Municipality/Organization: City of Nashua, NH

EPA NPDES Permit Number: NHR041021

Annual Report Number & Reporting Period: No. 11: 4/1/13 – 3/31/14

NPDES Phase II Small MS4 General Permit Annual Report

General Information

Contact Person: Stephen Dookran, P.E. Title: City Engineer
Telephone #: 603-589-3134 Email: dookrans@nashuanh.gov

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: SDookran

Printed Name: Stephen Dookran, P.E.

Title: City Engineer

Date: April 30, 2014

Introduction

This is the eleventh annual report to comply with the conditions of the 2003 Small MS4 General Permit. The City of Nashua (City) is aware of the issuance of the Draft 2013 Permit for Small MS4 General Permit for New Hampshire that was published in the Federal Register on February 23, 2013. The City submitted comments dated August 15, 2013 from Mayor Lozeau to Newton Tedder regarding the draft permit and are awaiting a response from the EPA. The City anticipates a final permit that sets goals achievable through a reasonable use of City resources.

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's Wastewater Department through its sewer user fee has primarily supported the efforts required for the MS4 Permit, these funds should be directed only to the sanitary and combined sewer system, not the storm drainage system. This funding deficiency is expected to grow since the 2013 Draft Small MS4 General Permit puts 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), and, using additional City fund, completed a feasibility study for a stormwater utility in the City of Nashua. 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. While a statewide TMDL has been approved for all waterways impaired with Escherichia coli, the City continues to complete projects related to the Consent Decree, and as discussed below, are ongoing and will reduce the amounts of CSOs, and thus Escherichia coli being discharged into the Nashua and Merrimack Rivers.

The CSO program was designed based on the philosophy that urban runoff, particularly in the urbanized areas dictated by the MS4 Permit, contains pollutants that are harmful to the waterways. The City moved from a complete separation program to a hold and treat philosophy. The inner city areas are served by combined sewers. The stormwater runoff enters a sewer in the street that also conveys sanitary wastes. Up to a two year storm event, particularly the most polluted first flush, will be collected/stored and conveyed to combined sewage treatment facilities.

The 60 MGD Wet Weather Flow Treatment Facility (WWFTF), located at the Nashua Wastewater Treatment Facility (NWTF), to capture and treat combined sanitary and stormwater, continues to operate, reducing the occurrence of CSOs and the volume of combined flows that is discharged to the rivers. Also, more urban stormwater runoff from approximately 30 percent of the city, which is part of the combined flow, is now conveyed to the WWFTF where it will be treated before being discharged to the Merrimack River.

The construction of a CSO storage tank located near Burke Street was completed in December 2013. This 40,000 gallon tank will contains overflow up to a 2 year storm event and reduces the amount of combined sewage discharging to the Merrimack River.

Sewer separation work completed upstream of CSO 003 has eliminated the discharge of combined sewage at CSO 3 up to a 2 year storm event. A stormwater treatment train constructed in 2006 which included a Vortechnic swirl concentrator, a detention pond and a created wetland allows treated stormwater to be discharged to the Merrimack River.

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.

The drop over structures constructed on the North Merrimack River Interceptor continue 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 NWTF and the WWFTF where the combined flow is treated prior to being discharged into the Merrimack River.

Separation of the 60 acre combined sewered Harbor Avenue area resulted in reducing the volume of combined sewage flowing to the CSO 005 regulator on the Merrimack River. An additional

benefit of this work is that localized flooding of combined sewage in the streets is eliminated.

Construction began on the Screening and Disinfection Facility (SDF) at CSOs 005/006, the last CSO plan element, during this reporting period in August 2013. This CSO facility, which will have the capacity to hold one million gallons, will contain overflow up to a 2 year storm event, reducing the amount of combined sewage discharging to the Merrimack River. In addition, *this* CSO facility will screen and disinfect combined sewer flows that are currently discharged untreated from CSO 005, located on the Merrimack River, and CSO 006, located on the Nashua River slightly upstream of its confluence with the Merrimack River. The new outfall for this facility will be located on the Merrimack River.

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 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.

The City continues to install low impact development elements on municipal owned properties in highly visible locations. The City is rehabilitating Main Street from Canal Street to West Hollis Street in a phased project. Within this reach of Main Street, impervious areas are being removed and being replaced with green space using planting elements such as landscape beds.

