City of Nashua, New Hampshire
Stormwater Funding Feasibility Study

Final Report

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Executive Summary

This stormwater fee feasibility study was performed by the City of Nashua to investigate the feasibility of implementing a stormwater fee to fund the City's stormwater management program and infrastructure improvement and maintenance. This study finds that a stormwater fee is a practical and advantageous option for Nashua and provides the following benefits:

- A stormwater fee fairly distributes the cost of stormwater management activities (e.g., drainage infrastructure maintenance and improvements) amongst property owners, with properties that produce greater volumes of runoff (e.g., commercial and industrial properties with large impervious areas) paying more than residential property owners
- It provides a stable source of funds that are dedicated to fulfilling mandated requirements for stormwater management and allow the City to pro-actively maintain its drainage infrastructure
- Increased maintenance and infrastructure improvements offer additional benefits such as better flood control, better roads, better fishing, better boating and better water quality for recreation and drinking

It is recommended that fees be assessed based on a property's impervious area and cover the costs of the City's current and anticipated stormwater program to meet upcoming mandated regulations and to provide long-term maintenance and improvements to the City's infrastructure. Long-term maintenance and improvements will help reduce localized flooding, minimize the occurrence of potholes and improve water quality in surface waters throughout the City, saving the City money over the long-term.

The average residential fee in Nashua to meet regulatory requirements and provide long-term maintenance and improvements would be approximately $75 per household per year. The average commercial property would pay about $820 per year, with actual fees based on the total amount of impervious surface. However, it is recommended that a credit system be established, properties to install stormwater best management practices on their sites to reduce their stormwater fee. Actual fees will need to be refined when finalizing the stormwater fee.

The most significant constraint to implementing a stormwater fee is anticipated to be the public's lack of understanding of the importance of maintaining the City's infrastructure and stormwater quality and how this will benefit them. In order to overcome this constraint, a Public Outreach Plan was developed outlining an approach for gaining public support for a stormwater fee and it is recommended that this plan be implemented as the first step in an overall fee implementation strategy.

1.0 Introduction

Stormwater runoff has long been recognized as a significant source of water quantity and more recently quality problems. Recent regulations, such as the federal 2003 NPDES Phase II Municipal Separate Storm Sewer (MS4) Permit issued by the United States Environmental Protection Agency (U.S. EPA) and the upcoming renewal of this permit, which was released in draft form in December 2008, are tightening the reins on municipal government, requiring better management of stormwater infrastructure and treatment of stormwater discharges, especially to 303(d) listed, or impaired, water resources. The permit applies to public entities that own drainage systems such as catch basins, pipes and outfalls that capture stormwater runoff and discharge it to surface waterbodies, otherwise known as MS4s.

While these new regulations are intended to improve water quality and the environment, they are an unfunded mandate, and cities and towns must find a way to generate the funds to comply with these regulations. This can be difficult, particularly when citizens and businesses do not recognize the value of stormwater management, and funds are competing with other city funded projects such as operation of schools, fire departments and police departments.

Recent enabling legislation allows New Hampshire municipalities to implement stormwater fee systems. This is further supported by the findings and recommendations of a Stormwater Study Commission, which recommends legislation for a statewide stormwater fee to overcome some of the barriers individual communities are facing in developing their own stormwater fee. Under the Commission's proposed recommendations, municipalities with existing fees would be able to opt out of the state fee and keep all funds local[1].

The City of Nashua applied for and received a new Hampshire DES 319 grant to investigate the feasibility of implementing a stormwater fee, and if so, what the approximate charges would be to residents and businesses and what possible revenues may be raised. This report presents the results of the feasibility analysis.

[1] *New Hampshire House Bill 1295 Chapter 71 Laws of 2008 Stormwater Study Commission, Final Report*, November 2010. (http://www.nh.gov/oep/legislation/2008/hb1295/final_report/november_2010.pdf)

2.0 Existing Stormwater Program and Future Needs

The City of Nashua already performs stormwater management activities, which are funded by the General Fund. It is important to understand what these activities include, who is responsible for them and the funds set aside to perform these activities. Understanding how they operate now allows for the identification of additional stormwater management needs to maintain existing stormwater infrastructure and comply with existing and upcoming regulations.

2.1 Existing Infrastructure

The City of Nashua occupies 31.7 square miles, consisting primarily of commercial/industrial and residential properties with a population of about 87,000. Known existing stormwater infrastructure is included in Table 1.

Table 1. Existing Stormwater Infrastructure

Stormwater Infrastructure Component	Known Quantity	Existing Maintenance
Catch basins	8,069	Clean about 400 structures per year (5%)
Drain manholes	2,931	Cleaned as needed
Headwalls	1,191	Dredge sediments as needed
Culvert locations	253	Cleaned as needed
Miles of drainage pipe	130	Cleaned as needed
Outfalls	807	Cleaned as needed
Detention ponds, public	35	None
Stormwater treatment facilities	8	None

The City of Nashua is approximately halfway through a twelve year $80 million dollar Combined Sewer Overflow (CSO) Program to reduce and mitigate discharges at the city's eight CSO locations located on the Nashua and Merrimack Rivers. Approximately 20 percent of the city, largely in its most urban downtown area, is served by combined sewers that collect both municipal wastewater/sewage and stormwater runoff, with some of the sewers dating back to the 1880s. The impairment of Escherichia coli in the Nashua and Merrimack Rivers can be largely attributed to the CSOs. At the end of the CSO Program, improvements in the water quality of these rivers should be evident.

The remaining 75 percent of the city is served by a separated collection system with stormwater infrastructure dating back to the early 1800s for culverts. A large portion of the separated system was constructed after 1960. The actual condition of the infrastructure is unknown and has not been documented. Most of the drainage network consists of smaller concrete pipe; however, there is some clay pipe. Due to staff and budget limitations, maintenance is performed on an as needed basis, with the exception of catch basin cleaning, which targets cleaning of roughly 400 structures (5%) each year. The City currently repairs about 120 catch basins per year, replacing frames and grates and in some cases the entire structure. Other infrastructure maintenance involves

dredging of sediments from headwalls and outfalls as needed (e.g., to alleviate localized flooding when it occurs) and proper disposal of the materials collected.

2.2 NPDES Phase II Compliance

The largest regulatory driver for implementing stormwater management practices at the City level is the National Pollutant Discharge and Elimination System (NPDES) Municipal Separate Storm Sewer system (MS4) General Permit. The majority of the city is designated "Urbanized" under the NPDES program since it has a population above 50,000 and an overall population density of at least 1,000 people per square mile. As such, the City is required to have permitted stormwater outfalls under the EPA NPDES MS4 Stormwater Phase II Rule.

The NPDES MS4 permit requires regulated Cities and Towns to develop and implement a Stormwater Management Plan that addresses six minimum measures:

1. Public Education and Outreach - distribute educational materials to the public
2. Public Involvement and Participation – involve the public in development of stormwater program
3. Illicit Discharge Detection and Elimination (IDDE) – map outfalls and receiving waters, develop ordinance prohibiting illicit discharges, develop IDDE plan, screen outfalls
4. Construction Site Stormwater Runoff Control – develop ordinance requiring stormwater controls during development, include procedures for site inspection and enforcement
5. Post-Construction Site Stormwater Runoff Control – develop ordinance requiring stormwater controls to handle post development runoff, address long-term operation and maintenance (O&M)
6. Pollution Prevention and Good Housekeeping in Municipal Operations – develop O&M to reduce stormwater pollution from City facilities and operations, develop training programs

The first permit was issued in 2003 and covers a five year period. The City of Nashua has developed a Stormwater Management Program to meet the NPDES requirements and submits the required annual report. Additional funding would allow the City to aggressively address tasks within the Stormwater Management Plan. Currently, the City satisfies permit requirements as budgetary funding allows.

A revised draft permit released in 2008 includes several new requirements that the City must comply with, which will significantly increase the cost and resources needed by the City to comply as summarized in Section 2.4. A copy of the draft permit and additional requirements is included in Appendix A.

Implementing the Stormwater Management Program falls to the Community Development Division (CDD) and to the Division of Public Works. NPDES Permit control measures 4 and 5 are mostly the responsibility of the CDD with measures 1, 2, 3 and 6 falling mostly to DPW.

2.3 Existing Stormwater Program Structure and Costs

The Nashua Division of Public Works currently oversees and implements most activities related to stormwater and stormwater management within the City of Nashua. The Division of Public Works employs about 200 people and is divided into seven departments with their main functions as follows:

1. Administration – The main functions of this department are setting division direction and goals, payroll, insurance, workers compensation claims, pension, purchasing, improved business technologies and the overall budget.

2. Engineering – The Engineering Department is responsible for reviewing and providing input to subdivision and site plans and also performs design of public sewers, drains, roads and other projects. They also perform inspections of construction in the public right of way to verify that the work is in accordance with approved plans. This includes stormwater improvement components of projects to meet local rules and regulations.

3. Parks and Recreation – The Parks and Recreation Department is responsible for providing and maintaining recreation facilities and for general park/tree/grounds maintenance, including applying fertilizers and herbicides.

4. Solid Waste Department – The main responsibilities of this Department include management of the landfill and recycling center, oversight of waste and recycling contracts, and management of drop-off events at the household hazardous waste/small quantity generator waste collection center.

5. Street Department – The Street Department is primarily engaged in the operation and maintenance of City Streets. The Department performs small construction projects, which include roadway drainage and sidewalk improvements. Stormwater related responsibilities include all structural catch basin repairs, dredging of headwalls, replacement of stormwater drainage pipes and street sweeping.

6. Traffic Department – The Traffic Department works towards providing efficient movement of people and goods throughout the City and is responsible for traffic engineering, traffic signals, street signs, and pavement markings.

7. Wastewater Treatment Facility – The primary function of the Wastewater Treatment Facility is to treat wastewater before discharging to the Merrimack River. This department is also responsible for the operation and maintenance of the City's sewer and drainage infrastructure.

Several of these departments fund and perform stormwater management related activities. These departments include the Engineering Department, Street Department and Wastewater Treatment Facility.

Additionally, the Planning Department, a department within the Community Development Division, and Code Enforcement provide services related to stormwater management, mostly as they pertain to implementing and enforcing City regulations that include stormwater management requirements for developers. The Planning Department reviews subdivision and site plans for compliance with regulations and is responsible for reviewing and tracking operation and maintenance (O&M) plans and records required under the Land Use Code. Code Enforcement enforces the ordinances.

Specific stormwater responsibilities for each of these departments are summarized in Table 2, along with the existing funding mechanism for each. Note that stormwater management activities performed by the Wastewater Department are funded through fees paid by sewer user fees, whereas activities performed by other City Departments are funded by the General Fund, which is funded through taxes paid by City residents and businesses.

Table 2. Stormwater Responsibilities and Funding Mechanism by City Department

Department	Responsibility	Funding Mechanism
Engineering Department	• NPDES Phase II Compliance – SWMP implementation & reporting • Review subdivision & site plans, stormwater designs • Inspection of construction projects in the right of way	General Fund
Street Department	• All structural catch basin repairs • Dredging headwalls • Replacing drainage pipes (10' deep or shallower) • Street sweeping – 2x/year, downtown more frequently	General Fund
Wastewater Treatment Facility	• Catch basin cleaning • Stormwater pipe flushing & root removal • Laboratory analysis of outfall samples for IDDE work • Disposal of catch basin cleanings	Sewer Rates
Community Development – Planning Department	• Review, accept & track O&M Plans & maintenance records required under 1998 Stormwater Ordinance • Inspect Best Management Practices (BMPs) during construction • Review subdivision & site plans for compliance with the Land Use Code (stormwater management, wetlands, and floodplain management)	General Fund
Code Enforcement	• Enforce ordinances related to wetlands & stormwater discharges	General Fund
Financial Services – Assessors & GIS	• Mapping of drainage infrastructure	General Fund

A summary breakdown of the existing stormwater budget by department is included in Table 3, with details provided in Appendix B. The existing stormwater budget was developed by determining the percentage of each Department's existing budget dedicated to performing the stormwater management responsibilities defined in Table 2.

Table 3. Existing Stormwater Program Costs[1]

Department	Personnel Costs[2]	Capital Costs[3]	Total Existing Budget
Engineering Department	$ 47,000	$ 21,000	$ 68,000
Street Department	$ 105,000	$ 155,000	$ 260,000
Wastewater Treatment Facility	$ 256,000	$ 120,000	$ 376,000
Community Development - Planning Department	$ 14,000	$ -	$ 14,000
Code Enforcement	$ 9,000	$ -	$ 9,000
Financial Services - Assessors & GIS	$ 17,000	$ 3,000	$ 20,000
Total	$ 448,000	$ 299,000	$ 747,000

[1]Existing Stormwater Program Costs represent an average annual cost between FY12 and FY16, which accounts for a 2.5% increase per year.
[2]Personnel costs include staff salaries and all fringe benefits.
[3]Capital costs include utility service costs (e.g., electricity, water heating), office supplies and equipment, general maintenance, educational training, membership dues, minor equipment (e.g., survey equipment), machinery and equipment (e.g., street sweepers), fleet maintenance, vehicle fuels, construction materials for drainage improvements (e.g., catch basin frames and covers, pipe, asphalt, cement, gravel), residuals disposal.

2.4 Future Stormwater Program Needs

As presented in Table 2, current staffing limitations and lack of manpower limit the level of stormwater management activities performed in the City. Many activities are performed on an as needed basis as allowed with existing budget and staff. This approach can be more costly in the long-term resulting in more repairs and replacements from lack of long-term maintenance and deleterious impacts on private property.

Additionally, new NPDES Phase II requirements are on the horizon, with a draft permit released in December 2008 (Appendix A) and a final permit expected sometime in 2012. The draft permit includes several new activities/requirements that municipalities with an MS4 must perform to comply with the requirements, with a greater emphasis on improving the water quality of impaired waters. Impaired waters with an approved Total Maximum Daily Load (TMDL) are a particular focus of the draft permit. The TMDL establishes how much pollution a particular water body can accept, how much needs to be removed to improve water quality, and what measures should be taken to achieve the

desired pollution removal. The draft permit is requiring municipalities to document how they are meeting TMDLs.

