

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

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EPA NPDES Permit Number: **MAR041041**

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MaDEP Transmittal Number: **W-036193**

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**Annual Report Number**

**& Reporting Period:** **No. 3: March 06-March 07**

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

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

Contact Person: **Maureen Thomas**

Title: **Conservation Agent**

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#### 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 27, 2007**

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

During the March 2006 to March 2007 permit year, the Town of Kingston applied for a Clean Water State Revolving Fund (CWSRF) loan through the Massachusetts Water Pollution Abatement Trust (MWPAT) in order to meet the requirements of our NPDES Phase II permit. In December 2006, the Town of Kingston Stormwater Management Plan was listed on the Massachusetts Department of Environmental Protection (MassDEP) Final Intended Use Plan (IUP) as one of the projects chosen to be financed through the MWPAT and in April 2007 residents at the Annual Town Meeting voted favorable action to appropriate \$ 323,000.00 to fulfill our NPDES Phase II Stormwater Planning goals (See Warrant Article attached). We intend to complete our financial application for CWSRF financing by the October 2007 deadline in order to move forward with the loan. During the April 2007 Annual Town Meeting an appropriation of \$ 7,500.00 was also made to fund the cost of a spring 2007 flyover needed to initiate digital mapping of the storm drain system and other associated goals of permit compliance. The flyover has already been completed and planimetric mapping can now begin. Though the appropriations were technically made during our final permit term (5<sup>th</sup> year, March 2007 – March 2008), the planning for those appropriations was all done during the 4<sup>th</sup> year of the permit and these appropriations represent the most significant strides the Town of Kingston has made thus far in working toward compliance with our permit. The final year of the permit term will be a challenging one, but the Town of Kingston is committed to fulfilling all the requirements of our NPDES Phase II permit and our Stormwater Management Plan (Table 1.).

### ***Permit Term 2006-2007***

#### *Stormwater Planning and Stormwater Working Group*

As mentioned above, the Town of Kingston successfully submitted an application to the MWPAT for a CWSRF loan for Stormwater Planning and in order to accomplish this, the informal Stormwater Working Group met four times in the 2006-2007 permit term.

#### *Low Impact Development Project*

During the summer of 2006 the Town of Kingston Department of Streets, Trees and Parks (DSTP) and the Kingston Conservation Commission built two raingardens at the Kingston Intermediate School (KIS) as part of the initial phase of implementation of a 319 Low Impact Development (LID) grant to the MassBays Program sponsored by the North and South Rivers Watershed Association (NSRWA) from MassDEP to encourage the use of LID techniques. Implementation of other stormwater improvements for this project including another raingarden, infiltration areas, vegetated swales, level spreaders and extended detention areas will occur this coming summer and will be installed by the Kingston DSTP in cooperation with the Conservation Commission and KIS. The LID implementation at the KIS will be a great educational tool for teaching young and old alike about the proper handling of stormwater so as not to affect adjacent resource areas. The Jones River Watershed Association (JRWA), with cooperation from the school and the town, will be leading the effort to create educational signage, brochures, etc. Education of the general public and the students at the KIS LID implementation site will begin this spring and will include general stormwater education as well as the benefits of LID techniques in handling stormwater. We are hopeful that the LID demonstration site will be incorporated into the school curriculum and look forward to capitalizing on the fact that Annual/Fall Town Meetings are held at the school to educate the general public. The LID implementation site will continue to be one of several mechanisms through which the Town of Kingston can meet some of the public education/outreach and public involvement/participation goals of our permit.

#### *Stormdrain Stenciling*

During the 2006-2007 permit term, the Kingston Conservation Commission geared up for the start of a stormdrain stenciling project with a local Boy Scout who is planning to conduct the stenciling as his Eagle Scout Project beginning this spring. Stormdrain stenciling kits were created along with all the paperwork to go along with the project including a stormdrain stenciling guide to encourage a safe and effective methodology for the project. A training session will be given to the Boy Scouts by the Kingston Conservation Commission as soon as they are ready to begin the stenciling. The Kingston DSTP is also providing material support to the stormdrain stenciling project.

