

**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. 7: March 09-March 10](#)**

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## **NPDES Phase II Small MS4 General Permit Annual Report**

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

Contact Person: Maureen Thomas Title: Conservation Agent

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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: April 30, 2010

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## Part II. Self-Assessment

### Permit Term 2009-2010

During the March 2009 to March 2010 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 April 2009 mapping and screening initiatives were completed by Environmental Partners Group. In 2009, new GIS shapefiles of Kingston's stormwater infrastructure and parcel data were uploaded to the Town's GIS system. Environmental Partners Group commenced a regulatory review of local By-Laws relating to stormwater in 2009 and will continue this task to completion in 2010. The review is 90% complete at this time and upon finishing the review, Environmental Partners Group will make recommendations to the Town on how to improve the local regulation of stormwater. In addition, development of an educational stormwater brochure commenced in 2009 and will be prepared for mailing in tax bills to all residents in 2010. While no water quality sampling related to stormwater was conducted by the Town of Kingston and Environmental Partners Group in 2009, plans are being made for follow-up sampling during the 2010-2011 permit term. Additional funding is needed, however, in order to conduct this monitoring as the CWSRF/MWPAT loan balance is near depletion. Please see table below for the status of contract deliverables by Environmental Partners Group for the Town of Kingston:

TASK	ITEM	ACTIVITY	STATUS
1	Review Existing Information	Reviewed all existing data that was provided by the Town	Complete
2	Assessors & Zoning Mapping	Assessor files superimposed on aerial data - final shapefiles and paper copies delivered to the Town	Complete
3	Storm System Field Inspections	253 Outfalls were located in Spring/Summer of 2008	Complete
4	GIS User Interface Development & Training	Shapefiles uploaded to the Town's GIS system - 2009	Complete
5	Illicit Discharge Detection & Elimination	Field Screening & Sampling conducted in September & October of 2008	Complete
6	<b>Local Bylaw Review</b>	<b>Reviews made in 2008/2009</b>	<b>90% Complete</b>
7	<b>Public Education Program</b>	<b>Prepare Education Materials</b>	<b>50% Complete (Underway)</b>
8	Project Management & Meetings	Management correspondence and meetings throughout project	Complete

Further accomplishments by the Town of Kingston in the 7<sup>th</sup> year of implementing its Stormwater Management Plan are described in more detail below.

#### Stormwater Working Group

The informal Stormwater Working Group met twice in the 2009-2010 permit term. Meetings were held to discuss:

- Contract with Environmental Partners Group, Inc. for various tasks;
- Development of a prioritization plan for stormwater remediation;
- Formalization of the Stormwater Working Group;
- GIS updates & training;
- Development of a stormwater by-law;
- Development of a stormwater webpage on Town of Kingston website; and
- Catchbasin/stormwater infrastructure cleaning and assessments.

#### Stormwater Improvement Projects

The Conservation Commission worked with the Department of Streets, Trees & Parks (DSTP's) to implement pre-treatment technologies on a roadway drainage project for Wapping Road/Route 106. The drainage project, which was essentially a redevelopment/maintenance project, was initially proposed to discharge stormwater directly from the street to Fountainhead Brook without any treatment beyond new deep sump catchbasins. The Commission convinced the DSTP's to include pre-treatment at the two discharge locations to Fountainhead Brook to meet the MA Stormwater Standards for 80% removal of Total Suspended Solids (TSS).

In late 2009 the Town began exploring potential stormwater retrofits for Gray's Beach, a Kingston Recreation Department property and the Town's only public swimming beach. Despite a previous s. 319 grant awarded to the Town to completely renovate Gray's Beach with stormwater treatment units, stormwater runoff continues to cause erosion of the beach. As a result, the Director of Recreation, Superintendent of DSTP's and the Conservation Agent worked together to solicit an engineering estimate for stormwater retrofits on the property to eliminate this ongoing problem. The Recreation Department submitted a request to the Kingston Capital Planning Committee (CPC) to fund the engineering design in FY 2011 and the CPC has made an initial recommendation that the appropriation for engineering funds be made for this stormwater retrofit project that will incorporate low impact development design. The final vote on the recommendation of the CPC to Town Meeting has yet to be made, but it appears likely that they will make the recommendation for funding to Annual Town Meeting on 6/1/2010.

