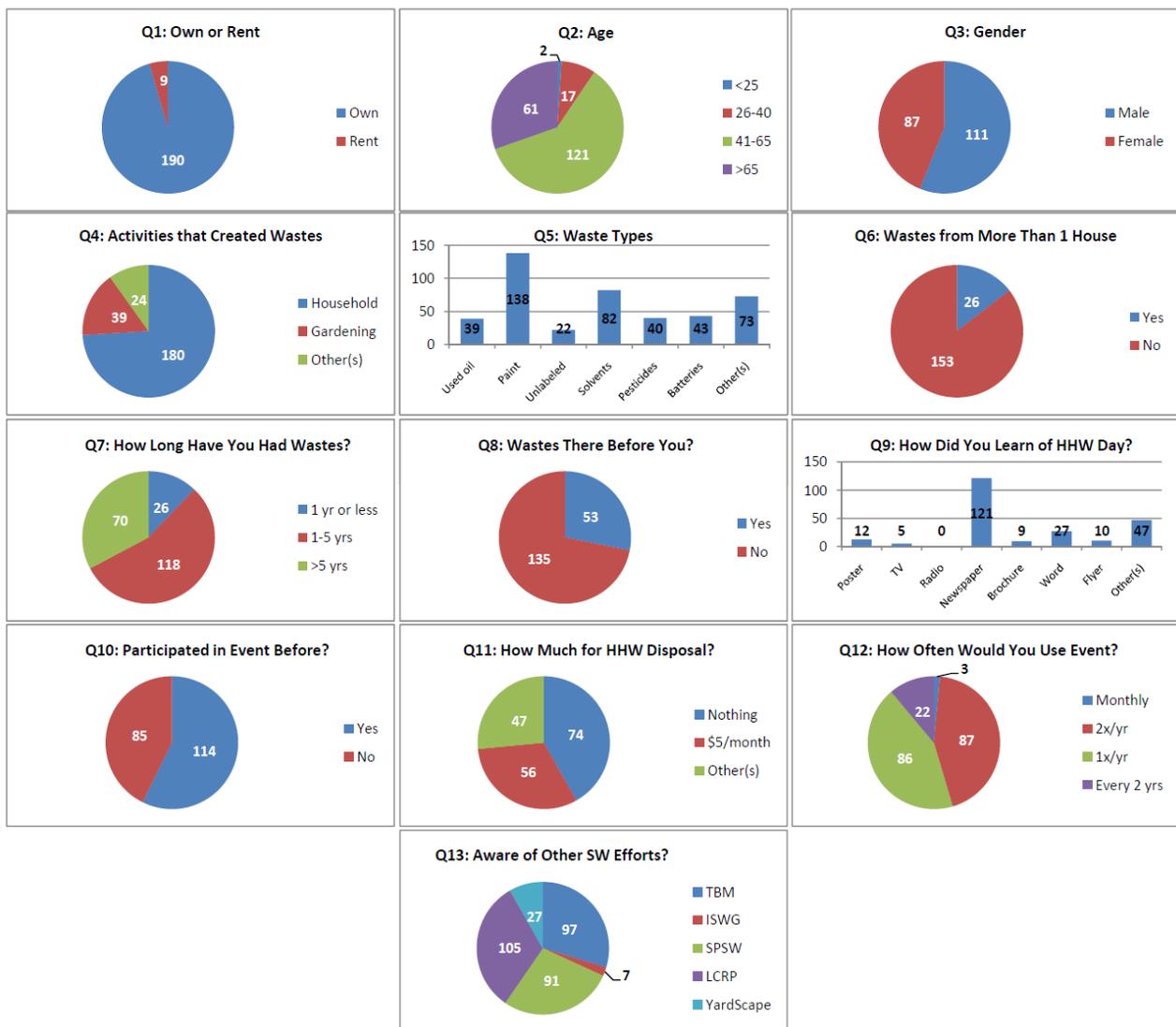
<http://www.cwp.org/>

Each of these links provides more information on stormwater and its effects. Please also contact the Water Resource Protection Department at 767-7675 with any questions about our operations.

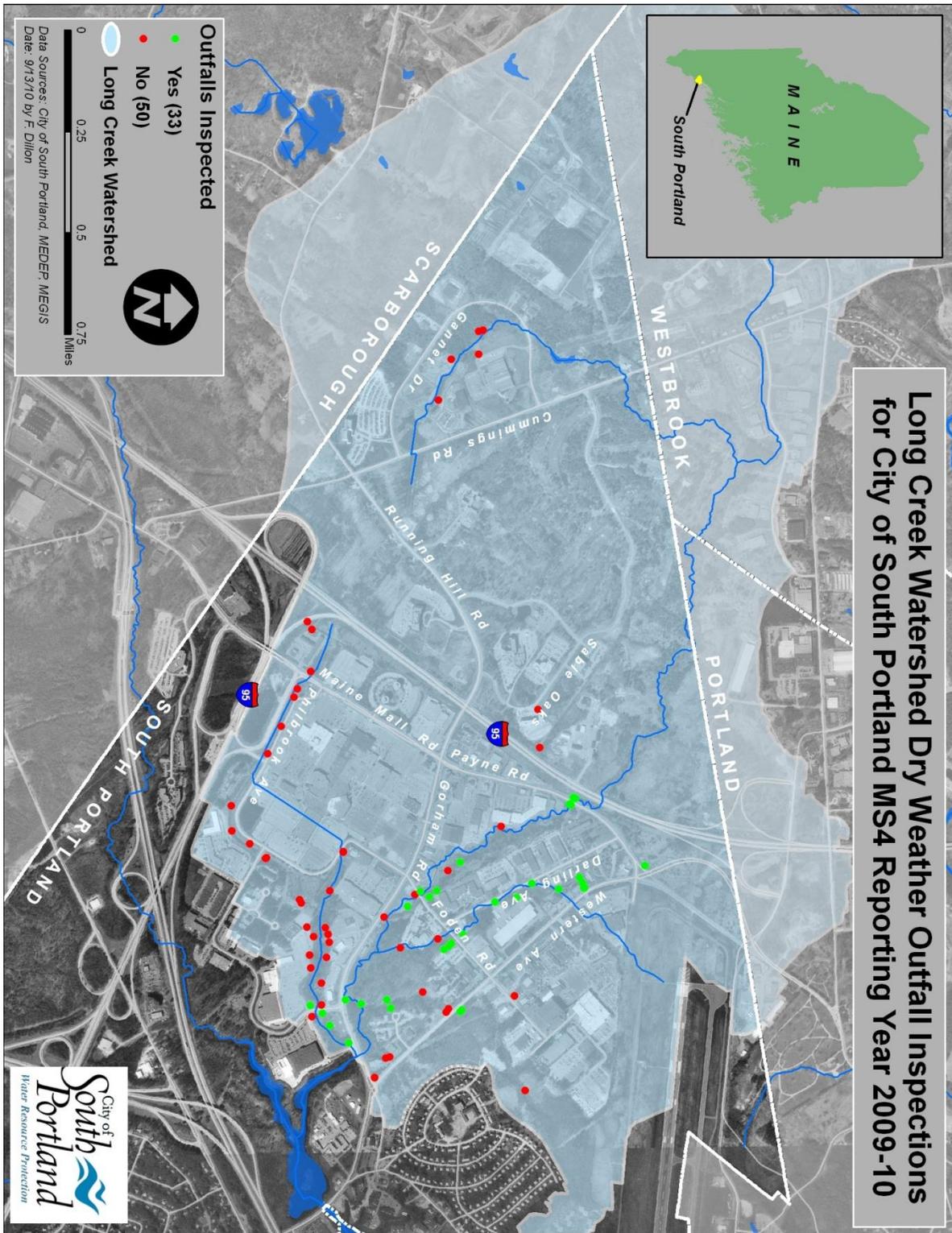
Appendix 3: Results from October 17, 2009 Household Hazardous Waste Collection Day Questionnaire