Public Education and Participation

The City continues to be a member of the Nashua Area Stormwater Coalition. During the past year the group met 3 times, sometimes jointly with the Manchester Area Coalition. The groups discussed successes and challenges in addressing their stormwater management programs and compliance with the Phase II regulations. The revised draft 2013 Phase II General Permit was also 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. In total, approximately 20 presentations were made to the public consisting of a middle school classroom, a high school classroom and people of all ages at the Public Works Day Celebration in May 2013.

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.

Updates of stormwater issues are reported 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, the progress made on addressing them, 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.

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.

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.

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.

During the rehabilitation of the Jackson Falls dam completed during this reporting period, the water level of the Nashua River was extremely low. Canoes trips were made in the urban industrial area to identify discharge points that are usually submerged. Video and still photography was used to document the discharge pipes.

On June 13, 2013, an incident occurred where approximately 2 gallon of hydraulic fluid was discharged into a wetland area on a private construction site. The Spill Center was contacted and fluid properly cleaned up.

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 September 1, 2012), 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.

Rehabilitation of two 12-foot metal culverts that carry Salmon Brook is anticipated in the next reporting period. The project has been bonded by the private developer.

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 harsh, late winter during the period December 2013 to March 2014 resulted in salt and sand being applied to the roadways into late March.

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 1,700 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 2013 Pesticide Usage Report was submitted to the NH Department of Agriculture. During this period, the State of NH passed new fertilizer laws that limit the purchase of products with phosphorous by only being contained within products used to establishment new seed.

As in previous years, the invasive species water chestnut was removed from the Nashua River

One hundred and twenty-five tons of vegetation was removed during this reporting period.

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 where Nashua is listed as the Primary Town on the NHDES 2012 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 if 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. In order to address Part I.D, the schedule for waterbodies in Nashua identified as bacteria impaired waters covered by the approved statewide TMDL is listed in Table B, located in Appendix B.

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 continues to test water samples upstream and downstream of the outfall as well as at key locations within the treatment facility. A Correction Action Plan to reduce the foaming is in place. Defoamant chemicals were tested in an effort to determine the most appropriate additive to the effluent stream.

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 11 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 2014 through March 2015, are also listed. Revisions to the Best Management Practices have been noted in the table.

Part II. Summary of Minimum Control Measures

BMP ID#	Best Management Practice	Measurable Goal	Responsible Party	Progress on Goals Permit Year 11	Planned Activities Next Year
1.00	**Public Education**				
1.01	Storm water education program for school children	Purchase Enviroscape Watershed/Nonpoint Source model	DPW (1) - Amy Gill	Presentations using the Enviroscape were completed in a middle school classroom, ahigh school classroom and at a DPW celebration in May.	Continue presenting in the schools and at other events. Establish more contacts with educators.
Revision		Number of presentations given using Enviroscape			
1.02	Insert flyer in local newspaper describing city wide storm water program	Number of inserts distributed annually	DPW - Amy Gill	Local newspaper continued to publish articles on river water quality, volunteer water sampling, and waterbodies in general.	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 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 being revised.	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 public 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 11	Planned Activities Next Year
1.09	Mail letters to owners/residents that abut wetland to explain importance of wetland and encourage no dumping in wetland area.	Number of letters mailed to abutters	DPW - Amy Gill, NCC(7)	Letters and Nashua Conservation brochures were sent to homeowners where a concern about adjacent wetlands were identified.	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 Enviroscape.	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 by11/05, 100% by 11/06	DPW - Amy Gill, Pennichuck Water Works, Inc.	Previously placed markers inspected to determine durability of marker. Some markes replaced.	Continue to have public involved in applying markers.
Revision		50% installed by 10/08			
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.

Part II. Summary of Minimum Control Measures

BMP ID#	Best Management Practice	Measurable Goal	Responsible Party	Progress on Goals Permit Year 11	Planned Activities Next Year
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 meetings were held with the Nashua Stormwater Coalition to discuss ongoing stormwater issues.	Continue to meet with members of the surrounding communities to discuss stormwater issues.
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			
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. Identified undocumented outfalls recorded. 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.