### *Stormdrain Stenciling*

During the 2009-2010 permit term the plan to have Boy Scouts conduct stormdrain stenciling fell through, but the Town was able to retrieve their stormdrain stenciling kits in order to continue the stenciling project that commenced a few years ago. A major goal for the 8<sup>th</sup> permit term is to obtain enough volunteers and commit Town staff to stenciling in order to further public education goals.

### *Greenscapes Program*

In 2009 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 2009 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)). In the 2009-2010 permit term the DSTP's sold 22 compost bins.

### *StormSmart Coasts Program Activities*

In 2009 the towns of Plymouth, Duxbury and Kingston continued with their StormSmart Coasts collaboration to hold meetings, workshops, create flood hazard brochures and plan for other activities. Workshops hosted at Kingston Town Hall included:

- No Adverse Impact Workshop for Local Officials presented by Edward Thomas, Esq. of Michael Baker Corporation – April 2009
- South Shore Coastal Hazards and Sea-Level Rise Workshop: Preparing for Impacts – Mapping Areas at Risk presented by MA CZM – November 2009

The floodplain hazard brochure that was mailed out to all residents of Kingston in tax bills as part of the StormSmart education and outreach project is at the following link: [http://www.kingstonmass.org/filestorage/40/888/Kingston\\_Flood\\_Hazard\\_Brochure.pdf](http://www.kingstonmass.org/filestorage/40/888/Kingston_Flood_Hazard_Brochure.pdf). The mailing was funded by the Sewer Department in Kingston who has been involved with the StormSmart project along with the Town Planner and Conservation Commission. More StormSmart activities and workshops are planned for the next permit term.

### *Website Announcements*

In the 2009-2010 permit term Kingston town departments continue to be 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).

### *Household Hazardous Waste Day*

The Town of Kingston sponsored a Household Hazardous Waste Day on May 2, 2009 with a reciprocal arrangement to allow other member towns of the South Shore Recycling Cooperative (SSRC) to attend as well. Another is planned in Duxbury for member towns, including Kingston, on May 1, 2010. This is a service the DSTP's provides to residents on an annual, rotating basis in partnership with the Town of Duxbury.

### *Catch Basin Cleaner*

After ten years of requests, the Town of Kingston finally purchased its first vector truck in November 2009. The Department of Streets, Trees & Parks (DSTP's) commenced their spring 2010 catchbasin, drainline & water quality structure cleaning with this machine and will continue with this program throughout Town on an annual basis. The new vector truck provides much needed technology to DSTP's to meet the requirements for municipal good housekeeping. As part of the enhanced program to clean the town-wide stormwater system, the staff of the DSTP's will be conducting assessments at each structure to establish a record for long-term maintenance, illicit discharge detection, planning and improved management of the stormwater system.



## *GIS Mapping & Training*

While new GIS mapping files, created by Environmental Partners Group, Inc. in contract with the Town of Kingston, was uploaded to the Town GIS system in 2009, the Town Planner and Conservation Agent are still in need of training on ArcGIS 9.2. Funds were allocated for this purpose a couple of years ago, but the Town was awaiting new GIS shapefiles prior to getting trained. Updated shapefiles were received in 2009 and ArcGIS training will be a priority in the 2010-2011 permit term.

## *MA Coastal Zone Management Coastal Pollutant Remediation Program Grant Applications*

In December 2009, the Kingston Conservation Commission collaborated with the Jones River Watershed Association (JRWA) to write two Coastal Pollutant Remediation (CPR) grant applications for stormwater remediation projects at two separate locations in Kingston: 1) Wapping Road - just upstream of the Wapping Road - dam where two stormwater outlets were discovered last year when the Jones River water levels dropped below normal levels due to a blown out water control structure within a raceway; and 2) Landing Road where Town stormwater discharges from a significantly-sized watershed to the Jones River Landing Environmental Heritage Center/JRWA site. Neither applications were funded, but CZM met with the Town and JRWA to discuss how the applications could be improved for submittal to CPR grant program next year or to another funding agency.

## *Support of Duxbury and Plymouth Water Quality Grant Applications*

The Town of Kingston Conservation Commission wrote a support letter for the Town of Duxbury's application to the 604(b) program for funds to remediate stormwater pollution to the "Nook" subarea of Kingston Bay and for the Town of Plymouth's application to the 604(b) program for funds to develop a Plymouth-Kingston-Duxbury land use model for cumulative nitrogen loading to Kingston Bay as part of the Massachusetts Estuaries Project (MEP).

