



# City of Nashua

Public Works Division  
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Nashua, NH 03060

Division Director  
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April 30, 2009

Ms. Glenda Velez  
U.S. Environmental Protection Agency(CIP)  
1 Congress Street, Suite 1100  
Boston, Massachusetts 02114-2023

Mr. Jeffery Andrews  
N.H. Department of Environmental Services  
Water Division  
Wastewater Engineer Bureau  
P.O. Box 95  
Concord, NH 03302-0095

**RE: City of Nashua, New Hampshire  
NPDES Phase II General Permit No. NHR041021, 2009 Annual Report**

Please find enclosed the 2009 Annual Report for the period April 1, 2008 to March 31, 2009 as required under the NPDES General Permit for Stormwater Discharges from Small Municipal Separate Storm Sewer Systems (MS4) for the City of Nashua, New Hampshire. Included in this report is:

- Part I. Self-Assessment
- Part II. Summary of Minimum Control Measures
- Part III. Summary of Information Collected and Analyzed
- Part IV. Implementation Schedule.
- Part V. Program Outputs & Accomplishments

Information supporting the report is included in Appendix A and Appendix B.

Please contact this office if you should have any questions concerning this report.

Respectfully,

David G. Fredette, Interim Director  
Division of Public Works

enc: (1)

c: Donnalee Lozeau, Mayor  
Kathy Hersh, Director Community Development  
Stephen Dookran, P.E., City Engineer  
Mario Leclerc, Superintendent, Nashua Wastewater Treatment Facility  
Scott Pollock, Superintendent, Nashua Street Department  
Lucy St, John, Deputy Planning Director  
Amy Prouty Gill, City Engineer's Office



City of Nashua, NH  
NPDES Phase II Small MS4  
General Permit No. NHR041021

2009 Annual Report  
April 1, 2008 to March 31, 2009



Prepared by:  
City of Nashua  
Public Works Division  
9 Riverside Street  
Nashua, NH 03062  
(603) 589-3140



**City of Nashua, NH  
NPDES Phase II Small MS4  
General Permit No. NHR041021**

**2009 Annual Report**

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Municipality/Organization: City of Nashua, NH

EPA NPDES Permit Number: NHR041021

Annual Report Number  
& Reporting Period: No. 6: 4/1/08 – 3/31/09



## NPDES Phase II Small MS4 General Permit Annual Report

### General Information

Contact Person: David G. Fredette

Title: Interim Director, DPW

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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: David G. Fredette

Printed Name: David G. Fredette.

Title: Director, Division of Public Works

Date: April 30, 2009





## **Introduction**

This is the sixth annual report to comply with the conditions of the 2003 Small MS4 General Permit. The City of Nashua is aware that this Permit is expired and is anticipating the issuance of the 2008 Permit later this year.

The City attended the Public Hearing for the Draft 2008 Permit in Portsmouth, NH in January 2009 and submitted written comments to the EPA about the proposed permit on February 20, 2009. A copy of that letter is included in Appendix A. After reviewing the proposed 2008 Permit and noting changes that are to be made for the next permit cycle, in advance of the approved 2008 Permit, the City is addressing the culvert inventory and cleaning requirement of the new permit by hiring summer staff to document and clean culverts city-wide.

The City continues to experience a lack of funding dedicated to providing maintenance to culverts, wetlands, brooks, catch basins, and drain lines and capital improvements to the drainage system. While the City has a sewer user fee, these funds should be directed only to the sanitary and combined sewer system, not the storm drainage system. In addition, federal mandates by the NPDES Phase II Stormwater permit have placed further requirements relating to stormwater upon the City. Knowing that legal authority was given to NH municipalities in 2008 to form stormwater utilities under RSA 149-I, the City included a request for a Stormwater Utility Feasibility Study and Implementation Analysis project in the FY10 Capital Improvements Program. The Capital Improvement Committee gave the project an "A-5" rating on a scale of A through D with A being a priority of "essential" and 5 being the order in which to complete the essential projects. However, the project has yet to be funded at this date. Meanwhile, the city applied for and is receiving a Stormwater Utility Feasibility Study grant from the NH Department of Environmental Services. This study is expected to be completed during the next permit period.

## **Part I. Self-Assessment**

### **CSO Program**

The City of Nashua is under an EPA Consent Decree (Civil Action No. 05-376-PB), dated December 26, 2005 (based on the Long-Term Water Quality and Infrastructure Control Plan), to mitigate Combined Sewer Overflows (CSOs). Currently, there are eight CSO outfalls that are a

part of the City's sewer collection system, four that discharge to the Nashua River and four that discharge to the Merrimack River. CSOs have been identified as a probable source for the Escherichia coli impairment of the portions of the Nashua and Merrimack Rivers located nearest to the City, as identified in Appendix B of this report. Several projects related to the Consent Decree are ongoing and will reduce the amounts of CSOs occurring in the Nashua and Merrimack Rivers.

In October 2006, the construction of the 60 mgd Wet Weather Flow Treatment Facility (WWFTF), located at the Nashua Wastewater Treatment Facility, to capture and treat combined (sanitary and stormwater) flow began. This facility was substantially complete in January 2009 and is online. This WWFTF will greatly reduce the occurrence of CSOs and the volume of combined flows that is discharged to these rivers. Also, more urban stormwater runoff from approximately 30 percent of the City, which is part of the combined flow, will now be conveyed to the WWFTF where it will be treated before being discharged to the Merrimack River.

The final design of improvements to five of the existing CSO regulators (003, 004, 007, 008, and 009) in order to optimize storage in the collection system and/or to minimize or eliminate for certain storm events, as required by the Consent Decree, was completed during this reporting period. Three of the CSOs are located on the Nashua River and two are located on the Merrimack River. These optimization measures will allow more combined flow to be conveyed to the new WWFTF. A construction task included with the CSO 008 improvements includes removing trash and debris along the bank of the Nashua River. Construction of the improvements began in August 2008 and is scheduled to be completed by September 2009.

