



City of Nashua

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April 30, 2012

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Mr. Jeffery Andrews
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**RE: City of Nashua, New Hampshire
NPDES Phase II General Permit No. NHR041021, 2012 Annual Report**

Please find enclosed the 2012 Annual Report for the period April 1, 2011 to March 31, 2012 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 are:

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.

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

Respectfully,

Lisa Fauteux
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
Roy Sorenson, Superintendent, Nashua Street Department
Roger Houston, Planning Director
Amy Prouty Gill, CSO Stormwater Engineer



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

2012 Annual Report
April 1, 2011 to March 31, 2012



Prepared by:
City of Nashua
Public Works Division
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**City of Nashua, NH
NPDES Phase II Small MS4
General Permit No. NHR041021**

2012 Annual Report

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Municipality/Organization: City of Nashua, NH

EPA NPDES Permit Number: NHR041021

Annual Report Number

& Reporting Period: No. 9: 4/1/11 – 3/31/12



NPDES Phase II Small MS4 General Permit Annual Report

General Information

Contact Person: Lisa Fauteux
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Certification:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature: _____

Printed Name: Lisa Fauteux

Title: Director, Division of Public Works

Date: April 30, 2012





Introduction

This is the ninth annual report to comply with the conditions of the 2003 Small MS4 General Permit. The City of Nashua (City) is anticipating the issuance of the 2012 Final Permit for Small MS4 General Permit for New Hampshire later this year.

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 applied for and received a grant from the NH Department of Environmental Services (NHDES) to complete a feasibility study for a stormwater utility in the City of Nashua. Using some City funds as well as the grant, the City hired a consultant to conduct the feasibility study. The Stormwater Funding Feasibility Study was submitted to the NHDES in December 2011. In addition to the study, the City produced a Final Grant Report to NHDES. The feasibility study determined that a stormwater fee is a practical and advantageous option for Nashua because it would fairly distribute the cost of stormwater management amongst property owners, provide a stable source of funds dedicated to fulfilling mandated requirements for stormwater management, and allow for proactive maintenance of and necessary improvements to the drainage infrastructure. However, at this time, pursuing a stormwater fee will be delayed due to the difficult economic times felt by the property owners and the lack of citizens or elected officials to champion the cause.

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 within reaches of the Nashua and Merrimack Rivers located nearest

to the city, as identified in Appendix A of this report. Several projects related to the Consent Decree, and that are discussed below, are ongoing and will reduce the amounts of CSOs, and thus *Escherichia coli*, being discharged into the Nashua and Merrimack Rivers.

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 continues to operate, reducing 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.

Planning and design for mitigation of discharges at CSO 004 is continuing. The proposed storage tank would reduce the amount of combined sewage discharging to the Merrimack River. Evaluation of the needed infrastructure near CSO 004 continues.

Preliminary analyses indicate that the sewer separation work completed upstream of CSO 003 has greatly reduced the volume of combined sewage so that no storage tank will be needed at CSO 003 to contain overflow up to a 2 year storm event. A stormwater treatment train constructed in 2006 which included a Vortech swirl concentrator, a detention pond and a created wetland allows treated stormwater to be discharged to the Merrimack River.

The construction of an automated sluice gate within the CSO 006 regulator chamber to control flow during wet weather events continues to operate. The sluice gate allows the excess volume in the 108" Nashua River Interceptor to be used to store combined flow, reducing the frequency and volume of combined sewage overflowing into the Nashua River, which has been identified as impaired with *Escherichia coli*.

The drop over structures constructed on the North Merrimack River Interceptor continued to operate. These structures reduce discharges to the Merrimack River at CSO 005 by allowing combined sewage flow from a 2-year and higher storm event in sewer pipes on East Hollis and Crown Streets to flow directly into the larger interceptor that flows directly to the wastewater treatment facility (WWTF). At the WWTF, the stormwater runoff and sewage is treated prior to being discharged into the Merrimack River.

Separation of combined sewers in the Harbor Avenue area will reduce the volume of combined sewage flowing to the CSO 005 regulator on the Merrimack River. An additional benefit is the localized flooding of combined sewage in the street will be eliminated. Stormwater will be captured and treated prior to being discharged into Salmon Brook. The construction of this project began during this reporting period and is to be completed by October 2012.