## *Aquaculture in Kingston Bay*

In 2009 the Town of Kingston, along with state and federal regulators, approved the opening of 10-acres of Ichabod Flat in Kingston Bay for American oyster aquaculture. Oyster farming is known to improve water quality and Kingston looks forward to the favorable impacts aquaculture will have on the bay.

## *Training of Local Officials*

In June 2009, the Town Planner, two Conservation Commissioners and the Conservation Agent attended a workshop at the University of New Hampshire Stormwater Center to learn more about innovative stormwater treatment technologies. At the 2010 Annual Environmental Conference of the Massachusetts Association of Conservation Commissions (MACC), the Conservation Agent attended a workshop entitled, *Investigating New Programs to Strengthen Local Municipal Stormwater Programs*, to learn more about the upcoming changes being made by EPA on the NPDES Phase II stormwater rule. This information was passed on to the Kingston Stormwater Working Group in a meeting held in March 2010. The Conservation Agent also attended an erosion control workshop entitled, *Erosion Control: On the Ground and Effective*, to learn about innovative erosion control technologies. In addition, the staff of the Highway Department received training on the use of the new vector truck in early 2010.

## *Jones River Watershed Association (JRWA) Ecology & Education Programs*

Throughout 2009, JRWA held approximately 40 educational events, reaching almost 3500 adults and children, including students at the Kingston Elementary, Middle, Intermediate & Regional High School, local Boy & Girl Scout troops as well as local senior citizen groups. The environmental education and outreach programs of the JRWA directly benefits the residents of the town and greatly enhances the efforts of the Town of Kingston in getting the message of environmental stewardship of our wetlands, rivers and bay out to the general public (See JRWA website at <http://www.jonesriver.org/> & 2009 Annual Report at <http://www.jonesriver.org/getfile/reports/JRWAProgressReport012410.pdf>).

## *JRWA Sponsored Community Clean-Up*

The JRWA sponsored their annual Community Clean-up project on April 24, 2010 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 on September 19, 2009 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.

## *Water Quality Monitoring*

- In 2009, the JRWA and the Division of Marine Fisheries (DMF) completed their two-year habitat assessment of Silver Lake that included water quality monitoring. Though the final report has yet to be completed, preliminary results indicate that the lake has a high potential for river herring spawning. The restoration of this fishery to their historic spawning grounds at the headwater of the Jones River is a principle goal of the JRWA. The JRWA also had their YSI 6600 water quality probe deployed in Stony Brook to assess

habitat potential for spawning of diadromous species through the stream and up to Blackwater Pond; and

- Other groups that conducted water quality testing in Kingston Bay and the Jones River estuary are the Provincetown Center for Coastal Studies (PCCS) who conducts Cape Cod Bay monitoring. Recent budget cuts, however, may reduce the number of PCCS sampling locations. The Division of Marine Fisheries continued to conduct sanitary surveys for the shellfish beds in the bay and the Kingston Board of Health conducted regular sampling of water quality at swimming beaches.

The monitoring data collected by various groups helps to inform the Town of Kingston as to pollutants and target areas of concern.

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

- In 2009-2010 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 2010 sampling rounds, the DMF was pleased to find the best smelt run since the start of their sampling in the Jones River and with a very high percentage of males, 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 2009 from April 1<sup>st</sup> to June 1<sup>st</sup>, JRWA organized their fifth annual herring count on the Jones River at the Elm Street dam where there is a fish ladder. Nearly 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 84 hours of counting. An approximate total of only 50 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 2010 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 spring 2010 herring run is also looking promising with more numbers than the 2009 season. The main mission of the JRWA is to restore fish passage throughout the watershed and the Conservation Commission supports this mission. The monitoring program will be expanding to the Wapping Road area of the Jones River in conjunction with the Wapping Road dam removal project.

