

Municipality/Organization: **Town of Kingston, MA**

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EPA NPDES Permit Number: **MAR041041**

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MaDEP Transmittal Number: **W-036193**

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**Annual Report Number**

**& Reporting Period: [No. 3: March 08-March 09](#)**

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## **NPDES PII Small MS4 General Permit Annual Report**

### **Part I. General Information**

Contact Person: **Maureen Thomas**

Title: **Conservation Agent**

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Telephone #: **781-585-0537**

Email: **[mthomas@kingstonmass.org](mailto:mthomas@kingstonmass.org)**

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#### Certification:

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

Signature: \_\_\_\_\_

Printed Name: **Maureen Thomas**

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Title: **Conservation Agent**

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Date: **May 1, 2009**

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## NPDES PII Small MS4 General Permit Annual Report

**Part I. General Information**

Contact Person: Maureen Thomas Title: Conservation Agent

Telephone #: 781-585-0537 Email: mthomas@kingstonmass.org

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Signature: 

Printed Name: Maureen Thomas

Title: Conservation Agent

Date: May 1, 2009

## **Part II. Self-Assessment**

During the March 2008 to March 2009 permit term, the Town of Kingston continued its relationship with Environmental Partners Group, Inc. with funding provided by a Clean Water State Revolving Fund (CWSRF) loan through the Massachusetts Water Pollution Abatement Trust (MWPAT) in order to continue to meet and address the requirements of our NPDES Phase II permit. In December 2008, the Town received a draft map of their stormdrain infrastructure and in April 2009 the mapping and screening initiative was completed by Environmental Partners Group. Various GIS stormdrain datalayers are now available for use in the Town Planners office as well as the Conservation office (See attached map *Town of Kingston Stormwater Management – Mapping & Sampling Initiative 2008* by Environmental Partners Group). The initial field screening of outfalls included sampling for pH, specific conductivity, temperature, and turbidity. Based on those results, further dry weather sampling was conducted at 12 flowing storm drain outlet pipes and 13 stream culverts/water bodies for laboratory analysis of the following parameters: *E. coli* (*E. coli*), total phosphorus, dissolved phosphorus, ammonia nitrogen, surfactants, and total suspended solids (TSS). The laboratory sampling comprised approximately 12 % of outfalls (See attached sampling results provided by Environmental Partners Group). Follow-up sampling and further investigations during 2009 will occur in locations where analysis revealed elevated levels of *E. Coli* bacteria.

The 2008 Annual Town Meeting allocated \$ 279,000.00 for the purchase of a vactor truck for cleaning stormwater infrastructure. The estimated date of purchase of this equipment is late summer/early fall 2009.

These were the most significant achievements made during the 2008-2009 term. Though it is unclear what the next five year permit term will bring as far as additional requirements from the Environmental Protection Agency (EPA)/Massachusetts Department of Environmental Protection (MA DEP), the Town of Kingston is fully committed to working toward complete implementation of its Stormwater Management Plan along with all of the requirements and goals of the original permit.

### ***Permit Term 2008-2009***

#### ***Stormwater Working Group***

The informal Stormwater Working Group met twice in the 2008-2009 permit term. Meetings were held to discuss the work by Environmental Partners Group, Inc. for mapping/sampling of the stormdrain system and to discuss the GIS datalayers produced as a result of those efforts.

#### ***Catch Basin Cleaner***

The 2008 Annual Town Meeting allocated \$ 279,000.00 for the purchase of a vactor truck to clean Kingston's stormwater infrastructure. The vactor truck will be purchased in the summer or fall of 2009 and will enable the Town of Kingston to greatly improve its stormwater infrastructure cleaning program to reduce stormwater and sedimentation impacts on wetland resource areas.

#### ***Stormwater Improvement Projects***

In the summer of 2008, a project to rebuild Route 27 in Kingston commenced after many years of planning and though water quality improvements will be minimal on this project, it has already led to detection and elimination of some illicit discharges to town stormdrains with elimination of more illicit discharges in process.

In the fall of 2008, the Town of Kingston completed the Rocky Nook area drainage project that included the installation of deep sump catchbasins with hoods as well as a Vortechs unit to remove suspended solids, heavy metals, oils and trash from stormwater flows that discharge to Kingston Bay. This project resulted in the detection and elimination of one illicit connection to a town storm drain.

In spring 2009, the Kingston Department of Streets, Trees and Parks (DSTP's) fixed a failed structure at Gray's Beach to prevent erosion, sedimentation and pollution of Kingston Bay and the shellfish beds.

The JRWA was able to get the Maple Street and Landing Road drainage area into the 2008 Environmental Bond bill for improvements to the town stormwater system and the outfall that discharges stormwater to the Jones River at the JRWA Landing Road facility. This drainage improvement project is currently in the planning stage.

### *Stormdrain Stenciling*

Other than some stormdrain stenciling that occurred at the Kingston Intermediate and Elementary Schools by the Green Team teacher, the Town of Kingston did not conduct any stormdrain stenciling in the 2008-2009 permit term. A local Boy Scout, however, is committed to conducting some stenciling for the Town in order to earn his Eagle Scout badge during the 2009-2010 term.

### *Low Impact Development Implementation*

In 2008, a contractor was hired to complete implementation of stormwater retrofits and Best Management Practices (BMPs) at the Kingston Intermediate School (KIS) as part of the s. 319 Low Impact Development (LID) grant to the MassBays Program (through their South Shore partner, the North and South Rivers Watershed Association (NSRWA)), from MA DEP to encourage the use of LID techniques in four South Shore towns, including Kingston. The work completed by the contractor included the construction of an extended detention basin, level spreaders and infiltration areas to increase recharge as well as improve water quality. In June 2008, the Green Team teacher at KIS conducted an outdoor environmental health seminar during the school's *Wellness Week* to teach students about stormwater, raingardens and water quality. In early 2009 the Mass Bays Program South Shore Coordinator and the Jones River Watershed Association conducted a watershed/water quality workshop for KIS 5<sup>th</sup> grade science students as part of the outreach and education portion of s. 319 grant. The installation of educational signage in 2009 at the outdoor BMPs and inside the school will further promote LID techniques to students, staff as well as the general public. In addition, educational workshops are planned in 2009 for the groundskeeping staff of KIS and the DSTP's to discuss how certain landscape practices can contribute pollutants to stormwater and adversely affect water quality.