A preliminary design report for a screening and disinfection facility for CSO control at CSO structures 005 and 006 was completed. Based on the results of the design analysis, it was determined that a re-evaluation of alternatives to reduce and eliminate CSOs at these regulators should be considered. The Re-evaluation Study for CSO Control at CSO 005 and CSO 006 was completed during this period. Recommendation included completing the following projects to best address the requirements of the Consent Decree:

- Design and construction of sewer separation within the Harbor Avenue area,
- Design and construction of an automated sluice gate control upstream of the CSO 006 junction chamber,
- Design and construction of drop structures near CSO 005, and
- Design and construction of a CSO screening and disinfection facility having a design capacity of 78.3 mgd [121.1 cfs].

Separation within the Harbor Avenue area will include stormwater treatment in the separated storm drain system.

### **Public Education and Participation**

The City continues to be a member of the Nashua Stormwater Coalition. One meeting included attendance of the Public Hearing for the Draft 2008 Permit. A total of three coalition meetings were held during the reporting period.

The Enviroscope Watershed/Non-point Source Model was used as part of a stormwater education program. The model was used to educate the public about watersheds and nonpoint source pollution during a day-long celebration of National Public Works Week in the City Hall auditorium. The model was also used during an elementary school celebration of Earth Day. In cooperation with other communities that are a part of the Nashua Stormwater Coalition, the model was loaned to the Town of Milford, NH to be included in an education program in their school system. The model will continue to be used in classroom presentations and public events in the next permit period.

Paulie the Pickerel "Let only Rain go down the Storm Drain" markers continued to be applied on separated catch basins within the City. Magnets with the logo continue to be distributed during educational presentations. Door hangers containing information about stormwater dos and don'ts were distributed in neighborhoods where the markers were being applied as well as at presentations. Door hangers are also available in locations frequented by residents in City Hall and other public buildings.

The Nashua Green Team continues to meet and engage residents, businesses and others in discussions to make Nashua a Green City. Education is an important element of these efforts and several schools have participated in projects throughout the city.

The Mine Falls Park Advisory Committee sponsored six Trail Days during the period, In addition to general park maintenance, trash and debris was removed from the waterways and banks of the Nashua River, Nashua Canal and Mine Pond.

An update of stormwater issues was presented at monthly meetings of the Board of Public Works. The Board of Public Works is a five member body of the elected officials that are responsible for the overall direction and performance of the Division of Public Works. This is a public meeting that is recorded and broadcasted repeatedly on the government access channel. The stormwater update discusses city-wide drainage issues, capital project needs, the progress of the stormwater utility and any other items that are related to stormwater.

### **Illicit Discharge Detection and Elimination**

Field verification of outfalls on small brooks and ponds continued. The Geographic Information System (GIS) mapping program of outfalls was updated with new information and corrected when discrepancies were found.

A culvert inspection program has begun by locating and listing all culverts in the City. An inspection program to document the existing condition of the culverts is being drafted using summer interns for the inspection. A plan to expand the cleaning of culverts inlets and stream by adding temporary personnel is being evaluated. Implementation is contingent upon funds being available.

The NHDES has identified portions of Old Maid's Brook, Harris Brook, and Salmon Brook (NHRIV700061201-05 and NHRIV700061201-07) as being impaired for Escherichia coli (E. coli). One reach has the probable source of the contaminant being identified as illicit connections and/or hook-ups to storm sewers. Observations of outfalls indicated a suspect outfall. Modifications to the sewer system were made to eliminate this illicit discharge on Salmon Brook. The City will continue to investigate outfalls within this brook system.

### **Construction Site and Post-Construction Runoff Control**

The Planning Department staff actively implements the provisions on the stormwater management ordinance during the development review process, for both new development and redevelopment projects. Erosion control measures including siltation fencing and other best management practices are shown on plan details and implemented during all phases of the construction process. The annual stormwater reporting requirements are implemented on sites such as the sweeping of parking lots, cleaning of catch basins and other specific details as shown on the plans.

During the plan review process staff continues to make recommendations on improving the quality of landscaping plans submitted. The planting of vegetative materials helps to improve stormwater quality. In a couple of instances, vegetation which was removed from a site, including several large trees, had to be replaced. In addition the Nashua Planning Board has engaged in discussions on landscaping standards and efforts to protect existing trees during the construction process. Additional notes and stipulations of approval include the placement of construction fencing to protect mature trees and other vegetation. Wetland Buffer Markers continue to be required to be installed in the buffer areas of impacted wetlands by the Nashua Conservation Commission when proposed developments include wetland impacts. The purpose of the markers is to encourage residents not to dump debris in wetland areas.

The City has solicited qualifications to retain a consultant to assist the Conservation Commission in monitoring the city's conservation lands and easements. Many of these parcels include wetlands. This project is expected to begin in June 2009. This project seeks to document infringement of wetland conservation areas and where future enforcement and educational efforts can be pursued. Public awareness via contact with property owners and other residents of the community while the consultants are in the field and updates at the Nashua Conservation Commission, which are publicly noticed meetings, will help to create awareness about these important ecosystems and the need for good stormwater management.

The preliminary design of the widening of Route 101A located in the drinking watershed of the Pennichuck Brook system is complete. The design incorporated treatment of any new stormwater generated. The design proposes improvements to two existing detention ponds.

## **Good Housekeeping**

Good housekeeping measures included the continuous street sweeping program. Sweepers operate 16 hours a day on week days from April 1 to June 1 and 8 hours per day until December 1. Winter salt and sand use was monitored. About 9800 tons of Salt was applied and about 2300 tons of sand was applied this past winter.

A new, web-based tracking system called the IntelliGov Work Order Management System went online during this period. This system allows entering and tracking of all work orders within the Division of Public Works, many of which are related to stormwater management.

Additional activities completed during the permit period are included in Part II of this report.

## **Impaired Waters**

To address Part I.C.1 of the City's General Permit, Table B is included in Appendix B. Listed on Table B are the water bodies within the City limits that are on the NHDES Final 2008 List of Threatened or Impaired Waters that require a TMDL (303(d) list). Included in the table is the Best Management Practice to address the cause of impairment.

No TMDL has been approved for any water body into which the City of Nashua discharges, as required of Part I.D. The schedule for required TMDLs is listed in Table B, located in Appendix B.

## **Permit Compliance**

The City of Nashua has completed the required self-assessment and is in compliance with permit conditions.