#### *Water Conservation*

The Town of Kingston Conservation Commission and the Town of Kingston Water Department teamed up with the Jones River Landing Environmental Heritage Center (the Landing, formerly the Jones River Marine Ecology Center) to apply for a Massachusetts Riverways (coordinated through River & Instream Flow Stewards (RIFLS) and Adopt-a-Stream Programs) Rain Barrel Demonstration grant to promote water conservation strategies to the general public. We were one of eight communities that were awarded the grant which included three rain barrels and marketing materials to be used for demonstrating conservation and wise use of water. The Town of Kingston installed their rain barrel at the Water Department building which is located directly

adjacent to the stressed Jones River basin. The Water Department uses the collected rainwater to irrigate the flowers planted on their property. The Landing, which received two rain barrels, is located on the banks of the Jones River as well and will be incorporating the rain barrels into their environmental education program once the renovation of their building is complete and downspouts are installed.

### *Greenscapes Program*

The Town of Kingston Water Department and the Jones River Watershed Association once again supported 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 Town of Kingston displays the Greenscapes poster in the front foyer of the Town Hall along with the newsletter and brochures. The newsletter is mailed to every household in Kingston and brochures are mailed in the tax bills as well as distributed throughout the town from various locations. The Kingston Conservation Commission regularly refers to the Greenscapes publications in public hearings and in the staff office to educate people about low impact development techniques/stormwater, environmentally friendly landscaping practices and water conservation.

### *South Coastal Watershed Action Plan*

During the 2006-2007 permit term, the JRWA and the Town of Kingston, along with many other organizations, agencies and municipalities, participated in drafting and commenting on the 5-Year South Coastal Watershed Action Plan (SCWAP) prepared by the Watershed Action Alliance (WAA) with funding from the Executive Office of Environmental Affairs (EOEA) to help identify goals to protect and restore water resources in the South Coastal Basin. We look forward to combining the goals of the SCWAP with those of our Stormwater Management Plan to achieve tangible results in enhancing, restoring and protecting the South Coastal Watershed (See SCWAP attached).

### *Water Quality Monitoring*

The JRWA, with support from various parties including the Kingston Conservation Commission, continues to conduct water quality monitoring on the Jones River thanks to the Massachusetts Coastal Zone Management (MACZM) grant awarded to them last year that allowed JRWA to purchase a water quality monitoring grant instrument for the establishment of a long-term, continuous monitoring site on the Jones River along with the establishment of baseline water quality data at various locations within the Jones River. During the 2006-2007 permit term, JRWA acquired a chlorophyll a attachment for their water quality monitoring probe and this addition has allowed them to increase the value of their data. Other parameters being sampled include dissolved oxygen, conductivity, pH, turbidity, temp and depth. While monthly transect sampling continued in 2006 and early 2007 at 19 different locations along the Jones River, JRWA and the Town of Kingston are planning on expanding the monitoring program during 2007 & 2008 to include nitrogen, phosphorus, fecal coliform and macroinvertebrates throughout the entire length of the Jones River as well as its tributaries. This expansion of the monitoring program will require involvement of many volunteer water quality monitors to successfully execute sampling efforts. The sampling and analysis of the data will assist the JRWA and the Town of Kingston in assessing overall water quality of the Jones River Watershed and focus attention on areas needing improvements/restoration in order to meet designated uses and JRWA goals of fish passage.

The Town of Kingston and the JRWA have been involved with the DEP/SMASST (School for Marine Science and Technology) Massachusetts Estuaries Project (MEP) for Nitrogen Management in the Duxbury-Kingston-Plymouth embayment since 2003. The first two years of monitoring for the project was originally funded through a Massachusetts 604b grant to the Town of Kingston and the Coastal Systems Program (CSP) who coordinated the monitoring efforts. Last year the Town of Kingston did not renew the 604b grant, but the JRWA still conducted the monitoring for the project in 2006 in order to continue the effort to establish a baseline of nitrogen distribution throughout the embayment system and the analysis was paid for by SMASST. SMASST is the technical and fiscal coordinator for the MEP project which is a collaboration between the towns of Duxbury, Kingston and Plymouth and they need another year of baseline data to complete their study. The JRWA is committed to conducting another summer of monitoring in 2007 and the Town of Kingston also feels it is important to complete the collection of baseline data to aid in the modeling of nitrogen throughout the system in order to better understand the need for restoration of habitat and water quality to designated standards.

The Jones River Landing Environmental Heritage Center was not awarded the Massachusetts Environmental Trust (MET) grant for which they applied in 2006, but they will be seeking other funding options for expand their monitoring efforts in 2007.

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

In 2006-2007 the JRWA continued to participate in the Massachusetts Riverways RIFLS project to measure streamflow in the Jones River and its tributaries through the reading of stream gauges for the establishment of flow rating curves. The JRWA hosted a RIFLS meeting in spring 2006 with staff from Riverways to reinvigorate the local efforts in monitoring streamflow and to discuss other issues facing the watershed including dam management to maintain baseflows as well as fish passage planning. The Kingston Conservation Agent regularly participates in reading a stream gauge at the headwater of the Jones River.

