

Municipality/Organization: Town of Kingston, MA

EPA NPDES Permit Number: MAR041041

MaDEP Transmittal Number: W-036193

Annual Report Number

& Reporting Period:

No. 7: March 10-March 11

NPDES Phase II Small MS4 General Permit Annual Report

Part I. General Information

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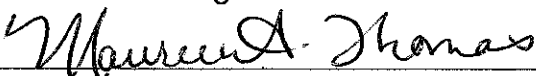
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Certification:

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

Title: Conservation Agent

Date: April 25, 2011

Part II. Self-Assessment

Permit Term 2010-2011

During the March 2010 to March 2011 permit term, the Town of Kingston continued its relationship with Environmental Partners Group, Inc. (EPG) 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. EPG developed a stormwater brochure in 2010 to meet the public outreach and education goals and the Town plans to mail them in tax bills in 2011. In late 2010 and early 2011, the Town had discussions with local Girl Scouts and Boy Scouts regarding stormdrain stenciling and both groups are very excited to participate in this project. EPG submitted a proposal to the Town in preparation for submitting a new Notice of Intent under the new NPDES Phase II General Permit, expected to be finalized in August 2011. Based on the proposal, the Town appropriated \$ 25,000.00 in funding at its Annual Town Meeting in early 2011 to hire a consultant to conduct this work (ATM Warrant Article 21, p. 8, http://www.kingstonmass.org/filestorage/49/3191/ATM_Warrant_2011_for_Website.pdf). The appropriation also includes funding for completion of local by-law review (90% complete) for development of a stormwater by-law. The Town & EPG await the final General Permit for more direction on this task. Furthermore, the 2011 NPDES appropriation provides funding for general technical assistance and training needs. While no stormwater sampling occurred in the 8th permit term, the Town of Kingston secured a Massachusetts Bays Research & Planning Grant in early 2011 in the amount of \$ 14,800.00 to conduct a stormwater assessment of the Lower Jones and portions of Kingston Bay (http://www.wickedlocal.com/kingston/town_info/government/x1798429295/Kingston-receives-grant-to-establish-baseline-water-quality-conditions-to-plan-improvements#axzz1KwG7gpvw). The wet weather sampling associated with this grant will establish baseline water quality data for the two 303d listed waterbodies and provide funding for development of preliminary plans to remediate the 6 stormwater outfalls that contribute the greatest bacterial contamination to the river and bay. The assessment project is the first in a multi-phase project to mitigate stormwater impacts with the ultimate goal of opening up and improving shellfish beds in Kingston Bay. The assessment project is a collaboration amongst Kingston, Duxbury & the Jones River Watershed Association (JRWA) and will include sampling of 25 town-owned stormwater outfall as well as approximately 10 MassDOT outfalls within the designated subwatershed area. While stormwater mapping and corresponding GIS shapefile transfer from EPG to the Town occurred in 2009, the Town, their new GIS consultant/volunteer and EPG worked together in the 8th permit term to fix some corrupted orthophoto files to ready their use for GIS mapping by Town staff. In early 2011, the Town contracted with another consultant, Cartographic Associates, Inc. (CAI) to upgrade parcel data through georeferencing of lot lines for increasing Kingston's GIS accuracy/capability. This work will directly assist the Town with reconnaissance and accurate mapping of drainage areas for the Mass Bays Program grant. In addition, part of the contract with CAI includes launching an online GIS platform in which Kingston's GIS data will be published on the internet and available for public access. While the Town has not finalized which layers will be available through the online GIS service, publishing the stormwater system layers would be a great way to further the public outreach & education goals of the NPDES General Permit. The most important on-the-ground work by the Town of Kingston in the 8th permit term was the thorough and comprehensive cleaning of stormwater structures made possible through the use of our new vacor truck. In addition to the cleaning of structures, much valuable data has been generated on the condition of these structures for future operation and maintenance needs. 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	<i>Local Bylaw Review</i>	<i>Reviews made in 2008/2009</i>	<i>90% Complete</i>
7	<i>Public Education Program</i>	<i>Prepare Education Materials</i>	<i>100% Complete (Need to conduct Stenciling & Mailing)</i>
8	Project Management & Meetings	Management correspondence and meetings throughout project	Complete

Further accomplishments by the Town of Kingston in the 8th year of implementing its Stormwater Management Plan are described in more detail below.