The City documented the volume of combined sewer overflows discharging into the Nashua and Merrimack Rivers. An annual monitoring program provides information for the volume of discharge at each of the eight CSOs. Rainfall data for is also recorded. A plan for the Post Construction Monitoring Program for the CSO program was submitted to the EPA for comment.

Included in the program, is testing of the Nashua and Merrimack Rivers to determine water quality.

A study to address surface flooding and sewage surcharging in low lying areas in the Manchester Street area was completed during the reporting period. A low impact development initiative is recommended in one location to solve a surface flooding issue.

Public Education and Participation

The City continues to be a member of the Nashua Area Stormwater Coalition. The Manchester Area and Nashua Area groups are meeting jointly. The groups discussed successes and challenges in addressing their stormwater management programs and compliance with the Phase II regulations. The pending revised Phase II General Permit has also been discussed.

The Paulie the Pickerel “Let Only Rain Go down the Storm Drain” logo continues to be used for marketing the stormwater management program in 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 during presentations and are available in locations frequented by residents in public buildings.

Over 900 letters with an accompanying Nashua Conservation Commission sponsored Wetland brochure were sent to properties that abut wetlands. The letter shared information about wetlands and wetland buffers and encouraged property owners to share in the protection of the city’s natural environment.

The Nashua Green Team continues to meet and engage residents, businesses and others in discussions to make Nashua a Green City. Education about stormwater, water quality and water bodies 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 were removed from the waterways and banks of the Nashua River, Nashua Canal and Mill Pond. These events are well attended and include families, high school groups, business teams and the general public.

An update of stormwater issues was presented at each of the 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 the management of stormwater.

The Nashua Conservation Commission (NCC) has taken an active role in disseminating information to the public via informational items included on the agendas. The NCC also

welcomes and encourages public participation at the meetings. Information pertaining to a range of environmental concerns including stormwater management, invasive species, grant and funding opportunities, workshops, volunteer opportunities, shoreland protection, wetlands and vernal pools, master plans, best management practices, and active legislation is discussed. Six site walks for projects for which a wetland impact application was submitted occurred during the reporting period. Issues addressed during the site walk include protection of the resource (wetlands), including discussion on snow storage, use of salt, pervious pavement options, stockpiling of materials, drainage and other elements of the design.

A workshop group consisting of city staff and a resident were formed to discuss the funding needs of the stormwater management program and the feasibility of a stormwater utility in the city in order to fund these needs. Three meetings were held to discuss issues such as problems caused by stormwater, associated responsibilities of the city, rate options, billing methods and the future impact of the updated Phase II permit.

The City continues to install low impact development elements on municipal owned properties in highly visible locations. Two rain gardens were installed at an elementary school during construction of an expanded parking lot. A rain garden was constructed as the focal point on the south lawn of the Hunt Memorial Building where both public and private functions are held.

The City purposed an abandoned building and converted it to an inner city park, which a large increase in green space.

The Nashua Telegraph continues to run articles on the water quality of area brooks, rivers and streams and the volunteer sampling program that is ongoing to determine the health of the waterways. An article on the installation of a rain garden at the Hunt Memorial Building was also published.

Illicit Discharge Detection and Elimination

The Geographic Information System (GIS) mapping program of outfalls was updated with new information and corrected when discrepancies were found.

Aerial photography including using Color Infrared Imagery is available on the City web site. A city-wide impervious surface layer was generated so a calculation of impervious surface for each parcel is possible. The information has been used in the analyses of a proposed stormwater utility fee. This information will be used for better land use planning and in more comprehensive design of stormwater systems.

Culverts continued to be cleaned and maintained. When a new culvert was identified, the GIS mapping system was updated with accurate culvert information based on the field verification. Where necessary, maintenance work orders were generated using the IntelliGov system.