QUESTIONS

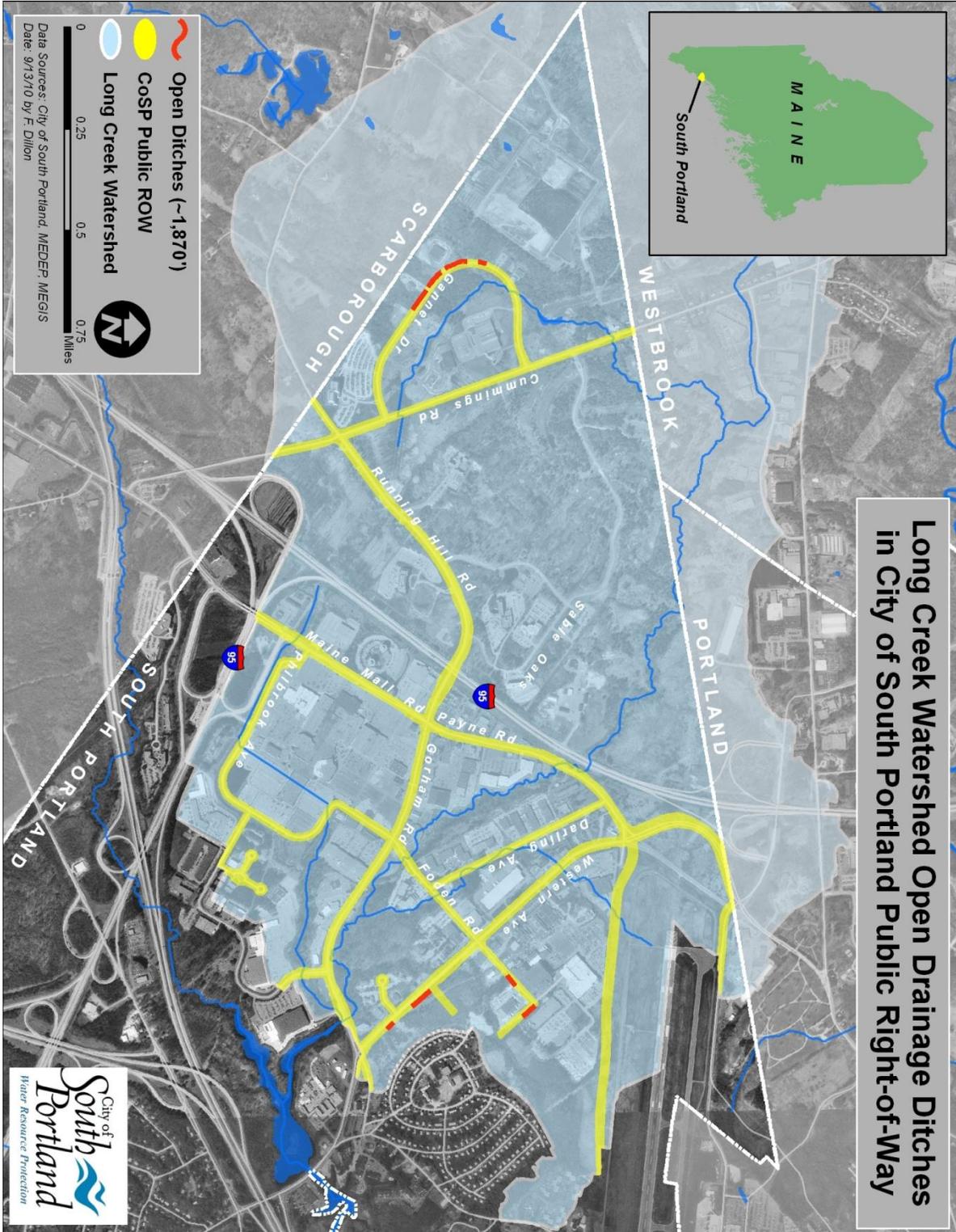
1. Do you own or rent your home?
2. What is your age?
3. Are you male or female?
4. What types of activities created these wastes?
5. Please indicate the types of wastes you dropped off today.
6. Did these wastes come from more than 1 household?
7. How long have you had these wastes?
8. Were any of the wastes in the house when you moved in?
9. How did you hear about today's event?
10. Have you participated in the City's previous Household Hazardous Waste Collection Days?
11. How much would you be willing to pay for household hazardous waste disposal on a regular basis?
12. How often would you use a household hazardous waste collection event in your area?
13. Are you aware of any of the following stormwater management efforts?



Appendix 4: Long Creek Watershed Dry Weather Outfall Inspections for PY 2009-10



Appendix 5: Open Drainage Ditches in Highest Priority Watershed (Long Creek)



Appendix 6: Friends of Casco Bay Acknowledgement Letter for City's Continued Support of Pumpout Program



August 13, 2010

Mr. Patrick Cloutier
Water Resource Protection Department
City of South Portland
PO Box 9422
South Portland, ME 04106-9422

Dear Pat,

We are delighted to have the continued support of the City of South Portland's Water Resource Protection Department! *Thank you* for your generous \$5,000 gift to Friends of Casco Bay. This contribution will strengthen our research, education, and outreach work on behalf of the Bay through the Pumpout Program.

As you know, Casco Bay's rocky coast, rugged islands, and scenic waters exemplify Maine's image as a natural wonder. The Bay provides endless recreational opportunities, from birding and angling to boating and beachcombing. Our community's identity and wellbeing are intrinsically linked to the health of the Bay.

Casco BAYKEEPER® Joe Payne is fond of reminding everyone that the Bay belongs to all of us. The City of South Portland's generosity helps ensure that the next generation will inherit a cleaner and healthier Bay.

Pat, thank you again for the Water Resource Protection Department's support. It is an honor to partner with you on this voyage toward a cleaner and healthier Casco Bay.

Warm regards,


Cathy L. Ramsdell, CPA
Executive Director

Pat,
Many, many thanks to you and your colleagues in the Department for supporting our work and for partnering with us on improving the health of the Bay. All the best, Cathy

Please keep this letter as your receipt for your tax-deductible gift.
No goods or services were provided in consideration of this donation.