Part II. Summary of Minimum Control Measures

BMP ID#	Best Management Practice	Measurable Goal	Responsible Party	Progress on Goals Permit Year 11	Planned Activities Next Year
3.06	Remove illicit discharges as budgetary funding allows	Track number of illicit discharges detected and removed	DPW - Mario Leclerc, Eric Ryder	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 4/20,5/4, 6/6, 8/3 ,10/5 and 11/2/2013. Approximately, 458 households from Nashua participated in this regional event.	Schedule hazardous waste collection days.
3.08	Track Hazardous Spills	Number of Spills identified	DPW - Mario Leclerc	On June 13, 2013, an incident occurred where approximately 2 gallon of hydraulic fluid was discharged into a wetland area on a private construction site. The Spill Center was contacted and fluid properly cleaned up.	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- Matthew Taylor	Land use ordinance revised and updated, effective September 2012. Staff routinely discusses land use code at staff meetings, noting areas where future amendments may be warranted.	Continue review of implementation of new ordinances.
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- Matthew Taylor	Land use ordinance revised and updated, effective September 2012.	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 11	Planned Activities Next Year
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- Matthew Taylor	Land use ordinance revised and updated, effective September 2012.	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 7alternative erosion protection measures by Dec. 2006	DPW - Amy Gill	Sample drawings gathered and compile into standards.	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- Matthew Taylor	Land use ordinance revised and updated, effective September 2012.	Continue review of implementation of new ordinances.
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- Matthew Taylor	Land use ordinance revised and updated, effective September 2012. 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- Matthew Taylor	Land use ordinance revised and updated, effective September 2012.	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 11	Planned Activities Next Year
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 ad green spaces have been designed for the Main Street Improvement project in downtown Nashua.	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. Two staff members upgraded their certifications.	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 Non-Point Source Pollution, 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.	Continue implementation of fertilization policies.
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 2013. 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 - Eric Ryder	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 585 catch basins were cleaned.	Continue catch basin cleaning program.

Part II. Summary of Minimum Control Measures

BMP ID#	Best Management Practice	Measurable Goal	Responsible Party	Progress on Goals Permit Year 11	Planned Activities Next Year
6.07	Continue SSO(6) correction and mitigation program for SSOs that discharge to water bodies	Record number of SSOs corrected.	DPW - Mario Leclerc	One SSOs was 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 1,700 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 - Eric Ryder	Calibrated salt and sand trucks in November 2013.	Calibrate trucks in fall 2014.
6.10	Review pooper scooper ordinance	Review ordinance by July 2005	DPW- Amy Gill, Nick Caggiano	Ordinance reviewed and found adequate. Eight "Mutt Mitt" dog convenience stations continue to be used by the public and are monitored.	Monitor the use of the dog 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	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. 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	Twenty-five 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 2012 List of Threatened or Waters that require a TMDL within the Limits of the City of Nashua, NH are listed in Appendix A. The NHDES Final Report for Statewide TMDL for Bacteria Impaired Waters has been approved by the EPA. Waterbodies in Nashua Identified as Bacteria Impaired Waters Covered by the Statewide TMDL are listed in Appendix B.				

(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

Volunteers with the Nashua River Watershed Association continue to monitor several locations in Nashua. Results of the sampling completed are included in the New Hampshire Volunteer River Assessment Program 2013 Nashua River Watershed Water Quality Report and can be found in Appendix C and at the web site http://des.nh.gov/organization/divisions/water/wmb/vrap/data.htm . Staff at the Nashua Wastewater Facility also takes samples of the Merrimack River throughout the year as a requirement of their NPDES permit.

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 11, is shown in bold. The proposed schedule for Year 12 is also presented.

Part IV. SWMP Implementation Schedule

	PERMIT YEAR 8				PERMIT YEAR 9				PERMIT YEAR 10				PERMIT YEAR 11				PERMIT YEAR 12			
BMP ID #	Spring 10	Summer 10	Fall 10	Winter 10-11	Spring 11	Summer 11	Fall 11	Winter 11-12	Spring 12	Summer 12	Fall 12	Winter 12-13	**Spring 13**	**Summer 13**	**Fall 13**	**Winter 13-14**	Spring 14	Summer 14	Fall 14	Winter 14-15
1.01																				
1.02																				
1.03																				
1.04																				
1.05																				
1.06																				
1.07																				
1.08																				
1.09																				
1.10																				
1.11																				
1.12																				
1.13																				
1.14																				
2.01																				
2.02																				
2.03																				
2.04																				
2.05																				
2.06																				

