CONCORD PUBLIC WORKS

ENGINEERING DIVISION
133 KEYES ROAD
CONCORD, MASSACHUSETTS 01742-1601

JAMES SHURIS, P.E.
TOWN ENGINEER

TEL: 978-318-3210
FAX: 978-318-3245

October 12, 2005

OCT 17 2005

United States Environmental Protection Agency
Water Technical Unit
P.O. Box 8127
Boston, MA 02114

RE: EPA NPDES Permit Number MA041187

To whom it may concern:

Please find enclosed the Town of Concord's NPDES Phase II annual report for 2004 to 2005. If you have any questions regarding this report, please do not hesitate to contact me at (978) 318-3210, or by email at jwoodsmall@concordnet.org.

Very truly yours,

John R. Woodsmall, III, P.E.
Public Works Engineer

Enclosures

cc: William Edgerton, Director of Public Works
James Shuris, PE, Town Engineer
File

Printed on 30% post consumer recycled paper.

Municipality/Organization: Town of Concord, MA

EPA NPDES Permit Number: MA041187

MaDEP Transmittal Number: W-035280

Annual Report Number & Reporting Period: No. 2: March 04-March 05

NPDES PII Small MS4 General Permit Annual Report

Part I. General Information

Contact Person: John Woodsmall, P.E. Title: Public Works Engineer

Telephone #: (978) 318-3210 Email: jwoodsmall@concordnet.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: Christopher Whelan

Printed Name: Christopher Whelan

Title: Town Manager

Date: 10-11-05

Part II. Self-Assessment

The Town of Concord, Massachusetts, has completed the required self-assessment and has determined that our municipality is in compliance with all permit conditions, except for the following provisions:

Part II.F Annual report provided after May 1, 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	Stormwater information page on Town of Concord website.	Concord Public Works (CPW)	Creation of website in Fall 2004.	Website content mapped out. Design, programming, and activation of website delayed.	Complete design, programming of website and activate it in Winter 2005-2006.
Revised			Creation of website in Winter 2005-2006		
2	Provide annual stormwater informational bill inserts.	CPW	Annual bill inserts to Water and Sewer customers, to be mailed in Winter '04-'05.	No Progress.	Develop inserts, and distribute in Winter '05-'06.
Revised			Annual bill inserts to be mailed in Winter '05-'06.		
3	Drop-off/Swap-off recycling days.	CPW	Hold twice a year, every year.	Held in Spring and Fall, 2004.	Hold in Spring and Fall, 2005
4	Provide stormwater information to businesses.	CPW	Provide to businesses in conjunction with annual recycling information.	No Progress.	Develop and distribute in Winter '05-'06.
Revised			Provide to businesses in conjunction with annual recycling information beginning in Winter '05-'06.		
5	Provide informational brochures on recycling, household hazardous materials, composting, and water conservation.	CPW	Maintain at Town House, CPW Administration, and Department of Planning and Land Management (DPLM)	Always available.	Continue to display and make available.

6	Hold "Conservation Coffees", informational and idea exchange sessions regarding maintenance of environmental quality.	Natural Resources Commission (NRC)	Hold Monthly	Held Monthly	Continue to hold monthly.
7	Provide informational brochures on open spaces and water ways.	NRC	Maintain at Town House and NRC office.	Always maintained.	Continue to maintain and make available.
8	Maintain affiliations with various public conservation groups	NRC	Maintain affiliations.	Always maintained.	Continue to maintain.

1a. Additions

None.

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
9	Provide logistical support to river, etc. clean-up days.	CPW/NRC	Provide support once a year, on average.	Provided support to Green Team clean up day.	Continue to provide support.
10	Tag catch basins draining to Mill Brook.	NRC	Tag 100% of known catch basins to Mill Brook by end of year 1.	Monitoring, mapping, and tagging of basins continued by the Mill Brook Task Force of the NRC.	Continue the monitoring, mapping and tagging. 100 tags are hoped to be installed. Begin Adopt-a-Basin program with abutters.
Revised			Tag all known catch basins as they are discovered.		