Board of Directors

- President
Malcolm F. Poole, Scarborough
- Vice President
Judith Fletcher Woodbury, Cumberland
- Clerk
Kathryn Reid, Portland
- Treasurer
Barry S. Sheff, Cumberland
- Stanley T. Bennett, Falmouth
- Sean Bergen, Yarmouth
- Jeff Clements, Peaks Island
- Sarah B. Coburn, Portland
- Peter DuFour, Portland
- John W. Fridlington, Yarmouth
- Paul Gregory, Portland
- Martin S. Grimnes, Brunswick
- Anne Henshaw, Brunswick
- Patricia Ianni, Falmouth
- Bob Knecht, South Freeport
- Peter C. LeBourdais, Hallowell
- Joan Benoit Samuelson, Freeport
- Janet M. Sactor, Portland
- Peter Van Alstine, Yarmouth
- John Wise, Cape Elizabeth

Honorary Directors

- Kenneth M. Curtis, Cape Elizabeth
- Kevin P. Gildart, Cape Elizabeth
- Sherry F. Huber, Falmouth
- Anthony R. Jensen, Freeport
- P. Andrews Nixon, Brunswick
- Donald W. Perkins, Westbrook
Founding President

Executive Director

Cathy L. Ramsdell CPA, Portland

Casco BAYKEEPER

Joseph E. Payne, Westbrook



Appendix 7: Example of Illicit Discharge Detection & Elimination Form

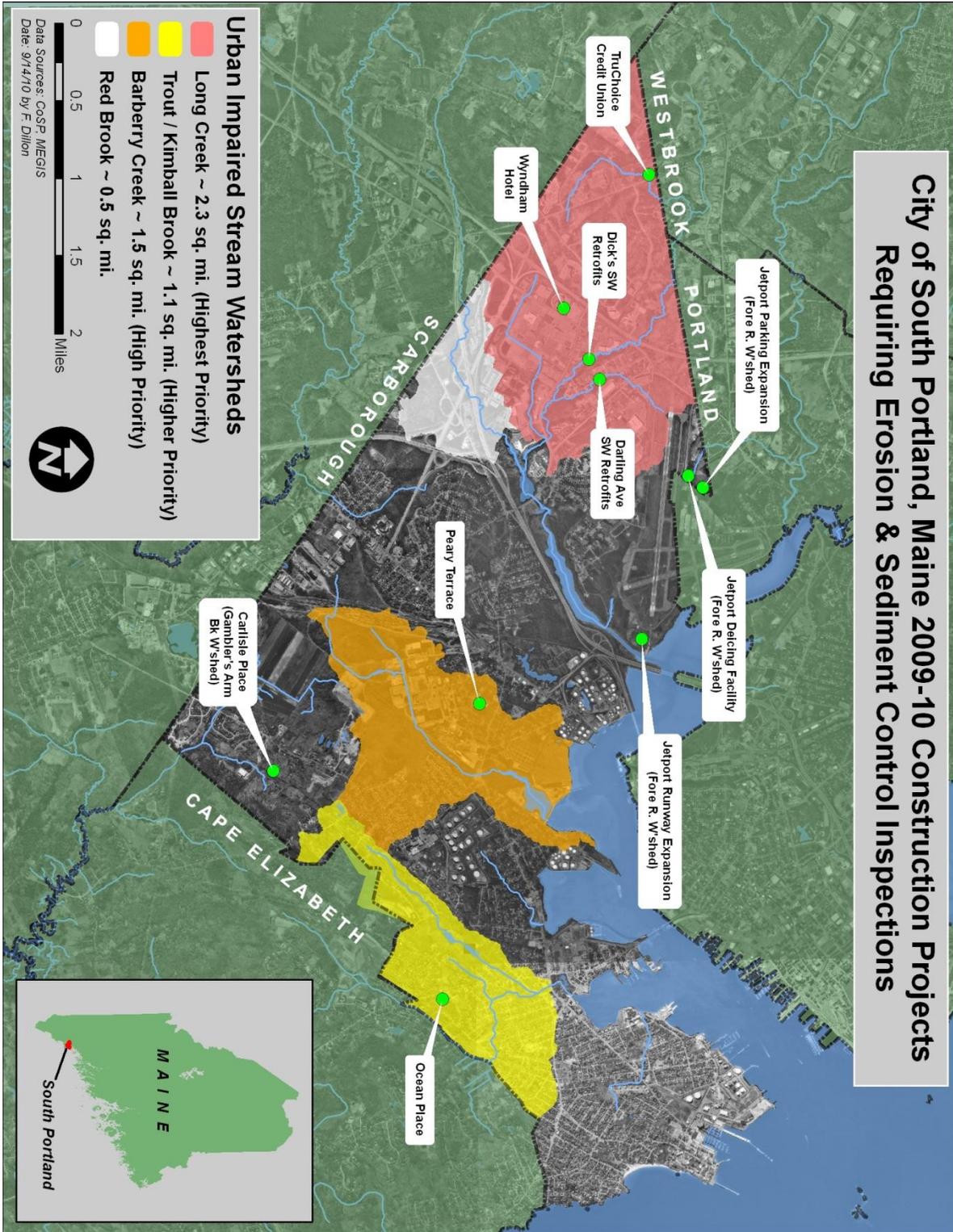
City of South Portland Illicit Discharge Detection & Elimination Tracking Sheet*				
Incident ID: ME Turnpike Spur Truck Rollover				
Responder Information				
Call taken by: Dave Thomes			Call date: 6/30/10	
Call time: ca. 1PM			Precip prev. 24-48 hrs:	
Reporter Information				
Incident time: ca. 1PM			Incident date: 6/30/10	
Caller contact information (optional): S. Portland dispatcher contacted Collection Systems Division of Water Resource Protection Dept. Stormwater Program Coordinator Fred Dillon reported to incident.				
Incident Location				
Latitude / Longitude: -70.326853 x 43.626148				
Stream address or outfall #: Red Brook				
Closest street address: Pape Subaru at W. Broadway in S. Portland				
Nearby landmark: Pape Subaru				
Primary Location Description		Secondary Location Description		
<input type="checkbox"/> Stream corridor		<input type="checkbox"/> Outfall	<input type="checkbox"/> In-stream flow	
<input checked="" type="checkbox"/> Upland area		<input checked="" type="checkbox"/> Near storm drain	<input type="checkbox"/> Near other waste source (SW pond, wetland, etc.)	
Narrative description of location: truck rolled over near median of Turnpike spur immediately adjacent to catch basin (see photos)				
Upland Problem Indicator Description				
<input type="checkbox"/> Dumping		<input checked="" type="checkbox"/> Oils/solvents/chemicals	<input type="checkbox"/> Sewage	
<input type="checkbox"/> Wash water, suds, etc.		<input type="checkbox"/> Other: _____		
Stream Corridor Problem Indicator Description				
Odor	<input type="checkbox"/> None	<input type="checkbox"/> Sewage	<input type="checkbox"/> Rancid/sour	<input checked="" type="checkbox"/> Petroleum (gas)
	<input type="checkbox"/> Sulfide	<input type="checkbox"/> Other (describe in narrative section)		
Appearance	<input type="checkbox"/> "Normal"	<input checked="" type="checkbox"/> Oil sheen	<input type="checkbox"/> Cloudy	<input type="checkbox"/> Suds
	<input type="checkbox"/> Other (describe in narrative section)			
Floatables	<input type="checkbox"/> None	<input type="checkbox"/> Sewage (toilet paper, etc.)	<input type="checkbox"/> Algae	<input type="checkbox"/> Dead fish
	<input type="checkbox"/> Other (describe in narrative section)			
Narrative description of problem indicators: diesel fuel slowly leaked from truck fuel tank. Fire Dept. arrived shortly after rollover and created dike and applied absorbent materials to prevent diesel from entering catchbasin or surface waters. During removal & transfer of the truck's contents, a considerable amount (~50-100 gal) of leaking beer entered the MS4 system.				
Suspected Violator (name, personal or vehicle description, license plate #, etc.): Regency Transportation Inc. 101 Constitution Blvd. Franklin, MA 02038 / (508) 520-3595 / Driver's name: Richard Abram				