#### *Wapping Road Dam Removal*

The JRWA project to remove the Wapping Road dam made great strides in the past year and is now in the permitting phase. The JRWA has secured federal and state funds for the design, engineering, permitting as well as construction of this project. JRWA filed an Expanded Environmental Notification Form (EENF) in March 2010. In April 2010, EOEEA issued an ENF Certificate as well as a Draft Record of Decision (DROD) preliminarily granting a waiver to file an EIR (Final ROD due out in early May 2010). JRWA will be filing a Notice of Intent with the Conservation Commission in the next month or so to begin permitting under the MA Wetlands Protection Act and the Town of Kingston Wetlands Protection By-Law. 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 two recently discovered stormwater discharge outlets just upstream of the dam from Wapping Road that likely contribute to objectionable turbidity and algae growth in this area portion of the river. These outlet pipes were discovered when the Jones River water levels were lowered after a blow of a board within a raceway of the old mill building for which the dam was originally built. Remediating these two stormwater outfalls as part of the river restoration project was the subject of one 2009 CPR grant proposal that was not funded by CZM. These outfalls will be placed at or near the top of the Town's prioritization list for stormwater remediation. The dam removal project will restore the natural flow regime in this segment of the Jones River to improve water quality conditions as recommended in the 2001 Water Quality Assessment Report and will restore fish passage to more than 3.7 miles of the Jones River as well as its tributaries. The JRWA will conduct water quality monitoring in the area of the dam during the planned 2010 deconstruction. The dam removal project has received overwhelming public support as well as support from the Town of Kingston through the planning stages.

#### *Pine Brook Restoration Project*

The Conservation Commission continues to work with project partners on the Natural Resource Conservation Service (NRCS) Wildlife Habitat Incentive Program (WHIP) grant 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. 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. One of the culverts planned for removal has started to undermine and the Town of Kingston has hired a contractor to remove this culvert as soon as possible under an emergency certification from the Conservation Commission. The Town is awaiting engineered plans from NRCS to proceed with the permitting of this project.

#### **Planned Activities 2010-2011**

The Town of Kingston will again be relying on our consultant, Environmental Partners Group, Inc., in the 2010-2011 to complete contractual tasks as outlined in the Table on p. 1 above. Future NPDES Phase II consultant contracts will be dependent on successfully securing further

funding for this purpose. A minimal balance remains in the CWSRF/MWPAT account as well as in a separate NPDES Phase II Education & Outreach account.

Planned activities for the 2010-2011 permit term include:

1. Securing funding for further implementation of the Kingston Stormwater Management Plan, especially water quality monitoring & stormwater remediation projects;
2. Developing Prioritization Plan for stormwater remediation throughout town;
3. Soliciting volunteers and setting aside staff time to conduct stormdrain stenciling project;
4. Completing the installation of LID educational signage at Kingston Intermediate School;
5. Continuing to expand use of LID in Kingston and on town-owned properties/projects;
6. Supporting engineering design process and, upon completion, secure grant funds for implementation of stormwater retrofits at Gray's Beach;
7. Continuing to improve annual DSTP activities;
8. Continuing Water Department support of the Greenscapes Program and other water conservation efforts;
9. Developing Stormwater/Erosion Control By-law and implement recommendations from Environmental Partners Group upon their completion of the regulatory review;
10. Develop stormwater webpage on Town of Kingston website;
11. Finalizing and send out educational brochure on stormwater/clean water to all town residents;
12. Hosting erosion control workshops conducted by New England Environmental (NEE) for inspectors, contractors and local officials – scheduled for June 2010;
13. Holding StormSmart workshop for engineers/builders/developers re: techniques to reduce storm damage, flooding impacts (resulting in less pollution to wetlands & waterways);
14. Conducting 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;
15. Developing formal snow and ice policy;
16. Continuing with GIS training to improve mapping capabilities of stormwater infrastructure & problems;
17. Establishing 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;
18. Continuing partnership with KIS, SLRHS Conservation & Horticulture, as well as other community groups (Boy Scouts, Girl Scouts, etc.) for Town of Kingston stormwater and resource area improvement projects;
19. Continuing 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.;
20. Continuing partnerships with other non-profits such as the MassBays program;
21. Continuing partnerships with neighboring towns on grant proposals to improve water quality of the bay;
22. JRWA potential bacterial and pharmaceutical sampling of Jones River in cooperation with EPA and PCCS, respectively; and
23. Planning for upcoming changes to the NPDES Phase II rule.