2a. Additions

None.

3. Illicit Discharge Detection and Elimination

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
11	Create GIS based Drainage Map of entire Town.	CPW	Create by year 2, maintain and update as needed.	All work on drainage system has been documented.	The GIS inventory will be updated using the documentation provided by CPW work crews.
12	Town of Concord Public Storm Drainage Connection Policy	CPW	In place; Enforce at all times.	Continued to enforce policy. 6 connections were discovered, and all are in the process of complying with the policy.	Enforcement to continue. Complete policy compliance of the outstanding of the three instances.
13	Develop system to locate priority areas of illicit conn.'s	CPW	System in place by end of year 2.	No Progress.	Discuss, plan, and implement simultaneously with BMP #14.
Revised			System in place by end of year 3.		
14	Develop proceedure for tracing source of illicit conn.'s	CPW	System in place by end of year 3.	Results of smoke and dye testing performed in commercial areas of downtown Concord did not show any drainage cross connections.	None, dependent upon completion of BMP 13.
15	Develop procedure for removing source of illicit/illegal discharges.	CPW	System in place by end of year 4.	No Progress	None, dependent upon completion of BMP 14.
16	Develop procedure for evaluating the progress of the programs.	CPW	System in place by end of year 4.	No Progress	None, dependent upon completion of BMP 15
17	Implement BMPs 13-16.	CPW	Begin implementation by Fall 2004.	No Progress	Begin implementation of BMP's #'s 13 & 14.
Revised			Begin implementation by Fall 2005.		
18	Develop Wastewater Master Plan.	CPW	Complete creation by end of year 1.	Construction of Phase I began in West Concord.	Complete construction in West Concord, begin and complete construction in East Concord.

3a. Additions

None.

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
19	All projects required to file MA DEP Stormwater Mgmt. form.	NRC	100% Compliance for all work within Wetland Districts.	All regulated work complies with this practice.	Continue, with no changes.
20	Sediment and Erosion Control by-law for all construction.	Planning Division (PD)	Ordinance approved and in force by end of Year 3.	No Progress due to staff turnover in Planning Division.	Begin formulation of proposed ordinance with new Staff Planner, in cooperation with the Engineering Division.
Revised			Ordinance approved and in force by end of Year 4.		
21	Site plan reviews by Town staff.	PD, NRC, CPW	All site plans reviewed for water quality concerns.	All regulated site plans reviewed.	Continue to review regulated site plans.
22	Public input on all proposed projects subject to local regulations.	PD, NRC	Planning Board, Board of Appeals, & NRC allow public comment on regulated projects.	On going at all times.	Continue at all times.
23	Site inspection of construction projects for proper erosion control.	Building Inspector (BI)	100% of construction sites receive a periodic visit upon the enactment of BMP #20.	No Progress due to lack of progress on BMP #20.	Provide erosion control inspection training to the Building Inspectors, and develop a process for ensuring each construction site is visited.

24	All work within the public right of way (ROW) is inspected to prevent erosion and sedimentation from washing in to the public way.	CPW	Minimize erosion and sedimentation from construction sites onto the public way.	All known construction sites that disturb ROW are permitted and inspected through the ROW program.	Continue permitting and inspecting relevant construction sites.
25	Storm water pollution prevention training provided to Town's inspectors of construction sites.	CPW/BI/NRC	Pertinent employees receive storm water training upon completion of BMP #20.	No Progress due to lack of progress on BMP #20.	Begin development of training program. Begin implementation upon completion of Erosion Control By-Law passage (BMP #20).

4a. Additions

None.