Stormwater Working Group

The informal Stormwater Working Group met seven times in the 2010-2011 permit term. Meetings were held to discuss:

- Contract with Environmental Partners Group, Inc. for various tasks;
- Development of stormwater mitigation plans for Gray's Beach;
- Development of grant proposal to Massachusetts Bays Research & Planning Program;
- On-site discussion of Wapping Road stormwater outfall remediation;
- GIS updates & training;

- Development of a stormwater by-law;
- Sump pumps & stormwater discharges;
- Catchbasin/stormwater infrastructure cleaning and assessments; and
- Notice of Intent submittal for new General Permit and associated funding through Town Meeting articles.

Stormwater Improvement Projects

In June of 2010 at Annual Town Meeting, funds were appropriated for the development of preliminary plans for Gray's Beach low impact development (LID) stormwater retrofits. The Town's Stormwater Working Group continued working with the Kingston Recreation Department and the consultant, Horsley Witten Group, throughout 2010 to guide development of preliminary plans. Preliminary plans were completed in time for April 2011 Annual Town Meeting in which an appropriation was made in the amount of \$ 175,000.00 to fund the retrofits (ATM Warrant, Article 20, p. 7, http://www.kingstonmass.org/filestorage/49/3191/ATM_Warrant_2011_for_Website.pdf). A corresponding ballot measure also passed in late April 2011 and the Stormwater Working Group will continue to work with the Recreation Department & Horsley Witten Group to finalize plans and permitting for implementation of mitigation measures in 2011.

In late 2010, the construction of a new Kingston Senior Center was completed and included the installation of a raingarden in front of the building. The raingarden will have signage and educational information provided in the lobby of the Senior Center to explain the importance of stormwater treatment. At around the same time, raingardens were installed on the Kingston Recreation Department Field Complex to handle stormwater issues along the entrance road to the facility. The new raingardens on Town of Kingston properties, in addition to existing raingardens at Kingston Intermediate School, provide great opportunities to demonstrate to residents how stormwater treatment can clean water while also providing aesthetically pleasing gardens for public enjoyment.

Stormdrain Stenciling

During the 2010-2011 permit term, new discussions ensued with a Girl Scout Troop, an Eagle Scout and the DSTP's on conducting stormdrain stenciling within 2011. The Girl Scouts and Boy Scouts will focus on stenciling quieter town roadways/parking lots where police details are not required and the Kingston DSTP's will conduct the stenciling on busier roads while cleaning structures.

Greenscapes Program

In the 8th permit term, 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. *Greenscapes* informational brochures were distributed to the public in the Town Hall while the *Be A Greenscaper* banner was prominently displayed in the main foyer of the Town Hall. The *Greenscapes* Program, with the Jones River Watershed Association (JRWA) Ecology Program Director, conducted outreach to the Kingston Intermediate School (KIS) 5th grade science classes with their *Water All Around You Program* to provide students with the knowledge, tools and desire to be future stewards of their water supply.

Plymouth-Carver Aquifer Advisory Committee (PCAAC)

The PCAAC, of which Kingston is a member, continues to meet on a regular basis and, with the help of the Southeast Regional Planning & Development District, received a Sheehan Family Foundation Grant of \$ 15,000.00 in 2010 for conducting educational forums about the importance of the Plymouth-Carver Aquifer as a valuable natural resource to be protected regionally by all those within it for both current and future water supply needs. DVD's will be created and distributed to all seven towns within the aquifer and they will also air on local cable TV stations for broadcast to the general public. The grant funds also paid for a reprint of the Plymouth-Carver Aquifer brochure (<http://www.srpedd.org/environmental/plycarbrochure.pdf>). The forum topics include the following topics: care of residential water supply wells & municipal water supply wells, contaminants in groundwater, the nature of soils & geology in Southeastern MA, septic systems and groundwater protection, cranberry water use, conservation & new technologies in cranberry farming, low impact development design, and the final forum will be geared toward educating children about the aquifer, but it has yet to be finalized.

