Stormwater Citizens Review Panel
Quarterly Meeting
September 22, 2015, 2 PM
City Council Chambers

Agenda

1. Introductions

2. Selection of new Chairperson for the Committee.
    a. Council Order, Mission and chairperson selection process

3. Review of Penjajawoc Stormwater Management Plan (Draft to be provided)

4. Review of Birch Stream Watershed Management Plan (Draft to be provided)

5. Stormwater Permit Year 2 Annual Report (Attached)

6. Grant application.

7. Other items for discussion.

~~PENJAJAWOC WATERSHED~~STORMWATER CITIZEN REVIEW PANEL
~~April 30, 2009~~July 7, 2011

Purpose

The ~~Penjajawoc Watershed~~ Citizen Review Panel (CRP) is intended to provide consistent ~~stakeholder~~ community participation into watershed management planning, ~~future refinements of the Penjajawoc Stream Watershed Management Plan (hereinafter referred to as the Plan),~~ provide review and suggestions to the Bangor City Council and City staff on ~~adaptive management efforts under the Plan~~water quality management efforts, review and discuss the implementation of associated action plans, facilitate communication and agreement, and generally to promote public understanding.

Mission

The mission of the CRP is to assist the City of Bangor in working to ~~implement the Plan and~~ achieve Class B water quality standards in ~~the Penjajawoc Stream~~certain designated streams in a manner which balances environmental stewardship with a healthy economy through an open process of dialogue and citizen participation. The CRP will allow for the presentation of a range of ideas and perspectives while providing for an efficient consultation process.

Responsibilities

1. Review and discuss the implementation of ~~the Plan~~watershed management plans.

2. Provide advice and comment to the City Council and City staff on the ongoing refinement of ~~the~~ watershed management plans.

3. Examine data regarding the impact of Best Management Practices on stream water quality, and consider whether sufficient data is being collected.

4. Review and comment on proposed adaptive management changes to ~~the Plan~~watershed management plans.

5. Assist in efforts to educate City residents, City property owners ~~within the watershed~~, and other interested parties on water quality issues and efforts.

6. Provide support for development and adoption of means to fund the implementation of ~~the Plan~~water quality improvement activities, such as a utility district.

Membership

1. The CRP will be made up of ~~12~~ 9 members. Members will be appointed ~~for three-year terms~~ by the City Council based on nominations from the public, interested organizations, individual Councilors, and City staff. Preference shall be given to Bangor citizens and potential ratepayers ~~those who reside in Bangor, those with an economic interest in the City, and those with an interest in the Penjajawoc watershed. Members will represent the following interests in the following numbers:~~

~~3 Environmental organizations.~~
~~3 Owners or managers of commercial property within the watershed.~~
~~2 Owners of non-commercial property within the watershed.~~
~~1 Nonprofit organizations owning property within the watershed and not otherwise represented.~~
~~3 At-large citizen members.~~
Three members shall be appointed for terms lasting through 2011, three for terms lasting through 2012, and three for terms lasting through 2013. Upon completion of his or her term, each member shall be reappointed or replaced by the City Council. The term of all such reappointed or newly appointed members shall be for three years.

2. Replacements or openings resulting from resignations shall be filled by the City Council. Members appointed in this fashion shall complete the term left vacant and, once the term is complete, shall be reappointed or replaced as outlined in the previous paragraph.

3. A representative of the Maine Department of Environmental Protection ~~and a member of the Mall Marsh Commission~~ will be invited to attend each meeting. The CRP may also invite people with strong scientific backgrounds in relevant fields and the ability to effectively communicate scientific and technical data to attend meetings and provide technical support.

Procedures

1. The CRP shall meet at least quarterly~~. Regular meetings shall be scheduled for the year at the beginning of each calendar year. Special~~

~~meetings may be called~~, with additional meetings scheduled as needed by the Chair.

2. Prior to December 31 of each calendar year beginning in 2009, the CRP shall prepare an annual report outlining its activities during the preceding twelve-month period (or fraction thereof for calendar year 2009) and the efforts made towards implementing the Plan and the results of those efforts. This report shall be provided to the Bangor City Council, the Maine Department of Environmental Protection, citizens who have expressed an interest in receiving such information, and the general public through posting on the City's web site. The CRP shall also meet jointly with the Infrastructure Committee of the City Council at least three times in 2010 and at least two times every other calendar year, including 2009, in order to provide an update to that Committee.

3. The City Council shall select a chair and vice-chair from among the members of the CRP.

4. A quorum shall consist of a majority of the members of the CRP.

5. Meeting notices and agendas shall be publicly posted and distributed in accordance with the public meeting procedures of the City of Bangor.

6. An opportunity for public comment will be provided at each meeting.

7. If a member is unable to attend a meeting, the member shall, whenever possible, notify the Chair and City Staff assigned to the CRP. If any member misses three consecutive meetings, the Chair will notify the Chairperson of the City Council and the member will be replaced by the City Council.

8. A member will notify the Chair if he/she must vacate his/her position. Where a vacancy occurs, the position will be filled by the City Council.

9. Feedback, comments, and any recommendations by the CRP shall be noted in meeting minutes, a copy of which shall be forwarded to the City Manager. If the CRP does not reach consensus, the minutes shall reflect the opinion of the majority (if any) and the opinion of each minority.

10. The CRP shall remain in existence for a term ~~of three years,~~ ending January 1, 2012. At that time, the CRP shall make a recommendation as to the need for its continued existence to the City Council.

Staff Support

Staff support shall be provided by the City of Bangor as assigned by its City Manager. Assigned City staff shall:

1. Provide technical support and information to the CRP.

2. Prepare agendas in coordination with the Chair and ensure that they are posted and distributed in accordance with normal City procedures.