## **Part II. Summary of Minimum Control Measures**

The summary of the activities completed in Permit Year 6 of the six Minimum Control Measures is listed on the attached table, Part II Summary of Minimum Control Measures. Planned activities for the next permitted year, April 2009 through March 2010, are also listed. Revisions to the Best Management Practices have been noted in the table.

BMP ID#	Best Management Practice	Measurable Goal	Responsible Party	Progress on Goals Permit Year 6	Planned Activities Next Year
<b>1.00</b>	<b>Public Education</b>				
1.01	Storm water education program for school children	Purchase Enviroscope Watershed/Nonpoint Source model	DPW (1) - Amy Gill	Presentations using the Enviroscope were given during Public Works Expo (about 20) and to Elementary school 5th graders (9 times). Enviroscope loaned to Milford, NH for use in elementary school presentation.	Continue presentation in the schools and at other events. Establish more contacts with educators.
Revision		Number of presentations given using Enviroscope			
1.02	Insert flyer in local newspaper describing city wide storm water program	Number of inserts distributed annually	DPW - Amy Gill	Newspaper article including stormwater management program on May 21. Included photo of Enviroscope demonstration	Continue to seek newspaper coverage on stormwater issues.
1.03	Create web page on City web site	Web page online by 12/05	DPW - Stephen Dookran, Amy Gill	New City web site online. Draft for stormwater information being developed. Status of stormwater improvement projects listed.	Review and update stormwater web page.
Revision		Web page online by 12/08			
1.04	Create Public Service Announcements	Run Announcement quarterly on cable TV channel access	DPW - Amy Gill	Power point slides developed and played on local cable channel May and June 2008	Continue playing educational PowerPoint presentations on local and government cable access channels.
Revision		Number of days presentation runs			
1.05	Create brochure and presentation to inform businesses and industrial users about illicit discharges	Distribute to businesses and industrial users once every two years	DPW - Phil Appert	No action taken yet on this item.	Begin development of brochure.
1.06	Run three videos on Cable Access TV. "After the Storm", "Stormwater is Never Away" and "A River Reborn"	Number of times videos are Run.	DPW - Amy Gill	No action taken on this item. Public access channel continues to be restructured.	Continue to run videos.
1.07	Create board for display at functions where the public is gathered.	Number of times display is used.	DPW - Amy Gill	Board used as tool during DPW Expo and classroom presentations.	Update board and continue to display board at various public events.

BMP ID#	Best Management Practice	Measurable Goal	Responsible Party	Progress on Goals Permit Year 6	Planned Activities Next Year
1.08	Install Wetland Buffer Markers to encourage no dumping of debris in a wetland area.	75 markers to be installed in 3 years.	DPW - Scott Pollock, Amy Gill	Task complete. Wetland markers continue to be installed by developers as stipulations for approval by the Conservation Commission.	Installations of wetland markers will continue to be stipulated by the Conservation Commission as part of the approval process.
1.09	Mail letters to owners/residents that about wetland to explain importance of wetland and encourage no dumping in wetland area.	Number of letters mailed to abutters	DPW - Amy Gill, NCC(7)	Task completed.	
1.10	Design sign for brook/stream crossings	Percent design completed	DPW - Amy Gill, NCC	Discuss concept with City departments.	Design sign.
1.11	Present Stormwater Management Program at Public Meetings	Number of Presentations	DPW- Amy Gill	Monthly Stormwater Issue update given at monthly Board of Public Works meeting which is carried and replayed on Government access channel.	Continue monthly updates.
1.12	Purchase and distribute Magnets with "Paulie the Pickerel" logo at public functions	Number of magnets distributed	DPW - Amy Gill	Magnets continue to be distributed in city offices.	Continue to distribute magnets.
1.13	Develop informative flyer about stormwater pollution and include in wastewater bills and display at public places.	Number of flyers distributed	DPW- Mario Leclerc, Amy Gill	Inserts and doorhangers continue to be made available at public locations.	Continue to distribute information flyers.
1a.	Addition			Power point slides developed and played on local cable channel May and June 2008	Update and run informational slides.
1.14	Develop Power point to run on Public Access television	Number of days presentation runs	DPW- Gill		
2.00	Public Participation				

BMP ID#	Best Management Practice	Measurable Goal	Responsible Party	Progress on Goals Permit Year 6	Planned Activities Next Year
2.01	Attach Storm Drain Markers in or near Catch Basins discharging to open water body	40% installed by 11/04, 80% installed by 11/05, 100% by 11/06	DPW - Amy Gill, Pennichuck Water Works, Inc.	Previously placed markers inspected to determine durability of marker.	Continue to have public involved in applying markers.
2.02	Continue phone hotline service for stormwater related concerns	50% installed by 10/08 Establish a hotline. Record number of phone calls concerning drainage issues	DPW- Mario Leclerc, NWTF(2)	Hotline for drainage issues continues. Record violations and report to NHDES(3) and USEPA(4) as needed.	Continue hotline for drainage issues.
2.03	Meet with local communities, and the NHDOT(9). Meeting coordinated by the Nashua Regional Planning Commission (NRPC). Group called Nashua Stormwater Coalition.	Meet every two months for a total of 6 meetings per year	DPW - Amy Gill, NRPC (8)	Representatives from Amherst, Merrimack, Nashua, Hollis, Hudson, Milford, NRPC and NHDOT attend meetings. Three meetings held.	Continue to meet with members of the surrounding communities.
2.04	Create door hanger with tips on preventing stormwater pollution	Number of door hangers distributed	DPW - Amy Gill	Door hangers were distributed as a part of the catch basin marker program and made available at public areas in City Hall.	Continue to distribute door hangers to the public.
2.05	Provide email links for stormwater related concerns	Number of times email received	DPW	Frequent emails received to report stormwater issues.	Continue to monitor emails.
2.06	Request public input for ordinance revision to Stormwater Management and Wetlands sections	Number of meetings held	CDD (5)	Continue to obtain public comment on ordinances.	Continue to obtain public comment on ordinances.
3.00	<b>Illicit Discharge Detection and Elimination</b>				
3.01	Map outfalls and waters of the United States in Nashua city limits	Complete by 11/04. Count number of outfalls identified	DPW - Amy Gill	Continued updating GIS maps based on field verifications of drainage systems and outfalls, and completion of new drainage systems.	Continue to update GIS maps based on field verification of outfalls and newly constructed outfalls.