During the 2008-2009 term, the Conservation Commission was successful in getting the Kingston Senior Center Building Committee to incorporate a raingarden into their site design for stormwater management and recharge. The Senior Center will be built on the Town Hall property and will be a very accessible example of LID with educational signage for local regulators, builders, developers and the general public. In September 2008, the JRWA also completed installation of a raingarden at their Landing Road facility with funding through an EPA 104b3 grant to reduce flooding of their building from roof and roadway runoff during large storm events. A few private developers also completed installation of raingardens/bio-retention areas at their sites in 2008.

### *Household Hazardous Waste Day*

The Town of Duxbury sponsored a Household Hazardous Waste Day in May 2008 with a reciprocal arrangement to allow other member towns to attend as well. Another is planned in Kingston for both Kingston & Duxbury residents on May 2, 2009. This is a service the DSTP provides to residents on an annual basis in partnership with the Town of Duxbury and the South Shore Recycling Cooperative (SSRC)(See announcement at <http://www.kingstonmass.org/content/40/946/3164.aspx> & below for recycling totals).

### *Cleaning of Water Quality Structures and Stormdrains*

Cleaning of all town-owned water quality structures as well as a portion of town-owned stormdrains occurred in the 2008-2009 term as it does on an annual basis.

### *Greenscapes Program*

In 2008 the Town of Kingston Water Department continued to support the Greenscapes Educational Program sponsored by the NSRWA (South Shore regional partner of the Massachusetts Bays Estuaries Program) and financed by Massachusetts Department of Environmental Protection, Massachusetts Environmental Trust and the Environmental Protection Agency. The Kingston DTSP's offered compost bins to residents in 2008 at a subsidized price of \$ 30.00 through a MA DEP and Executive Office of Energy and Environmental Affairs (EOEEA) Compost Bin Grant award of 40 bins ([http://www.kingstonmass.org/filestorage/40/930/Compost\\_Bins.pdf](http://www.kingstonmass.org/filestorage/40/930/Compost_Bins.pdf)). The Kingston Conservation Commission regularly refers to the Greenscapes publications/concepts in public hearings and in the conservation office to educate people about low impact development techniques/stormwater, environmentally friendly landscaping practices and water conservation. It appears that the Greenscapes Program has been successful in educating the masses as local newspapers are reporting more on environmentally sensitive landscaping practices and community groups, such as the Kingston Garden Club, are incorporating environmentally friendly methods into their work. In addition, residents are implementing low impact landscape practices such as reducing lawn size, reducing or eliminating the use of fertilizers and using compost bins as well as rainbarrels. The JRWA installed a modified cistern within their raingarden installation in 2008 and one resident along the coast is proposing to use a cistern to collect roof

runoff for irrigation.

### *Website Announcements*

In the 2008-2009 term Kingston town departments have been very active in using the award-winning Town of Kingston website to post community announcements for a variety of things including pollution prevention tips such as the availability of free compost at the transfer station, the sale of subsidized compost bins at the highway department, educational messages regarding stormwater, recycling, environmentally sensitive landscaping, etc (See <http://www.kingstonmass.org> for more details).

### *GIS Mapping & Training*

The Planning and Conservation offices have updated their ArcView software and have more datalayers available to them with the completion of the mapping of the Town's stormwater system. In order to become more proficient with the new software, staff will actively pursue GIS training to strengthen in-house digital mapping capabilities. In March 2009, the Town Planner, Conservation Agent, Sewer Department staff member and a Conservation Commission member attended an Old Colony Planning Council (OCPC) workshop on pictometry imagery and software tools that are available free to communities within the OCPC region. Once the digital oblique imagery is installed on the town server, this imagery and software will be very useful on its own or in combination with GIS datalayers.

### *JRWA Ecology & Education Programs*

Throughout 2008, JRWA made great strides in the development of ecology and community outreach programs as a result of one-time funding from the state budget. The enhanced funding enabled JRWA to expand their staff beyond their Executive Director and resulted in the hiring of their first Ecology Program Director, their first Outreach Coordinator as well as their first On-site Coordinator. The increased staff and growing membership resulted in 2008 being an exceptional year in which the JRWA laid a strong foundation of scientific investigation, planning and outreach that will, in turn, result in concrete improvements to water quality and habitats within the Jones River watershed in the coming year (See JRWA website at <http://www.jonesriver.org/> & 2008 Annual Report at [http://www.jonesriver.org/getfile/reports/JRWA2008AnnualReport\\_031509.pdf](http://www.jonesriver.org/getfile/reports/JRWA2008AnnualReport_031509.pdf)).

### *JRWA Sponsored Community Clean-Up*

The JRWA sponsored their annual Community Clean-up project on April 25, 2009 to remove rubbish and debris along roadways adjacent to the Jones River estuary. They collected a lot of plastic, cigarette butts, bottles, general trash and a few tires that would have eventually ended up in the waterway had they not been picked up. The JRWA also promoted the CoastSweep cleanup project at Duxbury Beach in October 2008 along with Batelle and the Duxbury Beach Preservation Society and brought many volunteers from Kingston to assist with the project to clean a barrier beach that protects the Kingston shoreline. The CoastSweep program is part of the Ocean Conservancy's International Coastal Cleanup and CoastSweep is the annual state-wide coastal cleanup sponsored by the Massachusetts Office of Coastal Zone Management (CZM), and coordinated by the Urban Harbors Institute (UHI) of the University of Massachusetts Boston. The Duxbury DPW reported that 2,460 pounds of trash were collected compared with about 1,380 pounds collected last year. The number of people volunteering was the highest turnout since the start of the program in Duxbury.

### *Water Quality Monitoring*

- The Town of Kingston contracted with Environmental Partners Group to commence the screening and sampling of outfalls in August 2008 as part of the stormdrain mapping and long-term stormwater improvement projects. The sampling effort continued through October 2008 to determine pollutant source locations for future sampling;
- The JRWA refocused its water quality monitoring efforts from the 19 Jones River stations in previous years to Silver Lake where the Division of Marine Fisheries (DMF) assisted them with the commencement of a habitat assessment in the spring of 2008 that included water quality sampling among other parameters to determine the lake's quality and potential as a spawning ground for river herring. The restoration of this fishery to their historic spawning grounds at the headwater of the Jones River is a principle goal of the JRWA; and
- Other groups that conduct water quality testing in Kingston Bay and the Jones River estuary are the Provincetown Center for Coastal Studies who does Cape Cod Bay monitoring and the Division of Marine Fisheries who conducts sanitary surveys for the shellfish beds in the bay.