3. Ensure that minutes are taken and distributed to the members.

4. Place on the agenda for the next meeting any item requested at least 1 week in advance, space permitting.

5. Provide other administrative support as needed.

Communications & Transfer of Information

1. Minutes, status updates, and important project information will be posted to the City's website to a special section reserved for such information. The website shall also include a section in which the public may post comments.

2. CRP members shall notify City staff of any agencies, organizations, interest groups, or individuals who have expressed an interest in receiving notices and minutes of CRP meetings. City staff shall provide such notices and minutes to those interested.

3. City staff shall keep the Department of Environmental Protection informed by forwarding them agendas and minutes and by providing them with opportunities to comment.

MS4 Annual Report
Permit Year 2 (2014-2015)

City of Bangor, Maine

in compliance with the requirements of
Maine Pollutant Discharge Elimination System
MS4 Permit No. MER041026

September 14, 2015

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Introduction

The City of Bangor, Maine operates a regulated small Municipal Separate Storm Sewer System (MS4). The MS4 is allowed to discharge stormwater as authorized by the State of Maine in accordance with MS4 Permit No. MER041026. This report represents the activities taken to comply with this permit.

Summary of Minimum Control Measures

The City's activities for achieving permit compliance are detailed in the following sections.

▪ MCM 1 - Public Education and Outreach

Most of the work on this MCM, including development of a Stormwater Awareness Plan, was undertaken as a collaborative regional effort through participation in the Bangor Area Stormwater Group (BASWG). Please refer to the BASWG Annual Report for Permit Year 2, incorporated herein by reference.

BMP 1 – Regional collaboration

The City actively participated in the BASWG and its programs to achieve permit compliance.

- ***Measureable Goal 1 – BASWG meeting attendance***

Measure	Statement of attendance
Responsibility	Municipal Stormwater Manager
Date	Annual Report

City staff attended and participated in the BASWG meetings. Attendance is documented in the BASWG meeting minutes.

- ***Measureable Goal 2 – Regional plan implementation***

Measure	Annual documentation of City-specific accomplishments
Responsibility	Municipal Stormwater Manager
Date	Annual Report

The City is implementing the Stormwater Awareness Plan as developed collaboratively at a regional level through the BAWSG. The plan and the City's participation are documented in the BASWG Annual Report. As part of this plan, the City's stormwater intern assisted with stenciling catch basins in the Woodlawn neighborhood.

The City also facilitated a stream clean-up event on Saturday, April 18, 2015, providing watershed maps and snacks. About 200 people participated in the citywide street-to-stream clean-up.

As part of the statewide pollutant awareness program, the City has developed a Chloride Outreach Plan that was approved by DEP on July 22, 2015.

BMP 2 – Permit Awareness Plan

The City has implemented a municipal Permit Awareness Plan to educate City personnel about stormwater and the MS4 permit requirements.

- ***Measureable Goal 1 – Permit Awareness Plan development***

Measure	Permit Awareness Plan provided to DEP
Responsibility	Municipal Stormwater Manager
Date	February 28, 2014

This goal was met in PY 1.

- ***Measureable Goal 2 – Permit Awareness Plan implementation***

Measure	Progress report on implementation Evaluation of progress (PY 3) In-depth assessment (PY 5)
Responsibility	Municipal Stormwater Manager
Date	Annual Report

The City implemented the DEP-approved Permit Awareness Plan. Permit Awareness Plan material was presented during regularly scheduled bi-weekly staff meetings. Information regarding the permit was presented to the new City Council during Council orientation on November 6, 2014.

Additional activities

- The City's Wastewater Treatment Plant staff provides community education and outreach programs to grade school, middle school, and high school students as well as college students each year. Each tour of the entire facility is followed by a question and answer session and lasts approximately 1.5 hours. During PY 2, there were 3 tours, in which a total of 64 students and adults took part and learned about the importance of clean water.

- At their request, the City's Environmental Coordinator provided stormwater education to the Meadowbrook Ridge Homeowners Association at their annual

meeting on September 23, 2014. Topics included the stormwater utility and maintenance of stormwater structures on the property.

- Bradley Moore addressed staff at the Bangor Water District, including the General Manager and the District Engineer, at a meeting on January 20, 2015. The subject was the stormwater utility and how it would impact the District's operations and activities.

- On April 29, 2015, Paul Nicklas, the Assistant City Solicitor, gave a presentation about the City's stormwater utility at the NEWIPCC conference in Freeport, Maine.

- During this permit year, the Environmental Coordinator provided information and educational materials to pressure washing contractors and to a retail store looking to hire a contractor to pressure clean its building exterior.

▪ MCM 2 - Public Involvement and Participation

BMP 1 – Regional collaboration

The City actively participated in the BASWG and its programs to achieve permit compliance.

- ***Measureable Goal 1 – Public notice***

Measure	Statement of compliance with example
Responsibility	Municipal Stormwater Manager
Date	Annual Report

The City complied with applicable public notice requirements. BASWG meeting notices and agendas are published in the City's weekly calendar and posted on the municipal website. One of these calendar postings with agenda is included in ***Appendix A*** as an example.

- ***Measureable Goal 2 – Public event***

Measure	Documentation of event participation and any additional City-specific accomplishments
Responsibility	Municipal Stormwater Manager
Date	Annual Report

The City participated in one public event organized through the BASWG, the Garden Show and Spring Fling. Engineers John Theriault and Peralie Burbank

staffed the informational booth for two hours on Saturday, April 11, 2015, accompanied by Peralie's daughter as "Stormy the Duck."

In addition, on September 29, 2014, Wynne Guglielmo, Environmental Coordinator, spoke as part of the "Introducing Green Infrastructure for Coastal Resilience" training in Ellsworth provided by NOAA to municipal officials, planners and environmental land trust groups.

Additional activities

- The City continued membership and participated in meetings of the Lower Penobscot Watershed Coalition and is a member of the Maine Winter Maintenance Task Force, which developed the *Snow & Ice Control Environmental BMP Manual*. (Other partners in the task force included: Maine DEP, the Maine DOT and the Maine Local Roads Program.)