*Adapted from Center for Watershed Protection's Illicit Discharge Detection and Elimination Technical Appendices (Oct. 2004)





Appendix 8: Construction Projects 1 Acre or Greater Requiring E&SC Inspections



Appendix 9: Example of E&SC Inspection Report for Projects 1 Acre or Less



INSPECTION REPORT

**City of South Portland
Erosion and Sediment Control Inspection
For Construction Sites Equal to or Less Than One Acre**

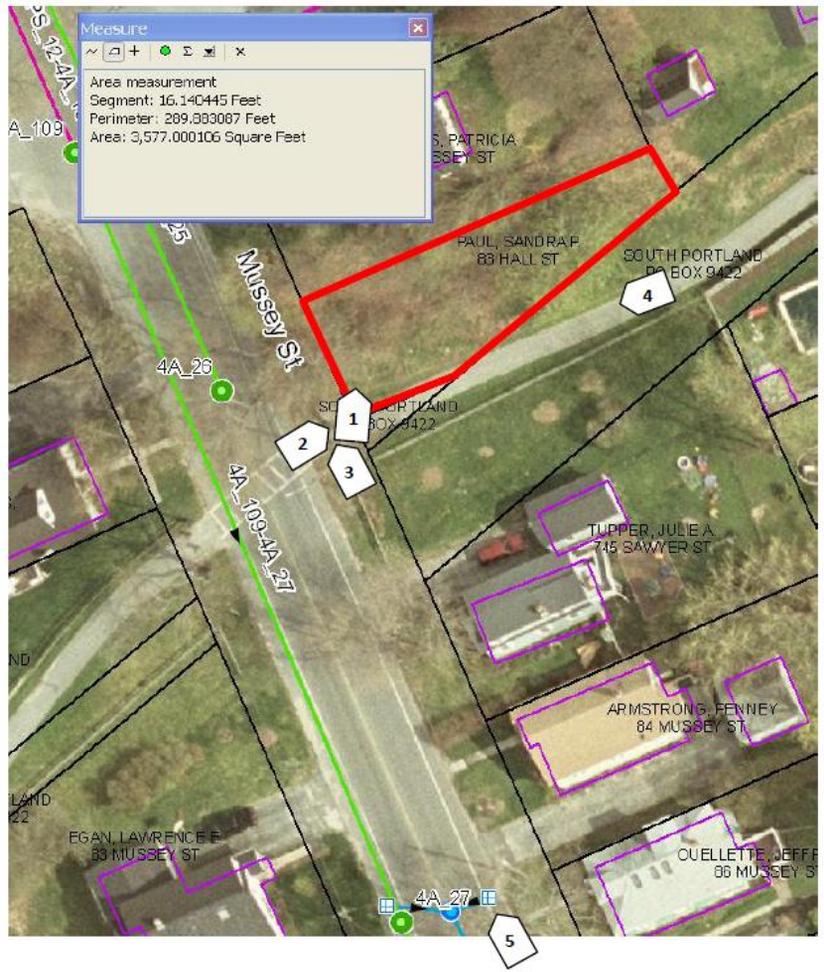
South Portland PID:
Project Name: **Kevin Tracy**
Project Location: 70 Mussey St
Map ___ Lot ___
Weather: **Mstly clr** Temperature: **ca. 65° F**
Quantity of Last Rain Event (inches):

Date: **6/11/10**
Scope of Inspection: **Entire site**
Inspector: **Fred Dillon**
Qualifications: **SW Coord**
Inspection Duration: **15 min**
Pictures Taken: **Yes / No**
Date of Last Rain Event: **6/10/10**

Inspection Parameter (Should reevaluate the parameters)	Inspection Result ¹	Major Observations/Corrective Action
Culverts / Inlet-Outlet Protection	<input checked="" type="checkbox"/> N/A <input type="checkbox"/> M <input type="checkbox"/> P <input type="checkbox"/> F	
Detention / Sediment Ponds	<input checked="" type="checkbox"/> N/A <input type="checkbox"/> M <input type="checkbox"/> P <input type="checkbox"/> F	
Dewatering Area	<input checked="" type="checkbox"/> N/A <input type="checkbox"/> M <input type="checkbox"/> P <input type="checkbox"/> F	
Ditches / Swales / Channels	<input checked="" type="checkbox"/> N/A <input type="checkbox"/> M <input type="checkbox"/> P <input type="checkbox"/> F	
Dust Control	<input checked="" type="checkbox"/> N/A <input type="checkbox"/> M <input type="checkbox"/> P <input type="checkbox"/> F	
Gabions	<input checked="" type="checkbox"/> N/A <input type="checkbox"/> M <input type="checkbox"/> P <input type="checkbox"/> F	
Hay Bales	<input checked="" type="checkbox"/> N/A <input type="checkbox"/> M <input type="checkbox"/> P <input type="checkbox"/> F	
Level Spreader	<input checked="" type="checkbox"/> N/A <input type="checkbox"/> M <input type="checkbox"/> P <input type="checkbox"/> F	
Material Storage Areas	<input checked="" type="checkbox"/> N/A <input type="checkbox"/> M <input type="checkbox"/> P <input type="checkbox"/> F	
Mats / Mulches / Blankets	<input checked="" type="checkbox"/> N/A <input type="checkbox"/> M <input type="checkbox"/> P <input type="checkbox"/> F	
Riprap Slope Stabilization	<input checked="" type="checkbox"/> N/A <input type="checkbox"/> M <input type="checkbox"/> P <input type="checkbox"/> F	
Silt Fencing / Silt Sock	<input checked="" type="checkbox"/> N/A <input type="checkbox"/> M <input type="checkbox"/> P <input type="checkbox"/> F	
Solid Waste / Hazardous Materials	<input checked="" type="checkbox"/> N/A <input type="checkbox"/> M <input type="checkbox"/> P <input type="checkbox"/> F	
Stabilized Construction Entrance	<input checked="" type="checkbox"/> N/A <input type="checkbox"/> M <input type="checkbox"/> P <input type="checkbox"/> F	
Stone Check Dam	<input checked="" type="checkbox"/> N/A <input type="checkbox"/> M <input type="checkbox"/> P <input type="checkbox"/> F	
Storm Drain Inlet Protection	<input checked="" type="checkbox"/> N/A <input type="checkbox"/> M <input type="checkbox"/> P <input type="checkbox"/> F	
Topsoil Stockpile	<input checked="" type="checkbox"/> N/A <input type="checkbox"/> M <input type="checkbox"/> P <input type="checkbox"/> F	
Vegetated Buffers	<input checked="" type="checkbox"/> N/A <input type="checkbox"/> M <input type="checkbox"/> P <input type="checkbox"/> F	
Vegetated Stabilization (seed/sod)	<input checked="" type="checkbox"/> N/A <input type="checkbox"/> M <input type="checkbox"/> P <input type="checkbox"/> F	
Wood Waste Bark Filter Berms	<input type="checkbox"/> N/A <input type="checkbox"/> M <input type="checkbox"/> P <input checked="" type="checkbox"/> F	V. minimal sediment transport off-site though berm would prevent any sediment loss
Other Stormwater Controls	<input checked="" type="checkbox"/> N/A <input type="checkbox"/> M <input type="checkbox"/> P <input type="checkbox"/> F	