### *Fish Sampling and Counting*

In 2006-2007 the Division of Marine Fisheries continued to sample the Jones River as a permanent sampling site for the purpose of collecting information on the rainbow smelt populations 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. The cause of decline in the migratory fishery is a matter of ongoing research, but according to biologists studying the phenomenon a possible cause is the increase in development and sedimentation of waterbodies.

In the spring of 2006, JRWA organized a very successful herring count on the Jones River at the Elm Street dam where there is a fish ladder. Many 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. The count sensitized participating individuals to the species and the plight of migratory fish in general. The JRWA will continue to organize the fish count on an annual basis for the foreseeable future in order to assess the population while also educating the general public. The main mission of the JRWA is to restore fish passage throughout the watershed and the Conservation Commission is in support of this mission (See chart of Jones River influences, JRWA).

### *No Discharge Area*

In July 2006 the Towns of Kingston, Duxbury and Plymouth received official designation of their shared embayment as a No Discharge Area (NDA). The designation as a NDA prohibits the release of sewage to the embayment system and will compliment the land-based stormwater and sewer improvements being made and result in an overall enhancement of water quality.

The Town of Kingston Harbormaster building at the Ahdeenah (or the Town Landing) on the Jones River will be tying into the municipal sewer system this year along with other improvements to the site and the Conservation Commission is working with the Harbormaster to improve drainage by installing a raingarden to capture stormwater from one of the parking areas. The Conservation Commission, with the help of the Harbormaster and Waterfront Committee, hopes to use this popular gathering/boat launching place as an educational tool for LID and Greenscapes implementation.

### *Pet Waste Stations*

A Boy Scout has offered to install pet waste stations along with educational signage at 5 conservation land properties in Kingston. The pet waste stations were funded through the E.B. Sampson Trust, the sole purpose of which is to fund projects that would not ordinarily get funded through any other town budget. The pet waste stations will be installed in the spring of 2007 to educate the general public about the importance of cleaning up after pets to ensure water quality.

### *GIS Technology Upgrade and Expansion*

In 2006, the Town of Kingston Planning Department upgraded their outdated ArcView software and was able to acquire an additional license at low cost to expand the GIS capability to the Conservation Department. Though the software has been installed in both departments, training on the new software has yet to occur, but is scheduled for sometime in 2007. Expanding GIS to two town departments greatly strengthens our current digital mapping capabilities and will help with integrating the new GIS data generated from digitizing our stormwater system, outfalls, monitoring data and base maps when the GIS user interface is developed.

### *Department of Streets, Trees and Parks Annual Activities*

Cleaning of all town-owned water quality structures occurred in 2006 as it does on an annual basis. The DSTP was unable to secure funding for the purchase of a high pressure drainline machine and vactor trailer for catchbasin cleaning in 2006, but DSTP continues to seek other funding sources. A possible solution to the lack of equipment is to combine funds from the Sewer Department and the DSTP to purchase a vactor truck apparatus that could be shared between the two departments. The feasibility of this has yet to be explored, but it is an option that is currently being discussed informally between the two departments that are both in need of a vactor truck. Acquisition of some sort of apparatus for use in the regular cleaning of

catchbasins is crucial to minimizing impacts of stormwater on our wetlands and waterways.

Dry weather sampling did not occur during the 2006-2007 permit term, but is included with a broader monitoring plan in 2007-2008 once funding through the SRF loan is finalized.

Drainage improvements were planned during 2006-2007 permit term for Leigh Road in Rocky Nook where an outfall currently discharges untreated stormwater from a few streets to Kingston Bay. Upgrades to the drainage include installation of deep sump catchbasins and a water quality inlet prior to discharge to the Bay. This will greatly enhance the treatment of stormwater prior to discharge to the Bay in this location. The Notice of Intent for this proposal will be submitted to the Conservation Commission this week and work is expected to be conducted during the 2007-2008 permit term.

The DSTP sponsored a Household Hazardous Waste Day in spring 2006 and one is planned for spring 2007 as well. This is a service the DSTP provides to residents on an annual basis in partnership with the Town of Duxbury and the South Shore Recycling Cooperative (SSRC).