- The City continued its partnership with the Bangor High School science department and UMaine's engineering department. Under a National Science Foundation grant, the students built water quality sensors and placed them in impaired streams around the state, including Arctic Brook in Bangor. The City is committed to working with other community partners on stormwater issues.

- The City held meetings of the Stormwater Citizen Review Panel (SCRP) on December 3, 2014, March 4, 2015, and June 3, 2015. These meetings, which include updates of the stormwater and watershed management programs as well as educational presentations, are advertised by posting at City Hall and on the City website, and are open to the public. The meetings are also recorded for broadcast on the government channel and available on the City's website at http://bangormaine.pegcentral.com/ in the Stormwater Citizen Review Panel folder.

▪ MCM 3 - Illicit Discharge Detection and Elimination

The City adhered to its Illicit Discharge Detection and Elimination (IDDE) plan as dated June 26, 2014, and approved by DEP and EPA on December 17, 2014.

BMP 1 – Storm sewer system infrastructure map

- ***Measureable Goal 1 – GIS database maintenance***

Measure	Description of any database changes and list of layers relevant to MS4
Responsibility	Municipal Stormwater Manager

Date	Annual Report

The City maintained the database. There were no material changes to the database. The GIS layers relevant to the MS4 program are listed in the following table.

General Features	*Hydrologic Features*	*MS4 Features*
Contours	Draw	Culvert
CityFootprint	Pond	Ditch
Road_Centerline	River	Stormwater_CatchBasin
Roads_Private	Wetland	Stormwater_Outfalls
Roads_Public	Stream	Stormwater_Pipe
Railroad		Stormwater_Manhole
Zoning	*Private Features (known)*	Stormwater_Pretreatment
Trails	Private_CatchBasins	Stormwater_StorageTank
	Private_Manhole	Stormwater_Structure
	Private_Pipe	Watersheds
	Private_Structures	BMPs

- ***Measureable Goal 2 – System map***

Measure	MS4 system map
Responsibility	Municipal Stormwater Manager
Date	Annual Report

The general system map showing the MS4 boundaries, MS4 stormwater pipes and ditches with estimated total lengths, roads and water bodies is included as ***Appendix B***.

BMP 2 – Non-stormwater discharge ordinance implementation

- ***Measureable Goal 1 – Awareness and reporting mechanism***

Measure	Post stormwater ordinance information and hotline phone number on website
Responsibility	Environmental
Date	June 30, 2014, for PY 1 Annual Report

The City maintains a stormwater web page with a link to the stormwater discharge ordinance and a hotline phone number where anonymous reports about possible violations can be reported. The web address is *http://www.bangormaine.gov/stormwater*.

- ***Measureable Goal 2 – Incident report investigations***

Measure	Report of number of incidents by watershed and a narrative describing general trends
Responsibility	Engineering and Environmental
Date	Annual Report

The City investigated all reports of potential violations of the non-stormwater discharge ordinance. Each incident report was recorded in the incident report database and investigated in accordance with the City's IDDE plan. A summary of incidents is included in ***Appendix C***.

In PY 2, the City investigated 22 incidents. Distribution of the incidents in PY 2 by watershed is as follows.

Watershed	*No. of Incidents*
Birch Stream	4
Kenduskeag Stream	6
Penjajawoc Stream	3
Penobscot River	6
Sucker Brook	1
Other (unnamed)	2

The City was notified of incidents by phone (15) , email (2), and verbally (1). The remaining 4 incidents were identified during opportunistic inspections by City employees during the course of work.

- ***Measureable Goal 3 – Identification of potential hot spots***

Measure	Location and description of potential hot spots PY 2 – Capehart Brook and Arctic Brook watersheds
Responsibility	Engineering and Environmental
Date	Annual Report

The City reviewed its GIS data, available aerial photography, internet business listings, and the MSGP permit holder and no exposure lists from DEP to create a list of potential hot spots sites in the Capehart Brook and Arctic Brook watersheds. (See following table.) These sites will be investigated in PY 3 in accordance with the schedule identified in the SWMP.

	Hotspot ID	Site	Address	Property Use/Concern
Arctic Brook	1	PSC Industrial Outsourcing	22 Alden Street	equipment storage and maintenance
	2	Prompto Oil Change	633 Broadway	oil change facility
	3	Kelley Car & Truck Sales	699 Broadway	vehicle sales and maintenance
	4	Broadway Hardware Store	720 Broadway	outside storage of landscape materials
Capehart Brook	1	Bangor Housing Authority	161 Davis Road	maintenance facility
	2	Cyr Bus Lines	1246 Ohio Street	bus maintenance and storage
	3	Bud & Ray's Auto Body	723 Finson Road	vehicle repair
	4	residence	124 Pushaw Road	private septic system with no record
	5	City compost site	939 Finson Road	composting

- ***Measureable Goal 4 – Hotspot investigation and remediation***

Measure	Documentation of findings and remediation measures taken (Penjajawoc watershed)
Responsibility	Engineering and Environmental, Code Enforcement as needed
Date	Annual Report

The City inspected 18 potential hotspot sites in the Penjajawoc watershed during PY 2, in accordance with the schedule identified in the SWMP: 8 oil change facilities, 4 fuel stations, 2 restaurants, 2 retailers offering fertilizer, 1 oil company, and 1 RCRA site. The oil change facilities were all found to be in good condition, connected to public sewer, and stocked appropriately for spill clean-up. At one facility, a dealership with car wash properly connected to the public sewer, the City provided educational materials about non-stormwater discharges as an extra preventative measure.