1. N/A = Not Applicable, M = Maintenance Required, P = Pass, F = Fail

General Comments (including erosion observed): **Follow up from 6/1/10 inspection. Site is approx. 4,000 sq. ft. w/ perhaps less than half of it disturbed for construction. There is very little sediment transport off-site and virtually none into the City’s stormwater system. Even so, a small erosion control berm around the site’s perimeter would prevent any soil loss. Spoke with contractor Kevin Tracy and informed him that basic erosion control filter berm would suffice for ESC.**



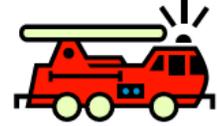


Appendix 10: ISWG O&M Procedures for Stormwater Pollution Controls of Municipal Facilities and Activities



OPERATION AND MAINTENANCE PROCEDURES FOR FIRE STATIONS

Train employees and subcontractors annually on O&M Procedures
Train new employees within six months of hire



Vehicle & Equipment Fueling

Always:

- Fuel carefully to minimize drips to the ground surface.
- When pouring fuel from a jerry can, use a funnel.
- Immediately clean up spills and properly dispose of contaminated soil and cleanup materials.
- Fuel vehicles at a central fueling station or in a designated area approved by stormwater manager.

Never:

- Never “top off” fuel tanks (post signs to remind employees).
- Never hose down or bury a fuel spill.
- Never fuel vehicles near stormdrains and waterbodies.

Vehicle & Equipment Storage

Always:

- Inspect parking areas for stains/leaks on a regular basis.
- Use drip pans or absorbents for leaking vehicles.
- Address any known leaks or drips and maintain vehicles to prevent leaks.

Whenever Possible:

- Store vehicles inside where floor drains have been properly connected.
- Store vehicles on paved areas, and street sweep on a regular basis to remove drips/leaks/dirt, and dispose of street sweepings properly.

Never:

- Never store leaking vehicles over a storm drain.

Vehicle & Equipment Washing

Always:

- Wash vehicles and equipment in an area approved by the municipal stormwater manager.
- Discharge all wash water containing degreasers, acids, bases, and or metal brighteners to an on site treatment facility, the sanitary sewer in accordance with the treatment plant standards, or an approved holding tank. If not available, discharge to a permeable area or vegetated buffer.

Whenever Possible:

- Use a biodegradable, phosphate free soap.
- Use a commercial car wash for light duty vehicles.
- Wash vehicles on grass, gravel, or other permeable surface.
- Obtain and use drain guards, (filter inserts) to catch sediments, petroleum products, etc. that might enter the storm drains as a result of vehicle washing.
- Minimize water and soap use when washing or rinsing vehicles.

Never:

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

Inside Floor Drains

Always:

- Know where your floor drains discharge.
- Keep a spill kit in the vicinity of the floor drains.
- Obtain and use drain mats, adsorbent booms or covers to keep larger spills out of drains.
- Use floor drains that are (1) connected to a holding tank or (2) connected to the sanitary sewer via an oil/water separator.
- Maintain a regular inspection and clean out procedure for floor drains and oil/water separators.
- Register floor drains that have regulated contaminants stored or used near them with the MDEP.
- Register holding tanks with the MDEP. (David Ladd checking with Erik C on these.)

Whenever Possible:

- Minimize water use or run a dry shop.

Never:

- Never dump down the floor drains or store hazardous materials near floor drains.

Spill Clean Up: (crude oil, gasoline, heating oil, various fuel oils, lubricating oil, hydraulic oil, asphaltic residuals)

Always:

- Stop the source of the spill and contain any liquids, if possible to safely do so.
- Contact the MDEP to report any size spill.
 - MDEP Petroleum Products Spill Response: 1-800-482-0777
 - MDEP Hazardous Material (non-oil spill): 1-800-452-4664
- Report any discharge of hazardous waste immediately, (within one hour) to local emergency officials [fire department], then contact MDEP Hazardous Material Department (as described above).
 - Hazardous materials spills involve non-oil spills that pose a threat to human health or the environment, such as chemical releases.
- Cover the spill with absorbent material such as kitty litter, sawdust, or oil absorbent pads. Do not use straw or water.

Deicing:

Always:

- Clear snow as soon as possible after snow fall from driveways, sidewalks and pathways.

Whenever Possible:

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

Dumpsters:

Always:

- Keep lids closed.
- Only use dumpsters for disposal of non-liquids.



**OPERATION AND MAINTENANCE PROCEDURES
FOR PUMP STATIONS**



Train employees and subcontractors annually on O&M Procedures
Train new employees within six months of hire

VEHICLE & EQUIPMENT: FUELING, WASHING & STORAGE (lawn mowers, trimmers, weed whackers, blowers)

Always:

- When fueling must be done in the field, do so over a paved or concrete area well away from any storm drains or ditches. When pouring fuel from a jerry can, use a funnel.
- Maintain all fueling equipment in good working order. Conduct preventive maintenance.
- Conduct regular inspections of the fueling area and clean up any spills and absorbent on the ground.
- Use drip pans under leaking equipment.
- Completely drain oil filters before disposal by poking a hole in the top and allowing it to drain for 24 hrs.
- Clean up all spills and leaks immediately with soil, sand, rags or paper towels. 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.
- 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.
- Place stockpiled materials away from ledge or rock outcrops, storm drains, ditches and surface waters.

When Possible:

- Perform all fueling activities for lawn care equipment in an enclosed building with closed drainage.
- Keep stockpiles under cover or use erosion control mulch to contain.
- Reduce the amount of liquid cleaning agents used or use low phosphate or phosphate free products.
- Conduct maintenance within a building or covered area.
- Park vehicles/equipment indoors or under a roof.
- Wash equipment/vehicles in a designated area that is permeable or drains to a buffer and does not directly drain to a ditch or waterbody.
- Discharge all wash water containing degreasers, acids, bases, and or metal brighteners to an on site treatment facility, the sanitary sewer in accordance with the treatment plant standards, or an approved holding tank.
- Drain fluid from stored/salvaged vehicles/equipment.

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.
- Never refuel or change the mower oil near storm drains.
- Never hose down the work area unless the runoff will either be directed to an oil/ water separator and discharged into the city’s sanitary sewer system or contained and disposed of as a hazardous waste.

WET WELL CLEANING

Always:

- Inspect wet wells for structural integrity and evidence of illicit discharges during cleaning.
- Stockpile and cover wet well residuals on an impervious surface that discharges to a sanitary sewer or buffered area.