### ***Permit Term 2007-2008***

The Town of Kingston will be relying on our consultant, Environmental Partners Group, in the 2007-2008 permit term to assist us with the large-scale mapping effort that will start this spring with a flyover of the town. Field screening/monitoring of outfalls along with illicit discharge detection and elimination will also be a large part of the stormwater planning activities for 2007. All other aspects of the Stormwater Management Plan will also be slated for completion in the coming year. We recognize the challenge before us and we are prepared to meet the requirements of the permit to the best of our abilities in the timeframe remaining.

Work will also continue in 2007-2008 on various other projects including:

1. the LID implementation site;
2. stormdrain stenciling and other education projects including Greenscapes;
3. starting field screening of outfalls and expanding other water quality monitoring projects;
4. RIFLS and migratory fish sampling and counting;
5. drainage improvements along Kingston Bay and the Jones River;
6. GIS training;
7. partnering with Boy and Girl Scouts; and
8. annual DSTP activities.

Needless to say, we are expecting to achieve great strides in complying with our NPDES Phase II permit in 2007-2008.

### **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 4 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 5
# 1.1	Partnership with local watershed association	Conservation, Department of Streets, Trees & Parks (DSTP) Planning, BOS/Town Administrator	Meetings regarding storm water management, grant proposals, SRF loan, 5-Year South Coastal Action Plan and getting info. out to general public through newspaper, etc.	Looking to continue (without funding) water quality sampling beyond three-year baseline estuary monitoring program to add to existing data (JRWA, ConCom & public)  Coordinating more water quality sampling efforts, exchange of ideas on educational programs, funding sources, etc., with Jones River Watershed Association (JRWA, ConCom & public)	Continued cooperative efforts on monitoring with JRWA, developing educational materials/programs & obtaining funds for expanded sampling throughout watershed by coordinated grant & loan applications.  Herring count on Jones River in spring 2007 organized by JRWA with cooperation from Water Dept., Conservation and community at large.
Revised					
# 1.2	Storm drain stenciling	DSTP, Conservation, Boy Scouts, JRWA	Start and finish town-wide stenciling with educational campaign	Used funds from ATM 2005 appropriation to create stormdrain stenciling kits. Additional materials for stenciling supplied by the DSTP (volunteers provided by Boy Scouts)	Conduct stenciling and stormwater education (at same time) in cooperative effort among Conservation, DSTP, Boy Scouts and neighborhoods (including businesses, schools, etc.)
Revised					
# 1.3	Distribution of educational materials and offer of free workshops for residents through Greenscapes Program	Kingston Water Department, MassBays Program, NSRWA, JRWA and other federal, state, regional, private sponsors	Display and use these materials at Kingston Town Hall to encourage greenscapes in Kingston  Install a Greenscape on town property	Greenscapes brochures distributed in water/tax bills in 2007 and Greenscapes Reference Guide sent to all residents in Kingston (MassBays/NSRWA, JRWA and other state & regional agencies)	Implement a Greenscapes demonstration landscape at the Town Landing property for educational purposes.
Revised					
# 1.4	Pet waste station installation at local conservation lands	Conservation		New BMP (Boy Scouts)	Received funding through a town trust at ATM 2006 to install pet waste stations at conservation land to reduce adverse effects to water quality.  Purchase and install pet waste stations with educational signage regarding importance of keeping water clean (Boy Scouts)
Revised					

# 1.5	Educational seminars and mailings for residents, local engineers, developers, real estate agents on water quality, stormwater, conservation issues	Conservation	Plan contents of workshops and set dates  Put schedule of seminars in tax bills  Write newspaper articles to educate	New BMP	Hold workshops  Mail brochures  Call local newspaper to discuss beginning a regular column
Revised					
# 1.6	Annual clean-up days on town properties	Conservation, DSTP	Hold annual clean-up day	New BMP (Boy Scouts/public)	Work on coordinating more clean-up days with general public  Boy Scouts cleaning conservation lands first week of May 2007

## 2. Public Involvement and Participation

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 4 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 5
# 2.1	Partnership with local schools	Recreation and Selectmen  ConCom, DSTP  ConCom, DSTP, Recreation, Selectmen, BOH	Gray's Beach Restoration Project  Coordinating with KIS teachers and students to plant & maintain raingardens on property	Dogs were disallowed on beach property because of nuisance and pollution  Discussed plans for stormwater education for intermediate school students (CEI, NSRWA/MassBays, JRWA)	Need to conduct regular maintenance on bio-retention areas (SLRHS Horticulture Dept.)  Teach students about stormwater & LID techniques and have them help plant new raingardens (KIS, SLRHS)  Work on implementing environmentally sustainable landscape management practices on town-owned properties (schools)
Revised					