Two of the fuel stations had recently been renovated and were free from staining. A third station was clean and has hydrocarbon filters in nearby catch basins that are maintained by the City. At the fourth site, some staining was noted, but proper supplies were on hand. (During the inspection, a vehicle in the parking lot was noted to have leaking hydraulic fluid. The spill was promptly cleaned when the City inspectors informed the staff, and the spill was reported to DEP (Spill Report #B-372-2015).The spill was contained in the parking lot and did not impact the site's stormwater collection system, the City MS4, or any water bodies.)

One restaurant was inspected due to its proximity to Penjajawoc Stream and a sewer pump station. This site was clean with proper grease storage and no

stained pavement. A second restaurant was inspected due to records of previous SSOs caused by grease plugs at that location. The site has outside grease storage, and no additional discharges have been reported since 2013.

Two retail sites with seasonal outside storage of fertilizer and landscaping materials were both found to be neat and orderly with no stains or signs of spills. The oil company site was clean with no signs of staining. Vehicles are stored on the site, but no bulk oil storage was observed.

The RCRA site (the former Osram Sylvania facility) on Sylvan Road has an operating vapor recovery system. The City has no information regarding the system, and although DEP receives yearly reports on the system's discharges, DEP staff were unable to find records about the system, which was originally installed in 1997. The site discharges to the City's MS4, but DEP was unable to provide information as to how or where. Stormwater from the RCRA site, as well as the adjacent hotels, empties into a pond at the rear of the property. Both the pond and the effluent from the vapor recovery system discharge to the MS4, and ultimately the Penjajawoc. The Environmental Coordinator is currently in communication with the DEP Bureau of Remediation and Waste Management project manager, Harold Nilsson, to obtain further information.

BMP 3 – Dry weather outfall inspections

Inspecting outfalls during dry weather allows the City to check for unauthorized discharges and possible cross-connections with the sanitary system.

- ***Measureable Goal 1 – Outfall inspections***

Measure	Report of number of outfalls inspected
Responsibility	Engineering
Date	Annual Report

The City conducted dry weather outfall inspections for the Arctic Brook watershed during the months of May and June 2015. Forty-four outfalls were identified and mapped. Accessible outfalls were inspected and photographed. Ten outfalls, mostly catch basin leads, were not accessible because Arctic Brook runs through an underground conduit for a portion of its length and pipes tied into this conduit do not have manholes. These outfalls have been mapped based on available site plans. Five other outfalls either could not be located or could not be accessed due to steep slopes and dense vegetation. These outfalls have been flagged to be revisited in the fall during the watershed survey when

vegetation is less dense. These outfalls were mapped based on site plans and aerial photography.

- ***Measureable Goal 2 – Outfall documentation***

Measure	List of outfalls inspected with descriptions and test results
Responsibility	Engineering
Date	Annual Report

The City's GIS mapping has been updated with information from the outfall inspections. Descriptions of the outfalls, including test results, and maps showing outfall locations are included in ***Appendix D***.

- ***Measureable Goal 3 – Illicit discharge tracking***

Measure	Description of source tracking and resolution for each illicit discharge
Responsibility	Engineering
Date	Annual Report

There were seven outfalls with dry weather flow. A summary of findings is presented in the following table. Dry weather flow issues for all but one of the outfalls (AR07) have been resolved to the City's satisfaction. The City is working with its consultant, AECOM, to develop a comprehensive work plan for IDDE tasks and sampling in the coming permit year that will include Outfall AR07.

	Outfall ID	Source	Test Results	Resolution
Arctic Brook	AR07	Falvey Street storm drain system	Foam and odors were present during field visits. Positive for human *Bacteroides* and surfactants on 5/13; 3 upstream manholes were negative for human *Bacteroides* on 5/27; two upstream catch basins tested positive for human *Bacteroides* and one tested negative on 6/24.	The storm drain system is being contaminated by sewage. The neighborhood is being dye-tested in systematic manner, proceeding in an outward direction from the outfall. The City will continue working with its consultant until the issue is resolved.
	AR15	Broadway storm drains	No visible sign of contamination or odors.	Based on plan review, this outfall serves a street underdrain system. The flow is groundwater, an acceptable non-stormwater discharge.

	AR26	Broadway Shopping Center parking lot	Tested for oil with test strip due to proximity to oil change facility. Test was negative.	Based on field observations and review of available plans, this outfall serves a parking lot underdrain. The flow is groundwater, an acceptable non-stormwater discharge.
	AR30	Broadway Shopping Center	No visible sign of contamination or odors.	Based on plan review, this outfall serves parking lot underdrain and foundation drains. The flow is groundwater, an acceptable non-stormwater discharge.
	AR32	Broadway Shopping Center	No visible sign of contamination or odors.	Based on plan review, this outfall serves an underdrained swale. Field observation of standing water in the swale. Flow is an acceptable discharge.
	AR33	private residence	No visible sign of contamination or odors. Tested negative on 5/5 for surfactants. Dye test showed house properly connected to sewer.	Based on field observations and test results, this outfall is a foundation underdrain. The flow is groundwater, an acceptable non-stormwater discharge.
	AR36	natural surface water flow	No visible signs of contamination or odors.	Natural drainage from upper watershed. Private culvert needs repair and was communicated to landowner.
	AR37	Grandview Avenue storm drains	No visible signs of contamination or odors. Tested negative on 5/5 for surfactants.	Review of plans show this is an underdrain system for the road. The flow is groundwater, an acceptable non-stormwater discharge.

BMP 4 – Illicit discharge detection program

The City inspected open ditches to identify and eliminate sources of illicit discharge into the MS4 in accordance with the City's IDDE plan.