Website Announcements

In the 2010-2011 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). This annual report will be posted on the town website in early 2011 and the possibility of a stormwater webpage will also be explored in 2011.

Household Hazardous Waste Day

Town of Kingston residents participated in a Duxbury-sponsored Household Hazardous Waste Day on May 1, 2010 through a reciprocal arrangement that allows other member towns of the South Shore Recycling Cooperative (SSRC) to attend. Another is planned in Kingston for SSRC member towns on May 7, 2011 (<http://ssrcoop.info/how/hazwaste%20flyer.pdf>). 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

The Department of Streets, Trees & Parks (DSTP's) commenced their spring 2010 catchbasin, drainline & water quality structure cleaning with the vactor truck purchased in 2009 and in the 8th permit year cleaned 293 structures, disposed of 328 tons of screenings and spent close to \$ 10,000.00 on disposal costs which includes street sweepings. The cleaning of 293 structures is in comparison to 25 structures cleaned in the 7th permit term; a 1,072% increase! As part of the enhanced program to clean the town-wide stormwater system, the staff of the DSTP's has generated much valuable data on structure condition for future operation and maintenance needs. The vactor truck and the hard work of DSTP's has greatly improved our ability to practice municipal good housekeeping.

GIS Mapping & Training

During the 8th permit term the Town of Kingston had a banner GIS year in that we received a Department of Housing and Community Development (DHCD) grant of \$ 1,000.00 in 2010 to upgrade our GIS platform through a Peer-to-Peer Grant in which a Planning Technician from the Town of Plymouth assisted us with greatly improving our GIS data and also providing very much needed training on ArcGIS. We are fortunate in that the Plymouth Planning Technician has been very generous with his time and still continues to assist the Town of Kingston with further GIS upgrades & training. All of this assistance will improve mapping capabilities with respect to Town's stormwater management system as well as other town infrastructure.

Support of Jones River Watershed Association (JRWA) Grant Proposals

The Kingston Conservation Commission provided support letters and in-kind match for two JRWA proposals: (1) a Massachusetts Bays Program Research and Planning Grant proposal to assess tidal restrictions in Stony Brook and Tussock Brook for improvements to habitat, tidal flushing, flood regimes and water quality within the Jones River watershed and tributary areas to Kingston Bay; and (2) a Massachusetts Environmental Trust proposal to conduct removal of the tidal restrictions in both brooks. Removal of these restrictions will provide significant habitat and water quality improvements in both Kingston and Duxbury and could potentially alleviate surcharging of some Town-owned stormwater outfalls in the area. This project is a collaborative one amongst JRWA, the Town of Duxbury and the Town of Kingston.

Support of Duxbury Water Quality Grant Application

In January 2011, the Town of Kingston Conservation Commission wrote a support letter for the Town of Duxbury's application to Coastal Zone Management (CZM) Coastal Pollutant Remediation (CPR) Program to install best management practices (BMPs) in the Nook area of Kingston Bay to continue their ongoing work to improve water quality.

Aquaculture in Kingston Bay

In early March 2011, Kingston's commercial oystermen had their first harvest of Rocky Nook Oysters from Kingston Bay and the oysters are now available at restaurants (<http://www.wickedlocal.com/kingston/features/x2011259201/Rocky-Nook-Oyster-Company-harvest-makes-history-in-Kingston#axzz1KwGrScO0>). Town of Kingston waters benefit from the success of oyster farming as it is known to improve water quality and Kingston looks forward to the favorable impacts aquaculture will have on the quality of the bay.

Training of Local Officials

In March 2010, the Conservation Agent and a Commissioner attended a workshop by a well known speaker entitled, *Water Words that Work*, in an effort to gain some communication skills to help persuade people that clean water is important. In June 2010, the Town of Kingston hosted an erosion control workshop conducted by New England Environmental (NEE) for inspectors, contractors and local officials at the Town Hall. At the 2011 Annual Environmental Conference of the Massachusetts Association of Conservation Commissions (MACC), the Conservation Agent attended a workshop on stormwater recharge. In March 2011, the Conservation Agent attended a webinar provided by Forester University on public outreach & education entitled, *NPDES Phase II: The Public Elements – Promoting Sustainable Behavior* (<http://www.forester.net/university/webinars.html>).