Specifically, the new draft permit requires:

- Two targeted public education messages during the permit cycle for residential, business/commercial, developer/construction and industrial audiences;
- Map receiving waters, outfalls, catch basins, manholes, pipes and treatment facilities associated with the separate storm sewer system (Nashua already has a map completed);
- Develop written IDDE program that includes an assessment and ranking of the drainage system for illicit discharge potential using criteria specified in the permit; systematic procedures for locating and removing illicit discharges; identification of responsibilities for fixing illicit discharges and tracking the progress, along with defining indicators to evaluate the effectiveness;
- Dry weather screening of all outfalls for illicit discharges (25% a year beginning year 2);
- Wet weather monitoring of all outfalls (25% a year beginning year 2), including whatever parameters the water body is impaired for, if any;
- Written procedures for site plan review including consideration of water quality impacts and for receipt and consideration of public inputs;
- Clear procedures for inspections and enforcement;
- Procedures to ensure long-term operation and maintenance of stormwater BMPs (Planning has a procedure in place, but lacks the manpower to implement it);
- Assess street and parking lot design regulations and incorporate changes that allow for low impact design options;
- Assess regulations for feasibility of allowing green infrastructure;
- Estimate directly connected impervious cover and update annually, specifically noting number of acres added or removed;
- Develop written operations and maintenance procedures for parks (includes fertilizers, pesticides); building and facilities (storage and use of materials; waste management); vehicles and equipment (storage, repairs and fueling); road way and sewer systems (inspections and cleaning); salt storage and usage and snow disposal;
- Sweep streets twice a year;
- Develop Stormwater Pollution Prevention Plans (SWPPPs) for maintenance garages, public works facilities, transfer stations and other waste handling facilities;
- Develop and implement inspection procedures for stormwater controls;
- Comply with specific terms of approved TMDL.

Table 4 summarizes the estimated future stormwater program costs, accounting for the existing level of service provided, the needed level of service to comply with the upcoming NPDES Permit, and the needed level of service to improve and maintain infrastructure to improve the handling of stormwater runoff. Incorporation of these efforts increases the existing budget by about $2.3 million. Needed improvements and maintenance include:

1. Capital Improvement Projects
   - Correct flooding at Shelley Drive and Browning Ave. associated with Old Maid's Brook – the brook currently overtops the road creating a hazard.
   - Correct flooding at Northeastern Blvd/Murphy Drive – Harris Brook currently tops the road creating a hazard.
   - Correct flooding at Courtland/Hall – street flooding occurred during 8/10/2008 storm and requires further investigation to correct.
   - Correct flooding at intersection of Manchester and Charlotte – flooding is occurring due to a lack of a drainage system to collect stormwater runoff.
   - Replace culvert at Main Dunstable Road that is carrying Hale Brook – top of pipe is missing on 36-inch culvert that is carrying Hale Brook.
   - Infrastructure replacement – The drainage infrastructure is aging and will require replacement over time. This item allows for replacement of 1% or 1.3 miles of piping and associated structures per year.
   - Retrofit existing stormwater BMPs – Most existing BMPs in the City were designed for flow control only, providing little to no water quality treatment. Retrofitting these BMPs to provide water quality treatment is a cost effective way to treat existing runoff. This item allows for retrofitting one BMP per year.
   - Install stormwater BMPs throughout City – Phase II will require the City to meet existing TMDLs for impaired waters, which will require measures to improve water quality from stormwater runoff. This item allows for installation one BMP per year to improve water quality.

2. Stormwater Management Fee and Staff
   - Costs to set up, implement and maintain a stormwater fee.
   - One additional staff person to assist with implementation of the Stormwater Program, including field inspection of erosion and stormwater controls during construction, tracking and enforcing operation and maintenance of BMPs.

3. Ongoing Maintenance
   - Maintaining the existing 43 City-owned stormwater BMPs. Maintenance is required to ensure these systems are operating as designed and generally consists of sediment removal and clearing of vegetation.
   - An allowance to clean stormwater outfalls of heavy sediment and debris, minimizing clogging and associated flooding.

Appendix B provides a detailed breakdown of NPDES compliance costs and future CIP and maintenance costs included in Table 4.

Table 4. Future Stormwater Program Costs[1]	
Existing Stormwater Program Costs	$ 750,000
NPDES MS4 Requirements	$ 320,000
Future CIP & Maintenance	$ 1,980,000
Total	$ 3,050,000

[1]All costs represent an average annual cost between FY12 and FY16. Existing costs include a 2.5% increase per year increase over the period. NPDES MS4 Requirements include compliance costs for the 5-year permit term. All costs have been rounded to the nearest $10,000.

3.0 Compelling Case Evaluation

3.1 Why Does Nashua Need a Stormwater Management Program?

The primary driving factor for a Stormwater Management Program is the NPDES Phase II Permit. The NPDES program was established under the authority of the Clean Water Act in 1972 with the NPDES Phase II General Permit enacted in 2003 for small Municipal Separate Storm Sewer Systems (MS4s). Nashua is classified as a 'Small MS4" (<100,000 population) and is located partially/fully in an urbanized area. The draft NPDES Phase II General Permit renewal is expected to be finalized in 2012 with increasing compliance requirements. The purpose of the permit is to address the negative impacts of stormwater runoff and improve water quality of surface waters. The Stormwater Management Plan required to be developed under the regulations provides the framework for permit compliance and for addressing water quality problems/issues.

Development and implementation of a stormwater management program also has several other desirable benefits including:

- Protection of drainage infrastructure assets
- Cleaner water for recreational uses such as fishing
- Reduced flooding and better roadways
- Cleaner water for drinking water

These benefits cannot be achieved without greater efforts and expenditures for stormwater management.

3.2 Why Is Stormwater a Concern?

The U.S. EPA has determined that non-point source runoff (a.k.a. stormwater) is the leading cause of water quality impairments in the United States today. Additionally, 80% of water quality impairments in New Hampshire are due in whole or in part to stormwater.[2] Increased impervious areas associated with urbanization interfere with the natural hydrologic cycle, resulting in drastic changes in stormwater quantity and quality. In a natural hydrologic cycle, about 50% of rainfall infiltrates into the groundwater to replenish groundwater baseflows, with an estimated 40% returned to the atmosphere through evapotranspiration (e.g., direct evaporative losses from surfaces and water used by vegetation and lost to the atmosphere as vapor). Only about 10% flows over land as runoff. Refer to Figure 1 for a simplified diagram of the hydrologic cycle and Figure 2 for typical changes to the water balance as impervious area increases.

[2] New Hampshire Department of Environmental Services. 2008. *2008 Section 305(b) and 303(d) Consolidated Assessment and Listing Methodology*. September 2008. NHDES-R-WD-08-5.

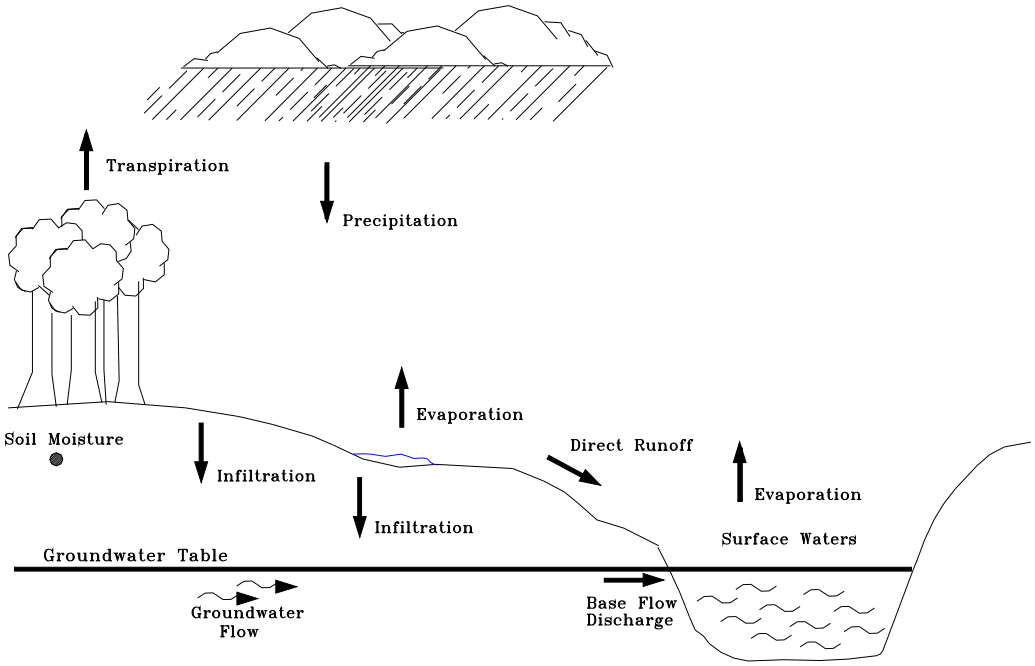

Figure 1. Simplified Diagram of the Hydrologic Cycle

The infiltration process through soils results in a cool, clean filtered water and even the surface runoff under natural conditions undergoes pollutant removal as flows are slowed by vegetation allowing particles and pollutants to settle out.

Once natural vegetation and soils are replaced with impervious surfaces, the infiltration component decreases significantly and the volume of surface runoff increases significantly. These changes result in:

- Greater volumes of water reaching streams and rivers faster – this can lead to localized flooding if the conveyance systems cannot handle these increased flows and increased flood plains.
- Reduced stream baseflows – rivers and streams are fed by groundwater during the drier summer months. Rainfall infiltrated during other times of the year can take months to reach the stream, providing a steady flow during dry periods. A reduction in infiltration reduces the baseflow available to these streams.
- Decline in water supply yields – reduced groundwater flows to water supplies (wells and surface water) can decrease water available for supply.
- Increased stream channel erosion – higher flow volumes and velocities over shorter periods of time can increase erosion of stream banks and channels.
- Increased pollutant loads to surface waters – pollutants build up on impervious surfaces (e.g., pesticides, fertilizers, animal wastes, oil, grease, heavy metals) and are easily washed into surface waters without vegetation filtration and infiltration processes to remove them.

- Increased stream temperatures – paved and open areas absorb heat and transfer this heat to stormwater runoff. A reduction of shade trees can also lead to increased stream temperatures.

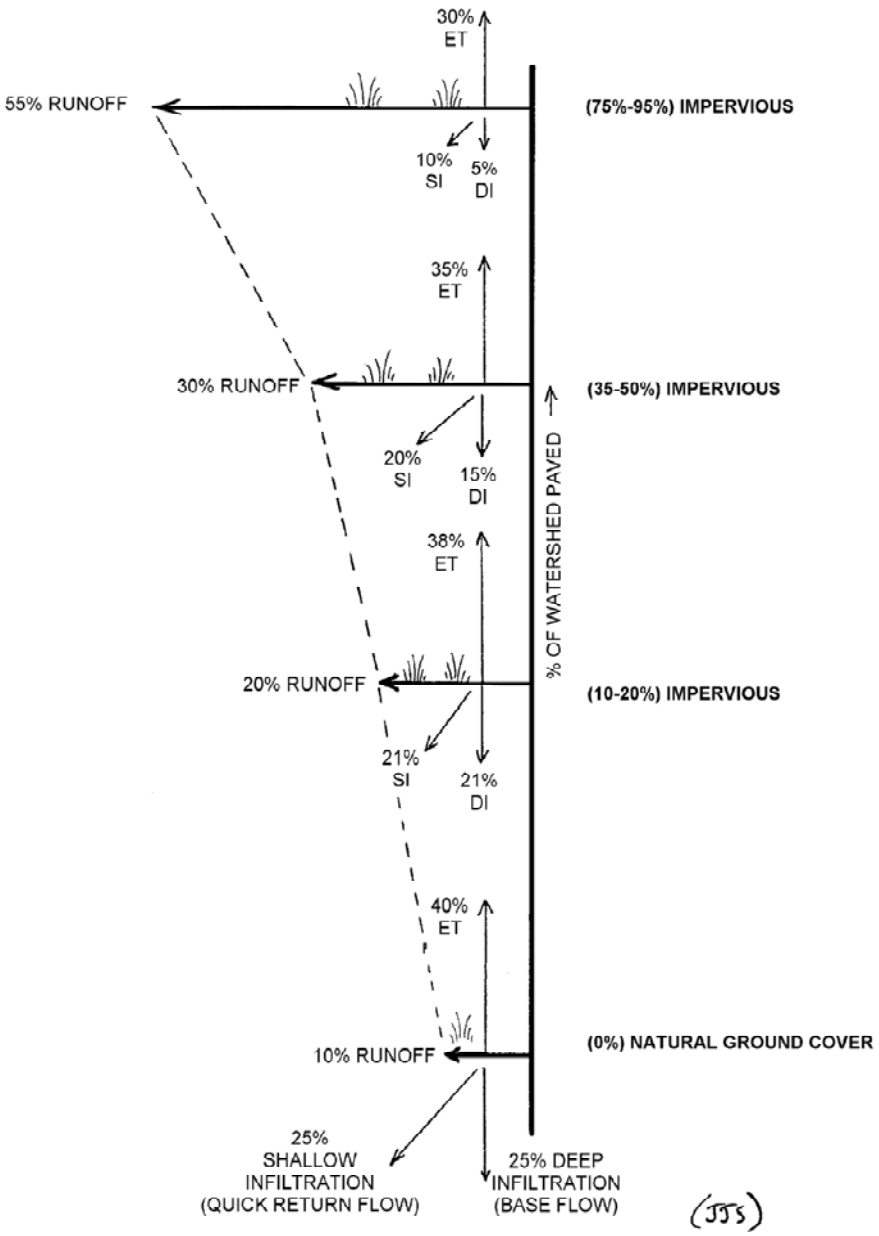

Figure 2. Typical Changes to the Water Balance with Increased Impervious Area

3.3 What Local Stormwater Impacts Has Nashua Experienced?

Nashua experiences the impacts of stormwater runoff first hand. Localized flooding, such as at the intersection of Northeastern Boulevard and Murphy Drive (Refer to Figure 3), occur as increased development generates more stormwater runoff than the existing

infrastructure can handle. Lack of maintenance also results in localized flooding as existing pipes and structures fill with debris carried and deposited by stormwater runoff. In most cases, maintenance is performed as budgetary funding allows.

Figure 3. Localized Flooding – Flooding at the intersection of Northeastern Boulevard and Murphy Drive impact traffic passage and business access

Infrequent maintenance can also introduce greater levels of pollutants to receiving waters. Sediments and pollutants accumulated in detention basins, catch basins and treatment structures will eventually discharge into the receiving water if they are not periodically removed from the treatment device, resulting in impaired water quality.