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
26	MADEP Stormwater Standards 2,3,4 and 7.	NRC	100% Compliance for all work within wetlands jurisdiction.	All regulated projects comply with this standard.	Continue with compliance with all regulated projects.
27	Pre-construction review of regulated developments.	NRC/PD/CPW	100% of proposed regulated projects reviewed.	All regulated projects were reviewed.	Continue reviewing all regulated projects.
28	Massachusetts Wetland Protection Act.	NRC	100% of projects within wetland jurisdiction areas reviewed and permitted under the Act.	All regulated projects were reviewed and permitted as necessary.	Continue reviewing and permitting all regulated projects.

29	Inspection of regulated subdivisions.	NRC/CPW	100% of regulated subdivisions inspected to ensure proper construction of environmental protections and drainage utilities.	All regulated projects were inspected.	Continue to inspect all regulated projects.
30	Recommended list of BMPs to be used in new construction to be developed and provided to potential developers.	NRC/PD/CPW	By end of year 2, a list has been developed as guidance.	EPA poster "Stormwater and the Construction Industry" is posted prominently in the CPW Engineering Office. Poster shows the proper use and placement of BMP's on construction sites.	Continue display of EPA poster. Also, develop list of Concord preferred BMP's, and upon finalization, post list in areas that construction companies and developers will have access to it.
Revised			By end of Year 3, a list has been developed as guidance.		
31	Subdivision Rules & Regulations; Storm Drainage Requirements	PD/CPW	Completed, evaluate yearly for effectiveness	None.	Subdivision Rules and Regulations will be reviewed by new Planning Staff Planner and CPW Engineers, will be modified as necessary.

5a. Additions

None.

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
32	Cleaning of catch basins.	CPW	25% of basins cleaned each year.	50% of basins were cleaned.	Clean at least 25% of catch basins, and more as funding allows.
33	Annual street sweeping.	CPW	100% of streets are swept of sand and sediments yearly.	All streets were swept twice during the spring/summer.	Continue to sweep all streets at least once each spring.

34	Central Business District (CBD) street sweeping.	CPW	CBD swept weekly, weather permitting, April to November.	CBD sweeping performed as planned.	Continue CBD sweeping weekly, weather permitting, from April to November.
35	Sewer main and manhole cleanings go to WWTP.	CPW	All cleanings are disposed of at WWTP.	All cleanings disposed of properly at WWTP.	Continue to properly dispose of cleanings.
36	Composting facility, open to public, accepts used paint.	CPW	Open to public once a week from April through November.	Composting facility opened as planned.	Continue opening facility as planned.
37	Member of Minuteman Regional Household Hazardous Waste Facility.	CPW	Maintain membership in this regional facility.	Maintained membership in this regional facility.	Continue to maintain membership.
38	CPW drainage maintenance within the right of way controlled by Drainage Maintenance Permit, issued by the NRC.	NRC/CPW	Meet terms and conditions of permit.	CPW and NRC reviewed and revised the terms of the order of conditions, to include road maintenance activities and to attempt to increase stormwater quality through the use of appropriate structural BMP's.	Continue to meet conditions of permit. Also review and revise the order of conditions as necessary.
39	Storm Water Pollution Prevention Plan (SWPPP) and Integrated Contingency Plan (ICP) in place and in effect for CPW facility.	CPW	Maintain ICP and SWPPP, review and update as needed.	Have complied with ICP and SWPPP.	Evaluate and revise ICP and SWPPP as necessary.
40	CPW operation employees receive storm water, spill control and prevention, and wetlands training.	CPW	100% of operations employees receive training.	All new employees receive initial orientation training.	All new employees continue to receive initial orientation. Develop and implement ongoing training program for all operations employees.

41	Drainage system mapping and GIS system will be used to optimize catch basin cleaning program.	CPW	By year 5, catch basin cleaning program has been optimized.	Edits are made to drainage map as they are needed.	Continue to edit and update drainage map.
42	Use GIS/Drainage system inventory/mapping to identify catch basins in poor condition and then repair and/or retrofit those basins.	CPW	Remove/Retrofit/Repair at least 5 catch basins a year, beginning in year 1.	15-catch basins were retrofitted, repaired, or replaced. All new catch basins were installed with deep sumps. 1-drainage scupper was discontinued and drainage directed to a catch basin (Pine Street).	Continue to upgrade at least 5 catch basins.