Jones River Watershed Association (JRWA) Ecology & Education Programs

Throughout 2010, JRWA held many educational events that reached numerous 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/> & 2010 Annual Report at <http://www.jonesriver.org/getfile/reports/JRWAProgressReport2010.pdf> for more information).

JRWA Sponsored Community Clean-Up

The JRWA sponsored their annual Community Clean-up project on Earth Day 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 25, 2010 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

The Division of Marine Fisheries (DMF) 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. This monitoring data helps to inform the Town of Kingston as to pollutants/target areas of concern and the DMF data was especially helpful in developing the MassBays Research & Planning Grant proposal in 2010.

Anadromous Fish Sampling, Counting and Education

- In 2010-2011 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 2010 from April 1st to June 1st, JRWA organized their sixth annual herring count on the Jones River at the Elm Street dam where there is a fish ladder. Sixty 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 many hours of counting. The 2010 count was the highest in five years with 4,626 fish counted over 612 counted in 2009. 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 2011 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 2011 herring run appears to be on pace with the 2010 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 was permitted by the Conservation Commission in 2010 and they await their Water Quality Certification from DEP prior to putting the project out to bid, but they expect to commence the dam removal project in the summer of 2011. 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 town-owned stormwater discharges 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 is at the top of the Town's prioritization list for stormwater remediation, but a grant proposal written for this purpose was not chosen for funding in 2010. 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 2011 deconstruction and JRWA has secured some funding for remediation of the town-owned outfalls from the Sheehan Family Foundation and from DSTP's purchase of materials. The Town of Kingston is looking for more funding sources to ensure that the remediation can occur at the same time as the dam removal to capitalize on efficiencies.

Pine Brook Restoration Project

In June 2010, the Kingston Conservation Commission hired a contractor to remove an undermined culvert on Pine Brook at Cranberry Watershed Preserve conservation land through the Natural Resource Conservation Service (NRCS) Wildlife Habitat Incentive Program (WHIP) grant. In early 2011, NRCS conducted surveying to develop engineering plans for removing and replacing other culverts that were used for manipulation of water levels in cranberry farming, but are no longer needed. We expect to commence the permitting for the remainder of the culvert removals along Pine Brook in 2011. 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 and within the Jones River.

Planned Activities 2011-2012

New funding sources combined with remaining balances in the CWSRF/MWPAT and the Education & Outreach account should provide for a very productive year in the first permit term under the new General Permit.

Planned activities for the 2011-2012 permit term include:

1. Executing and completing the Jones River & Kingston Bay Stormwater Assessment Project by end of December 2011 with MassBays Program funding and guidance;
2. Work with JRWA on MassBays and MET projects for elimination of Tussock and Stony Brook tidal restrictions;
3. Work with DEP Watershed Management to assess Lower Jones for 303d delisting;
4. Work with DMF, CZM, JRWA, DSTP's on shoreline survey of stormwater outfalls;
5. Finalizing plans and permits for the Gray's Beach Stormwater Retrofit Project;
6. Submitting an NOI under the new General Permit once finalized;
7. Mailing stormwater brochures and conducting stormdrain stenciling to complete goals under existing General Permit;
8. Completing by-law review and work to develop stormwater by-law;
9. Developing Prioritization Plan for stormwater remediation throughout town;
10. Completing the installation of LID educational signage at Kingston Intermediate School;
11. Continuing to expand use of LID in Kingston and on town-owned properties/projects;
12. Continuing to improve annual DSTP activities;
13. Continuing Water Department support of the Greenscapes Program and working with Greenscapes on public education efforts;
14. Developing stormwater webpage on Town of Kingston website;
15. Holding StormSmart workshop for engineers/builders/developers re: techniques to reduce storm damage, flooding impacts (resulting in less pollution to wetlands & waterways);
16. 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;
17. Developing formal snow and ice policy;
18. Continuing with GIS training to improve mapping capabilities of stormwater infrastructure & problems;
19. Communicating with MassDOT to learn how and when they will be remediating impacts from Route 3 and 3A on wetlands and waterways of Kingston. Also, getting access to their GIS data (unsuccessful attempt in 2010 to get map of outfalls to Jones River for the MassBays Research & Planning grant proposal);
20. 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;
21. 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.;
22. Continuing partnerships with other non-profits such as the MassBays program;
23. Continuing partnerships with neighboring towns on grant proposals to improve water quality of the bay;