Part IV. SWMP Implementation Schedule

	PERMIT YEAR 8				PERMIT YEAR 9				PERMIT YEAR 10				PERMIT YEAR 11				PERMIT YEAR 12			
BMP ID #	Spring 10	Summer 10	Fall 10	Winter 10-11	Spring 11	Summer 11	Fall 11	Winter 11-12	Spring 12	Summer 12	Fall 12	Winter 12-13	**Spring 13**	**Summer 13**	**Fall 13**	**Winter 13-14**	Spring 14	Summer 14	Fall 14	Winter 14-15
3.01																				
3.02																				
3.03																				
3.04																				
3.05																				
3.06																				
3.07																				
3.08																				
3.09																				
3.10																				
4.01																				
4.02																				
4.03																				
4.04																				
4.05																				
4.06																				
5.01																				
5.02																				
5.03																				

	PERMIT YEAR 8				PERMIT YEAR 9				PERMIT YEAR 10				**PERMIT YEAR 11**				**PERMIT YEAR 12**			
BMP ID #	Spring 10	Summer 10	Fall 10	Winter 10-11	Spring 11	Summer 11	Fall 11	Winter 11-12	Spring 12	Summer 12	Fall 12	Winter 12-13	**Spring 13**	**Summer 13**	**Fall 13**	**Winter 13-14**	Spring 14	Summer 14	Fall 14	Winter 14-15
5.04																				
5.05																				
5.06																				
6.01																				
6.02																				
6.03																				
6.04																				
6.05																				
6.06																				
6.07																				
6.08																				
6.09																				
6.10																				
6.11																				
6.12																				
6.13																				

Appendix A

Table A. 2012 List of Threatened and Impaired Waters that requires a TMDL, Primary Town, Nashua, NH

Table A. 2012 List of Threatened or Impaired Waters that requires a TMDL(1)
Primary Town, 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 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	Atmospheric Deposition Acidity	No action
	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 -Nashua Canal Dike NHIMP700040402-03 42.00 acres	Aquatic Life	pH	Low	2021	Atmospheric Deposition Acidity	To be determined once probable source identified by NHDES.
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	Low	2019	Source Unknown	To be determined once probable source identified by NHDES.
Lyle Reed Brook NHRIV700040402-04 3.688 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.

Table A. 2012 List of Threatened or Impaired Waters that requires a TMDL(1)
Primary Town, City of Nashua, NH

Water Body NH AUID Number Size	Use Description	Impairment Name	TMDL Priority	TMDL Schedule	Source Name	Best Management Practice
Muddy Brook NHRIV700061001-06 4.805 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.
Unnamed Brook to Pennichuck Brook (Boire Fields) RIV700061001-09 0.986 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 3.714 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	No action
Merrimack River NHRIV700061206-24 4.393miles	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.

(1) Source: New Hampshire Department of Environmental Services (NHDES), Water Division, Watershed Management Bureau, New Hampshire, 2012 303(d) Surface Water Quality List. http://des.nh.gov/organization/divisions/water/wmb/swqa/2012/documents/2012-all-impaired-waters.pdf

Acronyms : PWS - Pennichuck Water System,

Appendix B

Table B. Waterbodies in Nashua Identified as
Bacteria Impaired Waters Covered by the Statewide TMDL

Table B. Waterbodies in Nashua Identified as Bacteria Impaired Waters Covered by the Statewide TMDL

Watershed	Waterbody Name	Assessment Unit #	Primary Town	% Reduction to meet TMDL	
				Single Sample	Geometric Mean
Merrimack River	MERRIMACK RIVER	NHRIV700061002-14	NASHUA	72%	25%
	MERRIMACK RIVER	NHRIV700061206-24	NASHUA	96%	35%
	SALMON BROOK - HASSELLS BROOK - OLD MAIDS BROOK - HALE BROOK	NHRIV700061201-05	NASHUA	92%	no data
	SALMON BROOK	NHRIV700061201-07	NASHUA	96%	90%
Nashua River	NASHUA RIVER - JACKSON PLANT DAM POND	NHIMP700040402-05	NASHUA	92%	no data
	NASHUA RIVER	NHRIV700040402-08	NASHUA	94%	complies
	NASHUA RIVER	NHRIV700040402-09	NASHUA	92%	no data

Source: Final Report New Hampshire Statewide TMDL for Bacteria Impaired Waters by New Hampshire Department of Environmental Services, September 2010