BMP ID#	Best Management Practice	Measurable Goal	Responsible Party	Progress on Goals Permit Year 6	Planned Activities Next Year
3.02	Prepare an Illicit Discharge Detection and Elimination (IDDE) Plan	Complete final plan 10/04	DPW - Amy Gill	Continue to develop Draft IDDE.	Complete IDDE Plan.
Revision		Complete final plan 10/06			
3.03	Review illicit discharge ordinance	Amend ordinance as necessary by 12/07	DPW - Amy Gill	Determined if ordinance may require revisions.	Begin process to make changes to ordinance if needed.
3.04	Continue dry weather field survey of outfalls.	Complete survey of outfalls. Locate other outfalls in water bodies not included in survey by 11/04	DPW - Mario Leclerc, Amy Gill	Continue survey of outfalls on smaller brooks and ponds. Addition outfalls documented.	Update outfall list as outfalls are located or newly constructed.
3.05	Conduct sampling of dry weather discharges and attempt to trace source of illicit discharge	Sample and identify source of suspect outfalls	DPW - Amy Gill	Dry weather sampling of stream and brooks ongoing to attempt to trace illicit discharges.	Sample suspect sources as needed.
3.06	Remove illicit discharges as budgetary funding allows	Track number of illicit discharges detected and removed	DPW - Mario Leclerc, Scott Pollock	Suspect discharge identified at New Searles Road. Corrective steps taken to remove illicit discharge.	Continue testing and tracking suspect discharges.
3.07	Continue Regional Hazardous Waste Collection Day	Conduct 5 collection days per year	DPW - Sally Hyland, Solid Waste	Hazardous waste collection days were held on 4/12, 6/5, 8/2, 10/4, and 11/1/08. Event coordinated with NRPC.	Hazardous waste collection days scheduled for 4/18, 5/2, 6/4, 8/1, 10/3, and 11/7/09 for this year.
3.08	Track Hazardous Spills	Number of Spills identified	DPW - Mario Leclerc	No hazardous spills reported.	Report on spills as necessary.
3.09	Conduct watershed audit for input in NRPC report	Complete audit	DPW, CDD, NRPC	Audit completed.	
3.10	Sample outfalls in water body RIV700061201-05, identified on the Impaired waters list	Number of outfalls sampled	DPW - Mario Leclerc	Waterway continues to be visually inspected. One illicit discharge removed from waterway.	Sample outfalls and trace source, if possible.
<b>4.00</b>	<b>Construction Site Runoff Control</b>				
4.01	Review procedure for site plan review to consider if potential water quality impacts are included	Complete review by Dec. 31 2005	CDD- Lucy St. John	Land use ordinance revised and updated, effective January 2, 2006.	Continue review of implementation of new ordinances.

BMP ID#	Best Management Practice	Measurable Goal	Responsible Party	Progress on Goals Permit Year 6	Planned Activities Next Year
4.02	Review requirements for construction operators to control demolition waste, chemicals, sanitary waste and other waste at the construction site	Complete review by Dec. 31 2005	CDD- Lucy St. John	Land use ordinance revised and updated, effective January 2, 2006.	Continue review of implementation of new ordinances.
4.03	Review existing city ordinances concerning stormwater management at construction sites (Sec 16-145) and modify as necessary	Make recommendations for improvements by June 2006. Proceed through internal process to change ordinance by Dec. 2007	CDD- Lucy St. John	Land use ordinance revised and updated, effective January 2, 2006.	Continue review of implementation of new ordinances.
4.04	Develop standard drawings of runoff prevention BMPs to be used by site developers	Produce document containing at least 7 alternative erosion protection measures by Dec. 2006	DPW - Amy Gill	Gather sample drawings and compile into standards.	Compile drawings electronically.
4.05	Review procedures for inspection of construction sites to see if BMPs are in place and functioning correctly	Complete review by Dec. 2006	CDD- Lucy St. John	CDD contacted and informed that procedures need to be reviewed.	Complete review of inspection procedures.
4.06	Review procedures for enforcement of improper functioning sediment and erosion control measures	Complete review by Dec. 2006	CDD- Lucy St. John	CDD contacted and informed that procedures need to be reviewed.	Complete review of inspection procedures.
<b>5.00 Post Construction Runoff Control</b>					
5.01	Review existing ordinance Sec. 16-145 which requires post development peak discharges be no greater than predevelopment discharges. Modify as necessary	Make recommendations for improvements by June 2006. Proceed through internal process to change ordinance by Dec. 2007	CDD- Lucy St. John	Land use ordinance revised and updated, effective January 2, 2006.	Continue review of implementation of new ordinances.

BMP ID#	Best Management Practice	Measurable Goal	Responsible Party	Progress on Goals Permit Year 6	Planned Activities Next Year
5.02	Review ordinance Sec 16-145 for ground water recharge required on new site plans	Make recommendations for improvements by June 2006. Proceed through internal process to change ordinance by Dec. 2007	CDD- Lucy St. John	Land use ordinance revised and updated, effective January 2, 2006. Staff continues to make recommendations on improving the quality of landscaping plans submitted.	Continue review of implementation of new ordinances.
5.03	Implement Annual Operations and Maintenance requirement for BMPs on private properties	Implement by Dec. 2007	CDD- Lucy St. John	Land use ordinance revised and updated, effective January 2, 2006.	Continue review of implementation of new ordinances.
5.04	Develop enforcement measures and assign internal staff to enforce requirements	Implement by Dec. 2007	CDD	Review of enforcement procedures ongoing.	Complete review of requirements.
<b>5a.</b>	<b>Addition</b>				
5.05	Install Low Impact Development items on Municipal Properties	Design and Construct on Riverside Street Property	DPW - Steve Dookran	Task complete.	
<b>6.00</b>	<b>Municipal Good Housekeeping</b>				
6.01	Hazardous waste training program for applicable employees	Employees attend annual hazardous spill training program beginning May 2005	DPW - Mario Leclerc	Consultant hired to train NWTF staff about hazardous wastes.	Continue to train employees.
6.02	Storm water discharge training program for applicable municipal employees on preventing non-storm water discharges	Employees attend annual storm water discharge training program beginning May 2005	DPW - Mario Leclerc	EPA Stormwater Web Casts viewed by staff. Employees attended various conferences.	Continue to train employees.
6.03	Review program for handling fertilizer on city property	Complete review July 2005	DPW - Nicholas Caggiano, Amy Gill	Task complete.	Continue implementation of fertilization policies.