- ***Measureable Goal 1 – Open ditch inspections***

Measure	Map depicting ditches inspected with inspection dates
Responsibility	Engineering
Date	Annual Report

The MS4 ditches in the Arctic Brook watershed were surveyed on June 15 and June 17, 2015. Most of the ditches were vegetated and well-maintained. Areas needing repairs or maintenance were recorded and photographed. No pipes discharging to the ditch were found. In addition, other non-ditch items such as stormwater ponds in need of maintenance were noted. Maps showing the ditch locations are included in ***Appendix E.***

- ***Measureable Goal 2 – Ditch discharge documentation***

Measure	Identification of possible illicit discharge
Responsibility	Engineering and Environmental
Date	Annual Report

No potential sources of illicit discharges were found during ditch inspections. Two corroding culverts were noted for repair or replacement to prevent stormwater contamination.

	Concern	Follow-up / Resolution
Arctic	rusted culvert headwall at corner of Grandview and Darling Park (upper end)	added to Public Works task list
	rusted culvert at the corner of Broadway and Baldwin Way	replaced during reconstruction of Broadway in July 2015

- ***Measureable Goal 3 – Illicit discharge tracking***

Measure	Description of illicit connections, test results, and resolution
Responsibility	Engineering
Date	Annual Report

No potential illicit connections or discharges were noted during the ditch survey.

BMP 5 – Illicit connections

With infrastructure that is old and complex, such as the City's, there is the potential for illicit sanitary sewer connections to the MS4 system.

- ***Measureable Goal 1 – Identification and removal of illicit connections***

Measure	Identification and removal of illicit sanitary connections to the MS4
Responsibility	Engineering
Date	as soon as practicable

The City identified and removed illicit connections to the MS4 system found during routine records review, field work, and maintenance on the sanitary sewer system and coordination with the sanitary sewer pre-treatment program. Nine illicit connections were found and removed during PY 2, as summarized in the table in MG 2, below.

- ***Measureable Goal 2 – Reporting of illicit connections***

Measure	Report of illicit connections to MS4 found
Responsibility	Engineering

Date	Annual Report

The following table lists the illicit connections found and removed during PY 2.

date discovered	address or location	estimated flow and type	date removed
8/14/2014	Ohio St cross-connection	intermittent sanitary overflows	8/15/2014
summer 2014	Center St potential cross-connection	weir with potential for cross-connection during surcharge	November 2014
9/15/14	Maine Distributors facility on Coffey Street	potential discharge from floor drains connected to storm line	10/17/14
9/25/14	Cyr Bus facility on Ohio Street	25 gpd flow from sink in garage connected to cistern connected to storm line	10/2/14
10/23/14	Broadway Park potential cross-connection	potential for intermittent sanitary overflows	10/27/14
11/5/14	182 Essex Street	370 gpd sanitary flow from 2 units improperly connected to storm line	11/20/14
11/13/14	303-305 Essex Street	370 gpd sanitary flow from 2 units improperly connected to storm line	12/11/14
4/7/15	Bangor Radiator on Maine Avenue	potential discharge from floor drains connected to storm line	4/8/15
4/29/15	363 Mt Hope Avenue	270 gpd sanitary flow from house improperly connected to storm line	5/7/15
5/7/15	61 Brewster Street	270 gpd sanitary flow from house improperly connected to storm line	5/8/15

BMP 6 – Septic systems

The City will comply with permit requirements regarding septic systems. There were no measureable goals for PY 2.

- ***Measureable Goal 1 – Identify septic systems***

Measure	List and map of septic systems in the Penjajawoc watershed
Responsibility	Engineering and Code Enforcement
Date	June 30, 2016, for PY 3 Annual Report

- ***Measureable Goal 2 – Evaluation of septic systems***

Measure	List and documentation of potentially failing systems in the Penjajawoc watershed, and description of any possible water quality effects
Responsibility	Plumbing Inspector (Code Enforcement)
Date	June 30, 2017, for PY 4 Annual Report

- ***Measureable Goal 3 – Inspection and enforcement***

Measure	Description of resolution for any failing systems in the Penjajawoc watershed

Responsibility	Plumbing Inspector (Code Enforcement)
Date	June 30, 2018, for PY 5 Annual Report

BMP 7 – Hydrant flushing

The City is coordinating with the Bangor Water District (BWD) regarding water line and hydrant flushing to determine if either is a significant contributor of pollutants to the MS4.

- ***Measureable Goal 1 – Coordination with utility***

Measure	Report on coordination with BWD and results of evaluation
Responsibility	Municipal Stormwater Manager
Date	PY 1 Annual Report

Initial coordination was reported in PY 1.

- ***Measureable Goal 2 – Prioritized mapping***

Measure	Map of waterline and hydrant locations in Penjajawoc and Capehart watersheds, water quality progress report from BWD, status update report for Annual Report
Responsibility	Municipal Stormwater Manager
Date	December 30, 2014 for inclusion in PY 2 Annual Report

The City worked with BWD to complete hydrant mapping in the priority watersheds (Penjajawoc and Capehart). A full report of activities is included in the report by Bangor Water District included as ***Appendix F***.

- ***Measureable Goal 3 – Annual water quality progress report***

Measure	Water quality progress report from BWD
Responsibility	Municipal Stormwater Manager
Date	PY 3, PY 4 and PY 5 Annual Reports

This goal had no planned activities for PY 2.

- ***Measureable Goal 4 – IDDE ordinance***

Measure	Report on water line and hydrant flushing as a significant contributor of pollutants to the MS4 and an update on subsequent actions
Responsibility	Municipal Stormwater Manager
Date	PY 3 and PY 4 Annual Reports

This goal had no planned activities for PY 2.

Additional Activities

- ***Catch basin inspections***

Known MS4 catch basins in urban impaired stream watersheds were inspected and documented during PY 1. In PY 2 the City revisited 11 catch basins in the Birch Stream and Capehart watersheds that had been identified as having a potential for illicit discharge. It was determined, through investigation and sampling, that ten of the catch basins had no illicit discharge. One catch basin, near the Cyr Bus facility on Ohio Street, was found to contain discharge from a garage sink. The investigation, sampling results, and resolution of this illicit discharge were carried out in cooperation with DEP, and reports were provided to DEP at the time. (See also BMP 5 MG 2.)

