KINGSTON CONSERVATION COMMISSION

26 Evergreen Street, Kingston, MA 02364

April 29, 2005

U.S. Environmental Protection Agency
Water Technical Unit
P.O. Box 8127
Boston, MA 02114

RE: NPDES Phase II Small MS4 General Permit
Town of Kingston, Massachusetts Annual Report
EPA NPDES Permit Number: MAR041041
MADEP Transmittal Number : W-036193

To Whom It May Concern:

The Town of Kingston, Massachusetts is pleased to provide you with the National Pollutant Discharge Elimination System (NPDES) Phase II Small MS4 General Permit Annual Report for the period from March 2004 to March 2005. The town has developed a Stormwater Management Plan and is working to implement the plan in accordance with regulatory requirements and as available funding allows.

Please feel free to contact me with any questions at 781-585-0537.

Sincerely,

Maureen Thomas

Maureen Thomas
Conservation Agent

TELEPHONE: 781-585-0537 FAX: 781-585-0543

Municipality/Organization: Town of Kingston, MA

EPA NPDES Permit Number: MAR041041

MaDEP Transmittal Number: W-036193

Annual Report Number
& Reporting Period: No. 1: March 04-March 05

NPDES PII Small MS4 General Permit Annual Report

Part I. General Information

Contact Person: Maureen Thomas Title: Conservation Agent

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

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 29, 2005

Part II. Self-Assessment

During the March 2004 to March 2005 permit year, the Town of Kingston has steadily worked toward achieving the target activities for the second year of Phase II. We have successfully partnered with the Jones River Watershed Association, the North and South Rivers Watershed Association (NSRWA) the Silver Lake Conservation, Horticulture and Science Programs at the high school, as well as local citizens to incorporate the public education, outreach and participation aspects of the NPDES Phase II permit. We have completed detection and mapping our illicit discharges in order to assess, treat and eventually eliminate their influence on the water quality of streams, lakes, ponds and the bay. We are currently seeking funding to establish a monitoring program to sample the illicit discharges for a variety of parameters in order to determine appropriate treatment for such outfalls to surface water. The Town has also been working to develop and implement local stormwater controls to reduce construction runoff to water resources. In addition, efforts are continuously being made to improve maintenance and prevent pollution at municipal facilities. In the coming permit year the Town of Kingston will attempt to pinpoint illicit discharges to surface waters with GPS in order to upgrade our maps to GIS overlays. In addition, we hope to formalize what has been an informal stormwater working group with individual departments contributing funds toward compliance into an official town committee with an appropriated budget. Though the Town of Kingston has worked hard in the second permit year to comply with the NPDES Phase II Stormwater Permit, we hope to enhance our efforts in permit year two with additional funding from grant opportunities and the voters of Kingston at a special town meeting in the fall of 2005.

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 2 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 3
# 1.1	Partnership with local watershed association	Conservation, Highway, Planning	Meetings regarding storm water management and grant proposals	Kingston received 604B grant for two-year estuary monitoring effort in which volunteers were trained to conduct sampling (JRWA) Coordinating more water quality sampling efforts, exchange of ideas on educational programs, funding sources, etc., with Jones River Watershed Association (JRWA)	Continued cooperative efforts on future sampling, developing educational materials/programs & obtaining funding through coordinated grant applications
Revised					
# 1.2	Storm drain stenciling	Highway, Conservation, JRWA	Start and finish town-wide stenciling with educational campaign	Storm drain stencils purchased with Fiscal Year '05 Conservation Commission budget. Additional materials for conducting the stenciling supplied by the Highway Department with planning assistance and volunteers provided by JRWA	Conduct stenciling and stormwater education (at same time) in cooperative effort among Conservation, Highway, JRWA 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, NSRWA and other federal, state, regional, private sponsors		Greenscapes brochures distributed in water/tax bills in early 2005 and Greenscapes Reference Guide sent to all residents in Kingston (NSRWA and other regional agencies)	Implement a Greenscapes demonstration landscape on a visible town-owned property for educational purposes
Revised					
Revised					
Revised					

2. Public Involvement and Participation

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 2 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 3
# 2.1	Partnership with local schools	Recreation and Conservation	Gray's Beach Restoration Project	Continued planting of bio-retention areas on Gray's Beach (Silver Lake High School Conservation and Horticulture Program)	Finishing up planting of a couple of bio-retention areas not finished last year Work on implementing environmentally sustainable landscape management practices
Revised					
# 2.2	Partnership with watershed association	Planning, Harbormaster, Conservation	Estuary monitoring with combined town, watershed and volunteer efforts	Second year of two-year estuary monitoring complete (JRWA) Discussion of increased sampling efforts with citizen volunteers (JRWA)	Second year of two-year monitoring of estuary planned Create expanded citizen monitoring program Obtain funding for analysis
Revised					
# 2.3	Storm drain stenciling	Highway, Conservation, JRWA	Organizing neighborhoods/volunteers to stencil storm drains	Storm drain stencils and other supplies purchased through the Conservation and Highway Dept. budgets	Organization of volunteers and implementation of storm drain stenciling program with educational program starting with areas near priority water bodies.
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	Formal Stormwater Management Task Force established with expanded involvement to include more town boards and citizens at large Fall 2004 - requested committee be formed, need to do more work on this to get it actualized
Revised					