### *River Instream Flow Stewards (RIFLS) Participation*

In 2008-2009 the JRWA and volunteers continued to participate in the Massachusetts Riverways RIFLS project to measure streamflow in the Jones River and its tributaries through the reading of stream gauges and measuring of flows for the establishment of flow rating curves. In 2009, a new stream gauge was also installed on Barrows Brook in Plympton to assess impacts of upstream cranberry bog operations on flow within Barrows Brook and the Jones River watershed as a whole. The new stream gauge was installed with cooperation amongst the cranberry bog owner, the JRWA and MA Riverways (See MA Riverways 2008 Annual Report, p. 7, <http://www.mass.gov/dfwele/river/pdf/annual.report.08.webready.pdf>).

### *Anadromous Fish Sampling, Counting and Education*

- In 2008-2009 the Division of Marine Fisheries (DMF) continued to sample the Jones River as a permanent sampling site for the purpose of collecting information on rainbow smelt (*Osmerus mordax*) whose populations have declined dramatically in the Jones River and the entire coast of Massachusetts. The sampling of the rainbow smelt will eventually be conducted by the JRWA and the community. During the spring 2009 sampling rounds, the DMF was pleased to find more smelt than in previous years and individuals of various age classes, signaling a possible recovery of the fishery. The DMF is also continuing with a multi-year study to assess American eel (*Anguilla rostrata*) populations in the Jones River.
- In the spring of 2008 from April 1<sup>st</sup> to June 1st, JRWA organized their fourth annual herring count on the Jones River at the Elm Street dam where there is a fish ladder. Over fifty members of the community, including Town of Kingston employees and committee members, participated in this event to quantify the number of herring successfully migrating upstream during over 90 hours of counting. An approximate total of 105 fish were counted last year. The DMF still has a prohibition on the taking of herring from streams across the Commonwealth in an effort to protect those remaining in the dwindling populations. The JRWA is conducting a fish count in spring 2009 as well and will continue to organize the fish count on an annual basis for the foreseeable future in order to assess the population while also educating the general public. The main mission of the JRWA is to restore fish passage throughout the watershed and the Conservation Commission supports this mission.

### *Wapping Road Dam Fish Passage Feasibility Study*

In January 2008 JRWA received funding through NOAA and the Gulf of Maine Council on the Marine Environment to conduct a feasibility study for fish passage options at the Wapping Road Dam. The feasibility study was completed in January 2009 with a preferred recommendation for dam removal. The results of the feasibility study were presented at a public meeting in January 2009 to a very supportive audience of local officials and residents. The Wapping Road fish passage project also became a priority project of the Massachusetts Riverways Program in early 2008 (See Mass Riverways 2008 Annual Report, p. 4 at <http://www.mass.gov/dfwele/river/pdf/annual.report.08.webready.pdf>). The Town of Kingston, through its Conservation Commission, Community Preservation Committee and townspeople, are overwhelmingly in support of the Wapping Road dam removal project. This support is evident in the funding provided for the project from the Commission and, more notably, through Community Preservation Act funding that was approved at the 2009 Annual Town Meeting. Other financial contributors to the project include the property owner, the DMF, MA Riverways. The Wapping Road dam is the first completely impassable structure that anadromous fish encounter after navigating all of the challenges of the ocean, the bay, the estuary and the Elm Street fish ladder. The Commonwealth of Massachusetts South Shore Coastal Watersheds 2001 Water Quality Assessment Report assessed this portion of the river at Wapping Road dam (Station JR103) and upstream to Lake Street at the Jones River headwaters (Station JR104) and found the aquatic life, primary contact, secondary contact and aesthetic uses impaired due to flow alterations and fish passage barriers. There are also stormwater influences in the area of the Wapping Road dam that likely contribute to objectionable turbidity and algae growth in this area portion of the river. Recommendations were made in the report and included a suggestion to restore the natural flow regime in this segment of the Jones River to improve water quality conditions. Removal of the Wapping Road dam would restore the natural flow regime, restore fish passage to more than 3.7 miles of the Jones River and its tributaries as well as greatly improve water quality in this stretch of the river.

The JRWA was also able to get funding earmarked through the 2008 Environmental Bond Bill for a Forge Pond Dam Fish Passage Feasibility Study which may result in another recommendation for dam removal that would greatly improve water quality at the headwater of the Jones River.

### *Pine Brook Restoration Project*

In August of 2008, the Conservation Commission received a Wildlife Habitat Incentive Program grant totaling \$ 138,000.00 for removal of culverts on Pine Brook which flows through abandoned cranberry bogs at the open space parcel, Cranberry

Watershed Preserve. The removal of culverts will improve fish passage by removing barriers and restrictions which will enhance the overall riparian habitat for a variety of riverine species. Removal of obstructions will also improve water quality within the stream. This grant award to the Town of Kingston is the latest of multiple sources of funding that the JRWA has secured, with Conservation Commission support, for this restoration project. Other sources of funding for the project are from the Massachusetts Environmental Trust (MET) who awarded the JRWA \$ 21,000.00 in 2008 for coordinating restoration planning and the MA Riverways Program who awarded a \$ 15,000.00 RIFLS grant to JRWA in 2008 (See MA Riverways 2008 Annual Report, p. 7 at <http://www.mass.gov/dfwele/river/pdf/annual.report.08.webready.pdf>) to hire the Rushing Rivers Institute (RRI) to conduct surveying of Pine Brook through LIDAR aerial imagery and GPS to capture detailed information on the structure of the entire river system. Other important project partners include: the Silver Lake Regional High School Conservation and Horticulture Department, who is having their students conduct habitat assessments as well as create a restoration plant nursery; the MA Division of Fisheries and Wildlife who is helping to characterize fish populations with the stream; and the Plymouth County Mosquito Control who are helping with design of the project to reduce areas in which mosquitos may breed. Pine Brook is a large tributary of the Jones River and the restoration project will help to alleviate existing water quality issues within the stream as well as improve fish passage along most of its length.