Construction Site and Post-Construction Runoff Control

The Nashua Land Use Code addresses land use planning issues through a variety of provisions related to stormwater management including the protection of wetlands, floodplain regulations, landscaping requirements, impervious surface requirements, open space requirements, and designs issues discussed during the development review process. The technical review process affords an interdisciplinary review of all applications submitted for Planning Board approval. Stormwater, drainage, and improved landscaping elements are included in discussions for every site and contribute to improving the stormwater directly or indirectly. The open space, impervious surface, parking and other zoning provisions are addressed as part of the process as well. The current land use code (with revisions incorporated dated October 29, 2010), is routinely discussed at staff meeting, noting areas where future amendments may be warranted.

Wetlands and wetland buffer areas are protected and proposals to impact these areas are carefully reviewed by the Nashua Conservation Commission who makes a formal recommendation to the Zoning Board of Adjustment. 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 building permit process includes review of not only zoning and building issues, but proximity to local conservation lands and practical things to do or not do. For example, no construction materials shall be stored or left in the wetland buffer areas, best management practices to be followed during construction and site cleanup upon project completion.

Staff provides ongoing assistance to residents with flood insurance and floodplain management questions. This serves as an opportunity to educate the public about floodplain management and the relationship to stormwater management.

Staff routinely provided educational literature to the NCC and Planning Board on issues related to environmental protections such as stormwater management, erosion control and use of salt/sand in winter deicing applications.

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 and controlled. A mild winter resulted in less salt and sand being applied to the roadways.

Four more "Mutt Mitt" pet waste stations were installed, bringing the total to eight. Unfortunately, a grant application to purchase 10 more pet waste stations was not approved. These eight stations will continue to be monitored, with product being replenished as necessary. Pet owners are reminded to use these stations and pick up waste in general through park signage.

Video inspections of culverts and the storm drain system using a CCTV system and a hand operated pole camera were completed. This equipment assisted in detecting infrastructure issues. Over 900 feet of the closed pipe drainage system were inspected using cameras.

The Parks Department continues its practice of Integrated Pest Management (IPM) principles and reduced the amount of pesticides that was applied. The annual 2011 Pesticide Usage Report was submitted to the NH Department of Agriculture. Also, during the reporting period, the department experimented with a compost treatment instead of a fertilizing treatment at the city largest baseball field, Holman Stadium, last fall. The department is monitoring the results.

Invasive species of water chestnut and milfoil were removed from the Nashua River and Mill Pond during this reporting period. A harvester was used over a period of about 20 days to remove the vegetation.

The IntelliGov Work Order Management System continues to be used to track work orders. 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 A is included in Appendix A. Listed in Table A are the water bodies within the City limits that are on the NHDES Final 2010 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 is the source of impairment has been identified by the NHDES.

The NHDES Final Report for Statewide TMDL for Bacteria Impaired Waters has been approved by the EPA. Certain segments of the Nashua and Merrimack Rivers and portions of Salmon Brook have been identified as being impaired for *Escherichia coli*. The CSO Program is addressing this impairment in the Nashua and Merrimack Rivers. Sampling of Salmon Brook will be scheduled to attempt to identify sources of this pollutant in the waterway. In order to address Part I.D, the schedule for required TMDLs is listed in Table A, located in Appendix A.

The City received a Section 308 Request for Information letter from the EPA concerning the occurrence of foam at the Nashua Wastewater Treatment Facility Outfall. The City tested water samples upstream and downstream of the outfalls as well as at key locations within the treatment facility over an eight month period. A Correction Action Plan to reduce the foaming has been submitted to the EPA for comment.

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 9 of the six Minimum Control Measures is listed in the attached table, Part II Summary of Minimum Control Measures. Planned activities for the next permitted year, April 2012 through March 2013, are also listed. Revisions to the Best Management Practices have been noted in the table.

Part III. Summary of Information Collected and Analyzed

0Volunteers with the Nashua River Watershed Association continue to monitor several locations in Nashua on the Merrimack and Nashua Rivers. Results of the sampling completed are included in the New Hampshire Volunteer River Assessment Program 2011 Nashua River Watershed Water Quality Report and can be found at <http://des.nh.gov/index.htm>.

Part IV. Implementation Schedule

The Stormwater Management Program Implementation Schedule for the Best Management Practices is outlined in the attached table. The schedule for the current year, Year 9, is shown in bold. The proposed schedule for Year 10 is also presented.