BMP ID#	Best Management Practice	Measurable Goal	Responsible Party	Progress on Goals Permit Year 6	Planned Activities Next Year
6.04	Continue litter management program by street sweeping entire City at least once a year.	Review program annually and record number of lane miles swept	DPW - Scott Pollock	Program began in March 2008. Entire City swept once, with commercial/arterial or other critical streets being swept up to 6 times per year.	Continue street sweeping.
6.05	Review snow dumping procedure to allow snow storage in areas away from surface waters	Complete review July 2005	DPW - Scott Pollock	Program reviewed. Snow continues to be stored in areas where stormwater treatment is available before the melted snow is discharged to a water body. Area is swept during and after snow melt.	Review program annually.
6.06	Continue city wide program to clean catch basins	100% of all catch basins cleaned once every 3 years	DPW - Mario Leclerc	At least 350 catch basin were cleaned.	Continue catch basin cleaning program.
6.07	Continue SSO(6) correction and mitigation program for SSOs that discharge to water bodies	Record number of SSOs corrected.	DPW - Mario Leclerc	No SSOs were reported that affected a water body were reported.	Continue correction of SSOs.
6.08	Television inspection of storm drains as needed	Record number inspect as needed	DPW - Mario Leclerc	Approximately 2,500 LF of Storm Drain were inspected with the robotic camera.	Continue inspection as needed.
6.09	Calibrate salt and sand truck spreaders	Complete annually before November 1st	DPW - Scott Pollock	Calibrated salt and sand trucks in November 2008. Ordinance reviewed and found adequate. Four Doggie Convenience Stations were monitored. Bags holders are being emptied and replaced approximately monthly. Stations frequently vandalized.	Calibrate trucks in fall 2009.
6.10	Review pooper scooper ordinance	Review ordinance by July 2005	DPW- Amy Gill, Nick Caggiano	Low impact development ideas continued to be discussed with developers. Through encouragement by DPW, private owner in flood prone watershed included LID measures in parking lot rehabilitation project.	Monitor the use of the Doggie Convenience Stations.
6.11	Disseminate information contained within city developed Alternative Storm Water Management Methods guide for Storm Water Control	Make available to developers as guide by July 2004	DPW - Amy Gill		Continues discussion with developers the advantages of LIDs.

BMP ID#	Best Management Practice	Measurable Goal	Responsible Party	Progress on Goals Permit Year 6	Planned Activities Next Year
Revision		Make available by July 2005			
6.12	Develop a ditch/swale cleaning program	Develop program by July 2005	DPW - Mario Leclerc	Swales continue to be inspected and cleaned as needed. Preliminary inventory of swales identified in GIS of completed. Need field verification.	Hire interns to field locate and inventory swales. Document findings. Clean swales as necessary.
6.13	Develop culvert maintenance program.	Develop and Implement program by 2007	DPW - Mario Leclerc	Using GIS, culverts located and inventoried. Culverts continue to be inspected and cleaned as needed.	Hire interns to locate, inspect and document condition of culverts. Update GIS system as necessary.
<b>7.00</b>	<b>Impaired Waters</b>				
No TMDL is listed for any water body into which the City stormwater discharges.					

- (1) DPW - Division of Public Works, City of Nashua
- (2) NWTF - Nashua Wastewater Treatment Facility, City of Nashua
- (3) NHDES - New Hampshire Department of Environmental Services
- (4) USEPA - United States Environmental Protection Agency
- (5) CDD - Community Development Division, City of Nashua
- (6) SSO - Sanitary Sewer Overflow
- (7) NCC - Nashua Conservation Commission
- (8) NRPC - Nashua Regional Planning Commission
- (9) NHDOT - New Hampshire Department of Transportation

### **Part III. Summary of Information Collected and Analyzed**

Results of previously sampled sites in the City were reviewed. Some of these locations were along the Harris, Hassell, Old Maid's and Salmon Brooks. These waterways were identified as impaired on the NHDES 2008 303(d) List for Escherichia coli bacteria with the likely cause due to illicit connections and/or hook-ups to storm sewers. The City will attempt to trace illicit discharges into these waterways.

Volunteers with the Souhegan Watershed Association Council continue to monitor several outfall locations in Nashua on the Merrimack and Nashua Rivers. These samples are tested at the Nashua Wastewater Treatment Facility. The results from the sampling program are available on the web site maintained by the association at <http://www.souheganriver.org>.

### **Part IV. Implementation Schedule**

The Stormwater Management Program Implementation Schedule for the Best Management Practices is outlined on the attached table.

Part IV. SWMP Implementation Schedule

BMP ID #	PERMIT YEAR 3		PERMIT YEAR 4		PERMIT YEAR 5		PERMIT YEAR 6		PERMIT YEAR 7	
	Spring 05	Summer 05 Fall 05	Spring 06	Summer 06 Fall 06	Spring 07	Summer 07 Fall 07	Spring 08	Summer 08 Fall 08	Spring 09	Summer 09 Fall 09
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Part IV. SWMP Implementation Schedule

BMP ID #	PERMIT YEAR 3		PERMIT YEAR 4		PERMIT YEAR 5		PERMIT YEAR 6			PERMIT YEAR 7												
	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	Spring 08	Summer 08	Fall 08	Winter 08-09	Spring 09	Summer 09	Fall 09	Winter 09-10		
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Part IV. SWMP Implementation Schedule

BMP ID #	PERMIT YEAR 3		PERMIT YEAR 4		PERMIT YEAR 5		PERMIT YEAR 6		PERMIT YEAR 7	
	Spring 05	Summer 05 Fall 05	Spring 06 Summer 06 Fall 06 Winter 05-06	Spring 06 Summer 06 Fall 06 Winter 06-07	Spring 07 Summer 07 Fall 07 Winter 07-08	Spring 08 Summer 08 Fall 08 Winter 08-09	Spring 09 Summer 09 Fall 09 Winter 09-10			
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**Part V. Program Outputs & Accomplishments (OPTIONAL)**