The City also revisited the catch basins in Arctic Brook watershed that had been identified as having a potential for illicit discharge. Two catch basins on Earle Street were sampled and found to contain human *Bacteroides*. The City is conducting follow-up dye-testing of houses in the neighborhood to determine the source.

- ***Bangor Water District bleeder valves***

The City is working with the BWD to have all the bleeder valves shut off and permanently removed from catch basins. City staff met with BWD staff on May 6, 2015 to discuss bleeder valves locations and alternate locations. Four bleeder valves were removed from the storm system.

- ***Sampling***

The City conducted sampling as part of its IDDE program. A summary of sampling completed in this permit year is included in ***Appendix G***. (The WWTP lab processed the *E. coli* samples, and the other samples were sent to EMSL in New Jersey.) The City is currently reviewing the sampling data and working on action items based on this review. This City is also working with its consultant, AECOM, to develop a work plan for tackling IDDE issues in the coming permit year.

▪ MCM 4 – Construction Site Stormwater Runoff Control

The City relies on the Maine Construction General Permit (MCGP). Developers and contractors are notified of the requirement to file for coverage under the MCGP in the packet of information that accompanies the building permit application.

BMP 1 – Construction activity tracking

- ***Measureable Goal 1 – Construction site stormwater runoff control plan***

Measure	Construction site stormwater runoff control plan
Responsibility	Municipal Stormwater Manager
Date	March 21, 2014, for PY 1 Annual Report Status update in PY 2, PY 3, PY 4, PY 5 Annual Reports

The City has increased communication and data sharing between departments. Building and street opening permits are now entered into the City's Sungard permit database system. Permits can be accessed by all City departments.

- ***Measureable Goal 2 – Construction activity tracking***

Measure	Description of database function and screen shots of data entry interface, status updates on database functioning and changes
Responsibility	Municipal Stormwater Manager
Date	March 21, 2014 for PY 1 Annual Report Status update in PY 2, PY 3, PY 4, PY 5 Annual Reports

A report of active construction permits is generated and emailed to the engineering department each week from the central permit database. The engineering department continues to utilize a simple Access database for tracking inspections, and is in the process of investigating whether all inspections can be tracked and reported effectively from the central database.

BMP 2 – Construction inspections

The City inspects construction sites for compliance with the MCGP and Chapter 500, Stormwater Management.

- ***Measureable Goal 1 – Inspect construction sites***

Measure	Number of sites and number of site inspections completed
Responsibility	Engineering
Date	Annual Report

The City inspects sites in urban impaired watersheds at least three times over the course of construction and other sites at least two times. There were 62 construction sites inspected during this permit year, with 114 documented inspections.

- ***Measureable Goal 2 – Documentation of inspections***

Measure	Database report of inspections
Responsibility	Engineering
Date	Annual Report

A database report listing inspections in chronological order is included in ***Appendix H.*** Documentation of construction site inspections, including forms and photographs, is on file at the City.

- ***Measureable Goal 3 – Follow-up for violations***

Measure	Report listing sites with violations and the steps taken to bring those sites into compliance
Responsibility	Code Enforcement Officer
Date	Annual Report

Stormwater concerns are reported by the inspectors to the City Engineer and Code Enforcement Department for follow-up and resolution. In PY 2, 11 sites were referred. Some were visited more than once. The City did not issue any notices of violation because the issues at each site were resolved to the City's satisfaction. The following table identifies the sites referred for follow-up in PY 2.

Site ID	Address or location	Project/Site name
2014-004	Dutton Street	Bangor Marriott Residence Inn
2014-026	State Street	EMMC
2014-039	9 Deer Pond Lane	residence in subdivision
2014-044	Kenduskeag Avenue	Swan Village
2014-045	Mount Hope Avenue	Bangor Humane Society
2015-001	57 Whisper Drive	residence in subdivision
2015-002	Essex Street	residence in subdivision
2015-003	Longview Drive	BJ's (former Home Depot)
2015-011	53 Whisper Driver	residence in subdivision
2015-012	Lasalle Drive	residence in subdivision
2015-013	1110 Broadway	Dysarts convenience store

▪ MCM 5 – Post Construction Stormwater Management in New Development and Redevelopment

BMP 1 – Program to address stormwater runoff

- ***Measureable Goal 1 – Develop post construction stormwater management plan***

Measure	Post construction stormwater management plan
Responsibility	Municipal Stormwater Manager
Date	March 21, 2014, for PY 1 Annual Report Status update in PY 2, PY 3, PY 4, PY 5 Annual Reports

The City is tracking new development activities with Sungard, a centralized permit database system. For the upcoming permit year, we are hiring a MS4 Stormwater Utility Technician who will be responsible for collating and tracking stormwater management plans.

- ***Measureable Goal 2 – Encourage use of LID techniques***

Measure	LID statement on site development permit application
Responsibility	Planning
Date	March 21, 2014, for PY 1 Annual Report

Completed in PY 1.

- ***Measureable Goal 3 – Engineering review***

Measure	List of sites reviewed and number of O&M plans required
Responsibility	Engineering
Date	Annual Report

Proposed developments were reviewed by a professional engineer for compliance with stormwater laws. Reviewed developments, redevelopments, and revisions potentially affecting the MS4 are listed below.