The New Hampshire Department of Environmental Services (NHDES) continually assesses the quality of New Hampshire's surface waters based on the extent to which the waters provide for the protection and propagation of a balanced population of shellfish, fish, and wildlife, and allow recreational activities in and on the water. One outcome of this assessment is development of the 303(d) List of impaired waters in New Hampshire. The 303(d) List includes surface waters that are impaired or threatened by pollutant(s) and designates those that require a TMDL study designed to meet water quality standards. Several water bodies in Nashua are included on the 303(d) List due to impairments. Table 5 lists the impaired water bodies along with a description of use, type of impairment, source of impairment and schedule for TMDL.

3.4 Why Does the Stormwater Management Program Need to Be Expanded?

The existing Stormwater Management Program is based on the 2003 NPDES Phase II General Permit. This permit is good for five years, or until a new permit is issued. EPA released a draft permit renewal in December 2008, which is expected to become final in 2012. In addition to the ongoing requirements of the 2003 permit, this new permit outlines several new requirements targeted towards improving water quality as outlined in Section 2.4. Additional funds and resources are needed to implement existing requirements (e.g., inspection of BMPs, tracking of O&M) that are not currently being performed and the upcoming requirements.

Stormwater management funds are necessary to:

- Comply with the mandated regulatory requirements of the NPDES program
- Repair and fix flooding problems
- Replace or rehabilitate deteriorating infrastructure
- Address pollution in the City's waterways and ponds
- Improve quality of life and aesthetics including business attraction
- Preserve property value
- Source water preservation
- Avoid Lawsuits due to increased flooding of private property
- Protect Recreation opportunities such as fishing
- Avoid increased road repair/replacement costs

A good system of drainage infrastructure, maintained diligently, can save the City millions of dollars in the long-run and will greatly contribute to a thriving community. Without adequate funding, unmaintained drainage systems damage roads, private property and the environment, and may discourage business traffic, eventually creating the need for much more expensive and disruptive replacements and reconstructions.

Table 5. 303(d) Final 2010 List of Impaired Waters that Require a TMDL in Nashua

Water Body NH AUID Number Size	Use Description	Impairment	TMDL Schedule	Source Name
Nashua River, IMP, WWF Mine Falls Dam Pond NHIMP700040402-02 60 acres (upstream of Mine Falls Dam)	Aquatic Life	Chloride	2019	Commercial Districts (Shopping/Office); Highway/Road/Bridge Runoff (non-construction related); Municipal (Urbanized High Density Area)
		DO Saturation	2019	Source Unknown
		pH	2019	Source Unknown
	Primary Contact Recreation	Chlorophyll-a	2017	Municipal (Urbanized High Density Area)
Nashua River, IMP (Mill Pond) NHIMP700040402-03 42 acres	Aquatic Life	pH	2021	Source Unknown
	Primary Contact Recreation	E. coli	2023	Source Unknown
Nashua River, IMP, WWF Jackson Plant Dam Pond NHIMP700040402-05 40 acres (Upstream of Jackson Falls Dam)	Primary Contact Recreation	E. coli	2010	Combined Sewer Overflows
Harris Pond/Pennichuck Brook, PWS NHLAK700061001-04-01 72.079 acres	Aquatic Life	Iron	2023	Source Unknown
	Primary Contact Recreation	Cyanobacteria hepatotoxic microcystins	2019	Source Unknown
Bowers Pond, PWS* NHLAK700061001-04-02 79.221 acres	Aquatic Life	Iron	2023	Source Unknown
Holt Pond PWS* NHLAK700061001-06 21.385 acres	Aquatic Life	DO Saturation	2021	Source Unknown
		DO	2021	Source Unknown
		pH	2021	Source Unknown
Lyle Reed Brook NHRIV700040402-04 3.6 miles	Aquatic Life	DO	2017	Source Unknown
		pH	2017	Source Unknown
Nashua River, WWF NHRIV700040402-08 3.696 miles	Primary Contact Recreation	E. coli	2010	Combined Sewer Overflows
	Secondary Contact	E. coli	2010	Source Unknown
	Primary Contact Recreation	E. coli	2010	Combined Sewer Overflows
Muddy Brook NHRIV700061001-06 4.662 miles	Aquatic Life	DO	2019	Source Unknown
		pH	2021	Source Unknown

Table 5. 303(d) Final 2010 List of Impaired Waters that Require a TMDL in Nashua (cont)				
Water Body NH AUID Number Size	**Use Description**	**Impairment**	**TMDL Schedule**	**Source Name**
Pennichuck Brook, PWS* NHRIV700061001-07 3.635 miles	Aquatic Life	DO Saturation	2019	Source Unknown
		DO	2019	Source Unknown
		pH	2019	Source Unknown
	Primary Contact Recreation	E. coli	2010	Source Unknown
Unnamed Brook to Pennichuck Brook (Boire Fields) RIV700061001-09 0.984 miles	Aquatic Life	DO	2021	Source Unknown
		pH	2021	Source Unknown
Unnamed Brook RIV700061001-12 0.285 miles	Aquatic Life	Iron	2023	Source Unknown
		DO	2023	Source Unknown
Merrimack River, WWF NHRIV700061002-14 4.137 miles	Aquatic Life	pH	2023	Source Unknown
	Primary Contact Recreation	Creosote	2019	Contaminated Groundwater RCRA Hazardous Waste Site
		E. coli	2010	Source Unknown
Salmon Brook (includes Hassell, Old Maid's, Hale Brooks) NHRIV700061201-05 6.514 miles	Primary Contact Recreation	E. coli	2010	Illicit Connections/Hook-ups to Storm Sewers
Salmon Brook, WWF NHRIV700061201-07 0.29 miles	Primary Contact Recreation	E. coli	2010	Source Unknown
	Secondary Contact	E. coli	2010	Source Unknown
Merrimack River, WWF NHRIV700061206-24 4.321 miles	Aquatic Life	Aluminum	2019	Source Unknown
		pH	2016	Source Unknown
	Primary Contact Recreation	Chlorophyll-a	2019	Source Unknown
		E. coli	2010	Combined Sewer Overflows
	Secondary Contact	E. coli	2010	Source Unknown

Source: New Hampshire Department of Environmental Services (NHDES), Water Division, Watershed Management Bureau, New Hampshire 2010 303(d) List of Impaired Waters That Require a TMDL as submitted to the EPA April 1, 2010.

Acronyms:

- PWS – Pennichuck Water System
- WWF – Wet Weather Facility
- IMP - Impoundment
- DO – dissolved oxygen
- E. coli – Escherichia coli

*Primary town listed as Merrimac but Nashua shares waterfront.

3.5 Funding Options

Options for funding the stormwater management compliance activities include the following

- General Fund (taxation)
- Grants and Loans
- Fee-based Stormwater Enterprise Fund

General Fund and Sewer Rates

Funding of drainage system maintenance and repair has historically been split between the Street Department, Engineering and Planning budgets in the General Fund and the Wastewater enterprise fund, based on the level of service provided by each department.

The General Fund is funded through property taxes, where each property owner pays into the fund based on the value of their property, with the funds used to pay for various City expenses, including drainage infrastructure maintenance and repair.
The Wastewater enterprise fund is funded through sewer use rates, which are based on the amount of water a customer uses. A portion of these funds are used to pay for stormwater management activities performed by the Wastewater Treatment Facility. Neither the General Fund nor the Wastewater enterprise fund is correlated to specific impacts on stormwater infrastructure. Continuation of this method of funding stormwater management related activities would not require any increased administrative costs, since the tax and sewer rates would simply be adjusted to account for the approved stormwater budget.

However, funding through the General Fund and Wastewater enterprise fund (e.g., sewer rates) has three main problems:

1) The budgeted funds are not necessarily dedicated to stormwater, as multiple City expenses, such as schools and public safety, compete for General Fund funding. These competing expenses are often viewed as a higher priority resulting in inadequate funds to properly maintain the City's stormwater system. As a result, the ongoing lack of maintenance of the drainage system means that the City's stormwater infrastructure and roads are deteriorating increasingly rapidly. Fixing the damage will become even more expensive, with costs increasing every year that maintenance is put off;

2) There is inequity in that residences bear the largest monetary burden even though businesses typically produce the most runoff; and

3) The general fund and sewer rates have no correlation with stormwater generation.

Grants and Loans

Grants and loans can provide some funding to help defer some of the costs of the stormwater management program. In particular, the following grant programs administered by NHDES may provide the City with financial assistance towards NPDES Phase II permit compliance:

- s319 Funding Program – this is currently split into two funding avenues appropriated through the U.S. Environmental Protection Agency via the Clean Water Act. These include Watershed Restoration Grants which support local initiatives to control nonpoint source pollution and address pollution problems in impaired waters and the similar Watershed Assistance Grants which address issues to protect high quality waters through local watershed management. Municipalities are eligible to receive funds from either program with a project goal to prevent, control or abate nonpoint source pollution. Grants work on a reimbursement basis and must contain an element that provides information, education and/or a component that can be technically transferred as well as a method to verify project success. However, grant funds may not be used to implement NPDES MS4 Permit conditions. There is a 6-8 month proposal timeline beginning with a pre-proposal in September and a project start date of May.

- State Revolving Fund – NH allows the use of SRF funds for Phase II implementation projects, such as mapping and development of a capital improvement plan, and storm sewer system upgrades and retrofits.

Generally, these funds are only available for capital improvement or implementation projects and cannot be used to fund basic maintenance of a City's infrastructure, which must be locally funded. Additionally, state and federal agencies are unlikely to contribute grant monies for cleanup of water bodies if basic maintenance of the drainage system is unfunded. Thus, the funds are more useful as a supplement to local funding to help tackle specific projects, however, are typically limited and highly competitive.

CEI recommends that the City pursue grant opportunities, recognizing that any grant funds will be limited in amount and frequency, and will therefore be a supplement to local funding.

Fee-based Stormwater Enterprise Fund

A fee-based Stormwater Enterprise Fund provides an assessment of costs in proportion with each property's stormwater runoff and impact on the drain system and City waterways and ponds. The most common types of fee-based structures consist of a uniform fee for all residential properties and a varying fee for all non-residential properties based upon impervious area. This assessment is typically based upon a defined Equivalent Residential Unit (ERU) which corresponds to the typical residential properties. Each residential property is considered a single ERU, while non-residential properties are defined as multiple ERUs, in proportion to the extent of their impervious area in comparison to the typical residential property.

For example, in Nashua the average impervious area of a single family residential property is 3,525 square feet (sf). For simplicity and demonstration purposes the ERU is set at 3,525 square feet to represent the average single family residential property. Non-residential properties are then evaluated in terms of this ERU by dividing the residential ERU into the impervious area of the non-residential property. For example, if a business

has 35, 250 square feet of impervious area, it is defined as having 10 ERUs (35,250 sf/3,525 sf/ERU = 10 ERUs).

The extent of impervious area directly correlates with the amount of stormwater runoff and its impact on the City's stormwater infrastructure and waterways and ponds. Based on average rainfall of 42 inches per year and impervious area of 3,525 sf, a typical residential property produces less than 100,000 gallons of runoff per year compared to the typical non-residential property which produces more than 1 million gallons of runoff per year.

The fee-based Stormwater Enterprise Fund also assesses stormwater compliance costs among all groups within the City, including those entities which are tax-exempt. Funds would go to a dedicated Stormwater Fund, similar to a savings account, that requires funds be spent on stormwater related expenditures and can be carried over. The Fee system creates a consistent and stable revenue stream, key to long-term savings and effective operations.

Table 6 summarizes the advantages and disadvantage of each type of funding.

Based on this comparison, only a fee-based Stormwater Enterprise Fund provides sufficient, stable funds to maintain stormwater infrastructure and stormwater management regulatory compliance in a manner that is equitable to property owners.

3.6 Costs of Inaction

Consequences of not implementing a stormwater management plan include:

- Potential Monetary Fines or Sanctions from EPA. In 2009, EPA proposed fines ranging from $40,000 to $177,500 for nine New England communities.
- Increased Repair or Replacement Costs from clogged Stormwater Infrastructure (pipes).
- Increased Repair or Replacement Costs from failed or collapsed roadways.
- Increased Pollution in the City's waterways.
- Decreased Recreational Opportunities such as fishing due to deterioration of City's waterways and ponds.
- Increased Flooding of Public/Private Properties.
- Potential Lawsuits due to Increased Flooding.
- Accelerated deterioration of roadways.

Table 6. Comparison of Funding Options		
Funding Option	**Advantages**	**Disadvantages**
General Fund		• Competes with other City expenses (e.g., schools, public safety) • Unreliable as funds can be moved from budget to fund other City projects • Non-profits don't pay anything • Inequitable as it is based on property value rather than fair share/contribution – residents bear the greatest burden • Stormwater management remains low priority compared to other competing expenses – value of stormwater management goes unnoticed
Sewer Rates	• Existing billing system	• Not correlated to stormwater produced
Grants and Loans	• "Free" money or low interest loans	• Only good for specific one-time implementation projects • Cannot be used for ongoing maintenance • Limited funds available and highly competitive • Not enough funds and no funds for operations and maintenance
Fee-based Stormwater Enterprise Fund	• Funds dedicated to stormwater management – no competition with other City expenses • Reliable source of funding year after year • More equitable funding source – property owners pay based on their fair share/contribution to stormwater • Increases awareness of stormwater impacts and need to address them • Encourages better stormwater management through incentives	• Requires initial administrative expense to set up

4.0 Fee Structure

4.1 Types of Fee Structures

Typical utility fees are based on a defined usage or consumption that can be quantified. For example, property owners pay for the amount of gas, electricity and water they use, which is measured through meters. They have some control over the usage and resulting bill.

A stormwater fee is similar to other utilities in that all properties contribute to stormwater runoff volumes and associated pollutant loads through their impervious surfaces and disturbance of natural land. All property owners benefit from the operation and maintenance of stormwater infrastructure and a stormwater management program. The management of stormwater runoff helps provide roads free of defects such as pot holes, delamination, erosion and flooding and helps provide clean water bodies for use by all.