(Since beginning of permit coverage unless specified otherwise by a \*\*, which indicates response is for period covering April 1, 2008 through March 31, 2009)

**Programmatic**

	Preferred Units	Response
Stormwater management position created/staffed	(y/n)	yes
Annual program budget/expenditures ** <i>Currently being evaluated. Rough estimates.</i>	(\$)	at least \$750 K/\$400 K
Total program expenditures since beginning of permit coverage <i>Currently being evaluated. Rough estimates.</i>	(\$)	at least \$4.0 million
Funding mechanism(s) (General Fund, Enterprise, Utility, etc)		Enterprise and General Fund

**Education, Involvement, and Training**

Estimated number of property owners reached by education program(s) <i>via wastewater bill insert</i>	(# or %)	90% estimated
Stormwater management committee established	(y/n)	yes – Regional (NRPC)l
Stream teams established or supported	(# or y/n)	Yes - MFPAC
Shoreline clean-up participation or quantity of shoreline miles cleaned **	(y/n or mi.)	Yes Unknown
Shoreline cleaned since beginning of permit coverage	(mi.)	unknown
Household Hazardous Waste Collection Days <i>Regionally sponsored</i>		
▪ days sponsored **	(#)	6
▪ community participation ** <i>Nashua only</i>	(# or %)	449 households
▪ material collected ** <i>Entire region</i>	(tons or gal)	22,277 pounds
School curricula implemented <i>Classroom presentations</i>	(y/n)	
<i>Regional curricula generated by NRPC</i>		

**Legal/Regulatory**

	In Place prior to Phase II	Reviewing Authorities	Drafted	Draft in Review	Adopted
Regulatory Mechanism Status (indicate with "X") <i>Revised Land Use Code adopted January 2, 2006</i>					
• Illicit Discharge Detection & Elimination	X				
• Erosion & Sediment Control	X				
• Post-Development Stormwater Management	X				
Accompanying Regulation Status (indicate with "X") <i>Revised Land Use Code adopted January 2, 2006</i>					
• Illicit Discharge Detection & Elimination	X				
• Erosion & Sediment Control	X				
• Post-Development Stormwater Management	X				

## Mapping and Illicit Discharges

Outfall mapping complete	(%)	99%
Estimated or actual number of outfalls	(#)	401
System-Wide mapping complete (complete storm sewer infrastructure)	(%)	99%
Mapping method(s)		
▪ Paper/Mylar	(%)	99%
▪ CADD	(%)	50% estimated
▪ GIS	(%)	99%
Outfalls inspected/screened **	(# or %)	25 estimated
Outfalls inspected/screened (Since beginning of permit coverage)	(# or %)	401
Illicit discharges identified **	(#)	0
Illicit discharges identified (Since beginning of permit coverage)	(#)	4
Illicit connections removed **	(#); and (est. gpd)	1
Illicit connections removed (Since beginning of permit coverage)	(#); and (est. gpd)	4
% of population on sewer	(%)	90% estimated
% of population on septic systems	(%)	10 % estimated

## Construction

*Tracking not available at this time*

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 \$)	0
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 (for proper BMP installation & operation) completed **	(# or %)	unknown
BMP maintenance required through covenants, escrow, deed restrictions, etc.	(y/n)	Yes
Low-impact development (LID) practices permitted and encouraged	(y/n)	Yes

## Operations and Maintenance

Average frequency of catch basin cleaning (non-commercial/non-arterial streets) **	(times/yr)	0.1/year
Average frequency of catch basin cleaning (commercial/arterial or other critical streets) **	(times/yr)	0.5/year
Qty of structures cleaned **	(#)	at least 350
Qty. of storm drain cleaned **	(%, LF or mi.)	About 2,500 LF
Qty. of screenings/debris removed from storm sewer infrastructure **	(lbs. or tons)	unknown
Disposal or use of screenings (landfill, POTW, compost, beneficial use, etc.) **	(location)	Landfill

### Operations and Maintenance (continued)

Basin Cleaning Costs		
• Annual budget/expenditure (labor & equipment)**	(\$)	N/A
• Hourly or per basin contract rate **	(\$/hr or \$ per basin)	N/A
• Disposal cost**	(\$)	\$90 per ton
Cleaning Equipment		
• Clam shell truck(s) owned/leased	(#)	1
• Vacuum truck(s) owned/leased	(#)	2
• Vacuum trucks specified in contracts	(y/n)	N/A
• % Structures cleaned with clam shells **	(%)	10%
• % Structures cleaned with vector **	(%)	90%

Average frequency of street sweeping (non-commercial/non-arterial streets) **	(times/yr)	6
Average frequency of street sweeping (commercial/arterial or other critical streets) **	(times/yr)	6
Qty. of sand/debris collected by sweeping **	(lbs. or tons)	not documented
Disposal of sweepings (landfill, POTW, compost, beneficial use, etc.) **	(location)	Landfill
Annual Sweeping Costs		
• Annual budget/expenditure (labor & equipment)**	(\$)	\$290,000
• Hourly or lane mile contract rate **	(\$/hr. or ln mi.)	N/A
• Disposal cost**	(\$)	0
Sweeping Equipment		
• Rotary brush street sweepers owned/leased	(#)	1
• Vacuum street sweepers owned/leased	(#)	4
• Vacuum street sweepers specified in contracts	(y/n)	N/A
• % Roads swept with rotary brush sweepers **	%	1
• % Roads swept with vacuum sweepers **	%	99

Reduction (since beginning of permit coverage) in application on public land of: ("N/A" = never used; "100%" = elimination) <i>Public land has increased since beginning of reporting period therefore use of fertilizers has increased</i>		
▪ Fertilizers	(lbs. or %)	
▪ Herbicides	(lbs. or %)	
▪ Pesticides	(lbs. or %)	
Integrated Pest Management (IPM) Practices Implemented	(y/n)	Yes

Average Ratio of Anti-/De-Icing products used **  (also identify chemicals and ratios used in specific areas, e.g., water supply protection areas)  <i>A blended mix of salt and sand is used on city streets.</i>	% NaCl % CaCl <sub>2</sub> % MgCl <sub>2</sub> % CMA % Kac % KCl % Sand	
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*Italicized text is Comments made by City.*

N/A: Not Applicable

## **Appendix A**

Written Comments on Draft 2008 NPDES  
Phase II Small MS4 General Permit.  
Letter from City of Nashua to EPA, February 20, 2009.