	Applicant	Project Name	Street	Type	Stormwater Controls	New O&M Plan
1	TBA Inc.	expansion	Hammond St	site plan for expansion	none added	no
2	Daigle Oil Company	DOC's Place	Stillwater Ave	site plan revision	pervious geo-grid	yes
3	Dysarts	relocating parking	Broadway	site plan revision	removal of curb	no
4	Bangor Int. Airport	terminal expansion	Godfrey Blvd	site plans, SLOD modified	o/w separator	no
5	Bangor Humane Society	realign driveway, stormdrain	Mt Hope Ave	site plan	catch basin	no
6	Kushi Realty Group	restaurant	Hammond St	site plan	underdrain swale	yes
7	Swan Village	Swan Village	Kenduskeag Ave	site plan	underdrain cell	yes
8	Longview Plaza LLC	BJ's store	Longview Drive	site plan for redevelopment	ponds	yes
9	Sam's Club	revised pavement	Haskell Road	minor site plan revision	none added	no

	Applicant	Project Name	Street	Type	Stormwater Controls	New O&M Plan
10	EMMC	sidewalk revision	State St	minor site plan revision	none added	no
12	Ross Manor Associates	site improvements	Broadway	site plan	porous pavement	yes
13	EMCC	building and site work	Hogan Rd	site plan	tree box filters	yes
14	Bangor Federal CU	building with drive-thru	Venture Way	site plan	catch basins	no
15	JRG Properties	apartment building	Burleigh Rd	site plan	existing pond	no
16	Bangor School Dept	Downeast School parking	Moosehead Blvd	site plan	none added	no
17	Chick-fil-A	restaurant with parking	Stillwater Ave	site plan, SLOD modified	ponds	yes
18	TJS Realty	condo development	Grandview Ave	site plan revision	underdrain filters	yes
19	Darling's	redevelopment	Hogan Rd	site plan	catch basins	no
20	Bangor Housing Authority	redevelopment	First St	site plan	catch basins, tree box filter	yes

BMP 2 – Documentation of stormwater structures

- ***Measureable Goal 1 – Record new structures each year***

Measure	Description and location of new structural BMPs installed
Responsibility	Engineering
Date	Annual Report

The City documented three new structures installed in PY 2.

Site ID	Site Name/Project	Address	Structures
BMP-042	Daigle Oil Company	941 Stillwater Ave	pervious geo-grid pavers
BMP-043	Swan Village	521 Kenduskeag Ave	underdrain filters
BMP-044	Ross Manor	758 Broadway	porous pavement

- ***Measureable Goal 2 – Research records for existing structures***

Measure	Description and location of structural BMPs approved for installation in previous years
Responsibility	Engineering
Date	Annual Report

In accordance with the schedule identified in the SWMP, the City researched records and plans to document existing stormwater structural BMPs installed in 2012. Structures that were subject to redevelopment or that otherwise came to our attention were also included.

Site ID	Site Name/Project	Address	Structures	Installed
BMP-035	BIA stormwater BMPs	Godfrey Blvd	underdrain swale, ponds, aeration	2010
BMP-036	City of Bangor Golf Course	Webster Ave	detention pond	2006
BMP-037	Global Montello	611 Maine Ave	underdrain filter	2013
BMP-038	Bangor Gas	498 Maine Ave	bioretention basin	2012
BMP-039	Downeast School	100 Moosehead Blvd	bioretention cell	2013
BMP-040	Bangor Housing Authority	Rangeley Place	bioretention cel	2012
BMP-041	Hampton Inn	261 Haskell Rd	underdrain filter, tree boxes	2012

- ***Measureable Goal 3 – Obtain maintenance records***

Measure	List of maintenance performed on each documented BMP and enforcement actions taken
Responsibility	Engineering (for tracking), Code Enforcement Officer (for enforcement)
Date	Annual Report

The City has hired a new MS4 Technician (staring September 28, 2015) whose duties will include tracking stormwater structure maintenance reports and following up with owners to make sure the reports are submitted as required. The City received seven self-inspections during PY 2, listed in the table below.

Site Name/Project	Address
Irving Oil Company	633 Hogan Road
Broadway Shopping Center	649 Broadway
Burlington Coat Factory	229 Springer Drive
Husson University	Husson Avenue
Target	60 Longview Drive
Bangor Parkade	482 Stillwater Ave
Hammond Lumber Company	1087 Hammond St

BMP 3 – Inspections

The City inspected sites with post construction BMPs as described in the City's Post Construction Stormwater Management Plan.

- ***Measureable Goal 1 – Inspect a percentage of sites***

Measure	Number of sites inspected by the City
Responsibility	Engineering
Date	Annual Report

The City hired a consultant, Stillwater Environmental Engineering (SEE), to conduct the post-construction stormwater inspections on the City's behalf. Ten sites were inspected. See ***Appendix I*** for the consultant's report on the results of the inspections (*Annual Post-Construction Inspection Report, August 20, 2015*).

- ***Measureable Goal 2 – Tracking and documentation***

Measure	Summary of sites and function
Responsibility	Engineering
Date	Annual Report

There are currently 44 documented BMPs discharging stormwater in the City. Inspections on 7 sites were self-reported, and inspections on 10 additional sites were conducted for the City by SEE.

Of the 17 sites that were inspected, 12 had documented functioning BMPs, and 5 sites required maintenance or remedial action. All the self-reported sites had BMPs that were maintained and functioning.

- ***Measurable Goal 3 – Follow up for non-functioning post construction BMPs***

Measure	List of sites with non-functioning BMPs, follow up actions taken, and results
Responsibility	Code Enforcement Officer
Date	Annual Report

Based on the results of the SEE post-construction inspection report, the City identified the owners/operators listed in the table below as having non-functioning BMPs. Information about the non-functioning structures and the maintenance required is contained in the report in ***Appendix I***. Follow up with these owners is on-going.

Site ID	Site Name/Project	Address
BMP-002	St Joseph Medical Building	954 Broadway
BMP-011	Leadbetters	1065 Broadway
BMP-019	Meadowbrook Ridge	Mt. Hope Ave
BMP-030	JRG Properties	33 Burleigh Rd
BMP-041	Hampton Inn*	261 Haskell Rd

* Hampton Inn was mis-identified as Hilton Garden Inn (across the street) in the SEE report in Appendix I.

▪ MCM 6 – Pollution Prevention/Good Housekeeping for Municipal Operations

The City works to prevent or reduce runoff from municipal operations.