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 8 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 9
# 1.1	Partnership with local watershed association	Conservation, DSTP's, Planning, BOS, Water Dept., Harbormaster, etc.	Collaborate on storm water management, water quality monitoring, herring count, educational programs, clean-ups, etc.	Supported JRWA grant applications that result in much public education and outreach with SLRHS, KIS & other schools (on stream & habitat restoration & stormwater) (MET, Greenscapes)	Continue cooperative efforts with JRWA for MET & Greenscapes projects and other grants in 2011 (MET, Greenscapes)
Revised				Herring count at Water Dept. (JRWA & public)	Continue JRWA herring count in spring 2011 organized with Water Dept. and community
				River & CoastSweep clean-up (JRWA, other partners & public)	Do collaborative clean – ups in 2011
				Some media coverage of JRWA & Town collaboration	Work to publicize collaborative efforts for benefit of public

# 1.2	Storm drain stenciling	DSTP, Conservation, KIS, Stormwater Working Group	Re-start and finish town-wide stenciling with educational doorhangers & newspaper articles	Presented stormdrain stenciling/education project to Girl Scout & Boy Scout Troops – focus on sensitive areas of town – Jones River & Kingston Bay (Volunteers)	Continue work with Scouts to expand stenciling effort to increase stormwater education efforts. DSTP's to assist on major roads.
Revised					May 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 (MassBay & other sponsors) ConCom regularly uses Greenscapes concepts to educate folks & ask them to Greenscape and use LID – Town installed raingardens on two municipal properties and continued maintenance on KIS raingardens (MassBays, JRWA) Used town website to post educational stormwater messages ConCom continued mailings to new residents living near wetlands and waterways	Continue support of Greenscapes Program Implement more Greenscapes demonstration landscapes on town-owned parcels for educational purposes & conduct a local raingarden tour Create stormwater webpage to increase public education Mail stormwater brochure in 2011 tax bills
Revised				Planned forums on protection of Plymouth-Carver Aquifer with cable broadcast & DVD production (PCAAC) Regular articles on river and watershed (JRWA)	Holding forums on aquifer to include LID, septic systems, other pollution sources – distributed via cable and DVD's Use newspaper (Kingston Reporter) more to educate public about stormwater
# 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)	Install new 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	Plan contents of workshops and set dates Put schedule of seminars in tax bills, in paper, on website	Held Building in Coastal Floodplains workshop through CZM StormSmart Program Hosted erosion & sediment control workshop at town hall for local officials & consultants Continued advocating stormwater pollution prevention with various town departments and public	Hold workshops on Green Landscaping/Stormwater for local officials, consultants & residents Hold more erosion control workshops for local officials, inspectors & contractors Commence stormwater by-law development with Stormwater Working Group
Revised					
# 1.6	Annual clean-up days on town properties/streets	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/streets with various town groups (Open Space, Recreation, ConCom, etc.) River clean-up in April 2011 Start a volunteer land stewardship program

2. Public Involvement and Participation

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 8 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 9
# 2.1	Partnership with local schools	Recreation and Selectmen ConCom, DSTP's Conservation Land Review Committee, ConCom Water Dept.	Gray's Beach Bio-retention Demonstration & Maintenance KIS Raingarden Demonstration & Maintenance Involve SLRHS Cons. & Hort. students in Pine Brook project Greescapes Program participation	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) Watershed model presentation to KIS 5 th grade science classes (MassBays & JRWA)	Need to conduct regular maintenance on bio-retention areas (volunteers) Seek assistance from school/Go Green with maintenance Commence Pine Brook restoration planting (JRWA) <i>Water All Around You</i> program for KIS 5 th graders (MassBays & JRWA)
Revised					