Since all properties contribute to stormwater impacts and benefit from stormwater management programs, the fee structure for a stormwater fee must establish a relationship between cost for managing the stormwater system and the impact each property has on the system. Impacts can be tied to the quantity of runoff generated from each property as stormwater management systems are sized based on the volume of water coming to them and increasing pollutant loads are also seen with increasing flows. This can easily be tied back to the size of the property and amount of impervious surface on the property.

A credit system may also be established that allows for a reduction in fees for those properties that implement stormwater control measures that reduce the volume of stormwater runoff leaving their properties.

Based on these relationships, the most common fee structures used by stormwater municipalities and counties across the country are based on:

- Impervious area
- Impervious area plus gross area
- Gross area with an intensity of development factor

Impervious Area

This is the most common stormwater fee structure used across the country, largely due to its simplicity, ease of calculation and ease of understanding. Numerous studies have correlated water quantity and quality impacts with the amount of impervious area. The volume of runoff and level of water quality degradation increase with increasing impervious area and this is a concept that is easy to grasp and understand.

Typically an Equivalent Residential Unit (ERU) billing unit is established that represents the average impervious area associated with a single residential unit. It is a weighted

average of impervious area associated with all types of residential properties included in the City. Figure 4 provides an example ERU calculation.

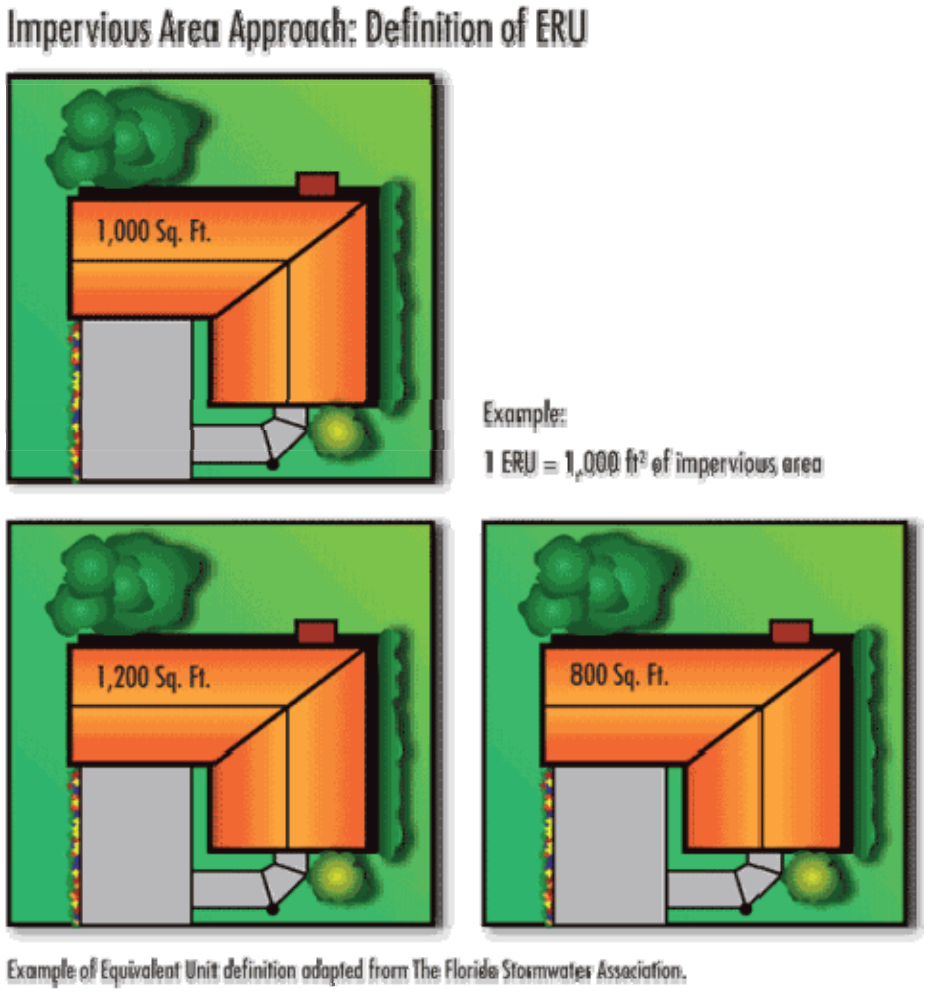

Figure 4. ERU Definition – The ERU is calculated as the weighted average of impervious area associated with all types of residential properties. In this example, three properties are used to calculate the ERU. The weighted average impervious area is calculated by adding the impervious areas of all of the properties and dividing by the number of properties as follows: (1,000 sf + 1,200 sf + 800 sf)/3 properties = 1,000 sf, thus 1 ERU = 1,000 sf

Use of an ERU simplifies administration of the billing system by assessing a flat or tiered fee to residences, and serving as the basis for determining fees for nonresidential properties. A flat fee system assesses the same fee to all single family residences, regardless of the size of their lot or impervious area. A tiered fee system breaks residential properties down into tiers based on their size and/or amount of impervious area and assesses different fees for each tier, with larger properties/impervious areas assessed a larger fee than smaller properties/impervious areas. This would allow for additional fee equity, but can complicate implementation of the fee as it requires

categorizing and billing residential properties by size of impervious area and may require additional software to achieve.

The ERU for nonresidential properties is calculated by determining the parcels impervious area and dividing it by the ERU. This value is then multiplied by the ERU fee to determine that property's fee. Thus, residential properties are typically assessed either the same flat fee or a tiered residential fee, while nonresidential customers pay a fee based on their actual impervious area.

Due to its simplicity and widespread use, this fee structure, using a single residential flat fee, will be used to estimate expected stormwater fees in the City of Nashua.

Impervious Area Plus Gross Area

As the name implies, the impervious area plus gross area fee structure considers runoff from both impervious surfaces and undisturbed/undeveloped surfaces. One purpose for this type of fee structure is to include undeveloped parcels or areas since it too contributes a small amount of runoff. This allows a fee to be assessed to undeveloped parcels, whose owners also benefit from the use of roadways and water bodies in the City.

Separate fees are assigned to impervious areas versus undeveloped area, with undeveloped area fees significantly less than impervious area fees. As with the impervious area fee structure, an ERU billing unit is typically established based on the average impervious area and average undeveloped area.

Gross Area With an Intensity of Development Factor

This structure is based on the level of development on a parcel and uses the impervious area and gross area to estimate the intensity of development or percent impervious area. A tiered fee structure is typically applied with higher fees assessed to properties with higher impervious area.

This type of structure puts more recognition on the amount of "green space" or undisturbed area of a property and its value on an individual basis for reducing stormwater runoff from a property.

As with the other fee structures, the fee is typically calculated for an ERU based on the average residential percent impervious area.

This method is more complex than the others in that a tiered fee structure is typically developed for various levels of imperviousness. It may also be difficult for some customers to accept as a small property with the same impervious area as a larger property will invariably have a greater percent impervious area and therefore pay a larger fee.

Table 7 compares the three fee structure methods and information needed to develop each.

Table 7. Comparison of Fee Structures

Type of Fee Structure	Description	Advantages/Disadvantages	Percent Used by Existing[3]	Data Needs*
Impervious Area	• Based on property's impervious area • Typically use average impervious area for residential properties to develop a single flat fee for all residential properties • Average residential impervious area and associated fee becomes Equivalent Residential Unit (ERU) to determine fees for nonresidential customers	• Strong correlation between water quality problems and impervious area • Flat fee residential structure is simple • Easy to explain and understand • Only applies to developed properties	55%	• Representative sample of impervious areas for residential parcels • Impervious areas of all non-residential parcels
Impervious Area Plus Gross Area	• Based on properties impervious and undeveloped land • Assigns separate fees to impervious and undeveloped land and typically develops ERU for each • ERUs used to determine fees for nonresidential customers	• Can charge undeveloped properties • Increases the fee base and flexibility to generate revenue by including undeveloped areas • Charges to undeveloped land can be confusing to customers	29%	• Parcel size and impervious area for all parcels
Gross Area with an Intensity of Development Factor	• Based on percent of impervious land • Typically use average percent imperviousness for residential properties to develop a single flat fee and ERU for all residential properties • ERUs used to determine fees for nonresidential customers – often increasing ERU fee with increasing percent impervious coverage	• Fees that increase with impervious area require some judgment to develop, may not be as defensible • Small properties with large percent impervious area will pay more per impervious area than large properties with same impervious area because the larger property allows for a lower percent impervious area – difficult for customer to accept • More complicated than other two methods	7%	• Parcel size and impervious area for all parcels

*The City of Nashua has this information readily available.

[3] Black and Veatch (2010). *2010 Stormwater Utility Survey*. Sponsored and Administered by Black and Veatch Management Consulting.

CEI recommends that Nashua use an Impervious Area fee structure as it is the most equitable, is the simplest to understand and implement, and is the most commonly used stormwater fee structure.

4.2 Preliminary Stormwater Fees for Nashua

Development of ERU

Critical to the development of a potential revenue and fee structure, CEI compiled impervious information in conjunction with the City Assessing Department for four land use types, including residential, commercial-industrial, current use and government.

The Assessing Department extracted information from an impervious layer that was developed as part of a Spring 2010 flyover of the City. The impervious area was broken down by land use type within each municipal zoning category and is shown in a series of tables in Appendix C. Due to the evolution of zoning categories and boundaries over time, most categories contain properties that are not consistent with the zoning category. For example, all municipal zoning categories within the City of Nashua have some number of single family residential parcels. Similarly, all municipal zoning categories have some number of commercial-industrial properties.

Using this information, all single family residential parcels and their associated areas in square feet, regardless of the zone in which they are located, can be used to determine the average ERU that will serve as a basis for fee assessment. The ERU for Nashua is 3,525 square feet of impervious area per single family lot.

Charges and Impact on Property Owners

The budget information presented in Section 2.0 and the calculated ERU for the City can be used to estimate a stormwater fee for the City. However, there are other factors that need to be considered when estimating the fee, specifically, lost revenue from a credit program.

A credit program allows property owners to implement stormwater best management practices that reduce the overall runoff that would otherwise leave the property, in exchange for a lower stormwater fee. This promotes the use of Low Impact Development (LID) techniques in development or redevelopment of properties, which reduces impacts on the City's drainage infrastructure and water bodies. While such a program benefits both the City and the property owner, its impact on revenues to the City, must be considered in setting the stormwater fee.

The allowance of credits would require the City to develop an application process. The maximum amount and criteria for abatements would need to be established in relation to the relative benefit of the runoff reduction. Maximum abatement level would also need to be established, as all customers continue to benefit from use of roadways and City waterbodies maintained under the stormwater program and should be responsible for a share of these services. Typically, credits are limited to 50% of the stormwater fee.

Additional credits or discounts may also be offered to senior citizens or others on fixed incomes.

The City should offer a credit program to property owners that provide some stormwater control. Credits are typically intended for non-residential properties with larger impervious areas as a way for them to reduce their fees, but can also be offered to residential properties.

For planning purposes, credits were assumed to reduce revenues by 3% and the estimated fee was adjusted to account for these credits. This should undergo thorough evaluation under the setup and implementation of the fee.

Based on the above information, a stormwater fee was estimated for three scenarios:

1) Existing Stormwater Program Costs – this fee represents the cost associated with the City providing the same level of stormwater services as it does now.
2) Existing Plus NPDES Compliance – this fee represents the cost associated with the City providing current services and additional services to comply with the upcoming NPDES Phase II MS4 permit. The NPDES compliance costs only include the assessments required under the permit to determine the need for more action (e.g., additional BMPs to address water quality issues to TMDLs, etc.), however do not include any extra maintenance of the stormwater infrastructure or new BMPs not specifically called out under the NPDES Phase II Permit. Therefore, this represents the minimum required to comply with the new permit.
3) Existing Plus NPDES Compliance & Future CIP and Maintenance Activities – this fee represents the cost associated with the City providing current services, the NPDES compliance requirements within scenario 2 and future CIP and maintenance activities to improve infrastructure, flooding conditions and water quality, avoiding future costly repairs. A list of these future CIP and maintenance activities was provided under Section 2.0.

Considering these scenarios, the City's stormwater fee for one ERU or per residential property could range from $18 to $73 per year or $1.50 to $6.10 per month. This assumes a 3% reduction in revenue due to credits, with fees adjusted to meet revenue needs with a credit system in place. Table 8 presents the estimated stormwater fee associated with each of these scenarios. The fee worksheet showing the calculations is provided in Appendix D.

Table 8. Estimated Residential Stormwater Fee		
	Estimated Average Annual Costs	**Stormwater Fee ($/ERU/year)[1]**
Existing Stormwater Program Costs	$750,000	$18
Existing Plus NPDES Compliance	$1,070,000	$26
Existing Plus NPDES Compliance & Future CIP & Maintenance[2]	$3,050,000	$73

[1]All fees are adjusted to account for 3% revenue losses expected with a credit program.
[2]Future CIP & Maintenance costs include $1.4 million per year to replace 1% of the drainage infrastructure annually. The residential stormwater fee without these improvements is $38/ERU/year.

The average fee for a non-residential property will range between $201 and $819 per year depending on the scenario funded. This is summarized in Table 9.

Table 9. Estimated Non-Residential Stormwater Fee			
	Stormwater Fee ($/ERU/year)	**Average Non-Residential ERUs/Parcel**	**Average Non-Residential Stormwater Fee per Year[1]**
Existing Stormwater Program Costs	$18	11	$201
Existing Plus NPDES Compliance	$26	11	$287
Existing Plus NPDES Compliance & Future CIP & Maintenance[2]	$73	11	$819

[1]All fees are adjusted to account for 3% revenue losses expected with a credit program.
[2]Future CIP & Maintenance costs include $1.4 million per year to replace 1% of the drainage infrastructure annually. The average non-residential stormwater fee without these improvements is $432/ERU/year.

The non-residential property with the greatest impervious area in Nashua is the municipal airport, which has about 3,875,000 sf of impervious area or 1,100 ERUs. This property would be assessed a fee between about $19,800 and $80,500 ($42,500 without the $1.4 million annual charge to replace 1% of the drainage infrastructure annually) per year depending on the scenario funded.

4.3 Additional Fee Considerations

The fee structure outlined in Sections 4.1 and 4.2 and used to estimate initial fees is based on an ERU flat fee system that is easy to understand and implement. Fees are assessed based on the amount of impervious area each property has. The City may wish to consider adding a fixed fee component or basic service charge that all customers are

charged regardless of the size of their impervious area. This fixed fee charge would cover costs that are common to all properties regardless of size such as administrative costs including billing and collection and customer service. The same level of these services is provided to all customers regardless of impervious area.