PETROLEUM STORAGE

Always:

- Be prepared for possible spills by having a spill kit nearby.
- Inspect storage areas for leaks or drips frequently.
- Store bulk items within secondary containment areas if bulk items are stored outside.

Whenever Possible:

- Store bulk petroleum products inside or under cover.
- Provide secondary containment for interior storage.

SPILL CLEAN UP: (crude oil, gasoline, heating oil, various fuel oils, lubricating oil, hydraulic oil, asphaltic residuals)

Always:

- Stop the source of the spill and contain any liquids, if possible to safely do so.
- Contact the MDEP to report any size spill.
 - MDEP Petroleum Products Spill Response: 1-800-482-0777
 - MDEP Hazardous Material (non-oil spill): 1-800-452-4664
- Report any discharge of hazardous waste immediately, (within one hour) to local emergency officials [fire department], then contact MDEP Hazardous Material Department (as described above).
 - Hazardous materials spills involve non-oil spills that pose a threat to human health or the environment, such as chemical releases.
- Cover the spill with absorbent material such as kitty litter, sawdust, or oil absorbent pads. Do not use straw or water.

PERSONNEL PRACTICES:

Always:

- Rinse apparatus, uniforms, clothing in a designated area such as a permeable or buffered area.

Never:

- Never rinse apparatus, uniforms, etc. into stormdrains or ditches.



**OPERATION AND MAINTENANCE PROCEDURES
FOR ALL MUNICIPAL LANDSCAPING**
Parks/Playgrounds/Cemeteries/School Grounds/Ball Fields/Libraries/Community Buildings



Train employees and subcontractors annually on O&M Procedures
Train new employees within six months of hire

VEHICLE & EQUIPMENT: FUELING, WASHING & STORAGE (lawn mowers, trimmers, weed whackers, blowers)

Always:

- When fueling must be done in the field, do so over a paved or concrete area well away from any storm drains or ditches. When pouring fuel from a jerry can, use a funnel.
- Maintain all fueling equipment in good working order. Conduct preventive maintenance.
- Conduct regular inspections of the fueling area and clean up any spills and absorbent on the ground.
- Use drip pans under leaking equipment.
- Completely drain oil filters before disposal by poking a hole in the top and allowing it to drain for 24 hrs.
- Clean up all spills and leaks immediately with soil, sand, rags or paper towels. 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.
- 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.
- Place stockpiled materials away from ledge or rock outcrops, storm drains, ditches and surface waters.

When Possible:

- Perform all fueling activities for lawn care equipment in an enclosed building with closed drainage.
- Keep stockpiles under cover or use erosion control mulch to contain.
- Reduce the amount of liquid cleaning agents used or use low phosphate or phosphate free products.
- Conduct maintenance within a building or covered area.
- Park vehicles/equipment indoors or under a roof.
- Wash equipment/vehicles in a designated area that is permeable or drains to a buffer and does not directly drain to a ditch or waterbody.
- Discharge all wash water containing degreasers, acids, bases, and or metal brighteners to an on site treatment facility, the sanitary sewer in accordance with the treatment plant standards, or an approved holding tank.
- Drain fluid from stored/salvaged vehicles/equipment.

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.
- Never refuel or change the mower oil near storm drains.
- Never hose down the work area unless the runoff will either be directed to an oil/ water separator and discharged into the city’s sanitary sewer system or contained and disposed of as a hazardous waste.

FERTILIZERS:

Always:

- Keep records/documentation of all materials applied and when.
- Check the weather forecast and apply according to product instructions as to whether to apply dry or lightly watered in.
- Store in closed containers labeled with contents and purchase date.
- Keep containers in a secure building enclosure and clean as needed.

FERTILIZERS, Continued:

- Always routinely inspect storage area for leaks, spills, residue, and trash.
- If fertilizer accidentally ends up on pavement, always sweep it up as and put it back in the bag.

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 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.

LANDSCAPING PRACTICES (mowing, irrigation,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).

When Possible:

- 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.

SPILL CLEAN UP: (crude oil, gasoline, heating oil, various fuel oils, lubricating oil, hydraulic oil, asphaltic residuals)

Always:

- Stop the source of the spill and contain any liquids, if possible to safely do so.
- Contact the MDEP to report any size spill.
 - MDEP Petroleum Products Spill Response: 1-800-482-0777
 - MDEP Hazardous Material (non-oil spill): 1-800-452-4664
- Report any discharge of hazardous waste immediately, (within one hour) to local emergency officials [fire department], then contact MDEP Hazardous Material Department (as described above).
 - Hazardous materials spills involve non-oil spills that pose a threat to human health or the environment, such as chemical releases.
- Cover the spill with absorbent material such as kitty litter, sawdust, or oil absorbent pads. Do not use straw or water.

WILDLIFE: (DUCKS, GEESE, GULLS, ETC)

Facts:

- Wildlife always have plenty of natural food sources
- They do not need Wonder Bread, French fries or pretzels (these foods have no nutritional value to wildlife)
- Wildlife's' most common instinct is "fear of humans"
 - If this instinct is lost-wildlife could be hurt or killed and humans put themselves at risk too
- Birds and other animals that have a steady diet of human food are overweight and undernourished.

More than meets the eye:

- The animals you feed aren't the only animals you may impact;
 - Bald Eagles eat ducks, which impacts the food chain (unhealthy ducks result in unhealthy eagles).
 - Sometimes a french fry, pretzel, etc., can get caught in their windpipes and actually split the esophagus causing the animal to die.

Never:

- Never feed wild animals and birds.

DRAFT



OPERATIONS AND MAINTENANCE PROCEDURES FOR ACCESSIBLE FORESTED AREAS AND TRAIL SYSTEMS



Train employees and subcontractors annually on O&M Procedures

Train new employees within six months of hire

TRAIL MAINTENANCE:

Always keep water off trails by:

- Installing rock or wood water bars to divert runoff into vegetated areas
- Installing water bars at a 45 degree angle
- Using drainage dips, swales or cross ditches to divert water from trails

Maintain Best Management Practices by:

- Cleaning and clearing out sediment and debris.
- Clearing blowdowns
- Keeping trails free of brush

EROSION AND SEDIMENT CONTROL:

Always:

- Use erosion control techniques or devices to stabilize disturbed areas.
- Use effective site planning to avoid sensitive areas.
- Keep land disturbance to a minimum.
- Install, inspect and maintain erosion control devices properly.
- Minimize slope lengths.
- Prevent erosion by covering bare soil with mulch or other cover.

Whenever Possible:

- Protect natural vegetation, especially near waterbodies, wetlands, and steep slopes.
- Establish vegetative cover with good root systems prior to freeze/thaw cycles.