# 2.2	Partnership with watershed association	Planning, Harbormaster, Conservation	604(b) Estuary monitoring with combined town, watershed and volunteer efforts	Third year of two-year estuary monitoring completed (JRWA did without funding to supplement data, Plymouth & Duxbury)	Need one more year of monitoring for baseline (JRWA) and use analysis of 604(b) project data to educate public and target impairments (JRWA)
		Conservation	Use new monitoring equipment and programs to continue collection of water quality data	Increased sampling efforts with citizen volunteers (JRWA)	Continue to involve more of public in sampling with new water quality instrument and continue education of public (JRWA)
Revised		Water Dept., Conservation	Hold annual Herring counts	Succeeded in getting many volunteers to participate (JRWA)	Use data from herring counts in 2006 & 2007 to understand fish passage problems, educate and work toward solutions (JRWA, DMF)
# 2.3	Storm drain stenciling	Highway, Conservation, Boy/Girl Scouts	Organizing neighborhoods/volunteers to stencil storm drains	Storm drain stencils and other supplies for kits purchased through the Conservation and Highway Dept. budgets as well as ATM 2005 appropriation	Storm drain stenciling program begins in spring 2007 starting with areas near priority water bodies. Training and education provided.
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	Informal stormwater management meetings with appropriate town officials (JRWA & occasionally other agencies)	Formal Stormwater Management Task Force established with expanded involvement to include more town boards and citizens at large
Revised					Use SRF application process to educate further and help to form formal group
# 2.5	Household Hazardous Waste Collection and Recycling Day	DSTP and Town of Duxbury	Hold annual collection days	Successfully held collection day that was well attended (SSRC)	Hold collection days for longer period or bi-annually
# 2.6	Educational seminars and mailings for residents, local engineers, developers, real estate agents on water quality, stormwater, conservation issues	Conservation	Plan contents of workshops and set dates  Get bulk mail account to do annual mailings	New BMP	Hold workshops  Mail brochures

# 2.7	Annual clean-up days on town properties	Conservation, DSTP	Hold annual clean-up day	New BMP	Work on coordinating more clean-up events with general public  Boy Scouts cleaning conservation lands first week of May 2007
# 2.8	Form "Friends of Conservation Land" group	Conservation and Open Space Committee	Hold regular clean-up days and watch group to reduce vandalism and littering of town conservation land	New BMP	Advertise in newspaper for volunteers  Boy Scouts cleaning conservation lands first week of May 2007 – need to expand upon this for regular inspection and maintenance

### 3. Illicit Discharge Detection and Elimination

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 4 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 5
# 3.1 Revised	Catch basin/outfall and sewer mapping to receiving waters	Planning, DSTP, Conservation	Mapping hotspots that are suspected to carry high pollutant loads	Orthophotos manually marked with hotspots  Got ATM approval of SRF application to begin mapping and final implementation on stormwater plan	Continue work with Environmental Partners to complete digital mapping, monitoring, illicit discharge removal, public education, stormwater bylaw and all portions of the stormwater plan  Organize & educate public/volunteers for sampling of newly digitized outfalls  Establish hotline to report discharges  Work with MassHighway to eliminate Route 3 and 3A untreated discharges to Jones and Bay
# 3.2 Revised	Sewering of densely developed areas and environmentally sensitive areas of town to reduce septic influence on water quality	Sewer Commission	Start Phase II Sewer Project and progress to completion	Phase II sewer begun in fall 2005 and scheduled for completion in 2007  Obtained copy of preliminary digitized sewer and drain lines in areas of Phase I and Phase II sewer for baseline mapping of outfalls (Sewer)	Planning for sewer plant expansion – will occur in approx. 2 years  Expand upon preliminary digital maps with SRF funds to comprehensively digitize underground infrastructure and outfalls (Env. Partners Group)
# 3.3 Revised	Hazardous Waste Collection and Recycling Program	DSTP	Hazardous Waste Collection Days	Annual collection of hazardous waste (in cooperation with Duxbury) is increased for residents by allowing residents and businesses to attend other town's collections via reciprocal arrangement (South Shore Recycling Cooperative - SSRC)  Recycling and hazardous waste brochures mailed (SSRC)	Encourage more recycling in more municipal buildings  Work on holding more hazardous waste collection days  Town Transfer Station slated for future improvements including recycling with new 40R development – date to be determined
# 3.4 Revised	Storm drain stenciling	DSTP, Conservation	Adopt a Storm Drain	Discussion of including this in storm drain stenciling efforts	Neighborhood representatives to monitor storm drains for illicit discharges
# 3.5	Water Quality Monitoring	Harbormaster, Planning, Conservation, Highway, Water, Stormwater Working Group	Continue volunteer monitoring program and expand throughout watershed	Continue water quality monitoring (JRWA with support of Conservation)  Continue work on MEP with Duxbury & Plymouth (DEP & SMAST)	Get more of community involved in sampling program  Obtain additional funding for equipment to expand monitoring program (JRWA)  Obtain one more year of monitoring data
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#### 4. Construction Site Stormwater Runoff Control