5.0 Billing Options

The most important issue for selecting a billing methodology is that it be simple, straightforward and preferably not create redundancy. Most stormwater fees are put on either the property tax bill as a fee or with an existing sewer or water bill as these methods are already available within most communities and reduce the need and associated cost for new billing software and systems.

The advantages and disadvantages for the three most common billing options available to the City are provided in Table 10.

Table 10. Comparison of Billing Options

Billing Option	Description	Advantages	Disadvantages
Property Tax	The stormwater fee would be listed as a separate line item on the property tax bill.	• Low cost since the City maintains a property tax billing system. • Existing system is equipped to bill for stormwater services with minimal adjustment. • Minimal effort to implement. • All property owners receive a bill.	• More likely to be perceived as a tax on property tax bill.
Sewer	The stormwater fee would be listed as a separate line item on the sewer bill.	• Low cost since the City maintains a property tax billing system. • Existing system is equipped to bill for stormwater services with minimal adjustment. • Minimal effort to implement. • More frequent billing than tax bill.	• Only sewer customers receive a bill. 95% of the City is sewered and receives a sewer bill.
Stormwater	A separate stormwater billing system would be developed requiring generation of a separate bill.	• Can be tailored exactly to fit City's billing needs (e.g., any fee structure).	• Costly to purchase new software and train personnel. • More staff time to provide customer service for a separate bill. • Greater potential for non-payment since it is not included with other charges. • More scrutiny as a standalone bill.

Billing the stormwater fee using the existing sewer bill or property tax bill are both viable options for the City and can be implemented with minimal effort using the existing software. Use of the sewer bill may be more advantageous as it is sent out more

frequently, quarterly for residents and monthly for businesses, than the tax bill, which is only sent out twice a year. This provides a more consistent revenue source to the City.

A separate stormwater only bill introduces more cost and complexity to a stormwater fee as it may require additional software and staff to generate and send bills and to collect on bills. As a standalone bill, it is also likely to receive greater scrutiny from customers.

CEI recommends using the sewer bill to bill a stormwater fee.

6.0 Recommendations and Data Needs

Development of a stormwater fee provides the most equitable means of generating revenue to maintain Nashua's existing stormwater drainage infrastructure, comply with future regulations and improve the water quality of City surface waters. Based on the information provided in this feasibility study, CEI recommends that the City of Nashua move forward with the implementation of a stormwater fee to fund the City's stormwater program. The following recommendations are provided for implementing a stormwater fee in Nashua. A recommended implementation schedule is included in Table 11.

1) Develop an Advisory Stakeholder Committee

Development/continuation of an advisory committee allows for key stakeholder input throughout the stormwater fee implementation process. This allows for concerns and issues to be brought forward and addressed during the decision making process, resulting in a more refined fee that meets multiple stakeholder needs.

CEI recommends the development of a stakeholder committee to help make key decisions and provide further direction on the implementation of the fee. The stakeholder committee could include the participants from the stormwater development fee workshops held during the development of this feasibility study. The Committee could also play a key role in the public education and communication program by providing various perspectives on how the fee will be received and strategies to overcome these perceptions.

2) Develop and Implement a Public Education and Communications Program

One of the biggest challenges facing successful implementation of a stormwater fee is public acceptance of a new fee based system. There is often confusion about the need for the fee and the benefits it will provide since residents and businesses don't see the immediate benefit to them as an individual. Management of stormwater runoff is a more abstract concept to grasp than providing water or treating wastewater, which can easily be quantified, explained and charged to individual users. Thus, an extensive public outreach program is recommended to drive home the need for the fee and more importantly from the public perspective to identify "what's in it for the people who will pay the fee."

As part of this project, a series of three stormwater development fee workshops were held with participants from CEI, City staff, the New Hampshire Department of Environmental Services (NH DES), and a resident of the City. The purpose of the workshops was to discuss the need and options for setting up a stormwater fee and how to obtain public acceptance of the fee. Copies of the presentations and meeting minutes from each workshop are included in Appendix E.

The input received from the workshops was incorporated into a Public Outreach Plan (Appendix F) that identifies target audiences and specific messages/themes and outreach material. This plan should be implemented to help remove barriers and promote a positive program image.

Even if the City chooses to wait to develop a stormwater fee, it should begin educating the public on the impacts of stormwater runoff and need for drainage infrastructure maintenance and improvements. This will help establish the need for the fee when the City decides to move forward with it.

3) Develop and Adopt Stormwater Fee Rules and Regulations

Stormwater fee rules and regulations should be prepared and adopted to formalize the fee. As part of this process, fee policies and procedures should also be developed that outline the final fee structure, how it will be applied and enforcement actions to be taken for late or nonpayment.

4) Update Land Use Ordinance

Update the existing Land Use Ordinance to adopt the Alteration of Terrain design requirements at a lower threshold. This will ensure future development and redevelopment in the City work towards reducing stormwater runoff and improving water quality of stormwater discharges to City infrastructure.

5) Define Organization Structure

Define the specific roles and responsibilities related to the stormwater fee by department and individual.

6) Refine Stormwater Program Costs

Stormwater program costs were presented in Section 2.0 broken out by existing stormwater program costs, NPDES MS4 requirements and future capital improvement (CIP) and maintenance projects. CEI recommends incorporation of all three components into a stormwater fee as this allows for regulatory compliance, while allowing for adequate maintenance and operation of the drainage network.

However, based on the level of public acceptance, the City may consider phasing in the stormwater program costs, beginning with the existing stormwater program costs, which represent the current level of service provided and then adding in the MS4 requirements and additional CIP and maintenance costs over the next several years.

These costs should be further evaluated and incorporated into the stormwater fee implementation process.

7) Finalize Fees

The impervious layer used to determine impervious area for each land use class throughout the City was still undergoing review and refinement during this study to identify impervious areas that showed up as green areas and vice versa. Upon completion of this analysis, re-evaluate the impervious area for each land class to refine the Equivalent Residential Unit (ERU) and combine this with refined costs to develop the stormwater fee.

At this time, the City should consider whether it wants to incorporate other fee modifiers such as the use of base fees or tiered fees.

8) Review Abatement System Options

An Abatement System should be established to encourage implementation of specific stormwater management practices by land owners by providing credits to the stormwater fee. A policy should be established outlining:

- How to qualify for an abatement (typically no more than 50% of the fee);
- Type of stormwater management practices that qualify for an abatement;
- The application process for applying for an abatement;
- The level of credit that will be applied for qualifying BMPs, including credit limits;
- Long-term maintenance requirements to maintain the credit.

9) Setup Billing, Collection and Accounting Systems

Formalize the billing and collection process and develop policies and procedures. Identify the number of parcels that do not receive a sewer bill and develop an alternate method for billing these properties.

Table 11. Stormwater Fee Implementation Schedule

Year	Quarter	Activity
2010	Jan - Mar	Feasibility study begins
	Apr - Jun	
	Jul - Sept	
	Oct - Dec	
2011	Jan - Mar	
	Apr - Jun	
	Jul - Sept	
	Oct - Dec	Feasibility study concludes
2012	Jan - Mar	Develop advisory & outreach committee - public outreach begins
	Apr - Jun	Gather audience lists & prepare actions
	Jul - Sept	Update Land Use Ordinance
	Oct - Dec	Outreach
2013	Jan - Mar	Prepare final fee and refine costs and structure
	Apr - Jun	Prepare billing and fee implementation - develop fee rules & regulations
	Jul - Sept	Begin billing fee
	Oct - Dec	1st report on Fee Implementation
2014 and on	Jan - Mar	Schedule of next year's planned Improvements
	Apr - Jun	Outreach
	Jul - Sept	Goal Tracking
	Oct - Dec	Annual report on fee implementation

Appendix A
Draft NH Small MS4 Permit

United States Environmental Protection Agency (EPA)
National Pollutant Discharge Elimination System (NPDES)

GENERAL PERMITS FOR STORMWATER DISCHARGES FROM SMALL MUNICIPAL SEPARATE STORM SEWER SYSTEMS

AUTHORIZATION TO DISCHARGE UNDER THE
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

In compliance with the provisions of the Clean Water Act (CWA), as amended (33 U.S.C. 1251 *et seq.*), any operator of a small municipal separate storm sewer system who

- Is located in the permit areas described in Part 1.1;
- Is eligible for coverage under Part 1.2 and Part 1.9; and
- Submits a complete and accurate Notice of Intent in accordance with Part 1.7.1 of this permit and receives written authorization from EPA

is authorized to discharge in accordance with the conditions and the requirements set forth herein.

The following appendices are also included as part of these permits: Appendix A - Definitions of permit-specific terms used in this permit; Appendix B- Standard permit conditions applicable to all authorized discharges; Appendix C – Conditions related to the Endangered Species Act; Appendix D – Conditions related to the National Historic Preservation Act; Appendix E – Information required for the Notice of Intent (NOI); and Appendix F – Requirements for NH Small MS4s Subject to Approved TMDLs.

These permits become effective on **[insert date of FR publication]**.

These permits and the authorization to discharge expire at midnight, **[insert date 5 years from the effective date]**.

Signed this day of

_____

Stephen S. Perkins, Director
Office of Ecosystem Protection
United States Environmental Protection Agency
One Congress Street – Suite 1100
Boston, Massachusetts 02114

1.0 Introduction

This document consists of six (6) general permits covering the areas listed in Part 1.1. Each general permit is applicable to either a particular area or particular entity within an area. Many of the permit terms and conditions are identical across all six permits, and therefore are presented just once in Parts 1 -3, Part 5, and Appendices A through E. Other conditions are applicable to a particular covered geographic area or particular covered entity; these terms and conditions are included in Parts 4, 6 and 7 and Appendix F. Throughout the permit, the terms "this permit" or "the permit" will refer to all six general permits.

1.1 Areas of Coverage

This permit covers small municipal separate storm sewer systems (MS4s) located in:

- The State of New Hampshire
  - Traditional Cities and Towns
  - State owned properties (Non-traditional)
  - State transportation agency
- Indian Country lands within the States of Connecticut and Rhode Island
- Federal Facilities within the State of Vermont

1.2 Eligibility

The MS4 must meet the eligibility provisions described in Part 1.2 and Part 1.9 to be eligible for coverage under this permit.

1.2.1 Small MS4s Covered

This permit covers the discharge of stormwater from small MS4s as defined at 40 CFR § 122.26(b) (16). This includes municipalities designated under 40 CFR §122.32(a) (1) and (a) (2). An MS4 is eligible for coverage under this permit if it is:

- An operator of a small MS4 within the permit area described in Part 1.1;
- Not a large or medium MS4 as defined in 40 CFR §§122.26(b)(4) or (7);
- Located either fully or partially within an urbanized area as determined by the latest Decennial Census by the Bureau of Census (the 2000 Census); or
- Located in a geographic area designated by EPA as requiring a permit.

A small municipal separate storm sewer system means all separate storm sewers that are:

- Owned or operated by the United States, a State, city, town, borough, county, parish, district, association, or other public body (created by or pursuant to State law) having jurisdiction over disposal of sewage, industrial wastes, stormwater, or other wastes, including special districts under State law such as a sewer district, flood control district or drainage district, or similar entity, or an Indian tribe or an authorized Indian tribal organization, or a designated and approved management agency under section 208 of the CWA that discharges to waters of the United States.
- Not defined as large or medium municipal separate storm sewer systems pursuant to 40 CFR § 122.26(b) (4) and (b) (7) or designated under 40 CFR § 122.26(a) (1) (v).

This term includes systems similar to separate storm sewer systems in municipalities such as systems at military bases, large hospital or prison complexes, and highways and other

thoroughfares. The term does not include separate storm sewers in very discrete areas, such as individual buildings.

1.3 Limitations on Coverage:

This permit does not authorize the following stormwater discharges:

a. - Discharges mixed with sources of non-stormwater unless such non-stormwater discharges are:

- In compliance with a separate NPDES permit; or
- A non-stormwater discharge as detailed in Part 1.4.

b. - Discharges associated with industrial activity as defined in 40 CFR 122.26 (b) (14) (i)-(ix) and (xi).

c. - Discharges associated with construction activity as defined in 40 CFR 122.26(b) (14) (x) or (b) (15).

d. – Discharges currently covered under another permit, including discharges covered under other regionally issued general permits.

e. – Discharges or discharge related activities that are likely to adversely affect any species that are listed as endangered or threatened under the Endangered Species Act (ESA) or result in the adverse modification or destruction of habitat that is designated as critical under the ESA. The permittee must follow the procedures detailed in Appendix C to make a determination regarding eligibility. The permittee must certify compliance with this provision on the submitted NOI.

f. – Discharges whose direct or indirect impacts do not prevent or minimize adverse effects on any Essential Fish Habitat.

g. – Discharges, or implementation of a stormwater management program, which adversely affects properties listed or eligible to be listed on the National Register of Historic Places. The permittee must follow the procedures detailed in Appendix D to make a determination regarding eligibility. The permittee must certify compliance with this provision on the submitted NOI.

h.– Discharges to territorial seas, the waters of the contiguous zone, and the oceans.

i. – Discharges prohibited under 40 CFR 122.4.

j. – Discharges to the subsurface subject to state Underground Injection Control (UIC) regulations. Although the permit includes provisions related to infiltration and groundwater recharge, structural controls that dispose of stormwater into the ground may be subject to UIC regulation requirements. Authorization for such discharges must be obtained from the relevant authority depending on the location of the discharge. (New Hampshire: New Hampshire Department of Environmental Services, Groundwater Discharge Permitting and Registration Program; Indian Lands (CT and RI): EPA-Region I, Underground Injection Control Program;

and Vermont Federal Facilities: Vermont Department of Environmental Conservation, Wastewater Management Division, Underground Injection Program).

k. – Discharges that cause or contribute to an instream exceedance of a water quality standard, including jeopardizing public and private drinking water sources.

l. - New discharges (as defined in 40 CFR § 122.2) to waters designated as Tier 3 for antidegradation purposes under 40 CFR § 131.13 (a) (3).