Donnalee Lozeau  
Mayor  
City of Nashua



February 20, 2009

Ms. Thelma Murphy,  
USEPA-Region 1  
Office of Ecosystem Protection (CIP),  
One Congress Street  
Boston, Massachusetts 02114-2023

**RE: 2008 Draft New Hampshire Small MS4 General Permit  
Comments from City of Nashua**

Dear Ms. Murphy:

The City of Nashua appreciates the opportunity to provide these general comments on the 2008 Draft New Hampshire Small MS4 General Permit. Staff from the Division of Public Works attended the Public Meeting and Public Hearing in Portsmouth, NH on January 28, 2009 and made a statement at the hearing. The statement included the desire to allow the municipalities to continue with the 2003 Permit and complete those tasks which are outstanding or could be improved upon rather than burden the municipalities with additional requirements without a mechanism to fund these new mandates.

The City of Nashua has been proactive in trying to reduce pollutants being discharged into the waterways. Stormwater regulations requiring site runoff mediation and recharge had been part of the City's Land Use Code since 1998 and were revised again in 2006 to include a treatment component. Through the planning process, site plans are reviewed with strict requirements for stormwater management during construction and post construction. Seven large swirl concentrator and two stormwater treatment trains have been constructed as Best Management Practices (BMPs) for large sewer separation projects completed by the City. A "Paulie the Pickerel" logo has been adopted as part of the public education program with colorful markers attached to catch basins to educate the public. Good housekeeping measures to reduce salt and sand applications, sweep miles of roadway in the spring and repeatedly in the most urban areas, and clean catch basins continue. Litter control in the City made great improvements when the City instituted an automated trash system, thus reducing litter getting into catch basins and the waterways. Continuous improvements in all of these areas are geared towards a better fulfillment of the 2003 permit requirements.

The updates of the 2003 Permit to the Draft 2008 Permit will require, in part, extensive monitoring of outfalls and biannual cleanings of the approximately 6,500 catch basins in the separate section of the city. The Division of Public Works is aware of the areas in the City requiring extra attention for street sweeping and catch basins maintenance and reacts to it. The online Customer Services request form allows a resident to notify the City of a drainage issue or a suspicious discharge. Knowing the areas in the city of concern for stormwater pollutants and having a mechanism for residents to be included as watch dogs for drainage issues allows the staff to locate, react, and implement procedures for removing potential pollutants to the waterways. We view this approach that concentrates the attention to areas most needing it a more prudent one. We believe that the success in the NH municipalities is being judged as limited because much of the five year period has been expended in planning, budgeting, initial implementation and standardizing of its measures. More time is needed to adequately evaluate these measures and make needed improvements.

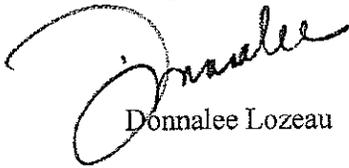
The new outfall monitoring component of the Draft 2008 Permit requires dry weather and wet weather monitoring of 25 percent of all outfalls each year. Over a three year period under the 2003 permit, 482 outfalls were identified and suspicious outfalls were sampled during dry weather. This led to 12 outfalls that required follow up monitoring. The City is aware of problematic outfalls and monitoring them. The City has completed the screening process already and feels monitoring and testing outfalls with no observed causes for suspicion of illicit discharges are not the best use of City funds. The City does have problematic areas which require culvert replacement and cleaning and would prefer to spend dollars in those known areas of concern rather than monitoring outfalls that present no suspicious physical or visual evidence of illegal discharges.

The City is in the preliminary stages of determining if a Stormwater Utility is a viable means of obtaining revenue in order to fund the operation, maintenance and improvements needed to the drainage collection system. The implementation of the utility, should it be deemed feasible, is years away from producing revenue. Until a revenue mechanism is in place, the City will not have the needed funding to complete many of the prescriptive requirements of the 2008 permit.

It should be noted that approximately one quarter of the City is served by combined sewers. The impairment of *Escherichia coli* in the Nashua and Merrimack Rivers can be largely attributed to the Combined Sewer Overflow (CSOs). The City of Nashua is approximately halfway through a twelve-year EPA Consent Decree \$76 million dollar CSO Program to reduce and mitigate discharges at the city's eight CSO locations. This is on top of \$20 million dollars spent on several sewer separation projects mentioned earlier that came under an EPA Administrative Order. At the end of the CSO Program, improvements in the water quality of these rivers should be evident.

I thank you for consideration of these comments as the 2008 Permit is finalized. The City feels we are proactive in our Stormwater Management Program and are sensitive to focusing on the problematic areas of the city. As the CSO Program continues to go forward, and the City continues to implement its Stormwater Management Plan, we continue to move towards the mutual goal of improved water quality in the waterways. In order to achieve this outcome, the City would like to continue with the approved 2003 Permit requirements and complete those tasks which are outstanding or could be improved upon rather than being burdened with additional requirements without a mechanism to fund these new mandates.

Respectfully,

A handwritten signature in cursive script, appearing to read "Donnalee", written in black ink.