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 4 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 5
# 4.1	Regulatory Mechanisms	Selectmen, Planning, Building, Conservation, DSTP	Establish and implement local stormwater management by-laws and/or stormwater authority to increase construction runoff controls in design criteria	Conservation working on regs. to fully adopt MA DEP Stormwater Management Policy and Standards  Review existing by-laws related to stormwater management for needed revisions (CEI and Environmental Partners)	Conservation currently revising regulations – will be completed in 2007  Continue to review regs. & adopt Stormwater By-laws and/or Authority (SRF-Env. Partners, Town counsel)
Revised				All applicable rules, regulations and bylaws were reviewed and revisions suggested to better encourage use of LID techniques to better control stormwater runoff (MassBays/NSRWA & CEI)	Adopt recommendations of CEI to make by-laws, rules, regs. more suitable to encouraging use of LID techniques for less site disturbance and less potential for erosion
# 4.2	Site Plan Review	Planning, Conservation, Building, Zoning, BOH	Establish Phase II specific stormwater guidelines for review of site plans	LID Workshop Planning for municipal officials and local developers held in 2005  Presentation made to Planning on revision suggestions to better incorporate LID in subdivision designs	Planning considering more LID subdivisions and other local boards encouraging its use  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)
Revised				Discussion of in house erosion and sediment control training  Involvement in Low Impact Development (LID) with MassBays/NSRWA & JRWA and other South Shore towns to educate developers and town officials on implementation of LID  Regularly require developers to obtain NPDES CGP for disturbance of 1 acre or more of land (Conservation)	Do in-house stormwater/erosion control workshop  LID grant involves a retrofit of town-owned stormwater system for educational purposes and enhanced treatment – implementation continues in 2007  Working on educating other boards to follow suit (Conservation)

# 4.3	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>Educating developers on as needed basis of new 1 acre or more disturbance regulation and construction general permit requirements</p> <p>Regularly condition Conservation 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>
Revised				<p>Regularly require erosion controls on all sites and started requiring stormwater management reports/bonds during construction to have better oversight on construction sites (Conservation)</p> <p>Involvement in Low Impact Development (LID) with MassBays/NSRWA &amp; JRWA and other South Shore towns to educate developers and town officials on implementation of LID</p> <p>Pursuing enforcement of negligent developers</p>	<p>Working with other boards/departments to require same (Conservation)</p> <p>Seek grant application (JRWA with town support) to start Conservation and Stewardship Program of Jones River – if received will be able to extrapolate to other areas of town to better manage construction around water resources</p> <p>Ongoing enforcement in 2007</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 4 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 5
# 5.1	Regulatory Mechanisms	Selectmen, Town Administrator, Planning, Building, Conservation, DSTP	Establish and implement local stormwater management by-laws	Adoption of MA DEP Stormwater Management Policy and Standards by Planning and Conservation  Reviewing existing by-laws relating to stormwater management (SRF – Env. Partners Group)	Adopt Stormwater By-laws (Env. Partners, Town counsel)  Revise existing regulations to address stormwater more comprehensively if stormwater bylaws/authority are not received favorably
Revised					
# 5.2	Site Plan Review	Planning, Conservation, Building, Zoning, BOH, DSTP	Establish Phase II - specific stormwater guidelines and low impact development guidelines for review of site plans	Held LID workshops at Kingston Town Hall as part of 319 LID grant obtained by MassBays/NSRWA to educate South Shore developers, engineers, municipal officials, etc.  Have worked with developers to install LID stormwater management techniques	Develop guidelines to be read, understood and signed by all homeowners/developers doing construction on all size projects  LID implementation project at KIS will assist in educating developers to use LID techniques that require less long-term maintenance and cost less to maintain in the future
Revised					Continue to work with developers/public to use LID to be used as future examples  Write educational articles for newspaper