1.4 Non-Stormwater Discharges

The following non-stormwater discharges do not need to be addressed unless the permittee, EPA, or the state or tribal agency determines that they are significant contributors of pollutants to the MS4. These discharges are acceptable non-stormwater discharges unless identified by EPA or the permittee as significant sources of pollutants to Waters of the United States or as causing or contributing to a violation of water quality standards. If the permittee identifies these discharges as significant contributors to the MS4, the permittee must address them as part of the Illicit Discharge Detection and Elimination Program described in Part 2.3.4 of this permit

a. Water line flushing
b. Landscape irrigation
c. Diverted stream flows
d. Rising ground water
e. Uncontaminated ground water infiltration (as defined at 40 CFR 35.2005(20)),
f. Uncontaminated pumped ground water
g. Discharge from potable water sources
h. Foundation drains
i. Air conditioning condensation
j. Irrigation water, springs
k. Water from crawl spaces pumps
l. Footing drains
m. Lawn watering
n. Individual resident car washing
o. Flows from riparian habitats and wetlands
p. De-chlorinated swimming pool discharges
q. Street wash waters and
r. Residential building wash waters without detergents

Discharges or flows from fire fighting activities are excluded from the effective prohibition against non-stormwater and need only be addressed where they are identified as significant sources of pollutants to waters of the United States.

1.5 Permit Compliance

Any non-compliance with the requirements of this permit constitutes a violation of the permit

and the CWA and may be grounds for an enforcement action and may result in the imposition of injunctive relief and/or penalties.

1.6 Continuation of this Permit

If this permit is not reissued prior to the expiration date, it will be administratively continued in accordance with the Administrative Procedure Act and remain in force and effect for discharges that were covered prior to expiration. If a small MS4 was granted permit coverage prior to the expiration date of this permit, it will automatically remain covered by this permit until the earliest of:

- Authorization for coverage under a reissued general permit, following timely and appropriate submittal of a complete and accurate NOI requesting authorization to discharge under the new permit; or
- Issuance or denial of an individual permit for the MS4's discharges; or authorization or denial under an alternative general permit.

1.7 Obtaining Authorization to Discharge

1.7.1 How to Obtain Authorization to Discharge

To obtain authorization under this permit, a small MS4 must:

- Be located in a State or Indian Country identified in Part 1.1 of this permit;
- Meet the eligibility requirements in Part 1.2 and Part 1.9;
- Submit a complete and accurate Notice of Intent (NOI) in accordance with the requirements of Part 1.7.2 and Appendix E of this permit; and
- Receive written authorization from EPA.

1.7.2 Notice of Intent

a. Operators of Small MS4s seeking authorization to discharge under the terms and conditions of this permit must submit a Notice of Intent that contains the information identified in Appendix E.

b. The NOI must be signed by an appropriate official (see Appendix B Subparagraph 11).

c. The NOI must contain the following 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, I certify that the information submitted is, to 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.*

Print the name and title of the official, followed by signature and date.

d. Small MS4s in New Hampshire not covered by the previous permit must use the form designated by the New Hampshire Department of Environmental Services (NHDES). NH requires the use of this form. EPA does not require the use of this form, but will accept information submitted on this form. All signatures must be originals. This form is available at: http://des.nh.gov/organization/divisions/water/stormwater/documents/nhnoi_ms4gp.pdf

e. The NOI must be submitted **within 90 days of the effective date of the permit**. If an MS4 is designated under 40 CFR 122.32(a) (2) or (b), the NOI must be submitted within 180 days of receipt of notice unless granted a longer period of time by EPA.

1.7.3 Submission of Notice of Intent

a. All small MS4s must submit a complete and accurate Notice of Intent to EPA-Region 1 at the following address:

United States Environmental Protection Agency
Industrial Permits Branch – CIP
One Congress Street – Suite 1100
Boston, Massachusetts 02114
ATTN: Thelma Murphy

b. Small MS4s located in New Hampshire must also submit a copy of the NOI to the New Hampshire Department of Environmental Services at the following address:

New Hampshire Department of Environmental Services
Water Division – Wastewater Engineering Bureau
P.O. Box 95
Concord, New Hampshire 03302-0095
ATTN: Jeff Andrews

c. Late notification: A small MS4 is not prohibited from submitting a Notice of Intent after the dates provided in Part 1.7.2. However, if a late NOI is submitted, authorization is only for discharges that occur after permit coverage is granted. EPA reserves the right to take enforcement actions for any unpermitted discharges.

1.7.4 Public Notice of NOI and Effective Date of Coverage

a. EPA will provide a public notice and opportunity for comment on the contents of the submitted NOIs. The public comment period will be a minimum of 30 calendar days.
A small MS4 will be authorized to discharge under the terms and conditions of this permit upon written receipt of notice from EPA.

b. Based on a review of a small MS4's NOI or other information, EPA may grant authorization, extend the public comment period, or deny authorization under this permit and require submission of an application for an individual or alternative NPDES permit. (See Part 1.8)

c. If permit coverage for a small MS4 under the May 1, 2003 Small MS4 general permit (MS4 – 2003) was effective as of May 1, 2008, authorization to discharge under the MS4 -2003 is automatically continued on an interim basis for up to 180 days from the effective date of this permit. Interim coverage will terminate earlier than the 180 days when a complete and accurate NOI has been submitted and coverage under this permit is either granted or denied. If a municipality was previously covered under the MS4 -2003 and submitted an accurate and complete NOI in a timely manner, and notification of authorization under this permit has not occurred within 180 days from the effective date of this permit, authorization under the MS4 - 2003 permit will be automatically continued on an interim basis. Interim coverage will terminate after authorization under this permit or upon issuance of an alternative permit or an individual permit.

1.8 Alternative Permits

1.8.1 EPA Requiring Coverage under an Alternative Permit

a. EPA may require a small MS4 to apply for and obtain coverage under either an individual NPDES permit or an alternative NPDES general permit. Any interested person may petition EPA in accordance with the provisions of 40 CFR 122.26(f) to require a small MS4 to apply for and/or obtain coverage under either an individual NPDES permit or an alternative NPDES general permit. If EPA requires a small MS4 to apply for an individual or alternative NPDES permit, EPA will notify the small MS4 in writing that a permit application is required. This notification will include a brief statement of the reasons for this decision and will provide application information. In addition, if the small MS4 is an existing permittee covered under this permit, the notice will set a deadline to file the application, and will include a statement that on the effective date of the individual NPDES permit, or the alternative general permit as it applies to the small MS4, coverage under this general permit will automatically terminate. EPA may grant additional time to submit the application following a request by the small MS4. If a small MS4 is covered under this permit and fails to submit an individual NPDES or an alternative general permit NPDES permit application as required by EPA, then the applicability of this permit to the small MS4 is automatically terminated at the end of the date specified by EPA as the deadline for application submittal. EPA may take enforcement action for any subsequent unpermitted discharge.

b. When EPA issues an individual NPDES permit or a small MS4 is authorized to discharge under an alternative NPDES general permit, coverage under this permit will be terminated on the effective date of the individual permit or the date of authorization of coverage under the alternative general permit.

1.8.2 Permittee Requesting Coverage under an Individual or Alternative Permit

a. A municipality may request to be excluded from coverage under this general permit by applying for an individual permit. In such a case, a municipality must submit an individual permit application in accordance with the requirements of 40 CFR §122.33(b) (2) (i) or §122.33(b) (ii), with reasons supporting the request, to EPA at the address listed in Part 1.7.3 of this permit. The request may be granted by issuance of an individual permit or authorizing

coverage under an alternative general permit if reasons stated by the municipality are adequate to support the request. (See 40 CFR § 122.28(b) (3))

b. When an individual NPDES permit is issued, or a municipality authorized to discharge under an alternative NPDES general permit, coverage under this permit is automatically terminated on the effective date of the individual permit or the date of authorization of coverage under the alternative general permit.

1.9 Special Eligibility Determinations

1.9.1 Documentation Regarding Endangered Species. The small MS4 must certify eligibility regarding endangered species in the NOI required in Part 1.7.2. The Stormwater Management Plan (SWMP) must include documentation supporting the permittee's eligibility determination with regard to Federal Endangered and Threatened Species and Critical Habitat Protection, including:

- Information on whether federally listed endangered or threatened species, or critical habitat are found in proximity to the municipality's stormwater outfalls or stormwater BMPs;
- Whether such species or habitat are likely to be adversely affected by the stormwater discharges or stormwater discharge-related activities, e.g., BMP installation;
- Results of the Appendix C endangered species screening determinations; and
- If applicable, a description of the measures the municipality must implement to protect federally listed endangered or threatened species, or critical habitat, including any conditions imposed by the Services. If a permittee fails to document and implement such measures, those discharges are ineligible for coverage under this permit.

1.9.2 Documentation Regarding Historic Properties. The small MS4 must certify eligibility regarding historic properties on the NOI required in Part 1.7.2. The SWMP must include documentation supporting the municipality's eligibility determination with regard to Historic Properties Preservation, including:

- Information on whether the permittee's stormwater discharges, allowable non-stormwater discharges, or stormwater discharge-related activities would have an effect on a property that is listed or eligible for listing on the National Register of Historic Properties (NRHP);
- Where such effects may occur and any written documents that have beensent to or written agreements the permittee has made with the State Historic Preservation Officer (SHPO), Tribal Historic Preservation Officer (THPO), or other Tribal representative to mitigate those effects;
- Results of the Appendix D historic property screening investigations; and
- If applicable, a description of the measures the permittee must implement to avoid or minimize adverse impacts on places listed, or eligible for listing, on the NRHP, including any conditions imposed by the SHPO or THPO. If the permittee fails to

document and implement such measures, those discharges are ineligible for coverage under this permit.

1.10 Stormwater Management Program (SWMP)

a. The permittee must develop a written SWMP. The SWMP must be signed in accordance with Appendix B, Subsection 11, including the date of signature. A signature and date is required for initial program preparation and for any significant revisions to the program. The written SWMP must be completed within 120 days following the permittee's receipt from EPA of authorization to discharge under the permit.

b. Permittees covered by the MS4 -2003 must modify or update their existing Best Management Practices (BMPs) and measurable goals to meet the terms and conditions of this permit within 120 days of the date of authorization. These modifications and updates must be reflected in the written SWMP.

c. The permittee is encouraged to maintain an adequate funding source for the implementation of this program. Adequate funding means that a consistent source of revenue exists for the program.

1.10.1 Stormwater Management Program Availability

a. The permittee must retain a copy of the current SWMP required by this permit at the office or facility of the person listed as the program contact on the submitted Notice of Intent (NOI). The SWMP must be immediately available to representatives from EPA; a State agency; a Tribal agency; the U.S. Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NMFS) at the time of an onsite inspection or upon request.

b. The permittee must provide a copy of the SWMP as soon as practicable to any member of the public who makes such a request in writing. A reasonable fee may be charged for copying. EPA encourages permittees to post the SWMP online.

1.10.2 Contents of the Stormwater Management Program

The SWMP must contain the following:

- Identification of names and titles of people responsible for program implementation. If a position is currently unfilled, list the title of the position and modify the SWMP with the name once the position is filled;
- Listing of all receiving waters, their classification, any impairments, and number of outfalls that discharge to each water. In addition to the receiving water, the permittee is encouraged to document in the SWMP all public drinking surface water and groundwater that may be impacted by the discharges.
- Documentation of compliance with Part 1.9.1;
- Documentation of compliance with Part 1.9.2;
- The map of separate storm sewer system required by Part 2.3.4.5;
- Description of practices to achieve water quality (Part 2.1);

For each permit condition in Part 2.1 identify:
- The person(s) or department responsible for the measure;
- The BMPs for the control measure or permit requirement;
- The measurable goal(s) for each BMP. Measurable goals must include milestones and timeframes for implementation and have a quantity or quality associated with its endpoint. Each goal must have a measure of assessment associated with it.

- Description of practices to achieve technology based limitations (MEP) (Part 2.3);
  For each permit condition in Part 2.3 identify:
  - The person(s) or department responsible for the measure;
  - The BMPs for the control measure or permit requirement;
  -The measurable goal(s) for each BMP. Measurable goals must include milestones and timeframes for implementation and have a quantity or quality associated with its endpoint. Each goal must have a measure of assessment associated with it.
- Description of measures to avoid or minimize impacts to public drinking surface water and groundwater. The permittee is also encouraged to include provisions to notify public water supplies in the event of an emergency. (For more information or assistance, contact: NH- New Hampshire Department of Environmental Services, Drinking Water Source Protection Program; Indian Lands (CT and RI); EPA Region 1, Drinking Water Program; and VT (federal facilities) – Vermont Department of Environmental Conservation, Water Supply Division).
- Documentation of compliance with Part 3.0;
- Documentation of compliance with Part 4.0;
- Annual program evaluation (Part 5.1).

1.10.3 Requirements for New Permittees

Permittees not covered by the MS4 2003 must meet all deadlines contained in this permit except the following:

- Mapping requirement in Part 2.3.4.5 must be completed three (3) years from the effective date of the permit;
- Monitoring requirements in Part 3.0 must begin by year four (4) of the permit. If the map required by Part 2.3.4.5 is complete prior to the deadline specified above; the permittee must begin monitoring within three (3) months of completion of the map; and
- The ordinances required by Parts 2.3.4, 2.3.5 and 2.3.6 must be completed by the end of the permit term.

2.0 Non-Numeric Effluent Limitations

2.1 Water Quality Based Effluent Limitations

Pursuant to Clean Water Act 402(p)(3)(B)(iii), this permit includes provisions to ensure that discharges from the permittee's small MS4 do not cause or contribute to exceedance of water quality standards, in addition to requirements to reduce the discharge of pollutants to the maximum extent practicable set forth in Part 2.3. The requirements found in Part 2.1., along with certain requirements in Part 2.2 that relate to discharges to impaired waters for which an approved TMDL exists, constitute the water quality based effluent limits of this permit.