BMP 1 – Pollution prevention at facilities

- ***Measureable Goal 1 – Update municipal inventory***

Measure	Inventory of properties, facilities and activities
Responsibility	Environmental Coordinator
Date	Annual Report

The City's inventory of properties and facilities that could potentially contribute to stormwater pollution is provided in the table below. Please note that 4 sites (two pools, the waterfront, and the compost site) were added in PY 2.

Facility	Building/Potential Source of Pollution	Location
Bangor International Airport	Sand shed	117 Maine Avenue
	7 Jetways	287 Godfrey Blvd
Community Connector	Bus storage and wash	497 Maine Avenue
Parks and Recreation	Bangor Municipal Golf Course	Webster Avenue
	Golf course equipment storage/sand storage	Webster Avenue
	Small equipment storage/maintenance	647 Main Street
	Dakin Pool	375 Pine Street
	Beth Pancoe Municipal Aquatic Center	175 13th Street
	Waterfront concert area	Main Street
Fleet Maintenance	Fleet Maintenance/Motor Pool	481 Maine Avenue
Parking Garages	Columbia Street parking deck & garage	Columbia Street
	Pickering Square parking garage	100 Broad Street
Public Works Department	Sand-salt storage	530 Maine Avenue
	Vehicle shelters	530 Maine Avenue
	Zero Sort Recycling Drop Off Center	530 Maine Avenue
	Public Works storage (sand)	530 Maine Avenue
	Bus/Garage	497 Maine Avenue
	Compost site	Finson Road
Wastewater Treatment	Treatment Plant	760 Main Street

- ***Measureable Goal 2 – Operation and maintenance plans***

Measure	List of O&M plans
Responsibility	Environmental Coordinator
Date	Annual Report

Operations and Maintenance Plans (O&M) are a component of the Storm Water Pollution Prevention Plans (SWPPPs).

Facility	O&M Document
Fleet Maintenance / Motor Pool	MS4 SWPPP
Department of Public Works	MS4 SWPPP
Community Connector (formerly Bangor Area Transit [BAT])	MSGP SWPPP
Bangor International Airport (BIA)	MSGP SWPPP
Wastewater Treatment Plant (WWTP)	NPDES/MEPDES Waste Discharge SWPPP

Parks & Recreation	*(voluntary)* MS4 municipal garage-style SWPPP
Golf Course Maintenance Building	*(voluntary)* MS4 municipal garage-style SWPPP

The City also has SPCC Plans for City Hall, Parks & Recreation, and BIA including the Tank Farm.

- ***Measureable Goal 3 – Employee training***

Measure	Report on municipal staff training
Responsibility	Environmental Coordinator
Date	Annual Report

The City has trained staff to reduce stormwater pollution contributions from municipal facilities and operations. Training events in PY 2 are summarized below.

40 staff members from Engineering, Public Works, BIA, and the Sewer Dept. attended a two-hour seminar on stormwater and erosion and sediment control on October 7, 2014.

9 staff received 24-hour HAZWOPER training on December 1-3, 2014.

25 staff received DOT manifest signing, storage areas, and hazardous materials training on December 4, 2014.

31 staff received HAZWOPER refresher training on December 5, 2014.

3 Public Works staff were trained on January 7, 2015, in stormwater, SWPPP and pesticides. It was a 2.5 hour training.

13 Fleet Maintenance staff including mechanics, supervisors and directors were trained on stormwater, SPCC, spills (including reporting and containment/cleanup), HAZCOM & HAZWASTE. It was a 2.5 hour training.

Training on the spill policy and spill reporting form (rev. 2/24/15) and stormwater:

12 Public Works staff on March 2, 2015
7 Engineering staff on March 2, 2015
7 Motor Pool staff on March 2, 2015
5 Parks & Rec staff on March 4, 2015
10 Bangor high school custodians and Dir. of Operations on March 4, 2015

4 Community Connector staff on March 4, 2015
20 staff from WWTP & Sewer on March 4, 2015
28 staff from BIA on March 4, 2015

BMP 2 – Good housekeeping

The City maintains streets, catch basins and other conveyances and structures to prevent or reduce pollution in stormwater.

- ***Measureable Goal 1 – Street sweeping***

Measure	Report on street sweeping
Responsibility	Director of Public Works
Date	Annual Report

The City swept all publicly accepted paved streets and publicly owned paved parking lots at least once this year as soon as possible after snowmelt. Other street sweeping takes place as needed.

- ***Measureable Goal 2 – Catch basin evaluation***

Measure	Summary of catch basins cleaned and evaluated
Responsibility	Director of Public Works for cleaning Environmental for evaluations
Date	Annual Report

The City's Public Works crew cleans catch basins by street on a yearly schedule and tracks basins with a greater load of sediment for more frequent cleaning. During cleaning, the crew notes the amount of sediment accumulated and any other problems. Locations of catch basins cleaned are recorded by street and GPS coordinates and tracked on a spreadsheet that is available to City staff. Due to equipment malfunctions in PY 2, 158 catch basins (5%) were cleaned. Replacement cleaning equipment has been purchased and is scheduled for delivery in 2016.

- ***Measureable Goal 3 – Repairs and upgrades***

Measure	Summary of stormwater structure repairs
Responsibility	Director of Public Works
Date	Annual Report

The City repaired and upgraded stormwater conveyances, structures and outfalls as necessary during routine work. Work orders were generated by public request, opportunistic inspection, or referral by other City staff.

BMP 3 – Municipal SWPPPs

- ***Measureable Goal 1 – SWPPP implementation***

Measure	Status update on SWPPP implementation
Responsibility	Public Works Director, Fleet Maintenance Supervisor, WWTP Superintendent
Date	Annual Report

The City has implemented SWPPPs as listed in BMP 1 MG 2. SWPPPs are kept on site and implemented as required.