Part II. Summary of Minimum Control Measures

BMP ID#	Best Management Practice	Measurable Goal	Responsible Party	Progress on Goals Permit Year 9	Planned Activities Next Year
1.00	Public Education				
1.01	Storm water education program for school children	Purchase Enviroscope Watershed/Nonpoint Source model	DPW (1) - Amy Gill	Presentations using the Enviroscope were scheduled for the spring in an elementary/middle school and city function.	Continue presenting 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	At least eight newspaper articles on river water quality, volunteer water sampling, and municipals rain gardens were published in the local paper.	Continue to seek newspaper coverage on stormwater and water quality issues..
1.03	Create web page on City web site	Web page online by 12/05	DPW - Stephen Dookran, Amy Gill	Finalized stormwater information for web site. Status of CSO and stormwater 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.	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	Visits were made to SIU and deficiencies discussed with property owners. Discussion of stormwater BMPs included in visits.	Continue visiting SIUs.
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	Public meetings where stormwater issues are discussed were replayed on local cable channel.	Continue to replay meetings.
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 presentations.	Update board and continue to display board at various public events.
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/CDD	Task complete. Wetland markers continued 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.

Part II. Summary of Minimum Control Measures

BMP ID#	Best Management Practice	Measurable Goal	Responsible Party	Progress on Goals Permit Year 9	Planned Activities Next Year
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)	In April 2011, over 900 letters and Nashua Conservation brochures were sent to homeowners that abutted wetlands.	Send out information to abutters of wetlands as needed.
1.10	Design sign for brook/stream crossings	Percent design completed	DPW - Amy Gill, NCC	Sign locations identified and draft sign concept developed.	Design sign. Discuss concept with Nashua Conservation Commission.
1.11	Present Stormwater Management Program at Public Meetings	Number of Presentations	DPW- Amy Gill	Monthly Stormwater Issue update given monthly and EPA CSO reports presented quarterly at Board of Public Works meeting which is carried and replayed on Government access channel.	Continue monthly and quarterly 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 and at public demonstrations using the Enviroscope.	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/doorhangers.
1a.	Addition				
1.14	Develop Power point to run on Public Access television	Number of days presentation runs	DPW- Amy Gill	Power point slides updated.	Run informational slides on government cable channel.
2.00	Public Participation				
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 1/06	DPW - Amy Gill, Pennichuck Water Works, Inc.	Previously placed markers inspected to determine durability of marker.	Continue to have public involved in applying markers.
Revision		50% installed by 10/08			

Part II. Summary of Minimum Control Measures

BMP ID#	Best Management Practice	Measurable Goal	Responsible Party	Progress on Goals Permit Year 9	Planned Activities Next Year
2.02	Continue phone hotline service for stormwater related concerns	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. Intelligov Work Order Management System used to track phone calls.	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), NHDES	Three joint meetings were held with the Nashua Area and Manchester Area Stormwater Coalitions to discuss stormwater issues and the upcoming revised permit.	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 made available at public areas.	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)	Continued to obtain public comment on ordinances.	Continue to obtain public comment on ordinances.
3.00	Illicit Discharge Detection and Elimination				
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	Update 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.
3.02	Prepare an Illicit Discharge Detection and Elimination (IDDE) Plan	Complete final plan 10/04	DPW - Amy Gill	Continued to develop Draft IDDE.	Complete IDDE Plan.
Revision		Complete final plan 10/06			