# 2.2	Partnership with watershed association	Planning, Harbormaster, Conservation	Continue collection of water quality data	Commence sampling effort in Jones River and Kingston Bay (JRWA & MassBays)	Complete stormwater assessment and preliminary BMP design (MassBays & JRWA)
		DSTPs, Conservation, Planning, Building	Stormwater Working Group	Supported JRWA grant proposals	Commence tidal restriction project (MassBays & JRWA)
		Water Dept.	Hold annual Herring counts	Continued working with Environmental Partners & secured funding for new permit term (JRWA)	Complete contract with Environmental Partners & develop new contract once funding is secured
Revised				Succeeded in getting many volunteers trained & participating in 2010 (JRWA)	Use data from herring counts in 2010 & 2011 to understand fish passage problems, educate and work toward solutions (JRWA, DMF)
# 2.3	Storm drain stenciling	Highway, Conservation, KIS, Stormwater Working Group	Organizing neighborhoods/volunteers to stencil storm drains	Girls Scout Troop and Eagle Scout interested in doing stormdrain stenciling for badges (Girl & Boy Scouts)	Support Scout stenciling project and attempt to complete in 2011 with help of DSTP's (Girl & Boy Scouts, volunteers)
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	Successful collection day in Duxbury held in spring 2010 that was well attended by Kingston residents (SSRC)	Spring 2011 collection day in Kingston for Duxbury as well (SSRC)
			Collect mercury-containing thermometer/thermostats throughout year	DSTP's cont'd collecting mercury thermometers, thermostats and handing out non-mercury thermometers	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	Installed signage at KIS on raingardens and finalize educational brochure for stormwater retrofits at KIS Held Erosion & Sediment Control and Building in Coastal Floodplains workshops (NEE & CZM) 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 Go Green Initiative Hold more workshops for engineers, designers, builders, developers, residents & local officials & participate in webinars Commence development of stormwater by-law with input from public
# 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 clean-up (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 2011 (JRWA & Public)
# 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	Senior volunteer for conservation land maintenance 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 8 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 9
# 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 & secured funding at ATM for new NOI to continue improvement work	Develop updated Stormwater Management Plan
Revised				One illicit discharge detected & removed in 2010 Requested map of MassDOT stormwater outfalls to Jones River but only received GIS layer – need shapefile to get information for sampling locations	Establish hotline to report illicit discharges Follow-up with MassDOT on maps of discharges to Kingston waters
# 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 with MEPA filing	Continue with sewer plant expansion plans
Revised					
# 3.3	Regulatory Review & Permit Enforcement	Selectmen, Planning, Building, Zoning, Conservation, DSTP's, BOH		Discussed development of stormwater by-law for new permit term	Develop stormwater by-law with associated fine schedule for illicit discharges
Revised				Env. Partners completed 90% of regulatory review	Env. Partners to complete regulatory review based on new permit guidance & make recommendations
# 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 stormdrain stenciling efforts
Revised					
# 3.5	Water Quality Monitoring	Harbormaster, Planning, Conservation, Highway, Water, Stormwater Working Group	Expand WQ monitoring to include surveying for illicit discharge detection	Secured funding for stormwater sampling (MassBays Program, JRWA, Duxbury)	Commence stormwater assessment project and follow-up with potential illicit connections after reviewing results Conduct shoreline survey of discharges for review of illicit (DMF, CZM, JRWA)