### 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 7 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 8
# 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 throughout town

Revised					
# 1.2	Storm drain stenciling	DSTP, Conservation, KIS, Stormwater Working Group	Re-start and finish town-wide stenciling with educational doorhangers & newspaper articles	Retrieved stormdrain stenciling kits to recommence stormdrain stenciling/education project in sensitive areas of town – primarily area of Kingston Bay (Volunteers)	Continue to expand stenciling effort by obtaining volunteers & increasing stormwater education efforts.
Revised					Re-evaluate technique/methods – explore use of metal markers  Write more newspaper articles on project, use website
# 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 Program (MassBays and other program sponsors)  ConCom regularly uses Greenscapes concepts 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 (stormwater webpage)  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 more pet waste stations for public lands	Install newly purchased pet waste stations
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	Held NAI & Coastal Hazard Workshops through CZM StormSmart Program  Mailed flood hazard brochure to all town residents  Continued advocating stormwater pollution prevention with various town departments and public	Workshops for local officials as well as public  Schedule a Green Landscaping/Stormwater Workshop for residents  Erosion control workshops for local officials, inspectors & contractors
Revised					Other StormSmart Workshops (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 April 2010

## 2. Public Involvement and Participation

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 7 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 8
# 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/Go Green with maintenance & continue to educate students on stormwater by installing signage and creating brochures (MassBays)  Commence Pine Brook restoration planting (JRWA)
Revised					

# 2.2	Partnership with watershed association	Planning, Harbormaster, Conservation  DSTPs, Conservation, Planning, Building  Water Dept.	Continue collection of water quality data  Stormwater Working Group  Hold annual Herring counts	Completed sampling effort at Silver Lake (JRWA & DMF)  Continued working with Environmental Partners (JRWA)  Succeeded in getting many volunteers trained & participating in 2009 (JRWA)	Continue to involve more of public in sampling and continue education of public on pollutants (JRWA)  Complete contract with Environmental Partners & develop new contract once funding is secured  Use data from herring counts in 2009 & 2010 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	Retrieved 3 stormdrain stenciling kits from Boy Scout and need to retrieve 4 <sup>th</sup> (Boy Scouts & KIS)	Restart stenciling project and attempt to complete in 2010
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 Kingston held in spring 2009 that was well attended by Duxbury & Kingston residents (SSRC)  DSTP's cont'd collecting mercury thermometers, thermostats and handing out non-mercury thermometers	Spring 2010 collection day in Duxbury for Kingston as well (SSRC)  Town to continue program – post on town website

# 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	Install signage at KIS on raingardens and finalize educational brochure for stormwater retrofits at KIS  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 workshop for residents – landscaping for environment, etc.  Hold workshop for engineers, designers, builders, developers on coastal flood hazards & storm damage prevention (CZM)  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
# 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 and to start a Volunteer Land Stewardship Group  Install spy-cams and start watch groups

### 3. Illicit Discharge Detection and Elimination

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 7 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 8
# 3.1	Catch basin/outfall and sewer mapping to receiving waters	Planning, DSTP, Conservation	Mapping hotspots that are suspected to carry high pollutant loads	Completed	Seek more funding to continue work with Environmental Partners to implement stormwater plan
Revised				DSTP's removed several 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	Establish hotline to report illicit discharges  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  Sewer Dept. enacted sump pump by-law	Continue with sewer plant expansion plans  Sewer Dept. created sump pump brochure to be mailed to residents to reduce inflow/infiltration
Revised					Completed tie-ins to WWTF
# 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 2009	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  Env. Partners conducting regulatory review	Implement fine schedule to deter illicit connections to MS4  Env. Partners to complete regulatory review
# 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)
					Prioritize & seek funding

#### 4. Construction Site Stormwater Runoff Control

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 7 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 8
# 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 Stormwater Management Handbook</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 2010, but may be more restrictive than state regs.</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 2010</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 (Building, Planning &amp; 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 – scheduled for June 2010</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 conditions 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>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				<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>Have town official become a CPESC and require these as well as CPSWQ on construction sites over 1 acre in size</p>

## 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 7 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 8
# 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 2010</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 2010</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 – to be held in June 2010</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					
# 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 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>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 cash (instead of 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 7 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 8
# 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  Town officials schooled on Green Communities Act	Hold Erosion Control Workshop & others Summer 2010  BOS with Green Energy Committee and town residents voted in Green Communities Act in spring 2010
Revised					ATM10 approved expanding wind turbine overlay district and solar PV district to public and private parcels  ATM10 approved Stretch Code to enhance energy efficiencies in new building
# 6.2	Improved Maintenance	DSTP, Water, Building	Increase frequency of maintenance and implement better storage practices	Vacuum truck purchased & DSTP's trained on its use  Annual street sweeping  Annual cleaning of all town-owned water quality inlets	Vacuum truck in use spring 2010  Continue & enhance annual street sweeping practices  WQI's, catch basins & infiltration galley cleanings will be greatly improved with vacuum truck
Revised					
# 6.3	Improved stormwater treatment	DSTP, Water, Conservation, Planning	Upgrade current systems in sensitive areas	Route 27 improvements nearing completion (Chapter 90 funds, MassHighway)  Completed drainage improvements on Wapping Road including pre-treatment	Work on Route 27 continuing & ending in 2010 (Chapter 90 funds, MassHighway)  Final paving & seeding in 2010
Revised				2 CZM CPR grant proposals submitted in 2009, but not funded	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	Continue to be vigilant with informal inter-departmental education of stormwater impacts to waterways