Part II. Summary of Minimum Control Measures

BMP ID#	Best Management Practice	Measurable Goal	Responsible Party	Progress on Goals Permit Year 9	Planned Activities Next Year
3.03	Review illicit discharge ordinance	Amend ordinance as necessary by 12/07	DPW - Amy Gill	Ordinance reviewed. Language to amend ordinance discussed.	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	Continued to locate outfalls on smaller brooks and ponds. Additional 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	Sampling of stream and brooks scheduled for summer 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, Roy Sorenson	Visual inspections of outfall continue in trying to identify suspect discharges.	Continue testing and tracking suspect discharges.
3.07	Continue Regional Hazardous Waste Collection Day	Conduct 5 collection days per year	DPW - Sally Hyland, NRPC	Hazardous waste collection days occurred on 4/23, 6/2, 8/6, 10/1 and 11/5/2011. Approximately, 26,206 pounds of hazardous waste was removed from the waste stream.	Hazardous waste collection days scheduled for 4/14, 6/7, 6/4, 10/6 and 11/3/2012.
3.08	Track Hazardous Spills	Number of Spills identified	DPW - Mario Leclerc	Hydraulic fluid was spilled into Nashua River in Pepperell, MA on 5/13/11, as reported by Mass DEP. City notified and spill monitored.	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. No suspect sources noted.	Sample outfalls and trace source, if possible.
4.00	Construction Site Runoff Control				
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 October 2010. Staff routinely discussed at land use code at staff meetings, noting areas where future amendments may be warranted.	Continue review of implementation of new ordinances.

Part II. Summary of Minimum Control Measures

BMP ID#	Best Management Practice	Measurable Goal	Responsible Party	Progress on Goals Permit Year 9	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 October 2010.	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 October 2010.	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	Sample drawings gathered and compile into standards. The standard for driveway construction revised.	Index drawings and finalize drawings. 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	CDD reviews construction sites of concern and as the availability of staffing allows.	Continue review of inspection procedures and continue to inspect sites.
4.06	Review procedures for enforcement of improper functioning sediment and erosion control measures	Complete review by Dec. 2006	CDD	Enforcement procedures continued to be reviewed and revised.	Continue review of inspection procedures.
5.00	Post Construction Runoff Control				
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 October 2010. Sectioned renumbered to 190-215.	Continue review of implementation of new ordinances.

Part II. Summary of Minimum Control Measures

BMP ID#	Best Management Practice	Measurable Goal	Responsible Party	Progress on Goals Permit Year 9	Planned Activities Next Year
5.02	Review ordinance Sec 16-145 for groundwater 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 October 2010. 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 October 2010.	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.	Continue review of requirements.
5a.	Addition				
5.05	Install Low Impact Development items on Municipal Properties	Design and Construct on Riverside Street Property	DPW - Steve Dookran	Task complete. Additional rain gardens have been installed at an elementary school and the very visible Hunt Memorial Building.	Continue to design and install LID elements on municipally owned properties.
6.00	Municipal Good Housekeeping				
6.01	Hazardous waste training program for applicable employees	Employees attend annual hazardous spill training program beginning May 2005	DPW - Mario Leclerc	NWTF staff reviewed procedures for handling hazardous wastes.	Continue to train employees and review procedures.
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 and seminars (APWA, UNH T2, NEWEA, NHDES LID, APA).	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. The City experimented with a compost treatment instead of a fertilizing treatment at Holman Stadium and is monitoring the results.	Continue implementation of fertilization policies.

Part II. Summary of Minimum Control Measures

BMP ID#	Best Management Practice	Measurable Goal	Responsible Party	Progress on Goals Permit Year 9	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 - Roy Sorenson	Program began in March 2011. Entire City swept once, with commercial/arterial or other critical streets being swept up to 6 times per year, including sidewalks.	Continue street sweeping.
6.05	Review snow dumping procedure to allow snow storage in areas away from surface waters	Complete review July 2005	DPW - Roy Sorenson	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 751 catch basin were cleaned, an increase of 33% over the last reporting period.	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.	Continue correction of SSOs.
6.08	Television inspection of storm drains as needed	Record number inspect as needed	DPW - Mario Leclerc	Approximately 900 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 - Roy Sorenson	Calibrated salt and sand trucks in November 2011.	Calibrate trucks in fall 2012.
6.10	Review pooper scooper ordinance	Review ordinance by July 2005	DPW- Amy Gill, Nick Caggiano	Ordinance reviewed and found adequate. An additional four "Mutt Mitt" dog convenience stations were installed, for a total of eight. The grant was not received.	Monitor the use of the dog convenience stations.