4. Construction Site Stormwater Runoff Control

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 8 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 9
# 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	Conservation still working on regs. to fully adopt MA Stormwater Management Handbook Review existing by-laws in-house related to stormwater management for needed revisions (Environmental Partners, JRWA)	Conservation regulations will be completed in 2011, but will be more restrictive than state regs. Complete review and adopt recommendations for new stormwater by-law
Revised				Plymouth Carver Aquifer Advisory Committee conducted Audit of town regs. to protect aquifer (PCAAC & Horsley Witten Group) - 2007 Planning also revising Subdivision Rules & Regs. to improve regulatory mechanisms, enforcement Discussed combining erosion control and stormwater by-law into one document Discussion of enhancing fine schedules	Adopt recommendations Will include provisions to enhance/promote stormwater runoff controls, LID, open space, aquifer protection – should be completed in 2011 Continue to review regs. & adopt Erosion Control & Stormwater By-laws and/or Authority (Env. Partners, Town counsel) Include fine schedule in new By-laws
# 4.2	Site Plan Review	Planning, Conservation, Building, Zoning, BOH, Stormwater Working Group	Establish Phase II specific stormwater guidelines for review of site plans	Conducted in-house erosion control workshop for local officials & consultants Regularly require developers to obtain NPDES CGP for disturbance of 1 acre or more of land (Building, Planning & Conservation) 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	Conduct in-house stormwater workshop and include residents Create stormwater by-law to encompass this Create stormwater by-law to encompass all of this instead
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	Many discussions amongst Stormwater Working Group regarding construction site runoff control Educating developers on as needed basis of new 1 acre or more disturbance regulation and construction general permit requirements 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 ConCom regularly requires erosion controls on all sites and started requiring stormwater management reports/bonds during construction to have better oversight on construction sites Discussed development of stormwater by-law	Develop/gather educational materials for developers/citizens involved in building projects & include CGP in in-house stormwater workshops Develop guide on priority areas of town where further pollutant loading may threaten water supply or further degrade 303d's Working with other boards/departments to require same Have town official become a CPESC and require these as well as CPSWQ on construction sites over 1 acre in size Implement stormwater by-law
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 8 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 9
# 5.1	Regulatory Mechanisms	Selectmen, Town Administrator, Planning, Building, Conservation, DSTP	Establish and implement local stormwater management by-laws	Conservation still working on regs. to fully adopt MA DEP Stormwater Management Policy and Standards Review existing by-laws in-house related to stormwater management for needed revisions (Environmental Partners, JRWA)	Conservation regulations will be completed in 2011 Complete review & need recommendations for development of stormwater by-law
Revised				Plymouth Carver Aquifer Advisory Committee conducted Audit of town regs. to protect aquifer (PCAAC & Horsley Witten Group) - 2007 Planning also revising Subdivision Rules & Regs. to improve regulatory mechanisms, enforcement Discussed combining erosion control and stormwater by-law into one document Discussion of enhancing fine schedules	Adopt recommendations Will include provisions to enhance/promote stormwater runoff controls, LID, open space, aquifer protection – should be complete in 2010 Continue to review regs. & adopt Erosion Control & Stormwater By-laws and/or Authority (Env. Partners, Town counsel) Include fine schedule in new By-laws
# 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	Held in-house erosion and sediment control training Regularly require developers to obtain NPDES CGP for disturbance of 1 acre or more of land (Conservation) GIS mapping will improve electronic reviews	Conduct in-house stormwater training Develop stormwater by-law Continue work on town-wide GIS enhancements
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	Many discussions amongst Stormwater Working Group regarding construction site runoff control Educating developers on as needed basis of new 1 acre or more disturbance regulation and construction general permit requirements Continue to attach Operations & Maintenance Plans to Conservation Orders of Conditions and refer directly to the O & M Plan with specific conditions into perpetuity (as now required under new DEP stormwater policy) Continue requiring annual reports submitted to ConCom for stormwater maintenance post-construction	Implement Stormwater and Erosion Control By-Law with fee schedule and revise existing regulations Establish cash (instead of bond) surety with developers to create binding obligation to keep stormwater runoff onsite
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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 8 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 9
# 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	Held Erosion & Sediment Control Workshop in 2010 Adopted Green Communities Act, approved expanding wind turbine overlay district and solar PV district to public and private parcels & approved Stretch Code to enhance energy efficiencies in new building 2010	Hold more workshops for local officials
Revised					
# 6.2	Improved Maintenance	DSTP, Water, Building	Increase frequency of maintenance and implement better storage practices	Vacuum truck in use spring 2010 Annual street sweeping Annual cleaning of all town-owned water quality inlets	Vacuum truck was able to clean close to 300 structures in 2010-2011 permit term to greatly improve maintenance 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	Worked with MassDOT to improve stormwater discharges to Jones River at Elm Street Bridge Project Secured grant funds for stormwater assessment of Jones River & Kingston Bay (MassBays, Duxbury, JRWA)	(JRWA, Env. Partners Group, others) Work with project partners to complete stormwater sampling and develop preliminary remediation plans for water quality improvements
Revised					
#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	Improve municipal recycling program Work to reduce litter on