Donnalee Lozeau

cc: Judd Gregg, U.S. Senator  
Jeanne Shaheen, U.S. Senator  
Paul Hodes, U.S. Congressman  
David Fredette, Interim Director, Public Works Division  
Stephen Dookran, P.E., City Engineer

## **Appendix B**

Table B. Final 2008 List of Threatened or Impaired Waters  
that require a TMDL within the Limits of the City of Nashua, NH

Table B. Final 2008 303(d) List of Impaired Waters Requiring a TMDL within the Limits of the City of Nashua, NH

Water Body NH AUID Number Size	Use Description	Impairment Name	TMDL Priority	TMDL Schedule	Source Name	Best Management Practice
Nashua River, IMP, WWF Mine Falls Dam Pond NHIMP700040402-02 60 acres (upstream of Mine Falls Dam)	Aquatic Life	Chloride	Low	2019	Commercial Districts (Shopping/Office) ; Highway/Road/Bridge Runoff (non-construction related); Municipal (Urbanized High Density Area)	Visual inspections of salt applications and snow storage at locations within watershed.
		Dissolved Oxygen Saturation	Low	2019	Source Unknown	To be determined once probable source identified by NHDES.
		pH	Low	2019	Source Unknown	To be determined once probable source identified by NHDES.
	Primary Contact Recreation	Chlorophyll-a	Low	2017	Municipal (Urbanized High Density Area)	Vortechnic unit installed upstream of one outfall. Stormwater detention pond installed on another outfall. Continue to maintain BMPs.
Nashua River, IMP (Mill Pond) NHIMP700040402-03 55.00 acres	Aquatic Life	pH	Low	2021	Source Unknown	To be determined once probable source identified by NHDES.
Nashua River, IMP, WWF Jackson Plant Dam Pond NHIMP700040402-05 40 acres (Upstream of Jackson Falls Dam)	Primary Contact Recreation	Escherichia coli	High	2017	Combined Sewer Overflows	The City continues to implement requirements of the EPA Consent Order, including construction of a Wet Weather Flow Treatment Facility (WWFTF) and regulator changes at CSO 007 and CSO 008, which discharge to this reach of the river, to reduce the occurrences of CSOs.
Harris Pond/Pennichuck Brook, PWS NHLAK700061001-04-01 83 acres	Primary Contact Recreation	Cyanobacteria hepatotoxic microcystins	Low	2019	Source Unknown	To be determined once probable source identified by NHDES.
Holt Pond PWS NHLAK700061001-06 34.99 acres	Aquatic Life	Dissolved Oxygen Saturation	Low	2021	Source Unknown	To be determined once probable source identified by NHDES.
		Oxygen, Dissolved	Low	2021	Source Unknown	To be determined once probable source identified by NHDES.
		pH	Low	2021	Source Unknown	To be determined once probable source identified by NHDES.

Table B. Final 2008 303(d) List of Impaired Waters Requiring a TMDL within the Limits of the City of Nashua, NH

Water Body NH AUID Number Size	Use Description	Impairment Name	TMDL Priority	TMDL Schedule	Source Name	Best Management Practice
Lyle Reed Brook NHRIV700040402-04 3.059 miles	Aquatic Life	Oxygen, Dissolved	Low	2017	Source Unknown	To be determined once probable source identified by NHDES.
		pH	Low	2017	Source Unknown	To be determined once probable source identified by NHDES.
Nashua River, WWF NHRIV700040402-08 3.66 miles	Primary Contact Recreation	Escherichia coli	Low	2017	Combined Sewer Overflows	The City continues to implement requirements of the EPA Consent Order, including construction of the WWFTF to reduce CSOs.
		Escherichia coli	Low	2019	Source Unknown	To be determined once probable source identified by NHDES.
Nashua River, WWF NHRIV700040402-09 1.3 miles (downstream of Jackson Falls Dam)	Primary Contact Recreation	Escherichia coli	High	2017	Combined Sewer Overflows	The City continues to implement requirements of the EPA Consent Order, including construction of the WWFTF and regulator changes at CSO 007 and CSO 008, which discharge to this reach of the river, to reduce the occurrences of CSOs.
			Low	2021	Source Unknown	To be determined once probable source identified by NHDES.
Unnamed Brook to Pennichuck Brook (Boire Fields) RIV700061001-09 1.18 miles	Aquatic Life	Oxygen, Dissolved	Low	2021	Source Unknown	To be determined once probable source identified by NHDES.
		pH	Low	2021	Source Unknown	To be determined once probable source identified by NHDES.
Merrimack River, WWF NHRIV700061002-14 3.53 miles	Primary Contact Recreation	Creosote	Low	2019	Contaminated Groundwater RCRA Hazardous Waste Site	
		Escherichia coli	High	2019	Source Unknown	To be determined once probable source identified by NHDES.

Table B. Final 2008 303(d) List of Impaired Waters Requiring a TMDL within the Limits of the City of Nashua, NH

Water Body NH AUDID Number Size	Use Description	Impairment Name	TMDL Priority	TMDL Schedule	Source Name	Best Management Practice
Salmon Brook (includes Hassell, Old Maid's, Hale Brooks) NHRIV700061201-05 6.34 miles	Primary Contact Recreation	Escherichia coli	Low	2016	Illicit Connections/ Hook-ups to Storm Sewers	Sample outfalls to trace possible locations of sources. One illicit discharge found and disconnected this reporting period.
Salmon Brook NHRIV700061201-07 0.29 miles	Primary Contact Recreation	Escherichia coli	High	2019	Source Unknown	Sample outfalls to trace possible locations of sources
Merrimack River, WWF NHRIV700061206-24 4.88 miles	Secondary Contact Recreation	Escherichia coli	High	2019	Source Unknown	Sample outfalls to trace possible locations of sources
	Aquatic Life	Aluminum	Low	2019	Source Unknown	To be determined once probable source identified by NHDES.
Merrimack River, WWF NHRIV700061206-24 4.88 miles	Primary Contact Recreation	pH	Low	2016	Source Unknown	To be determined once probable source identified by NHDES.
	Primary Contact Recreation	Chlorophyll-a	Low	2019	Source Unknown	To be determined once probable source identified by NHDES.
Merrimack River, WWF NHRIV700061206-24 4.88 miles	Primary Contact Recreation	Escherichia coli	High	2017	Combined Sewer Overflows	The City continues to implement requirements of the EPA Consent Order, including construction of the WWFTF and regulator modifications at CSO structures to reduce CSOs.
	Secondary Contact Recreation	Escherichia coli	High	2019	Source Unknown	To be determined once probable source identified by NHDES.

Source: New Hampshire Department of Environmental Services (NHDES), Water Division, Watershed Management Bureau, New Hampshire Final 2008 303(d) List of Impaired Waters Requiring a TMDL.

Acronyms :  
 PWS - Pennichuck Water System,  
 WWFTF - Wet Weather Flow Treatment Facility  
 IMP - Impoundment