#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  DSTP's compost bins subsidized by EOEa grant – 22 sold in 2009	Improve municipal recycling program  Work to reduce litter on roads (fining?)  Continue to sell them in 2010
#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 (General public)	Continue to expand stenciling effort & stormwater education.  Re-evaluate technique/methods – explore use of metal markers  Write more newspaper articles on project, use website

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

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 7 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 8
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

7.2	GIS Mapping	Stormwater Working Group	Complete mapping of stormdrain system and outfalls	Completed (Env. Partners)	Enhance mapping and follow-up sampling of remaining outfalls in 2010 (Env. Partners, JRWA & others)
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Revised					
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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 2009	Commence modeling in 2010 for Category 5 water bodies
Revised					

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

The following assessments were conducted in the year 2009-2010:

1. The Town of Kingston, through their consultant Environmental Partners Group, Inc., completed mapping of outfalls and uploaded GIS stormwater shapefiles to Town GIS system (See table p. 1);
2. Board of Health beach sampling summer swim season 2009;
3. DMF/Harbormaster sanitary survey sampling of Kingston Bay;
4. PCCS Kingston Bay sampling;
5. JRWA & DMF 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 2009 over 2008 numbers and 2010 numbers look promising as well;
6. JRWA 5<sup>th</sup> Annual Herring Count;
7. JRWA & DMF American eel surveys;
8. JRWA & DMF completed Silver Lake habitat assessment including water quality information – final report forthcoming;
9. JRWA YSI 6600 deployed in Stony Brook to collect water quality data.

**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 = \$ 18, 600 & Remaining budget for stormdrain stenciling project = \$ 2,227

## Education, Involvement, and Training

Estimated number of residents reached by education program(s)	(# or %)	-Many (website) -36 (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
Household Hazardous Waste Collection Days		
▪ days sponsored	(#)	13 (in SSRC – 1 for Kingston)
▪ community participation	(#)	2,081 (in SSRC)
▪ material collected	(tons or gal)	Paper – 907 tons (SSRC) Textiles – 280 tons (SSRC) Books – 260 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
Regulatory Mechanism Status (indicate with "X")			
▪ Illicit Discharge Detection & Elimination		x	
▪ Erosion & Sediment Control		x	
▪ Post-Development Stormwater Management		x	
Accompanying Regulation Status (indicate with "X")			
▪ Illicit Discharge Detection & Elimination		x	
▪ Erosion & Sediment Control		x	
▪ Post-Development Stormwater Management		x	

## Mapping and Illicit Discharges

Outfall mapping complete	(%)	100%
Estimated or actual number of outfalls	(#)	253
System-Wide mapping complete	(%)	100%
Mapping method(s)		
▪ Paper/Mylar	(%)	100%
▪ CADD	(%)	0

▪ GIS	(%)	100%
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	(%)	85%
Site inspections completed	(# or %)	120
Tickets/Stop work orders issued	(# or %)	1/1
Fines collected	(# and \$)	\$ 0.00 (ticket not paid)
Complaints/concerns received from public	(#)	25

### 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/year
Average frequency of catch basin cleaning (commercial/arterial or other critical streets)	(times/yr)	Once/year
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)	281 tons
Disposal or use of sweepings (landfill, POTW, compost, recycle for sand, beneficial use, etc.)		Bourne landfill
Cost of screenings disposal	(\$)	\$ 8,436.90 @ \$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)	281 tons
Disposal of sweepings (landfill, POTW, compost, beneficial use, etc.)	(location)	Bourne landfill
Cost of sweepings disposal	(\$)	\$ 0.00
Vacuum street sweepers purchased/leased	(#)	1 purchased
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
Automatic or Zero-velocity spreaders used	(y/n)	N
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