Part II. Summary of Minimum Control Measures

BMP ID#	Best Management Practice	Measurable Goal	Responsible Party	Progress on Goals Permit Year 9	Planned Activities Next Year
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	Low impact development ideas continued to be discussed with developers. Developers have proposed permeable pavement, infiltration systems, rain gardens and other LID components at various sites.	Continue discussion with developers about the advantages of LIDs.
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. Seasonal help continues to be hired to clean swales.	Clean swales as necessary.
6.13	Develop culvert maintenance program.	Develop and Implement program by 2007	DPW - Mario Leclerc	Fifty - seven culverts were cleaned. Continued to document, and inspect culverts as they were identified. GIS mapping updated.	Continue to locate culverts and clean culverts as needed. Update GIS system as necessary.
7.00	Impaired Waters				
The NHDES Final Report for Statewide TMDL for Bacteria Impaired Waters has been approved by the EPA. See Appendix A for a listing Impaired Waters and the schedule for TMDL studies for waterway within the city limits.					

(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 IV. SWMP Implementation Schedule

BMP ID #	PERMIT YEAR 6				PERMIT YEAR 7				PERMIT YEAR 8				PERMIT YEAR 9				PERMIT YEAR 10			
	Spring 08	Summer 08	Fall 08	Winter 08-09	Spring 09	Summer 09	Fall 09	Winter 09-10	Spring 10	Summer 10	Fall 10	Winter 10-11	Spring 11	Summer 11	Fall 11	Winter 11-12	Spring 11	Summer 11	Fall 11	Winter 11-12
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Part IV. SWMP Implementation Schedule

BMP ID #	PERMIT YEAR 6				PERMIT YEAR 7				PERMIT YEAR 8				PERMIT YEAR 9				PERMIT YEAR 10			
	Spring 08	Summer 08	Fall 08	Winter 08-09	Spring 09	Summer 09	Fall 09	Winter 09-10	Spring 10	Summer 10	Fall 10	Winter 10-11	Spring 11	Summer 11	Fall 11	Winter 11-12	Spring 11	Summer 11	Fall 11	Winter 11-12
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BMP ID #	PERMIT YEAR 6				PERMIT YEAR 7				PERMIT YEAR 8				PERMIT YEAR 9				PERMIT YEAR 10			
	Spring 08	Summer 08	Fall 08	Winter 08-09	Spring 09	Summer 09	Fall 09	Winter 09-10	Spring 10	Summer 10	Fall 10	Winter 10-11	Spring 11	Summer 11	Fall 11	Winter 11-12	Spring 11	Summer 11	Fall 11	Winter 11-12
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Appendix A

Table A. Final 2010 List of Impaired Waters
that require a TMDL within the Limits of the City of Nashua, NH

Table A. 303(d) Final 2010 List of Impaired Waters that requires a TMDL within the limits of the City of Nahua, NH (1)

Water Body NH AUD Number Size	Use Description	Impairment Name	TMDL Priority	TMDL Schedule	Source Name	Best Management Practice
Nashua River 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.
	Primary Contact Recreation	pH	Low	2019	Source Unknown	To be determined once probable source identified by NHDES.
		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 -Nashua Canal Dike NHIMP700040402-03 42.00 acres	Aquatic Life	pH	Low	2021	Source Unknown	To be determined once probable source identified by NHDES.
	Primary Contact Recreation	Escherichia coli	Low	2023	Source Unknown	To be determined once probable source identified by NHDES.
	Primary Contact Recreation	Escherichia coli	High	2010	Combined Sewer Overflows	The City continues to implement requirements of the EPA Consent Order, including construction of a slide gate to hold wet weather flow in an 108 inch interceptor and construction of drop over structures to divert more flow to the WWFTF to reduce CSOs.
Harris Pond/Pennichuck Brook, PWS NHLAK700061001-04-01 72.079 acres	Aquatic Life	Iron	Low	2023	Source Unknown	To be determined once probable source identified by NHDES.
	Primary Contact Recreation	Cyanobacteria hepatotoxic microcystins	Low	2019	Source Unknown	To be determined once probable source identified by NHDES.