3. Illicit Discharge Detection and Elimination

ID #		Dept./Person Name	Goal(s)	Permit Year 2 (Reliance on non-municipal partners indicated, if any)	Permit Year 3
# 3.1 Revised	Catch basin/outfall and sewer mapping to receiving waters	Planning, Highway, Conservation	Mapping hotspots that are suspected to carry high pollutant loads	Orthophotos manually marked with hotspots Smoke testing of storm drains on Jones River performed by JRWA, CZM & DMF Shoreline survey of bay (JRWA) Mapping of Category 3 outfall pipes (See attached) (JRWA & Geosyntec)	Use inter-department funds to obtain GPS for mapping of outfalls Establish contact with MassHighway to share information on mapping of state drainage under transportation MS4 permit Organize & educate public/ volunteers to locate illicit discharges Establish hotline to report discharges
# 3.2 Revised	Sewering of densely developed areas of town to reduce septic influence on water quality	Sewer Commission	Start Phase II Sewer Project and progress to completion	Completion of Phase I Sewer Project (Rocky Nook, Kingston Shores, Areas around Jones River) and start of Phase II permitting (Main Street, 3A/ downtown, shopping areas, Zone II area, etc.)	Start implementation of Phase II Sewer project and explore expanding capacity of sewer plant which will reach maximum capacity at end of Phase II
# 3.3 Revised	Hazardous Waste Collection and Recycling Program	Highway	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) More recycling containers available in town hall	Encourage more recycling in more municipal buildings
# 3.4 Revised	Storm drain stenciling	Highway, 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	Start monitoring program to establish focus areas	Coordinating efforts with JRWA to do more monitoring through grant opportunities 604B monitoring of the bay and estuary completed (DMF, UMass Dartmouth)	Obtain funding for expanding monitoring program Final 604B Report due in June 2005 with water quality trends, flow and nutrient loads, etc.

4. Construction Site Stormwater Runoff Control

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 2 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 3
# 4.1 Revised	Regulatory Mechanisms	Selectmen, Town Administrator, Planning, Building, Conservation, Highway	Establish and implement local stormwater management by-laws to increase construction runoff controls in design criteria	Adoption of MA DEP Stormwater Management Policy and Standards by Planning and Conservation Reviewing existing by-laws related to stormwater management	Adopt Stormwater By-laws(Town counsel) Reviewing all applicable town by-laws related to development to encourage Low Impact Development (LID) techniques to encourage less stormwater impacts on surface waters (NSRWA, CEI & other agencies) Adopt recommendations of CEI to make by-laws, rules, regs. more suitable to encouraging use of LID techniques
# 4.2 Revised	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 Discussion of in house erosion and sediment control training Involvement in Low Impact Development (LID) with NSRWA and other South Shore towns to educate developers and town officials on implementation of LID	Workshops scheduled for fall 2005 Schedule erosion control/stormwater workshop with NRCS, etc. Develop guidelines to be read, understood and signed by all homeowners/developers doing construction on all size projects LID grant involves a retrofit of town-owned stormwater system for educational purposes and enhanced treatment

# 4.3 Revised	Enforcement	Building, Planning, Zoning, BOH, Highway, Conservation	Establish new site inspection forms, new procedures and fee/fine schedules for incorporating requirements of Phase II	Educating developers on as needed basis of new 1 acre or more disturbance regulation and construction general permit requirements Started conditioning 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 Involvement in Low Impact Development (LID) with NSRWA and other South Shore towns to educate developers and town officials on implementation of LID	Develop/gather educational materials for developers/citizens involved in building projects Develop guide on priority areas of town where further pollutant loading may threaten water supply or further degrade 303d's Natural Resource Management Plan discussions between Conservation and JRWA for management of areas around 303d's

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 2 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 3
# 5.1	Regulatory Mechanisms	Selectmen, Town Administrator, Planning, Building, Conservation, Highway	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 Attended Stormwater By-law workshop in winter 2004 to learn about draft by-laws created for towns of Plymouth, Duxbury & Marshfield	Adopt Stormwater By-laws (Town counsel)
Revised					
# 5.2	Site Plan Review	Planning, Conservation, Building, Zoning, BOH	Establish Phase II - specific stormwater guidelines and low impact development guidelines for review of site plans	Attended workshop to learn more about adopting stormwater bylaws Became involved in LID grant with other South Shore towns that will involve bylaw, rule, regulation review and recommended changes. The grant also include educational workshops on LID for municipal officials and local developers (NSRWA)	Hold LID Workshops in fall 2005 and encourage attendance at other workshops/classes on stormwater and LID Develop guidelines to be read, understood and signed by all homeowners/developers doing construction on all size projects
Revised					