#### *MA Coastal Zone Management StormSmart Coasts Grant*

In 2008 the towns of Plymouth, Duxbury and Kingston received a grant of technical assistance to become a StormSmart community and region. The focus of the StormSmart Coast assistance is public outreach and education to help town officials and residents understand and mitigate for predicted increases in storm frequency, storm intensity and sea level rise. The three communities are working on: a comprehensive flood hazard brochure to be mailed out to residents within floodplains; a workshop to educate officials on the No Adverse Impact philosophy; a workshop for homeowners and builders on building and retrofitting homes to prepare for storms and floods; as well as enhancing hazard mitigation plans and floodplain management By-Laws. Plymouth, Kingston and Duxbury are intimately connected via geography and the bay shared amongst the three communities. The collective shorelines interact and change as a result of shoreline activities within each community. As a result, planning for change together will help to mitigate for impacts of future coastal erosion, storms and sea level rise. Furthermore, better planning in the coastal zone will ultimately result in less pollution to our shared coastal resources (See [http://www.boston.com/news/local/massachusetts/articles/2009/01/03/mass\\_launches\\_effort\\_to\\_protect\\_coast\\_residents/](http://www.boston.com/news/local/massachusetts/articles/2009/01/03/mass_launches_effort_to_protect_coast_residents/)).

#### **Planned Activities 2009-2010**

The Town of Kingston will again be relying on our consultant, Environmental Partners Group, Inc., in the 2009-2010 term to fulfill compliance with our 5-Year permit and our Stormwater Management Plan:

- complete the mapping of our stormwater system to include parcel identification;
- complete the mapping to include 100% of outfalls;
- complete initial illicit discharge detection and elimination activities as well as continue this in future years;
- conduct additional sampling rounds in dry and wet weather;
- trace drainlines contributing to identified impacted outfalls with dye testing and smoke testing;
- Identify sources on subbasin levels where pollutant impacts were found at stream culverts.

Activities scheduled to occur in 2009-2010 include:

1. Purchase a vector truck for cleaning stormdrain infrastructure;
2. Re-evaluate the need for a formalized Stormwater Working Group to further explore a Stormwater By-Law & Erosion Control By-Law and involve more departments;
3. Reconnect with Plymouth and Duxbury to continue water quality monitoring toward establishment of a TMDL for the bay;
4. Explore further CWSRF loans and/or grant programs for stormwater improvements along the Jones River and bay;
5. Restart the stormdrain stenciling project as well as reevaluate techniques and materials to find a longer lasting method that will not be as effected by plowing, sanding/salting and winter weather (many stormdrains stencils painted in roadways disappeared over the winter – may purchase metal stormdrain markers in some locations with remaining stormdrain funds). If Boy Scout project does not occur, seek other volunteers and/or town staff to conduct stenciling;
6. Complete the installation of LID educational signage & a workshop on BMPs for groundskeepers of Kingston schools and public lands;
7. Continue to expand use of LID in Kingston and on town-owned properties/projects;
8. Seek out grant funds to improve handling and treatment of stormwater at Gray's Beach where erosion problems are occurring due to runoff from impervious surfaces;
9. Continue to improve annual DSTP activities;
10. Continue Water Department support of the Greenscapes Program and other water conservation efforts (Water

Department is applying for a DEP Water Conservation Grant in the 2008-2009 permit term);

11. Create an Erosion Control and Stormwater By-law to develop consistency and streamlining among town regulations and by-laws;
12. Conduct workshops for single family homeowners such as Stormwater Management for the Home, Healthy Lawns & Landscapes, Landscaping in the Coastal Zone, etc. to educate residents about various ways to reduce stormwater pollution;
13. Conduct workshops for town officials and builders/developers including No Adverse Impact philosophy, retrofitting homes to reduce storm damage, flooding impacts (resulting in less pollution to wetlands & waterways);
14. Develop formal snow and ice policy;
15. Continue with GIS training;
16. Establish contact with MassHighway to learn how and when they will be remediating impacts from Route 3 and 3A on wetlands and waterways of Kingston and when they will commence funding of stormwater treatment systems with Chapter 90 funds;
17. Continue partnership with KIS, SLRHS Conservation & Horticulture, as well as other community groups for Town of Kingston stormwater and resource area improvement projects;
18. Continue partnership & participation with JRWA on grant applications for stormwater/resource area improvements, protection of open space, community clean-up days, educational programs, migratory fish sampling/counting, RIFLS, restoration projects, dam removals, etc.; and
19. JRWA to continue advocacy before town boards and to general public.

### Part III. Summary of Minimum Control Measures

#### 1. Public Education and Outreach

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 6 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 7
# 1.1	Partnership with local watershed association	Conservation, DSTP's, Planning, BOS, Water Dept., Harbormaster, etc.	Meetings regarding storm water management, water quality (WQ) monitoring, grant proposals, educational programs, clean-ups, etc.	Supported grant applications that result in much public education and outreach when projects are implemented (fish passage/stream restoration) (JRWA)	Continue cooperative efforts on monitoring with JRWA, Plymouth & Duxbury for MEP & new TMDL, collaborate to obtain funds for expanded sampling through coordinated grant & loan applications.
Revised				Herring count at Water Dept. (JRWA & public)  River & CoastSweep clean-up (JRWA, other partners & public)  Raingarden construction (JRWA & public)	Continue JRWA herring count on Jones River in spring 2008 organized with Water Dept. and community at large.  Do collaborative clean-ups, WQ monitoring & educational stormwater workshops  Continue to promote LID
# 1.2	Storm drain stenciling	DSTP, Conservation, KIS, Stormwater Working Group	Re-start and finish town-wide stenciling with educational doorhangers & newspaper articles	Planned to recommence stormdrain stenciling/education project in sensitive areas of town – primarily area of Kingston Bay (Boy/Girl Scouts &	Continue to expand stenciling effort & stormwater education.  Re-evaluate technique/methods –