# 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>Educating developers on as needed basis of new 1 acre or more disturbance regulation and construction general permit requirements</p> <p>Began 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</p> <p>Worked with DEP enforcement on stormwater violations/lack of CGP on construction sites</p> <p>Started requiring annual reports submitted to ConsCom for stormwater maintenance post-construction</p>	<p>Develop/gather educational materials for developers/citizens involved in building projects</p> <p>Develop guide on priority areas of town where further pollutant loading may threaten water supply</p> <p>Establish bond surety with developers to create binding obligation to keep stormwater runoff onsite</p>
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**6. Pollution Prevention and Good Housekeeping in Municipal Operations**

<b>BMP ID #</b>	<b>BMP Description</b>	<b>Responsible Dept./Person Name</b>	<b>Measurable Goal(s)</b>	<b>Progress on Goal(s) – Permit Year 4</b> (Reliance on non-municipal partners indicated, if any)	<b>Planned Activities – Permit Year 5</b>
# 6.1	Employee Training	Selectmen, DSTP, Water, Building, Planning, Conservation	Establish pollution prevention plan and good housekeeping procedures & schedules	DSTP employees attended NPDES Phase II training in fall 2004	Educate municipal employees on car oil leaks and other things that contribute to polluted runoff  Town of Kingston has improved municipal recycling program
Revised					
# 6.2	Improved Maintenance	DSTP, Water, Building	Increase frequency of maintenance and implement better storage practices	No vacuum truck purchased in fourth permit year  Sediment stockpiles at Highway barn removed in 2005  Annual street sweeping  Annual cleaning of all town-owned water quality inlets	Plans to purchase vector truck for sewer and drainlines in 2007  Increase frequency of street sweeping, maintenance of catchbasins and infiltration galleys
Revised					
# 6.3	Improved stormwater treatment	DSTP, Water, Conservation, Planning	Upgrade current systems in sensitive areas	Route 27 improvements planned and permitted  Planned drainage improvements in Rocky Nook (Leigh Road) and discharge to Kingston Bay	Continue to seek funding through grant opportunities for improving stormwater treatment in sensitive areas of town.  Work on Route 27 to start in 2007  Work in Nook (Leigh Rd.) in 2007
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

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

<b>BMP ID #</b>	<b>BMP Description</b>	<b>Responsible Dept./Person Name</b>	<b>Measurable Goal(s)</b>	<b>Progress on Goal(s) – Permit Year 4</b> (Reliance on non-municipal partners indicated, if any)	<b>Planned Activities – Permit Year 5</b>
7.1	Target 303d waterbodies	Conservation, Planning, DSTP	Focus sampling on 303d impaired waterbodies to work toward removing them from 303d list	Commented on the South Coastal and Taunton Watershed TMDL's (JRWA)	Continue to work on collecting water quality monitoring data for MEP project, etc. and seeking funding for more equipment to provide data for TMDL allocations (JRWA, Environmental Partners, SMAST)
Revised					

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

The following assessments were conducted in the fourth year of the NPDES Phase II permit year:

1. Third year of collecting water quality data in Jones River at long-term monitoring station in late winter 2006 as part of CZM grant – continuous monitoring for depth, temperature, salinity, DO (mg/L), DO sat (%), and pH in permanent location in Jones River as well as monthly monitoring along 19 transects of the river (see attached Sampling and Analysis Plan (SAP));
2. Multi-year rainbow smelt fish study in Jones River (DMF & JRWA– started in 2004 and ongoing as permanent sampling site)(see attached report by Brad Chase of DMF);
3. Flyover occurred in spring of 2007 and now that this is complete, we can begin the digital mapping of the town.

With a grant from CZM, the JRWA purchased a multi-parameter water quality monitoring instrument to do sampling of the Jones River at a permanent, long-term station as well as along 19 transects of the river. The JRWA is funding the actual sampling and analysis of the data (see attached preliminary data). The JRWA hopes to be the recipient of further grant awards to purchase additional water quality monitoring equipment to expand on the current program. In addition, the JRWA would like to involve more of the public in the water quality monitoring effort once a system is established to conduct the monitoring and calibrating of the instrument.

The sampling of rainbow smelt in the Jones River (and three other rivers in Massachusetts) by the Division of Marine Fisheries (DMF through grant from NOAA) started in permit year 2003 – 2004 and will continue as a permanent sampling location for DMF for the purpose of developing population indices for the long-term goal of restoring smelt populations state-wide. Sampling results during the first year of the project showed that the Jones River smelt has decreased dramatically compared to sampling results from 20 – 25 years ago. DMF attributes the decline to a variety of things including acid deposition, sedimentation, eutrophication and overall degradation of water quality. Catches of smelt in 2005 increased substantially due, in part, to modifications to the net. Preliminary data from 2006 showed that catches declined from 2005, but the final report is not yet completed. The final 2004 report of findings is attached.