Appendix C

Table C. Nashua River Watershed Association
2013 E.Coli Monitoring Results

Table C. Nashua River Watershed Association 2013 E.Coli Monitoring Results

		Excellent	Good	Poor	Fair 127-630							
		≤ 88	89-126	> 630								
		MassDEP and NHDEP swimming standard is 126 colony forming units(cfu) per 100 milliliters of water(mL)										
					NC-Not Collected							
		wet weather										
Site ID	**Monitor/Team**	**Town**	**Water Body**	**Quick ID**	**Site Description**	APRIL	MAY	JUNE	JULY	AUG	SEPT	OCTOBER
BK0435	Miller	Fitchburg	Baker Brook	Rt. 2A	Rt. 2A	65	48	75.4	NC	NC	NC	114.5
BR0895	Hogan/Ashley/Wa	Harvard	Bowers Brook	DS Bare Hill dam	D.S. Bare Hill pond dam	NC	2	7.1	11.9	3	2	3.1
BR1039	Hogan/Ashley/Wa	Harvard	Bowers Brook	inlet to Bare Hill	at Tahanto Trail, inlet to Bare Hill Pond	65	75.4	101.7	155.3	98.7	42.5	no sample
CT0195	Shirley Team	Shirley	Catecunemaug	Umbagog Bld	Umbagog Building on Leominster Rd.	46.5	79.4	43.5	167	150	62	20.4
CT0425	Shirley Team	Shirley	Catecunemaug	Below dam	104 Catecunemaug Rd.Below dam.	NC	NC	NC	NC	NC	NC	NC
FT0290	Flagler/Bucht	Hollis, NH	Flint Brook	French Mill Rd.	off French Mill Rd.	187.2	27.9	95.9	248.1	147	19.5	2
GB0312	Armstrong/Schott	Pepperell	Gulf Brook	Chestnut St.	Gulf Brook u.s. of Chestnut Street.	13.4	53	24.1	16.1	24.2	15.8	17.1
JB0200	VonCampe/Saun	Groton	James Brook	Old Ayer Rd.	Old Ayer Rd.	313	224.7	579.4	816.4	NC	36.8	25.9
JB0121	Sheffield	Ayer	James Brook	U.S. Rt. 111	U.S. Rt. 111 Bridge.	32.3	209.8	285.1	387.3	95.9	403.4	77.1
MN0009	Himlan	Leominster	Monoosnoc Brook	Whitney Field mall	Upstream of bridge over Commercial Road, the	37.5	95.9	387.3	NC	547.5	93.3	228.2
MN0223	Himlan	Leominster	Monoosnoc Brook	Whitney Street	Near Whitney Carriage off Whitney Street	17.3	238.2	193.5	NC	1119.9	416	1046.2
MN0419	Himlan	Leominster	Monoosnoc Brook	Monument Sq	Behind Friendly's at 24 Monument Square. Throu	NC	NC	NC	NC	NC	NC	79.4
MN0520	Himlan	Leominster	Monoosnoc Brook	Granite Street	Granite Street	56.3	24.5	54.6	NC	44.3	51.2	118.7
MU0647	Brockelman	Lunenburg	Mulpus Brook	Cross St.	Brockelman property-Cross St.	21.1	39.3	90.6	30.5	21.1	42.8	20.2
MU2011	Luescher	Lunenburg	Mulpus Brook	23 Valley Rd	Above Hickory Hills Lake behind 23 Valley	12.1	6.3	57.6	50.4	NC	21.3	23.1
NB0006	Langten	Ayer	Nonacoicus Brook	Bishop Rd.	U.S from Bishop Rd. bridge	156.5	104.6	NC	129.1	NC	248.9	172.5
NM0121	Insigna	Nashua, NH	Nashua Mainstem	Canal Street	Canal Street at Area Agency parking lot	41.4	48	101.9	178.5	NC	125	27.2
NM0140	Sarno/Noble	Nashua, NH	Nashua Mainstem	Water St	French Park on Water St.	NC	30.1	75.4	79.4	39.3	82	48.8
NM0200	MacDougall/Ruby	Nashua, NH	Nashua Mainstem	Technology Park	Nashua Technology Park	19.3	35	108.1	38.9	28.5	81.6	26.9
NM0875	Insigna	Nashua NH	Nashua Mainstem	boat launch	Mine Falls Park at boat launch	16	10.9	172.5	10.8	NC	65.7	lab error
NM1567	Dinsmore	Hollis, NH	Nashua Mainstem	Runnels Bridge	Upstream from Rte 111(Runnels) Bridge	17.5	30.5	78.9	79.4	24.5	12.1	24.1