Revised				public)	explore use of metal markers  Write more newspaper articles on project
# 1.3	Distribution of educational materials and offer of free workshops for residents/officials through Greenscapes Program	Kingston Water Dept., ConCom	Display and use these materials at Kingston Town Hall to encourage greenscapes in Kingston  Install a Greenscape on town property  Use town website for educational stormwater messages	Greenscapes Guide distributed to member towns (MassBays and other program sponsors)  ConCom regularly uses Guide to educate folks & ask them to Greenscape and use LID (MassBays, JRWA)  Used town website to post educational stormwater messages  ConCom continues mailings to new residents living near wetlands and waterways  Regular articles on river and watershed (JRWA)	Continue support of Greenscapes  Implement Greenscapes demonstration landscape on a town-owned parcel educational purposes  Encourage Greenscapes on other town lands & private lands esp. in high visibility & sensitive areas  Consider a local raingarden tour once more are implemented and educational signage installed  Increase use of town website for stormwater education  Use newspaper (Kingston Reporter) more to educate – monthly column?
Revised					
# 1.4	Pet waste station installation at local conservation lands	Conservation, E.B. Sampson Fund (town grant program)		Maintain Pet Waste Stations installed on 5 conservation land parcels (Senior volunteer)  Purchased one more pet waste station for high use beach	Install newly purchased pet waste station
Revised					
# 1.5	Educational seminars for employees, residents, local engineers, developers, real estate agents on water quality, stormwater, conservation issues	Stormwater Working Group, StormSmart Group	Plan contents of workshops and set dates  Put schedule of seminars in tax bills, in paper, on website	Stream ecology & stormwater effects workshop w/KIS 5 <sup>th</sup> grade science classes (JRWA & MassBays)  Receiving technical assistance through CZM StormSmart Program  Continued advocating stormwater pollution	Hold workshops for groundskeepers of town-owned land (Mass Bays)  Schedule a Green Landscaping/Stormwater Workshop for residents  NAI Workshop for town officials (CZM)

Revised				prevention with various town departments and public	Other StormSmart Workshops & brochures (CZM)
# 1.6	Annual clean-up days on town properties	Conservation, DSTP	Hold annual clean-up days	Various Boy/Girl Scout groups cleaned up conservation land parcels and DSTP's disposed of rubbish (Boy/Girl Scouts & public)  River and roadway clean-up near 2 conservation lands (JRWA & public)	Work on coordinating more large scale clean-up days on town lands with various town groups (Open Space, Recreation, ConCom, etc.)  River clean-up in May 2009

## 2. Public Involvement and Participation

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 6 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 7
# 2.1	Partnership with local schools	Recreation and Selectmen  ConCom, DSTP's  Conservation Land Review Committee, ConCom	Gray's Beach  KIS Raingardens  Involve SLRHS Cons. & Hort. students in Pine Brook project	Volunteers cleaned up the planted bio-retention cells installed to reduce stormwater impacts to bay  ConCom & DSTP's continued to maintain raingardens  SLRHS Cons. & Hort. students will assist with restoration plantings on Pine Brook (JRWA)	Need to conduct regular maintenance on bio-retention areas (volunteers)  Seek assistance from school with maintenance & continue to educate students on stormwater  Commence Pine Brook restoration planting (JRWA)
Revised					

# 2.2	Partnership with watershed association	Planning, Harbormaster, Conservation  DSTPs, Conservation  Water Dept.	Continue collection of water quality data  Complete screening of outfalls  Hold annual Herring counts	New sampling effort at Silver Lake with hired intern (JRWA & DMF)  Majority of mapping completed (Env. Partners Group, DSTPs & JRWA)  Succeeded in getting many volunteers trained & participating in 2008 (JRWA)	Continue to involve more of public in sampling and continue education of public on pollutants (JRWA)  Use data from herring counts in 2008 & 2009 to understand fish passage problems, educate and work toward solutions (JRWA, DMF)
Revised					
# 2.3	Storm drain stenciling	Highway, Conservation, KIS, Stormwater Working Group	Organizing neighborhoods/volunteers to stencil storm drains	Distributed 4 stormdrain stenciling kits to KIS and Boy Scout and trained them in conducting stenciling (public)	Restart stenciling project and attempt to complete in 2009
Revised					
# 2.4	Establishing formal Storm Water Management Task Force with citizen involvement	Selectmen and all other applicable boards	Establish Storm Water Management Task Force with regularly scheduled meetings and activities	Still informal Stormwater Working Group meetings with appropriate town officials (JRWA & occasionally other agencies)	Establish formal Stormwater Management Task Force to work toward Stormwater By-Law with expanded involvement to include more town boards and citizens at large (Env. Partners Group, JRWA, advice from other towns)
Revised					
# 2.5	Household Hazardous Waste Collection and Recycling Day	DSTP's and Town of Duxbury	Hold annual collection days  Collect mercury-containing thermometer/thermostats throughout year	Successful collection day in Duxbury for Kingston as well held in spring 2008 that was well attended (SSRC)  DSTP's cont'd collecting mercury thermometers, thermostats and handing out non-mercury thermometers	Spring 2009 collection day in Kingston for Duxbury as well (SSRC, Duxbury) – posted on website  Town to continue program – post on town website  JRWA also doing mercury collection (JRWA & Covanta)

# 2.6	Educational seminars and mailings for residents, local engineers, developers, real estate agents on water quality, stormwater, conservation issues	Stormwater Working Group	Plan contents of workshops and set dates Put schedule of seminars in tax bills, in paper, on website	Held workshop for KIS 5 <sup>th</sup> Grade Science students (Green Team unfunded in 2008) on stormwater & watersheds (MassBays & JRWA)  Continued advocating stormwater pollution prevention with various town departments and public through ConCom and conservation related mailings to new residents	Continue relationship with schools and get involved in the new Go Green Initiative  Hold workshops for adult audiences- NAI, coastal hazards, retrofits, landscaping, etc. (CZM)  Scheduling a Green Landscaping/Stormwater Workshop for town employees (Mass Bays)  Find off-site training for town employees
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# 2.7	Annual clean-up days on town properties	Conservation, DSTP	Hold annual clean-up day	Various Boy/Girl Scout groups cleaned up conservation land parcels and DSTP's disposed of rubbish (Boy/Girl Scouts & public)  River and roadway clean-up near 2 conservation lands (JRWA & public)	Work on coordinating more large scale clean-up days on town lands with various town groups (Open Space, Recreation, ConCom, etc.)  River clean-up in May 2009
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# 2.8	Form "Friends of Conservation Land" group	Conservation and Open Space Committee	Hold regular clean-up days and watch group to reduce vandalism, theft and littering of town conservation land where there are many wetlands and streams	New Senior volunteer for conservation land maintenance as well as new Boy Scouts  Much illegal dumping, vandalism, theft – considering installing spy-cams  Some volunteer groups helped clean-up public lands (JRWA, Boy/Girl Scouts, public)	Advertise in newspaper, on website, at cons. land parcels for more volunteers  Install spy-cams and start watch groups
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### 3. Illicit Discharge Detection and Elimination