				DSTP's compost bins subsidized by EOE grant – 2 sold in 2010	roads (fining?) Continue to sell them in 2011
#6.6	Stormdrain Stenciling	Stormwater Working Group, DSTP's	Start and finish town-wide stenciling with educational doorhangers & newspaper articles	Was not successful in restarting stormdrain stenciling/education project in 2010 but discussed project with Scouts	Working with Eagle Scout and Girl Scout troop to restart stenciling project in 2011 May 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 8 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 9
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, but collaborated on grant proposal with Duxbury & JRWA to conduct stormwater assessment of Lower Jones & portion of Kingston Bay (MassBays Program)	Received MassBays funding and will commence assessment in 2011 (JRWA & Duxbury) Use website to post results of sampling
Revised					Working with DEP and JRWA to sample Lower Jones water quality for possible de-listing from Category 5

7.2	GIS Mapping	Stormwater Working Group	Complete mapping of stormdrain system and outfalls	Enhanced GIS capabilities through a grant which allowed hiring of a consultant to update GIS platform for general mapping of town-wide infrastructure including stormwater system (DHCD Peer-to-Peer Grant & Plymouth Planning Technician)	Continuing working with Plymouth Planning Technician and others to update Kingston Assessor's and parcel data as well as GIS platform/capabilities (Cartographic Associates, Inc.)
Revised					Find funding for GIS position

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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 2010	Some modeling in Lower Jones will be completed for development of BMP designs at 6 locations as part of MassBays Program Grant received April 2011
Revised					

Part IV. Summary of Information Collected and Analyzed

The following assessments were conducted in the year 2010-2011:

1. Board of Health beach sampling summer swim season 2010;
2. DMF/Harbormaster sanitary survey sampling of Kingston Bay;
3. 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 2010 over 2009 numbers and 2011 numbers look similar to 2010;
4. JRWA 6th Annual Herring Count held in 2010 saw more herring than in prior years and 2011 counts are on par with 2010;
5. JRWA & DMF American eel surveys;
6. JRWA & DMF completed Silver Lake habitat assessment including water quality information – final report forthcoming;

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 = \$ 7, 300 & 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)
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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	(#)	2,042 (in SSRC)
▪ material collected	(tons or gal)	Paper – 813 tons (SSRC) Textiles – 300 tons (SSRC) Books – 221 tons (SSRC)
School curricula implemented (http://www.wickedlocal.com/kingston/news/education/x126908902/Kingston-Elementary-and-Kingston-Intermediate-Schools-adopt-Go-Green-Initiative)	(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	(#)	1
Illicit connections removed	(#) (est. gpd)	1
% of population on sewer	(%)	26.0%
% of population on septic systems	(%)	74.0%

Construction

Number of construction starts (>1-acre)	(#)	1
Estimated percentage of construction starts adequately regulated for erosion and sediment control	(%)	95%
Site inspections completed	(# or %)	120
Tickets/Stop work orders issued	(# or %)	1/1
Fines collected	(# and \$)	\$ 300.00 (ticket not paid)
Complaints/concerns received from public	(#)	20

Post-Development Stormwater Management

Estimated percentage of development/redevelopment projects adequately regulated for post-construction stormwater control	(%)	95%
Site inspections completed	(# or %)	85
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	(#)	293
Storm drain cleaned	(LF or mi.)	2,000 LF
Qty. of screenings/debris removed from storm sewer infrastructure	(lbs. or tons)	328 tons
Disposal or use of sweepings (landfill, POTW, compost, recycle for sand, beneficial use, etc.)		Bourne landfill
Cost of screenings disposal	(\$)	\$ 9,846.00 @ \$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)	328 tons
Disposal of sweepings (landfill, POTW, compost, beneficial use, etc.)	(location)	Bourne landfill
Cost of sweepings disposal	(\$)	\$ 9,846.00
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 ₂	0
	% MgCl ₂	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