2.1.1 Requirements to Meet Water Quality Standards

a. Discharges shall not cause or contribute to an exceedance of applicable water quality standards (including numeric and narrative water quality criteria) for the receiving water. Applicable water quality standards are the State standards that are in place upon the effective date of this permit. In the absence of information suggesting otherwise, discharges will be presumed to meet the applicable water quality standards if the permittee fully satisfies the provisions of this permit.

b. For each waterbody that receives a discharge from the small MS4, the permittee must identify the water quality standards applicable to that waterbody. Applicable water quality standards are compiled at http://www.epa.gov/waterscience/standards/wqslibrary/ . They are also available from the State or Tribal environmental protection agency. (NH: www.des.state.nh.us/rules/env-wq1700.pdf)

c. If at any time the permittee becomes aware or EPA or NHDES determines that a discharge causes or contributes to an exceedance of applicable water quality standards, the permittee must within 60 days of becoming aware of the situation eliminate the conditions causing or contributing to an exceedance of water quality standards. Within 30 days of eliminating the condition, the permittee must document the measures used to correct the condition in the Stormwater Management Program. The permittee must comply with any additional requirements or schedules established by EPA or the state or tribal agency, including any requirement to submit additional information concerning the potential cause of the exceedance. EPA reserves the right to notify the permittee that an alternative permit is necessary in accordance with Part 1.8 and to take any enforcement action allowed under the CWA.

2.2 Discharges to Impaired Waters

Impaired waters are those waters that the State agency has identified pursuant to Section 303(d) of the Clean Water Act as not meeting applicable state water quality standards. Impaired waters include both those with approved Total Maximum Daily Loads (TMDLs), and those for which TMDL development has been identified as necessary, but for which a TMDL has not yet been approved.

2.2.1 Discharge to an Impaired Water with an Approved TMDL

a. Approved TMDLs within the areas of coverage are listed in Appendix F. Appendix F identifies those small MS4s for which there are approved TMDLs that are applicable to them and the expected measures the small MS4 must implement to be consistent with the terms of the approved TMDL. EPA may also notify the small MS4 of the need to comply with additional requirements that are consistent with the Waste-Load Allocation (WLA) or that an individual permit application is necessary in accordance with Part 1.8.

b. For any discharge from the MS4 to an impaired water with an approved TMDL, the permittee must comply with the specific terms of Part 2.1 and must implement specific BMPs to support

the achievement of the WLA. Permittee must describe in the SWMP and annual reports all the measures that are being used to address the terms of the WLA.

c. If the applicable TMDL does not specify a wasteload allocation or other requirements either individually or categorically for the MS4 discharge (including disallowing such discharge), and the permittee has complied with Part 2.1 and the terms and conditions of this permit, and has undertaken measures and documented them in the SWMP to address the pollutant of the TMDL, then compliance with these conditions will be presumed adequate to meet the requirements of the TMDL, unless otherwise notified by EPA.

d. "Applicable TMDLs" for discharges from the permittee's MS4 are those that have been approved by EPA as of the effective date of this permit.

e. The permittee shall highlight in its annual report all control measures currently being implemented or planned to be implemented to control the pollutants identified in the approved TMDLs. The permittee shall include in the annual report and the SWMP the basis supporting the permittee's determination that such controls are adequate to meet the TMDL.

2.2.2 Discharge to an Impaired Water without an Approved TMDL

If there is a discharge from the MS4 to an impaired water without an approved TMDL, the permittee must comply with Part 2.1 of this permit and address in its SWMP and annual reports how the discharge of pollutant(s) identified as causing the impairment will be controlled such that they do not cause or contribute to the impairment. The permittee shall:

a. evaluate discharges to impaired waters;

b. identify additional or modified BMPs in its SWMP to ensure that discharges do not cause or contribute to the impairment; and

c. implement such BMPs and include the status of each in its annual report.

2.2.3 Discharge to a Chloride Impaired Water in New Hampshire

a. The permittee shall develop and implement a written plan to reduce chloride in discharges from the permittee's MS4 to those chloride impaired surface waters. The requirements in this plan shall apply to all parking lots, roads, and chloride-based deicing chemical piles that drain directly or indirectly to the permittee's MS4[1]. The plan shall include the following:

- A requirement that private and public owners of parking lots and roads annually report to the permittee the amount of chloride-based deicing chemicals applied for each storm event. For the purposes of this provision, a storm event is any event that triggers the use of the deicing chemicals.
- The preparation of an annual written report that summarizes the amount of chloride-based deicer usage by each user, and the total application of chloride-based deicer chemicals to

[1] The permittee may choose to implement the chloride reduction plan throughout its jurisdiction.

areas that discharge directly or indirectly to the MS4 for the previous winter's application season. The report shall be submitted as part of the annual report required in Part 5.2.

- A requirement for all public and private chloride applicators to use application rates that are at least as stringent as those specified in the State of Minnesota guidance documents: Table 19 on page 35 of *Winter Parking Lot and Sidewalk Maintenance Manual (Revised edition June 2008)* for parking lots (http://www.pca.state.mn.us/publications/parkinglotmanual.pdf) and for roads, the application guidelines on page 17 of *Minnesota Snow and Ice Control: Field Handbook for Snow Operators (August 2005)* (http://www.mnltap.umn.edu/pdf/snowicecontrolhandbook.pdf)
- A requirement that public and private chloride applicators regularly calibrate spreading equipment in accordance with guidelines at least as stringent as those specified in of the above referenced *Winter Parking Lot and Sidewalk Maintenance Manual (Revised edition June 2008) (pp9-13)*.
- A requirement to cover all piles containing chloride in order to prevent exposure to precipitation and runoff to the MS4 either directly or indirectly and a requirement to implement appropriate measures to minimize exposure resulting from adding to or removing materials from the pile.
- A program to educate users of deicing materials on best management practices (storage, use, and housekeeping) for their uses and effects on the environment. Education efforts shall include those audiences in Part 2.3.2.1(c). Education efforts must be summarized in the permittee's annual report required in Part 5.2.

b. The permittee shall report the status of the development and implementation of the plan described above in its annual report including the amount of annual chloride use and education efforts.

2.2.4 New or Increased Discharges to Impaired Waters

For the purposes of this permit, EPA considers new discharges to be new outfalls constructed or created by the permittee after the authorization date of this permit and are under the jurisdiction of the MS4.

a. The permittee must notify EPA and the state agency a minimum of thirty (30) days prior to commencement of a new discharge or increased discharge from the MS4 with a description of the discharge and information demonstrating that the discharge will satisfy the antidegradation provisions of the state water quality standards including an alternatives analysis. Such discharges will become authorized thirty (30) days after the permittee's notification unless EPA or the state notifies the permittee that it has failed to demonstrate compliance with the antidegradation provisions. Before commencing any new or increased discharge, the permittee shall identify in its SWMP the BMPs it will implement to ensure compliance with antidegradation provisions and the terms of this permit.

b. New discharges to impaired waters are not eligible for coverage unless the permittee:

i. Prevents all exposure to stormwater of the pollutants(s) for which the waterbody is

impaired, and retain documentation of procedures taken to prevent exposure with the SWMP; or

ii. Document that the pollutant(s) for which the waterbody is impaired is not present and retain documentation of this finding with the SWMP; or

iii. Provide data to support a showing that the discharge is not expected to cause or contribute to an exceedance of a water quality standard, and retain such data with the SWMP. To do this, the permittee must provide data and other technical information to EPA sufficient to demonstrate:
    - For discharges to waters without an EPA approved TMDL, that the discharge of the pollutant for which the water is impaired will meet in-stream water quality criteria at the point of discharge to the waterbody; or
    - For discharges to waters with an EPA approved TMDL, that there are sufficient remaining wasteload allocations in an EPA approved TMDL to allow the discharge and that existing dischargers to the waterbody are subject to compliance schedules designed to bring the waterbody into attainment with water quality standards.

c. New discharges are eligible if the permittee receives an affirmative determination from EPA that the discharge will not contribute to the existing impairment, in which case the permittee must maintain such determination onsite with the SWMP, or if EPA fails to respond within 30 days of submission of data.

d. At the same time that the permittee submits information to EPA and the state agency, it shall make it available to the public. The permittee shall retain documentation of its demonstration in its SWMP and annual reports.

e. New or increased discharge to surface waters (including those waters designated by the state as Tier 2 for anti-degradation purposes under 40 CFR § 131.12 (a)) must receive certification from the state agency that the discharge will not violate water quality standards, including antidegradation. Prior to commencing the discharge, the permittee must submit the certification, or any waiver of certification to EPA. Such discharges will become authorized thirty (30) days after permittee's notification unless EPA notifies the permittee that it has failed to demonstrate compliance with the antidegradation provisions of the surface water quality standards.

2.3 Requirements to Reduce Pollutants to the Maximum Extent Practicable (MEP)

a. The BMPs and control measures in this part are non-numeric effluent limitations.

b. The permittee shall reduce the discharge of pollutants from the MS4 to the maximum extent practicable (MEP). MEP is generally a focus on pollution prevention and source control in combination with structural controls and treatment. MEP is an iterative process.

2.3.1 Control Measures

a. Permittees authorized under the MS4 2003 must continue to implement their existing SWMPs while updating their SWMPs pursuant to the new permit. This permit does not extend the

compliance deadlines set forth in the MS4-2003.

b. Implementation of one or more of the minimum control measures described in Parts 2.3.2-2.3.7 or other permit requirements may be shared with another entity or the other entity may fully implement the measure or requirement, if the following requirements are satisfied:

- The other entity, in fact, implements the control measure.
- The particular control measure, or component of thereof, is at least as stringent as the corresponding permit requirement.
- The other entity agrees to implement the control measure on the permittee's behalf. A legally binding written acceptance of this obligation is required. This acceptance may be in the form of a contract, a Memorandum of Understanding, or other written documentation and it must outline roles and responsibilities of each party. This document must be included as part of the SWMP. If the other entity agrees to report on the control measure, the permittee must supply the other entity with the reporting requirement contained in this permit under Part 5.3.
- The permittee remains legally responsible for permit compliance and implementation of the control measure if the other entity fails to implement.

c. Cooperation between interconnected municipal separate storm sewer systems is strongly encouraged. The permittee shall identify all interconnections within the system. The permittee shall depict interconnections on the map required by Part 2.3.4.4.

2.3.2 Public Education and Outreach

Objective: The permittee must implement an education program that includes educational goals based on specific stormwater issues within the community. The program must include a focus on pollutants of concern for impaired waters and priority waters within the community. Priority waters include beaches, shellfishing areas, and drinking water supplies. The ultimate goal of a public education program is to create a change in behavior and knowledge so that pollutants in stormwater are reduced.

2.3.2.1 - The permittee must continue to implement the public education program required by the MS4-2003 by distributing educational material to the community. The educational program must express specific messages, define the targeted audience for each message, and identify responsible parties for implementation. If appropriate for the target audience, materials may be developed in a language other than English. At a minimum, the program must provide information concerning the impact of stormwater discharges on water bodies within the community especially those waters that are impaired or identified as priority waters. The program must identify steps and/or activities that the public can take to reduce the pollutants in stormwater runoff and their impacts to the environment.

a. The educational program must include education and outreach efforts for the following four (4) audiences: (1) residents, (2) businesses, institutions, and commercial facilities, (3) developers (construction), and (4) industrial facilities.

b. Beginning the first year of the permit the permittee must distribute a minimum of two (2) educational messages over the permit term to each audience identified in Part 2.3.2.1(a) (The permittee must distribute a minimum of at least eight educational messages.) The distribution of materials to each audience must be spaced at least a year apart. Educational messages may be printed materials such as brochures or newsletters; electronic materials such as websites; mass media such as newspaper articles or public service announcement (radio or cable); or poster displays in a public area such as town/city hall. The permittee may use existing materials if they are appropriate for the message the permittee chooses to deliver or the permittee may develop its own educational materials.

c. The permittee must at a minimum consider the topics listed in paragraphs 2.3.2.1 (c) (i – iv) when developing the outreach/education program. The topics are not inclusive and the permittee must focus on those topics most relevant to the community.

i. Residential program: maintenance of septic systems; effects of outdoor activities such as lawn care (use of pesticides, herbicides, and fertilizers); benefits of appropriate on-site infiltration of stormwater; effects of automotive work and car washing on water quality; proper disposal of swimming pool water; and proper management of pet waste. If the municipality has greater than 50 percent of its residents serviced by septic systems, the municipality must include maintenance of septic systems as part of its education program.

ii. Business/Commercial/Institution program: proper lawn maintenance (use of pesticides, herbicides and fertilizer); benefits of appropriate on-site infiltration of stormwater; building maintenance (use of detergents); use of salt or other de-icing and anti-icing materials (minimize their use); proper storage of salt or other de-icing/anti-icing materials (cover/prevent runoff to storm system and contamination to ground water); proper storage of materials (emphasize pollution prevention); proper management of waste materials and dumpsters (cover and pollution prevention); and proper management of parking lot surfaces (sweeping).

iii. Developers and Construction: proper sediment and erosion control management practices; information about Low Impact Development principles and technologies; and information about EPA's construction general permit (CGP). This education can also be a part of the Construction Site Stormwater Runoff Control measure detailed in Part 2.3.5.

iv. Industrial program: equipment inspection to ensure timely maintenance; proper storage of industrial materials (emphasize pollution prevent); proper management and disposal of wastes; proper management of dumpsters; minimization of use of salt or other de-icing/anti-icing materials; proper storage of salt or other de-icing/anti-icing materials (cover/prevent runoff to storm system and ground water contamination); benefits of appropriate on-site infiltration (areas with low exposure to industrial materials such as roofs or employee parking); and proper maintenance of parking lot surfaces (sweeping).

2.3.2.2 - An effective program must show evidence of focused messages and audiences as well as demonstration that the defined goal of the program has been achieved. The permittee must define the specific messages for each audience. The permittee must identify methods that the

municipality will use to evaluate the effectiveness of the educational messages and the overall education program. Any methods used to evaluate the effectiveness of the program must be tied to the defined goals of the program and the overall objective of changes in behavior and knowledge. One method of evaluation of the program may be an evaluation of audience knowledge prior to commencement of the educational message followed by an evaluation after delivery of the message, such as a survey.

2.3.2.3 - The permittee must modify any ineffective messages or distribution techniques prior to the next scheduled message delivery.

2.3.2.4 - The permittee must report on the messages for each audience; the method for distribution; the measures/methods used to assess the effectiveness of the messages, and the method/measures used to assess the overall effectiveness of the education program in the annual report.

2.3.3 Public Involvement and Participation

Objective: The permittee must provide opportunities to engage the public to participate in the review and implementation of the municipality's SWMP.

2.3.3.1 - All public involvement activities must comply with state public notice requirements (NH: RSA-91A). The SWMP and all annual reports must be available to the public.

2.3.3.2 - The permittee must annually provide the public an opportunity to participate in the review and implementation of the stormwater management program.