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 6 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 7
# 3.1	Catch basin/outfall and sewer mapping to receiving waters	Planning, DSTP, Conservation	Mapping hotspots that are suspected to carry high pollutant loads	SRF loan funds used to complete mapping and commence screening and sampling	Continue work with Environmental Partners to complete mapping, monitoring, public education, stormwater bylaw and all portions of the stormwater plan
Revised				DSTP's removed several illicit discharges	Establish hotline to report illicit discharges
				Discussed sending letter to MassHighway asking for information on SWMP to cleanup stormwater outfalls & illicit discharges to Kingston receiving waters as well as funding of treatment systems with Chapter 90 funds	Send letter to MassHighway to cleanup/eliminate Route 3 and 3A untreated discharges/illicit discharges to Jones and Bay
# 3.2	Sewering of densely developed areas and environmentally sensitive areas of town to reduce septic influence on water quality	Sewer Commission	Expand sewer capacity	Continued planning for sewer expansion	Complete tie-ins to WWTF
Revised				Sewer Dept. considered and working on sump pump by-law to reduce CSO to WWTF from flooded basements	Enact sump-pump by-law
					Continue with sewer plant expansion plans
# 3.3	Regulatory Review & Permit Enforcement	Selectmen, Planning, Building, Zoning, Conservation, DSTP's, BOH		Selectmen must approve of all connections to stormdrain system – only 1 or 2 approved – none in 2008	Once stormwater by-law is adopted consider review by administrator of by-law as well as BOS (& other applicable boards)
Revised				Considered fine schedule for illicit connections	Implement fine schedule to deter illicit connections to MS4
# 3.4	Storm drain stenciling	DSTP, Conservation, Stormwater Working Group	Adopt a Storm Drain	Discussion of including this in storm drain stenciling efforts, but no progress made	Neighborhood representatives to monitor storm drains for illicit discharges – pursue this with expanded stormdrain stenciling and WQ monitoring
Revised					Setup hotline for residents to report illicit connections
# 3.5	Water Quality Monitoring	Harbormaster, Planning, Conservation, Highway, Water, Stormwater Working Group	Expand WQ monitoring to include surveying for illicit discharge detection	Revised BMP (Env. Partners Group, JRWA, public)	Get more of community involved in sampling program (Env. Partners Group, JRWA, public)
					Organize & educate public/volunteers for illicit detection (DSTPs, Env. Partners Group, JRWA, public)
					Focus on Stony Brook (DMF sanitary survey fecal info.)

#### 4. Construction Site Stormwater Runoff Control

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 6 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 7
# 4.1	Regulatory Mechanisms	Selectmen, Planning, Building, Conservation, DSTP, Stormwater Working Group	Establish and implement local stormwater management by-laws and/or stormwater authority to increase construction runoff controls in design criteria	<p>Conservation still working on regs. to fully adopt MA DEP Stormwater Management Policy and Standards</p> <p>Review existing by-laws in-house related to stormwater management for needed revisions (Environmental Partners, JRWA)</p>	<p>Conservation regulations will be completed in 2009</p> <p>Complete review and adopt recommendations</p>
Revised				<p>Plymouth Carver Aquifer Advisory Committee conducted Audit of town regs. to protect aquifer (PCAAC &amp; Horsley Witten Group) - 2007</p> <p>Planning also revising Subdivision Rules &amp; Regs. to improve regulatory mechanisms, enforcement</p> <p>Discussed combining erosion control and stormwater by-law into one document</p> <p>Discussion of enhancing fine schedules</p>	<p>Adopt recommendations</p> <p>Will include provisions to enhance/promote stormwater runoff controls, LID, open space, aquifer protection – should be completed in 2009</p> <p>Continue to review regs. &amp; adopt Erosion Control &amp; Stormwater By-laws and/or Authority (Env. Partners, Town counsel)</p> <p>Include fine schedule in new By-laws</p>
# 4.2	Site Plan Review	Planning, Conservation, Building, Zoning, BOH, Stormwater Working Group	Establish Phase II specific stormwater guidelines for review of site plans	<p>Discussion of in house erosion and sediment control training</p> <p>Regularly require developers to obtain NPDES CGP for disturbance of 1 acre or more of land (Conservation)</p> <p>Discussed revising Zoning By-law performance standards for site plan review to require CGP for 1 acre or more of disturbance and erosion control standards</p>	<p>Conduct in-house stormwater/erosion control workshop – invite public</p> <p>Develop guidelines to be read, understood and signed by all homeowners/developers doing construction on all size projects (could be based on feedback from in-house stormwater workshops)</p> <p>Revise all regulations to enhance performance standards for site disturbances of all sizes to improve erosion controls and stormwater runoff</p>
Revised					

# 4.3	Enforcement	Building, Planning, Zoning, BOH, DSTP, Conservation, Stormwater Working Group	Establish new site inspection forms, new procedures and fee/fine schedules for incorporating requirements of Phase II	<p>Many discussions amongst Stormwater Working Group regarding construction site runoff control</p> <p>Educating developers on as needed basis of new 1 acre or more disturbance regulation and construction general permit requirements</p> <p>ConCom regularly condition permits requiring NPDES Phase II Construction General Permits (CGP) to be in place prior to start of work on disturbance of 1 acre or more</p> <p>ConCom regularly require erosion controls on all sites and started requiring stormwater management reports/bonds during construction to have better oversight on construction sites</p>	<p>Develop/gather educational materials for developers/citizens involved in building projects &amp; include CGP in in-house stormwater workshops</p> <p>Develop guide on priority areas of town where further pollutant loading may threaten water supply or further degrade 303d's</p> <p>Working with other boards/departments to require same</p>
Revised					