# 5.3	Enforcement	Building, Planning, Zoning, BOH, Highway, Conservation	Establish new site inspection forms, new procedures and fee/fine schedules for incorporating requirements of Phase II	Educating developers on as needed basis of new 1 acre or more disturbance regulation and construction general permit requirements Including maintenance schedules for stormwater treatment systems in Conservation Orders of Conditions	Develop/gather educational materials for developers/citizens involved in building projects Develop guide on priority areas of town where further pollutant loading may threaten water supply Establish bond surety with developers to create binding obligation to keep stormwater runoff onsite

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 2 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year 3
# 6.1	Employee Training	Selectmen, Highway, Water, Building, Planning, Conservation	Establish pollution prevention plan and good housekeeping procedures & schedules	Highway Department 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	Highway, Water, Building	Increase frequency of maintenance and implement better storage practices	Highway request for vacuum truck to clean out catchbasins through Capital Planning Committee and town meeting approval has been abandoned and other avenues being explored to complete purchase Sediment stockpiles at Highway barn being removed	Purchase vacuum truck Increase frequency of street sweeping, maintenance of catchbasins and infiltration galleys Address vehicle maintenance, fuel tanks
Revised					
# 6.3	Improved stormwater treatment	Highway, Water, Conservation, Planning		Discussed grant opportunities for implementing stormwater treatment systems in various sections of town (with JRWA)	Improve street drainage and treatment in Rocky Nook and increase the number or stormwater treatment systems on town roads and properties. Working to upgrade Route 27 drainage infrastructure with a road widening and sidewalk project
Revised					

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 2** (Reliance on non-municipal partners indicated, if any)	**Planned Activities – Permit Year 3**
7.1	Target 303d waterbodies	Conservation, Planning, Highway	Focus sampling on 303d impaired waterbodies to work toward removing them from 303d list	Established list of 303d water bodies in all districts (JRWA)	Develop TMDL for the Jones River and Kingston Bay
Revised					

Part IV. Summary of Information Collected and Analyzed

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

1. Current monitoring of the bay (see attached) and estuary (Town Of Kingston, JRWA, DMF & UMass Dartmouth); and
2. Multi-year rainbow smelt fish study in Jones River (JRWA & DMF – started in 2004 and ongoing as permanent sampling site).

The estuary monitoring project will assess and model nutrient loading of the bay in order to help guide land use practices. Results of the two-year estuary project will be submitted to the Town of Kingston in 2005 and will include a discussion of water quality trends, seasonal trends, flow and nutrient loads.

The sampling of rainbow smelt in the Jones River (and three other rivers in Massachusetts) by the Division of Marine Fisheries (DMF) 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. 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. Results for this the 2004 sampling round are enclosed.

Further sampling efforts are planned for FY06 pending funding availability.

Part V. Program Outputs & Accomplishments (OPTIONAL)

Programmatic

Stormwater management position created/staffed	(y/n)	
Annual program budget/expenditures	($)	

Education, Involvement, and Training

Estimated number of residents reached by education program(s)	(# or %)	
Stormwater management committee established	(y/n)	
Stream teams established or supported	(# or y/n)	
Shoreline clean-up participation or quantity of shoreline miles cleaned	(y/n or mi.)	
Household Hazardous Waste Collection Days		
▪ days sponsored	(#)	
▪ community participation	(%)	
▪ material collected	(tons or gal)	
School curricula implemented	(y/n)	

Legal/Regulatory

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

▪ Erosion & Sediment Control				
▪ Post-Development Stormwater Management				

Mapping and Illicit Discharges

Outfall mapping complete	(%)	
Estimated or actual number of outfalls	(#)	
System-Wide mapping complete	(%)	
Mapping method(s)		
▪ Paper/Mylar	(%)	
▪ CADD	(%)	
▪ GIS	(%)	
Outfalls inspected/screened	(# or %)	
Illicit discharges identified	(#)	
Illicit connections removed	(#) (est. gpd)	
% 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)	
Average frequency of catch basin cleaning (commercial/arterial or other critical streets)	(times/yr)	
Total number of structures cleaned	(#)	
Storm drain cleaned	(LF or mi.)	
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.)		
Cost of screenings disposal	($)	

Average frequency of street sweeping (non-commercial/non-arterial streets)	(times/yr)	
Average frequency of street sweeping (commercial/arterial or other critical streets)	(times/yr)	
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	(#)	
Vacuum street sweepers specified in contracts	(y/n)	

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 % $CaCl_2$ % $MgCl_2$ % CMA % Kac % KCl % Sand	
Pre-wetting techniques utilized	(y/n)	

Manual control spreaders used	(y/n)	
Automatic or Zero-velocity spreaders used	(y/n)	
Estimated net reduction in typical year salt application	(lbs. or %)	
Salt pile(s) covered in storage shed(s)	(y/n)	
Storage shed(s) in design or under construction	(y/n)	