NM2256	Tornaritis	Pepperell	Nashua Mainstem	Covered Bridge	downstream side of covered bridge-bridge	18.7	25.6	93.3	161.6	47.3	21.3	27.5
NM2928	Hamelin	Pepperell	Nashua Mainstem	Rte. 119	South side of Rte. 119 bridge at Canoe launch	27.9	86	146.7	62.5	67.6	78.9	45.5
NM4201	Shirley Team	Shirley	Nashua Mainstem	Ice House Dam	Ice House Dam on Walker Rd.	4.1	49.6	148.3	69.7	28.5	22.3	59.8
NM5837	Lancaster Team	Lancaster	Nashua Mainstem	Rte. 117	Nashua at boat launch downstream of Rte. 117	29.1	86.5	NC	260.3	69.5	104.3	88.2
NN0049	Lancaster Team	Lancaster	North Nashua	Main St.	N. Nashua at Main St. R.R. Bridge	114.5	86.5	NC	88.2	46.5	77.1	35.9
NN0426	Lancaster Team	Lancaster	North Nashua	Langen Rd	Langen Rd. @ Rt. 117	81.6	184.2	579.4	72.2	38.8	73.3	91
NN1194	Lancaster Team	Lancaster	North Nashua	Rt. 190	Downstream of Rt. 190. Access from paved	1203.3	517.2	178.5	151.5	60.8	71.4	59.8
NN1905	Couture/Streb/Ha	Leominster	North Nashua	Hamilton St	Parking lot of Gearworks cycle. Hamilton St.	51.2	78.9	201.4	325.5	93.3	103.9	59.4
NN2657	Butler/Forbes	Fitchburg	North Nashua	Riverfront Park	Riverfront Park	31.5	12.1	122.3	129.1	44.1	31.8	32.7
NN2888	Butler/Forbes	Fitchburg	North Nashua	Rt. 12	McDonalds at Rt. 12 Rotary	8.3	648.8	107.6	344.8	75.9	68.9	52.9
NN3071	Couture/Streb/Ha	Fitchburg	North Nashua	Mill # 3	Mill # 3 Farm Stand	7.4	23.1	52	107.6	31.1	155.3	29.2
NT0082	Metzger	Pepperell	Nissitissit River	Lomar Park	Nissitissit River at Lomar Park. Up gradient of	63.7	41	58.3	79.8	114.5	150	66.3
NT0418	Armstrong/Schott	Pepperell	Nissitissit River	Prescott Street	Nissitissit River upstream of Prescott Street river	84.2	NC	81.3	116.2	101.4	59.4	33.6
NT0890	Hebert	Brookline,	Nissitissit River	Fire Station	Nissitissit River at Fire Station in Brookline Cntr	2	9.6	51.2	30.1	13.2	60.9	52.1
PB0840	Picone YSI ONLY	Ashburnham	Phillips Brook	Whitney Hill Rd	Philips Brook at Whitney Hill Rd	NC	NC	NC	NC	NC	NC	NC
SB0025	Black/Steeves	Pepperell	Sucker Brook	Brookline Road	Sucker Brook d.s. of Brookline Road bridge.	114.5	33.2	178.9	101.4	108.1	62.4	58.1
SB0295	Black/Steeves	Pepperell	Sucker Brook	Sartelle Street	Sucker Brook d.s. of Sartelle Street	35.5	21.6	157.6	52.1	73.3	13.4	<1
SN0169	Lancaster Team	Lancaster	South Nashua	Mill St	South Nashua at Mill St.(upstream) Access	206.4	160.7	88.2	770.1	21.1	214.3	84.2
SQ0356	Moore	Groton	Squannacook	Rte. 225	Squannacook River d.s. of Rte. 225 bridge	14.6	39.3	NC	68.3	38.4	27.8	Lab error
SQ1329	Padla/Taylor	Townsend	Squannacook	Rte. 119	Squannacook River-d.s.Harbor Pond, behind	16	21.6	201.4	119.1	37.3	25.6	6.3
SQ1788	Wilkinson/Beauch	Townsend	Squannacook	Rte. 13.	Squannacook River off of Elm Circle, west side	35	35	204.6	235.9	122.3	128.1	24.6
SQ2400	Wilkinson/Beauch	Townsend	Squannacook	Mason Road	Squannacook River @ Mason Road, d.s. of	31.8	58.1	150	85.5	95.9	10.9	34.1
WE0034	Lancaster Team	Lancaster	Wekepeke Brook	Bartlett Pond dam	Wekepeke below Bartlett Pond dam	1299.7	96	115.3	95.9	67	42.6	1