6a. Additions

43	Increase use of infiltration chambers for roadway drainage discharge.	CPW	Where soil and site conditions are appropriate, use infiltration chambers for stormwater discharge.	205 L.F. of chambers installed to infiltrate entire stormwater runoff from Assabet Avenue (2,000 L.F. roadway bordering Assabet River).	Install infiltration chambers on Hayward Mill Road to infiltrate road runoff.

7. BMPs for Meeting Total Maximum Daily Load (TMDL) Waste Load Allocations (WLA)

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
43	NRC Order of Conditions, Special Condition #27, prohibits use of herbicides, pesticides, or fertilizers within all resource areas.	NRC	In place, will enforce at all times.	Special Condition enforced.	Continue enforcement.
Revised 44					

7a. Additions

45	Remove direct discharge of Walden Street stormwater to Walden Pond.	CPW (in partnership with Walden Pond State Reservation)	Infiltrate all stormwater runoff from Walden Street and remove the flow to a direct discharge to Walden Pond.	Site conditions have been investigated, and several coordination and discussion meetings have been held with Walden Pond State Reservation staff.	Design, chose contractor, and construct a new drainage system.

None.

7b. WLA Assessment

BMP #43/44 was chosen as a means to attempt to limit fertilizers that may be entering Warner's Pond. Warner's Pond has a proposed TMDL due to impairments caused by Metals, Noxious Aquatic Plants and Exotic Species. While there is no known direct discharges into the pond from the Town's drainage system, it is believed that enforcement of this special condition of the NRC's standard Order of Condition will help to control the growth of the Noxious Aquatic Plants. As additional information is collected regarding the pond, additional BMP's may be added as needed.

BMP #45 was added based on the discovery that four catch basins on Walden Street, an arterial road, where interconnected and discharged jointly into a pipe which outfalled approximately 50-feet from the shore, in Walden Pond. The pipe leading to the outfall had failed, and was causing erosion of trails and the beach at Walden Pond State Reservation. Walden Pond, besides being of great historical interest, is listed as an impaired waterway for metals and organic enrichment (low DO). The parking lot for the reservation discharges large amounts of water to Walden Street, and the Reservation will be undertaking a study to identify the steps necessary to remove this discharge to the road. They will then remove the discharge. The removal of the parking lot discharge will allow the Town of Concord to infiltrate the stormwater from Walden Street. These two steps will remove a direct outfall of approximately 875,000 gallons per year of untreated stormwater to an impaired waterway (assuming an average yearly rainfall of 42-inches).

Part IV. Summary of Information Collected and Analyzed

None.

Part V. Program Outputs & Accomplishments

Programmatic

Stormwater management position created/staffed	(y/n)	Y- A Stormwater Program Manager position was created and staffed with existing personnel to deal with all Drainage issues for the Town Of Concord.

Annual program budget/expenditures	($)	$130,000 estimate for FY05.