Table A. 303(d) Final 2010 List of Impaired Waters that requires a TMDL within the limits of the City of Nahua, NH (1)

Water Body NH AUDID Number Size	Use Description	Impairment Name	TMDL Priority	TMDL Schedule	Source Name	Best Management Practice
Bowers Pond, PWS * NHLAK700061001-04-02 79.221 acres	Aquatic Life	Iron	Low	2023	Source Unknown	To be determined once probable source identified by NHDES.
Holts Pond PWS * NHLAK700061001-06 21.385 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.
Lyle Reed Brook NHRIV700040402-04 3.6 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 3.696 miles	Primary Contact Recreation	Escherichia coli	High	2010	Combined Sewer Overflows	The City continues to implement requirements of the EPA Consent Order, including construction of the WWFTF to reduce CSOs.
	Secondary Contact	Escherichia coli	High	2010	Source Unknown	To be determined once probable source identified by NHDES.
Nashua River, WWF NHRIV700040402-09 1.273 miles (downstream of Jackson Falls Dam)	Primary Contact Recreation	Escherichia coli	High	2010	Combined Sewer Overflows	The City continues to implement requirements of the EPA Consent Order, including construction of a slide gate to hold wet weather flow in an 108 inch interceptor and construction of drop over structures to divert more flow to the WWFTF to reduce CSOs.

Table A. 303(d) Final 2010 List of Impaired Waters that requires a TMDL within the limits of the City of Nahua, NH (1)

Water Body NH AUD Number Size	Use Description	Impairment Name	TMDL Priority	TMDL Schedule	Source Name	Best Management Practice
Muddy Brook NHRIV700061001-06 4.662 miles	Aquatic Life	Oxygen, Dissolved	Low	2019	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.
Pennichuck Brook, PWS * NHRIV700061001-07 3.635 miles	Aquatic Life	Dissolved Oxygen Saturation	Low	2019	Source Unknown	To be determined once probable source identified by NHDES.
		Oxygen, Dissolved	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	Escherichia coli	High	2010	Source Unknown	To be determined once probable source identified by NHDES.
Unnamed Brook to Pennichuck Brook (Boire Fields) RIV700061001-09 0.984 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.
Unnamed Brook RIV700061001-12 0.285 miles	Aquatic Life	Iron	Low	2023	Source Unknown	To be determined once probable source identified by NHDES.
		Oxygen, Dissolved	Low	2023	Source Unknown	To be determined once probable source identified by NHDES.
Merrimack River NHRIV700061002-14 4.137 miles	Aquatic Life	pH	Low	2023	Source Unknown	To be determined once probable source identified by NHDES.
	Primary Contact Recreation	Creosote	Low	2019	Contaminated Groundwater RCRA Hazardous Waste Site	
		Escherichia coli	High	2010	Source Unknown	To be determined once probable source identified by NHDES.

Table A. 303(d) Final 2010 List of Impaired Waters that requires a TMDL within the limits of the City of Nahua, NH (1)

Water Body NH AUD 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 6.514 miles	Primary Contact Recreation	Escherichia coli	High	2010	Illicit Connections/ Hook-ups to Storm Sewers	Sample outfalls to trace possible locations of sources.
Salmon Brook, WWF NHRIV700061201-07 0.184 miles	Primary Contact Recreation Secondary Contact	Escherichia coli Escherichia coli	High High	2010 2010	Source Unknown Source Unknown	Sample outfalls to trace possible locations of sources Sample outfalls to trace possible locations of sources
Merrimack River NHRIV700061206-24 4.321 miles	Aquatic Life	Aluminum	Low	2019	Source Unknown	To be determined once probable source identified by NHDES.
		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.
		Escherichia coli	High	2010	Combined Sewer Overflows	The City continues to implement requirements of the EPA Consent Order, including construction of a slide gate to hold wet weather flow in an 108 inch interceptor and construction of drop over structures to divert more flow to the WWFTF to reduce CSOs.
	Secondary Contact	Escherichia coli	High	2010	Source Unknown	To be determined once probable source identified by NHDES.

(1) Source: New Hampshire Department of Environmental Services (NHDES), Water Division, Watershed Management Bureau, New Hampshire, Final 2010 303(d) Surface Water Quality List as submitted to the EPA April 1, 2010.

Acronyms :

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

* Primary town listed as Merrimack but Nashua shares waterfront