The main mission of the JRWA is to restore fish passage along the length of the Jones River and to that end, the JRWA is working to restore fish ladders on various reaches of the river for the purpose of restoring flow and fish migration to the watershed. The Town Of Kingston hopes to continue to work closely with JRWA to assist them in their mission and to improve the general health of the river and Kingston Bay.

Further sampling efforts with JRWA in the watershed are planned for FY08 pending funding availability. The most important sampling will be coordinated by Environmental Partners Group for the Town of Kingston to work toward eliminating illicit discharges as well as improving/removing existing & legal discharges. We look forward to accomplishing all of our NPDES Phase II permit goals in 2007-2008.

**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	(\$)	Allocation of \$ 7,500 (flyover) & \$ 323,000. Allocation of \$ 2,500.00 from 2005 being spent for stormdrain stenciling project

**Education, Involvement, and Training**

Estimated number of residents reached by education program(s)	(# or %)	?
Stormwater management committee established	(y/n)	Informal
Stream teams established or supported	(# or y/n)	Working on this w/ JRWA
Shoreline clean-up participation or quantity of shoreline miles cleaned	(y/n or mi.)	n
Household Hazardous Waste Collection Days		
▪ days sponsored	(#)	13 (in SSRC – 1 for Kingston)
▪ community participation	(#)	2,622 (in SSRC)
▪ material collected	(tons or gal)	Construction debris – 2,533 tons (SSRC) Mattresses – 1,698 (SSRC) Mercury – 100 lbs (SSRC) Paper – 406 tons (SSRC) Textiles – 246 tons (SSRC) Books – set up book collection at transfer station - ? lbs
School curricula implemented	(y/n)	?

**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	(%)	Most
Estimated or actual number of outfalls	(#)	?
System-Wide mapping complete	(%)	?
Mapping method(s)		
▪ Paper/Mylar	(%)	Most
▪ CADD	(%)	0
▪ GIS	(%)	0
Outfalls inspected/screened	(# or %)	0
Illicit discharges identified	(#)	Most
Illicit connections removed	(# ) (est. gpd)	0
% of population on sewer	(%)	?
% of population on septic systems	(%)	?

**Construction**

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

**Post-Development Stormwater Management**

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

**Operations and Maintenance**

Average frequency of catch basin cleaning (non-commercial/non-arterial streets)	(times/yr)	0
Average frequency of catch basin cleaning (commercial/arterial or other critical streets)	(times/yr)	0
Total number of structures cleaned	(#)	10 (water quality structures)
Storm drain cleaned	(LF or mi.)	0
Qty. of screenings/debris removed from storm sewer infrastructure	(lbs. or tons)	?
Disposal or use of sweepings (landfill, POTW, compost, recycle for sand, beneficial use, etc.)		0
Cost of screenings disposal	(\$)	0

Average frequency of street sweeping (non-commercial/non-arterial streets)	(times/yr)	2
Average frequency of street sweeping (commercial/arterial or other critical streets)	(times/yr)	2
Qty. of sand/debris collected by sweeping	(lbs. or tons)	?
Disposal of sweepings (landfill, POTW, compost, beneficial use, etc.)	(location)	?
Cost of sweepings disposal	(\$)	?
Vacuum street sweepers purchased/leased	(#)	Leased when needed (once or twice per year)
Vacuum street sweepers specified in contracts	(y/n)	?

Reduction in application on public land of: ("N/A" = never used; "100%" = elimination)		
▪ Fertilizers	(lbs. or %)	0
▪ Herbicides	(lbs. or %)	0
▪ Pesticides	(lbs. or %)	0

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

\* As the Conservation Agent in the Town of Kingston, I have very little time to work on the NPDES Phase II Annual Report and the Stormwater Management Plan. The informal Stormwater Working Group consists of department heads that also have very little time to work on the SWMP. We are doing the best we can with the resources we have and now that the Town of Kingston has applied for an SRF loan and received preliminary approval, we now have the ability to pay a consultant to help us in complying with our permit. This will allow us to more effectively and accurately complete Part V. of this report. I do not believe the various departments (DSTP, Sewer, BOH, etc.) would have this information readily available and it would likely take them some time to develop the estimates of percentages, numbers, etc. As a result, I

have filled out Part V. to the best of my abilities with the limited amount of knowledge I currently have on these subjects. I look forward with great anticipation to having ample resources to more effectively comply with our NPDES permit.

Sincerely,

**Maureen Thomas**  
**Conservation Agent**