Education, Involvement, and Training

Estimated number of residents reached by education program(s)	(# or %)	-
Stormwater management committee established	(y/n)	Y
Stream teams established or supported	(# or y/n)	Y
Shoreline clean-up participation or quantity of shoreline miles cleaned	(y/n or mi.)	-
Drop-off/Swap-off Recycling Days in Spring and Fall '04 (2 days)		
▪ days sponsored	(#)	2
▪ community participation	# of cars per day	812
▪ material collected in Spring and Fall at '04 Drop-Off Days, and in FY05 at CPW ▪ Fluorescent bulbs (linear feet) ▪ Fluorescent bulbs (bulbs) ▪ Mercury (lbs.) ▪ Mercury (5 gallon pail) ▪ Misc. batteries and lead ballast (lbs.) ▪ Misc. batteries and lead ballast (5 gallon pail) ▪ Latex based paints (non-hazardous) (gallons) ▪ Oil and alkyd based paints, polyurethane, paint thinner and stripper (hazardous) (gallons)	(lbs, gal, linear feet)	 3,055 l.f. 560 bulbs 15 lbs. 1 pail 291 lbs. 2 pails ~275 gal. ~165 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	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% of known
Estimated or actual number of outfalls	(#)	183
System-Wide mapping complete	(%)	100% of known
Mapping method(s)		
▪ Paper/Mylar	(%)	
▪ CADD	(%)	
▪ GIS	(%)	100%
Outfalls inspected/screened	(# or %)	100% in Year 1.
Illicit discharges identified	(#)	6
Illicit connections removed	(#) (est. gpd)	All connections in process of complying with Drainage Connection Policy.
% of population on sewer	(%)	34% of parcels are sewered, with the completion of the West Concord portion of the Phase I Sewer Extension.
% of population on septic systems	(%)	66% of parcels are not sewered.

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	(%)	100%
Site inspections completed	(# or %)	-
Assabet Avenue Reconstruction & Re-alignment: Estimated volume of stormwater recharged (based upon 42-inches of rain per year).	(Million Gallons per Year)	1.1 MGY

Operations and Maintenance

Average frequency of catch basin cleaning (non-commercial/non-arterial streets)	(times/yr)	.5/year
Average frequency of catch basin cleaning (commercial/arterial or other critical streets)	(times/yr)	.5/year
Total number of structures cleaned	(#)	1300/year
Storm drain cleaned	(LF or mi.)	1 mi.
Qty. of screenings/debris removed from storm sewer infrastructure	(lbs. or tons)	-
Disposal or use of cleanings (landfill, POTW, compost, recycle for sand, beneficial use, etc.)		landfill
Cost of catch basin/drain cleaning and screenings disposal	($)	$14,954
Average frequency of street sweeping (non-commercial/non-arterial streets)	(times/yr)	2
Average frequency of street sweeping (commercial/arterial or other critical streets)	(times/yr)	2/yr, and weekly between Apr. and Nov. in business districts.
Qty. of sand/debris collected by sweeping	(lbs. or tons)	1,000
Disposal of sweepings (landfill, POTW, compost, beneficial use, etc.)	(location)	Compost, roadside use.
Cost of sweepings disposal	($)	-

Vacuum street sweepers purchased/leased	(#)	0
Vacuum street sweepers specified in contracts	(y/n)	N

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

Anti-/De-Icing products and ratios	% NaCl $CaCl_2$ % Sand	3,500 tons (54%) (est.) 4,500 gallons (est.). 3,000 tons (46%) (est.)
Pre-wetting techniques utilized	(y/n)	Y
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 %)	None *
Salt pile(s) covered in storage shed(s)	(y/n)	Y
Storage shed(s) in design or under construction	(y/n)	N/A

*Above average number of storm events and level of severity of events in winter of 2004-2005.

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Watershed Management

BRP WM 08A NPDES Stormwater General Permit Notice of Intent
for Discharges from Small Municipal Separate Storm Sewer Systems (MS4s)

F. Storm Water Management Program TIME FRAMES

Transmittal Number W035280

Facility ID (if known)

2004-2005 Annual Update Revised Time Frame

	PERMIT YEAR ONE				PERMIT YEAR TWO				PERMIT YEAR THREE				PERMIT YEAR FOUR				PERMIT YEAR FIVE				
BMP ID #	Spring 03	Summer 03	Fall 03	Winter 03-04	Spring 04	Summer 04	Fall 04	Winter 04-05	Spring 05	Summer 05	Fall 05	Winter 05-06	Spring 06	Summer 06	Fall 06	Winter 06-07	Spring 07	Summer 07	Fall 07	Winter 07-08	Next Permit
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