## 5. Post-Construction Stormwater Management in New Development and Redevelopment

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 6 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 7
# 5.1	Regulatory Mechanisms	Selectmen, Town Administrator, Planning, Building, Conservation, DSTP	Establish and implement local stormwater management by-laws	<p>Conservation still working on regs. to fully adopt MA DEP Stormwater Management Policy and Standards</p> <p>Review existing by-laws in-house related to stormwater management for needed revisions (Environmental Partners, JRWA)</p>	<p>Conservation regulations will be completed in 2009</p> <p>Complete review</p>
Revised				<p>Plymouth Carver Aquifer Advisory Committee conducted Audit of town regs. to protect aquifer (PCAAC &amp; Horsley Witten Group) - 2007</p> <p>Planning also revising Subdivision Rules &amp; Regs. to improve regulatory mechanisms, enforcement</p> <p>Discussed combining erosion control and stormwater by-law into one document</p> <p>Discussion of enhancing fine schedules</p>	<p>Adopt recommendations</p> <p>Will include provisions to enhance/promote stormwater runoff controls, LID, open space, aquifer protection – should be complete in 2009</p> <p>Continue to review regs. &amp; adopt Erosion Control &amp; Stormwater By-laws and/or Authority (Env. Partners, Town counsel)</p> <p>Include fine schedule in new By-laws</p>
# 5.2	Site Plan Review/As-Built Review	Planning, Conservation, Building, Zoning, BOH, DSTP	Establish Phase II - specific stormwater guidelines and low impact development guidelines for review of site plans	<p>Discussion of in house erosion and sediment control training</p> <p>Regularly require developers to obtain NPDES CGP for disturbance of 1 acre or more of land (Conservation)</p>	<p>Conduct in-house stormwater/erosion control workshop – invite public</p> <p>Develop guidelines to be read, understood and signed by all homeowners/developers doing construction on all size projects (could be based on feedback from in-house</p>

Revised				<p>Discussed revising Zoning By-law performance standards for site plan review to require CGP for 1 acre or more of disturbance and erosion control standards</p> <p>GIS mapping will improve electronic reviews</p>	<p>stormwater workshops)</p> <p>Revise all regulations to enhance performance standards for site disturbances of all sizes to improve erosion controls and stormwater runoff</p> <p>Implement in 2008</p>
# 5.3	Enforcement	Building, Planning, Zoning, BOH, DSTP, Conservation	Establish new site inspection forms, new procedures and fee/fine schedules for incorporating requirements of Phase II	<p>Many discussion amongst Stormwater Working Group regarding construction site runoff control</p> <p>Educating developers on as needed basis of new 1 acre or more disturbance regulation and construction general permit requirements</p> <p>Continue to attach Operations &amp; Maintenance Plans to Conservation Orders of Conditions and refer directly to the O &amp; M Plan with specific conditions into perpetuity (as now required under new DEP stormwater policy)</p> <p>Continue requiring annual reports submitted to ConsCom for stormwater maintenance post-construction</p>	<p>Implement Stormwater and Erosion Control By-Law with fee schedule and revise existing regulations</p> <p>Establish bond surety with developers to create binding obligation to keep stormwater runoff onsite</p>

## 6. Pollution Prevention and Good Housekeeping in Municipal Operations

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 6 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 7
# 6.1	Employee Training	Selectmen, DSTP, Water, Building, Planning, Conservation, Green Energy Committee, Stormwater Working Group	Establish pollution prevention plan and good housekeeping procedures & schedules	Planned Green Landscaping/Stormwater Workshop for town employees  BOS with Green Energy Committee adopted “no-idling policy” for town vehicles - 2007	Hold Workshop Summer 2009  Explore possibility of expanding to all residents
Revised				ATM08 approved exploring alternative wind energy on town-owned lands	Continue studies and possibly install new turbines to reduce pollution caused by using traditional energy
# 6.2	Improved Maintenance	DSTP, Water, Building	Increase frequency of maintenance and implement better storage practices	Vacuum truck approved for purchase at ATM08  Annual street sweeping  Annual cleaning of all town-owned water quality inlets	Purchase vacuum truck in FY09  Increase frequency of street sweeping  WQI's, catch basins & infiltration galley cleanings will be greatly improved after vacuum truck purchase
Revised				Water Dept. leak detection – 107 gal/day. Sought DEP water conservation grant funds	
# 6.3	Improved stormwater treatment	DSTP, Water, Conservation, Planning	Upgrade current systems in sensitive areas	Route 27 improvements commenced (Chapter 90 funds, MassHighway)  Completed drainage improvements in Rocky Nook (Leigh Road) and discharge	Work on Route 27 continuing & ending in 2010 (Chapter 90 funds, MassHighway)  Commence planning of other SW improvements in bay area

Revised				to Kingston Bay	Continue to seek funding through grant opportunities for improving stormwater treatment in sensitive areas of town (JRWA, Env. Partners Group, others)
#6.4	Inter-department education	Conservation, Building, Water, DSTP, Sewer, Zoning	Continue informal education	Succeeded in communicating the importance of stormdrain protection during road work for water, sewer, drainline work performed by the town and the use of enhanced erosion controls	Continue to be vigilant with informal inter-departmental education of stormwater impacts to waterways  Seek formal training sessions for all dept's.
#6.5	Improved Recycling	BOS, DSTP's, Recycling Committee	New BMP	DSTP's, BOS, Recycling Committee developing plans to renovate transfer station to improve recycling – recycling rate 21% for 2007, recycling bin give away in 2008	Improve municipal recycling program  Work to reduce litter on roads (fining?)
#6.6	Stormdrain Stenciling	Stormwater Working Group, KIS	Start and finish town-wide stenciling with educational doorhangers & newspaper articles	Restart stormdrain stenciling/education project in sensitive areas of town – primarily area of Kingston Bay (Boy/Girl Scouts & public)	Continue to expand stenciling effort & stormwater education.  Re-evaluate technique/methods – explore use of metal markers  Write more newspaper articles on project

**7. BMPs for Meeting Total Maximum Daily Load (TMDL) Waste Load Allocations (WLA) <<if applicable>>**

<b>BMP ID #</b>	<b>BMP Description</b>	<b>Responsible Dept./Person Name</b>	<b>Measurable Goal(s)</b>	<b>Progress on Goal(s) – Permit Year 6</b> (Reliance on non-municipal partners indicated, if any)	<b>Planned Activities – Permit Year 7</b>
7.1	Target 303d waterbodies for Water Quality Monitoring	Stormwater Working Group	Focus sampling on 303d impaired waterbodies to work toward removing them from 303d list	No data collected (JRWA, SMAST/DEP, Plymouth & Duxbury)	Collaborate on grant application for further funding to complete monitoring to develop TMDL for bay (JRWA, Environmental Partners, SMAST, Plymouth & Duxbury)
Revised					Use website to post results of sampling

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7.2	GIS Mapping	Stormwater Working Group	Complete mapping of stormdrain system and outfalls	Completed 98% of mapping and datalayers provided to Town (Env. Partners)	Complete mapping and sampling of remaining outfalls in 2009 (Env. Partners, JRWA & others)
Revised					

7.3	Stormwater Modeling	Stormwater Working Group	Focus modeling on 303d impaired waterbodies to work toward removing them from 303d list as well as bay needing TMDL	No modeling done in 2008	Commence modeling in 2009 for Category 5 water bodies
Revised					

**Part IV. Summary of Information Collected and Analyzed**

The following assessments were conducted in the year 2008-2009:

1. The Town of Kingston, through their consultant Environmental Partners Group, Inc., completed mapping of 98% of outfalls and sampled 12% of the 253 outfalls mapped (See attached memos with maps and sampling results); and
2. JRWA continued in 2008 to participate in the multi-year rainbow smelt fish study with DMF in the Jones River (DMF & JRWA– started in 2004 and ongoing as permanent sampling site) – Numbers of smelt increased in 2008 over 2007 numbers with older age classes, but many eggs and fish died as a result of algae in the river in April and May. This demonstrates that nutrient and water quality problems in the Jones River continue to require abatement (See JRWA 2008 Annual Report for further sampling efforts on their part such as Silver Lake assessment).