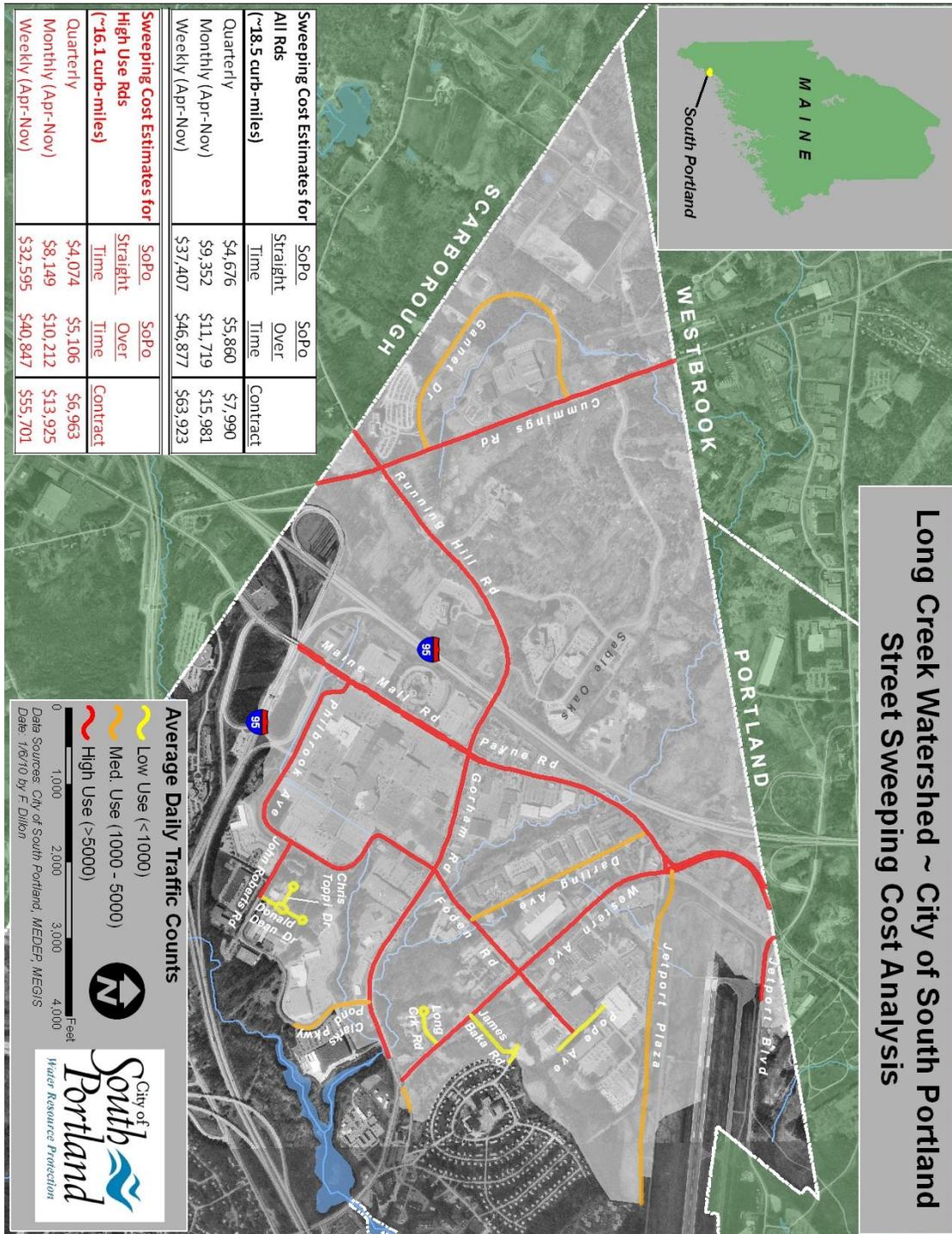
Never:

- Never divert runoff into a sensitive area.

SEE O&M PROCEDURES FOR LANDSCAPING FOR:

- Vehicle Fueling
- Mowing
- Spill Clean Ups
- Wildlife

Appendix 11: Sweeping Cost Analysis for Long Creek Watershed



Appendix 12: Stormwater System Construction Projects Cost Summary for 2009-10

Date	Location	Purpose	Job Type	Material cost	Labor cost	Total cost
7/2/09	Pleasant Ave	attempted to repair sewer main	sewer	\$655.00	\$648.63	\$1,303.63
7/15/09	Bonnybriar Rd	relaid sewer main 232'	sewer	\$9,768.02	\$6,460.52	\$16,228.54
7/20/09	Smith St	Install new drain line + CB	storm	\$2,784.61	\$1,487.19	\$4,271.80
7/21/09	Broadway 295 overpass	repair two CB	storm	\$70.14	\$185.88	\$256.02
7/22/09	Main St	raised 5 frames and covers	sewer	\$1,890.55	\$650.58	\$2,541.13
7/22/09	B St	raised buried MH cover to grade	sewer	\$95.01	\$284.52	\$379.53
7/22/09	Anthoine St	raised buried MH cover to grade	sewer	\$61.23	\$139.41	\$200.64
7/27/09	Winding Way	repaired joint in storm line connection	storm	\$135.75	\$557.64	\$693.39
7/28/09	Henley St	repair CB + adjusted to grade	storm	\$722.76	\$278.82	\$1,001.58
7/29/09	Pine St	Repaired sewer main	sewer	\$512.44	\$722.27	\$1,234.71
7/30/09	New York Ave	repair offset joint in CB lead	storm	\$279.39	\$368.72	\$648.11
7/31/09	Gramby Rd	replaced old CB with new precast	storm	\$1,269.23	\$673.22	\$1,942.45
7/31/09	20 Berwick St	repair sewer service	sewer	\$372.21	\$314.67	\$686.88
8/3/09	Holden St	Installed new storm system	storm	\$12,329.18	\$7,804.49	\$20,133.67
8/12/09	Greenbelt walkway	rip rapped washout	storm	\$177.95	\$185.88	\$363.83
8/12/09	Fickett St	rip rapped side of rd	storm	\$693.76	\$374.91	\$1,068.67
8/13/09	Massachusetts Ave	spot repair on main	sewer	\$1,003.00	\$1,133.88	\$2,136.88
8/14/09	Collin Kelley Rd	repaired CB and paved	storm	\$52.37	\$199.56	\$251.93
8/18/09	FairLawn Ave	spot repair on sewer main	sewer	\$702.40	\$1,016.27	\$1,718.67
8/18/09	Cedar St	install deadend MH	sewer	\$1,080.05	\$833.68	\$1,913.73
8/19/09	Alfred St	repair CB	storm	\$30.51	\$240.51	\$271.02
8/19/09	Fesseden St	raise CB	storm	\$35.07	\$320.68	\$355.75
8/21/09	Maple St	repaired two spots on 8" main	sewer	\$736.48	\$908.23	\$1,644.71
8/25/09	Long Creek PS	dug test pit	sewer	\$0.00	\$39.63	\$39.63
8/27/09	Anthoine St	Repair sewer main 2 spots	sewer	\$1,063.65	\$792.74	\$1,856.39
8/28/09	Main St PS	sealed over flow	sewer	\$472.50	\$266.76	\$739.26
9/3/09	School St	repaired broken CB lead	storm	\$267.24	\$286.76	\$554.00
9/10/09	Ocean St	Replaced 76' of sewer main	sewer	\$5,291.37	\$1,722.62	\$7,013.99
9/12/09	Marsh Rd	Install new storm lead an CB	storm	\$1,330.37	\$856.58	\$2,186.95
9/14/09	Mountain View	4 test pits	storm	\$418.67	\$546.74	\$965.41
9/17/09	Greenbelt walkway	Repair washout @ Bonnybria outfall	storm	\$106.50	\$54.84	\$161.34
9/22/09	Hillcrest St	Lowered and raise after paving	sewer	\$1,243.93	\$845.78	\$2,089.71
9/24/09	Pierce st	install CB in storm line	storm	\$2,414.76	\$4,313.16	\$6,727.92
9/26/09	Nutter Rd	remove casting adjust curb inlet	storm	\$453.12	\$577.96	\$1,031.08
9/26/09	Foden Rd	remove casting adjust curb inlet	storm	\$1,596.60	\$761.64	\$2,358.24
9/30/09	Oak St	remove casting and plate+ replaced	sewer	\$69.50	\$250.92	\$320.42
10/13/09	Pierce St Sawyer St	Install doghouse MH on storm line	storm	\$5,828.96	\$4,278.33	\$10,107.29
10/16/09	Lubec Street	101 feet Sdr_35 storm system	storm	\$3,392.95	\$1,926.72	\$5,319.67
10/30/09	Pleasant Ave	44' SDR-35 storm + CB	storm	\$3,703.40	\$3,373.83	\$7,077.23
11/9/09	Hamilton Street	122' 12" N-12	storm	\$4,814.78	\$2,317.70	\$7,132.48
11/20/09	Treatment Plant	digging trench	sewer	\$84.00	\$1,090.32	\$1,174.32
11/23/09	Lahave St	new storm + CB	storm	\$5,741.77	\$3,157.71	\$8,899.48
12/17/09	Thomas Knight Park	Rip rapping to repair sea wall	storm	\$1,093.05	\$576.54	\$1,669.59
1/26/10	Shop	digging ditch oversize rook	storm	\$4,073.66	\$2,636.72	\$6,710.38
2/2/10	Lower floor shop	reconnected storm line	storm	\$1,055.65	\$1,129.04	\$2,184.69
2/5/10	Agusta Ave	Ditching + rip rapping	storm	\$2,172.55	\$1,493.53	\$3,666.08
3/10/10	Treatment Plant	Ditching for new conduit	sewer	\$527.80	\$496.54	\$1,024.34
3/11/10	Wainwrights Fields	culvert and ditching swale	storm	\$293.36	\$319.20	\$612.56
3/16/10	295 on ramp	repair CB with precast and concreat	storm	\$1,075.76	\$460.09	\$1,535.85
3/26/10	Charlotte St	built invert in MH	sewer	\$42.28	\$148.42	\$190.70
4/1/10	North Kelsey St	repaired invert in MH	sewer	\$21.14	\$107.54	\$128.68
4/1/10	Hill St	repaired invert in MH	sewer	\$11.06	\$35.85	\$46.91
4/1/20	Bonnybriar Rd	repaired invert in MH	sewer	\$76.61	\$71.69	\$148.30
4/9/10	Ship Channel Rd	141 feet of 12" SDR-35	sewer	\$1,472.33	\$2,225.99	\$3,698.32
4/13/10	Hamilton St	Loamed and seeded side of rd	storm	\$35.68	\$117.83	\$153.51
4/13/10	Lahave St	raked and loamed and seeded	storm	\$14.43	\$78.55	\$92.98
4/20/10	Broadway @ Golf course	Installed a storm line for drainage	storm	\$792.47	\$555.44	\$1,347.91
4/17/10	Treatment plant	trenching for plumbers	sewer	\$812.00	\$2,255.14	\$3,067.14
4/23/10	Treatment plant	ditched for conduit	sewer	\$673.95	\$634.65	\$1,308.60
4/27/10	Nutter Rd	new CB+ pipe	storm	\$4,758.26	\$2,742.63	\$7,500.89
4/27/10	Boat Ramp	Rip Rapped	storm	\$420.00	\$185.39	\$605.39
4/29/10	Main St PS	Rip rap wash out	storm	\$522.52	\$499.96	\$1,022.48
5/6/10	George St	Installed CB and storm line	storm	\$1,977.25	\$672.05	\$2,649.30

City of South Portland – Stormwater Phase II Annual Report for Permit Year 2 / Permit Cycle 2

Date	Location	Purpose	Job Type	Material cost	Labor cost	Total cost		
5/11/10	Frarence St	Prep + Paved	sewer	\$165.00	\$161.64	\$326.64		
5/13/10	Thorton St	Repaired sewer main	sewer	\$1,051.70	\$920.46	\$1,972.16		
5/15/10	Highland Ave	loamed side of rd for new storm	storm	\$67.00	\$331.53	\$398.53		
5/19/10	Westbrook St	Repaired 8" sewer main	sewer	\$305.93	\$179.10	\$485.03		
5/24/10	Mussey St	CB and Storm Lline	storm	\$3,199.65	\$2,026.60	\$5,226.25		
5/25/10	Barstow St	Install 2 CB and storm line	storm	\$3,652.46	\$2,876.61	\$6,529.07		
5/28/10	Augusta Ave	Box cut rd + installed CB + storm line	storm	\$4,595.08	\$3,180.32	\$7,775.40		
6/4/10	Briarwood	repaired two CB	storm	\$209.64	\$248.29	\$457.93		
6/7/10	Preble@ Loveitts	removed CB from our system	storm	\$249.28	\$285.56	\$534.84		
6/7/10	Hill St	dug and plugged abandon storm	storm	\$365.60	\$498.28	\$863.88		
6/9/10	198 Sawyer St	Repaired CB	storm	\$232.08	\$213.81	\$445.89		
6/9/10	Sawyer St	REO MARINE removed curbing,loam	storm	\$396.44	\$445.68	\$842.12		
6/9/10	Highland Ave	New culverts ditching @ Beechers	storm	\$2,705.55	\$1,363.81	\$4,069.36		
6/11/10	Pearl Street	replaced frames with lockdown frames	sewer	\$964.46	\$209.72	\$1,174.18		
6/14/10	73 Sawyer Street	Plugged abandoned line	sewer	\$792.06	\$743.34	\$1,535.40		
6/15/10	High Street	Repaired 10" sewer in 2 spots	sewer	\$932.00	\$1,317.81	\$2,249.81		
6/17/10	Highland @ Presidents	replaced culvert basin to basin	storm	\$2,590.77	\$878.54	\$3,469.31		
6/19/10	Westbrook Street @ pape	replaced broken sewer main	sewer	\$466.58	\$616.56	\$1,083.14		
6/21/10	Hill Street	Removing castings and plating manholes	both	\$448.70	\$533.34	\$982.04		
6/21/10	Mill Creek Park	Pulled stump	both	\$0.00	\$73.74	\$73.74		
6/24/10	Thornton Ave	Dug up water service	sewer	\$56.00	\$446.18	\$502.18		
6/25/10	Mill Creek Park	removed sod replaced with stone	storm	\$420.00	\$230.00	\$650.00		
6/30/10	Community Center	Repair broken storm system	storm	\$769.00	\$816.35	\$1,585.35		
Number of Projects: 86						% Total		
				Storm System	\$86,387.03	\$59,991.82	\$146,378.85	69.8%
				Sewer System	\$33,472.24	\$28,692.06	\$62,164.30	29.7%
				Combined	\$448.70	\$607.08	\$1,055.78	0.5%
					\$120,307.97	\$89,290.96	\$209,598.93	