**Part V. Program Outputs & Accomplishments (OPTIONAL) \* (Please see note below this section)**

**Programmatic**

Stormwater management position created/staffed	(y/n)	n
Annual program budget/expenditures	(\$)	CWSRF Loan balance = \$ 28, 400 & Remaining budget for stormdrain stenciling project = \$ 2,227

## Education, Involvement, and Training

Estimated number of residents reached by education program(s)	(# or %)	-Many (website) -30 (Conservation mailings) -All (Mass Recycles) -Many more (JRWA Programs)
Stormwater management committee established	(y/n)	Y - Informal
Stream teams established or supported	(# or y/n)	JRWA
Shoreline clean-up participation or quantity of shoreline miles cleaned	(y/n or mi.)	2 miles
<b>Household Hazardous Waste Collection Days</b>		
▪ days sponsored	(#)	13 (in SSRC – 1 for Kingston)
▪ community participation	(#)	2,661 (in SSRC)
▪ material collected	(tons or gal)	Construction debris – 4,799 tons (SSRC) Mattresses – 2,091 (SSRC) Paper – 1,013 tons (SSRC) Textiles – 280 tons (SSRC) Books – 218.3 tons (SSRC)
School curricula implemented ( <a href="http://www.wickedlocal.com/kingston/news/education/x126908902/Kingston-Elementary-and-Kingston-Intermediate-Schools-adopt-Go-Green-Initiative">http://www.wickedlocal.com/kingston/news/education/x126908902/Kingston-Elementary-and-Kingston-Intermediate-Schools-adopt-Go-Green-Initiative</a> )	(y/n)	Y (Go Green Initiative)

## Legal/Regulatory

	In Place Prior to Phase II	Under Review	Drafted
<b>Regulatory Mechanism Status (indicate with "X")</b>			
▪ Illicit Discharge Detection & Elimination		x	
▪ Erosion & Sediment Control		x	
▪ Post-Development Stormwater Management		x	
<b>Accompanying Regulation Status (indicate with "X")</b>			
▪ Illicit Discharge Detection & Elimination		x	
▪ Erosion & Sediment Control		x	
▪ Post-Development Stormwater Management		x	

## Mapping and Illicit Discharges

Outfall mapping complete	(%)	98%
Estimated or actual number of outfalls	(#)	253
System-Wide mapping complete	(%)	98%
Mapping method(s)		
▪ Paper/Mylar	(%)	100%
▪ CADD	(%)	0
▪ GIS	(%)	98%
Outfalls inspected/screened	(# or %)	12%
Illicit discharges identified	(#)	6
Illicit connections removed	(#) (est. gpd)	3
% of population on sewer	(%)	26.0% (correction from last year)
% of population on septic systems	(%)	74.0% (correction from last year)

### Construction

Number of construction starts (>1-acre)	(#)	1
Estimated percentage of construction starts adequately regulated for erosion and sediment control	(%)	75%
Site inspections completed	(# or %)	100
Tickets/Stop work orders issued	(# or %)	10
Fines collected	(# and \$)	\$ 200.00
Complaints/concerns received from public	(#)	20

### Post-Development Stormwater Management

Estimated percentage of development/redevelopment projects adequately regulated for post-construction stormwater control	(%)	75%
Site inspections completed	(# or %)	75
Estimated volume of stormwater recharged	(gpy)	75%

### Operations and Maintenance

Average frequency of catch basin cleaning (non-commercial/non-arterial streets)	(times/yr)	Once/ 4 years
Average frequency of catch basin cleaning (commercial/arterial or other critical streets)	(times/yr)	Once/ 4 years
Total number of structures cleaned	(#)	25
Storm drain cleaned	(LF or mi.)	1,000 LF
Qty. of screenings/debris removed from storm sewer infrastructure	(lbs. or tons)	40 tons
Disposal or use of sweepings (landfill, POTW, compost, recycle for sand, beneficial use, etc.)		landfill
Cost of screenings disposal	(\$)	\$ 1,200.00 @ \$30/ton

Average frequency of street sweeping (non-commercial/non-arterial streets)	(times/yr)	1/year
Average frequency of street sweeping (commercial/arterial or other critical streets)	(times/yr)	1/year
Qty. of sand/debris collected by sweeping	(lbs. or tons)	245 tons
Disposal of sweepings (landfill, POTW, compost, beneficial use, etc.)	(location)	Bourne landfill
Cost of sweepings disposal	(\$)	\$ 7,350.00

Vacuum street sweepers purchased/leased	(#)	Leased when needed (2-3 times per year)
Vacuum street sweepers specified in contracts	(y/n)	N, but will be for porous pavements

Reduction in application on public land of: ("N/A" = never used; "100%" = elimination)		
▪ Fertilizers	(lbs. or %)	?
▪ Herbicides	(lbs. or %)	?
▪ Pesticides	(lbs. or %)	?

Anti-/De-Icing products and ratios	% NaCl	50%
	% CaCl <sub>2</sub>	0
	% MgCl <sub>2</sub>	0
	% CMA	0
	% Kac	0
	% KCl	0
	% Sand	50%
Pre-wetting techniques utilized	(y/n)	Y
Manual control spreaders used	(y/n)	Y (correction made from last year)
Automatic or Zero-velocity spreaders used	(y/n)	N (correction made from last year)
Estimated net reduction in typical year salt application	(lbs. or %)	0% (50% reduction made in 2007)
Salt pile(s) covered in storage shed(s)	(y/n)	Y
Storage shed(s) in design or under construction	(y/n)	N