2.3.3.3 - The permittee must report on the activities undertaken to provide public participation opportunities including compliance with Part 2.3.3.1. Public participation opportunities pursuant to Part 2.3.3.2 may include, but are not limited to, websites; hotlines; clean-up teams; monitoring teams; or an advisory committee.

2.3.4 Illicit Discharge Detection and Elimination (IDDE) Program

Objective: The permittee must implement an IDDE program to systematically find and eliminate sources of non-stormwater from the separate storm sewer system and to implement defined procedures to prevent illicit connections and discharges.

2.3.4.1- The permittee shall prohibit illicit discharges and sanitary sewer overflows ("SSOs") to its MS4 and require removal of such discharges consistent with Part 2.3.4.2 of this permit. An illicit discharge is any discharge to a municipal separate storm sewer that is not composed entirely of stormwater. Exceptions are discharges pursuant to a separate NPDES permit (other than the NPDES permit for discharges from the municipal sewer system) and non-stormwater discharges listed in Part 1.4. An SSO is a discharge of untreated sanitary wastewater. SSOs are illegal and must be eliminated.

2.3.4.2 –Illicit discharges to the MS4 are prohibited, and any such discharges violate this permit and remain in violation until they are eliminated. Upon detection, the permittee shall eliminate illicit discharges as expeditiously as possible and require immediate cessation of improper disposal practices upon confirmation of responsible parties in accordance with its enforceable legal authorities established pursuant to Part 2.3.4.6.a. Where elimination of an illicit discharge within 30 days of its confirmation is not possible, the permittee shall establish an expeditious schedule for its elimination. No later than 6 months after confirmation such discharges shall be eliminated or appropriate enforcement actions shall be initiated. In the interim, the permittee shall take all reasonable and prudent measures to minimize the discharge of pollutants to its MS4.

a. Discharges from SSOs to the MS4 are prohibited and any such discharges violate this permit and remain in violation until they are eliminated. Upon detection, the permittee shall eliminate SSOs as expeditiously as possible and take all reasonable and prudent interim mitigation measures to minimize the discharge of pollutants from its MS4 until elimination is achieved.

b. The permittee shall identify all known SSOs that have not yet been eliminated or for which the underlying cause has not yet been identified or corrected. This shall include SSOs resulting, during dry or wet weather, from inadequate conveyance capacities, or where interconnectivity of the storm and sanitary sewer infrastructure allows for communication of flow between the systems. This shall not include SSOs resulting from isolated episodes of pipe blockages or collapses that have not recurred since addressed. Within 60 days of the effective date of the permit, the permittee shall develop an inventory of the identified SSOs indicating:

- Location (approximate street crossing/address and receiving water, if any);
- Date(s) and time(s) (i.e., beginning and end of discharge);
- Estimated volume(s);
- Description of the occurrence indicating known or suspected cause(s);
- Mitigation and corrective measures completed with dates implemented; and
- Mitigation and corrective measures planned with implementation schedules.

Upon becoming aware of an SSO, the permittee shall provide written notice to EPA and the state or tribal agency in accordance with Paragraph B.12 of Appendix B. The permittee shall maintain the inventory as a part of the SWMP and update the inventory annually. The permittee shall include a summary of this information in the annual report.

c. Schedules for the mitigation or elimination of SSOs shall be established pursuant to compliance orders issued by EPA or the state or tribal agency; or in the absence of a compliance order addressing a particular SSO, the permittee shall implement mitigation or corrective actions according to schedules established and identified pursuant to Part 2.3.4.2.b.

d. The permittee shall include in its annual report the status of mitigation and corrective measures implemented by the permittee to address each SSO identified pursuant to this part.

2.3.4.3 – During the development of the new components of the IDDE program required by this permit, permittees authorized by the MS4-2003 must continue to implement the IDDE program required by the MS4-2003 to detect and address non-stormwater discharges to the separate storm

sewer system (see Part II.B.3, Part III.B.3, Part IV B.3 and Part V B.3 of the MS4-2003) including illegal dumping.

2.3.4.4 - The sources of non- stormwater listed in Part 1.4 of this permit need not be eliminated provided a determination has been made by the permittee that these discharges do not impact the quality of its stormwater such that they cause or contribute to an instream exceedance of a water quality standard. The permittee must evaluate the sources of non-stormwater discharges in Part 1.4 and determine whether these sources are significant contributors of pollutants to the municipal system. If the permittee determines these sources are significant, the permittee must implement measures to control the sources so they are no longer significant contributors of pollutants or to prohibit the sources. The permittee must document in the SWMP its determinations on each of the non-stormwater discharges listed in Part 1.4.

2.3.4.5 - The permittee must develop a map of the separate storm sewer system. The map of the separate storm sewer system must be finished by two (2) years from the effective date of this permit. This permit does not provide additional time for completion of the map that was required by the MS4-2003. The map must include the entire separate storm sewer system and all structures associated with the system, including, at a minimum, catch basins, manholes associated with the storm sewer system, pipes, interconnections to other small MS4s, and treatment structures associated with the separate storm sewer system. The map must show outfalls, receiving waters, and resource waters such as drinking waters. The map may also show the locations of sanitary sewers, a description of the land use areas including amounts of impervious cover, the drainage area of each outfall and the land use associated with that drainage. The map may be a hard copy or on a Geographic Information System (GIS). The permittee must report on the status of the complete map required by this permit in the annual report.

2.3.4.6 - The IDDE program must be a written document and must describe the elements detailed in Parts 2.3.4.6 (a-g). If the IDDE program does not contain all the elements, the IDDE program must include written documentation or rationale as to why an element is not applicable to the permittee. The permittee must maintain all records used to develop the IDDE program as described in Part 5.2.1.

a. The IDDE program must have adequate legal authority to accomplish the following tasks: prohibit illicit discharges; investigate suspected illicit discharges; eliminate illicit discharges and enforce the program. Adequate legal authority consists of a currently effective ordinance, by-law, or other regulatory mechanism. For permittees authorized by the MS4-2003, the ordinance, by-law, or other regulatory mechanism was a requirement of the MS4-2003 and was required to be effective by May 1, 2008. The written IDDE program must include a reference or citation of the authority the permittee will use to implement all aspects of the IDDE program.

b. The permittee must assess the illicit discharge potential of all catchments of the MS4. This assessment will aid in the identification of priority areas for beginning the systematic investigations for illicit discharges. The permittee may draw from existing information about the MS4 for initial characterization of the illicit discharge potential of all catchments of the MS4. If the permittee has knowledge of drainage catchments or alignments with known or highly

suspected contributions of illicit discharges or SSOs, the MS4 is not required to rank these catchments of the MS4 pursuant to Part 2.3.4.6.b(ii) and (iii). In this situation, the permittee shall continue, or initiate, isolation and removal procedures for known illicit discharges and SSOs based on the permittee's procedure established pursuant to Part 2.3.4.6.d of this permit. For the purpose of this permit, a catchment is the area that is tributary to an individual outfall.

i. The permittee shall delineate the small MS4 into catchments and evaluate each catchment for illicit discharges. This delineation can be on hard copy maps or on a GIS system. Once delineated, each catchment shall be assessed based on currently available data to determine the potential for illicit discharges.

If the boundaries of the catchment extend beyond the boundaries of the MS4, the permittee is encouraged to work with neighboring MS4s to ensure an accurate assessment.

ii. The permittee shall rank delineated catchments as "high", "medium", or "low" for its potential to have illicit discharges. The ranking shall be based on screening factors that are reflective of existing circumstances of the MS4. The purpose of the ranking is to identify and prioritize areas in the MS4 with a high potential for illicit discharges and to identify areas where the impact of discharges is already known. The permittee must begin implementation of the illicit discharge detection protocol required in Part 2.3.4.6.d of this permit in areas of the MS4 identified as "high" or with the highest ranking based on the factors detailed below. At a minimum, the permittee shall consider the following list of factors:

- Past Discharge complaints and reports – any area of the municipality that has a high frequency of complaints should be considered for high illicit discharge potential.
- Poor dry weather receiving water quality- the following guidelines are recommended to identify waters as having a high illicit discharge potential: exceeding fecal coliform or *E.Coli* water quality standards; ammonia-nitrogen levels of 0.30 mg/l; total phosphorus levels of 0.40 mg/l; or any other available sources of dry weather water quality data including state agencies or watershed associations.
- Density of generating sites - Generating sites are those places, including institutional, municipal, commercial, or industrial sites, with a potential to generate pollutants that could contribute to illicit discharges. Examples of these sites include, but are not limited to, car dealers; car washes; gas stations; garden centers; industrial manufacturing areas; colleges and residential areas (septic systems, swimming pools, dumping).
- Stormwater outfall density – Stormwater outfall density is the number of stormwater outfalls per stream mile. Receiving waters with 20 or more outfalls in a stream mile may be considered to have a high illicit discharge potential.
- Age of surrounding development – Developments 50 years or older will probably have a high illicit discharge potential. Developments 20 years or younger will probably have a low illicit discharge potential.
- Sewer conversion – Catchments that were once serviced by septic systems, but have been converted to sewer connects may have a high illicit discharge potential.
- Historic combined sewer systems – Catchments that were once serviced by a combined sewer system, but have been separated may have a high illicit discharge potential.
- Presence of older industrial operations – Older industrial areas tend to have a high potential for cross connections. Older industrial areas are those area that are 40 years or

older.

- Aging or failing sewer infrastructure – Sewer systems where the age of the system exceeds 50 years have a high illicit discharge potential.
- Density of aging septic systems – Septic systems 30 years or older are prone to have failures. Areas with older septic system density of 100 units per square mile may have a high illicit discharge potential.
- Culverted streams – any river or stream that is culverted for distances greater than a simple roadway crossing may be considered "high".

The following is a list of waterbodies that the permittee may consider as priorities for evaluation for illicit discharges, but are not necessarily indicators of the presence of illicit connections or discharges

- Waterbodies that receive a discharge from the MS4 and are drinking water supplies, shell fishing areas, or beaches.
- Impaired waterbodies that receive a discharge from the MS4 with the potential to contain the pollutant identified as the cause of impairment.
- Waters with approved TMDLs and identified WLA applicable to the permittee.

The permittee must consider all factors listed above, but not all factors may apply. The permittee must include the results of the evaluation of the factors as part of the written IDDE program. The permittee may add additional location specific relevant screening factors. If the permittee develops other factors, the permittee must include the additional factors and the metric used for its evaluation it in its written IDDE program. The permittee must include the results of the evaluation of the factors as part of the IDDE program.

iii. For each factor relevant to the MS4 listed in Part 2.3.4.6 (b) (ii) above, the permittee shall rate each factor as "low", "medium" or "high" for its potential to have illicit discharges. The permittee shall then use the results of the factors in each catchment to prioritize each catchment as "low", "medium" or "high" for its illicit discharge potential. The permittee must begin systematic implementation of the illicit discharge detection protocol as described in Part 2.3.4.6 (d) in all catchments identified as priorities by the MS4 or with the highest ranking in the illicit discharge potential ranking. The permittee shall continue the systematic implementation of the illicit detection protocol described in Part 2.3.4.6(d) until all catchments within the MS4 have been investigated. The permittee shall retain the results of the prioritization as part of the written IDDE program. The permittee must document in the SWMP and the annual reports the basis of any decisions not to implement the protocol in any catchment identified as a priority.

iv. The illicit discharge potential assessment and prioritization must be completed by one (1) year from the effective date of the permit. The permittee must document the results of the ranking in the SWMP and must report the results of the ranking for each catchment in the annual report. The annual report shall also include information on catchments that the permittee did not evaluate using the factors listed in Part 2.3.4.6 due to prior knowledge of known or suspected illicit discharges or connections.

c. The permittee must establish a written protocol that clearly identifies responsibilities with regard to eliminating illicit discharges. The protocol must describe who is responsible for

eliminating identified illicit connections and other problems identified during investigations; the appropriate methods for elimination of the illicit connection or identified problem; the process for confirmation and verification of removal of the connection or the discharge and a procedure for tracking progress towards the overall program goals. The written responsibility protocol must be complete one (1) year from the effective date of the permit. The permittee must report on the status of this protocol in each annual report.

d. The permittee must develop a written systematic procedure for locating illicit connections. The procedure, at a minimum, must include walking all stream miles (walking the banks of all waters in the MS4) and observing the outfalls including editing any existing maps to reflect actual field conditions; conducting dry and wet weather monitoring (see Parts 2.3.4.6.d (ii) and 3.0 of this permit) of outfalls; determining the potential source of any non-stormwater discharges; and documenting the elimination of the discharge. The written systematic procedure must be completed no later than two (2) years from the effective date of the permit. The permittee must report on the status of this procedure in the annual report. If the systematic procedure is completed prior to two (2) years from the effective date of the permit, the permittee must begin implementing the protocol within 3 months of its completion.

i. The systematic procedure to locate the presence and the source of an illicit discharge may either start from the outfall and work up the system or start from the upper parts of the catchment and work down the system or be a combination of both practices. Either method must, at a minimum, include an investigation of each junction manhole within the MS4. The illicit discharge detection procedure must describe the method the municipality will use.

ii. The permittee must begin systematically locating illicit discharges using the procedure developed in accordance with Part 2.3.4.6 (d) no later than 27 months (2 years and 3 months) from the effective date of the permit. In accordance with Part 2.3.4.2, the permittee must address any illicit discharges identified prior to completion of the procedure.

The systematic procedure for locating illicit discharges and connections must include the following activities:

- Outfall Inventory – The purpose of the inventory is to record the actual location of an outfall and to provide a characterization of its condition (size, material, flow, etc). The permittee must conduct an outfall inventory for each stream mile within its regulated jurisdiction. The inventory must begin with the catchments identified as priorities in the ranking and assessment required by Part 2.3.4.6 (b) of this permit. Each outfall must be labeled with a unique identifier. The following information shall be recorded for each outfall: dimensions, shape, material (concrete, PVC), spatial location (GPS), and physical condition. Additionally, any sensory observations shall also be recorded. Sensory observations include odor, color, turbidity, floatables, or oil sheen. The permittee must complete an inventory for 25 percent of the outfalls each year of this permit, beginning in year 2 of the permit. An outfall means a point source as defined by 40 CFR § 122.2 at the point where the municipal separate storm sewer discharges to waters of the United States. An outfall does not include open conveyances connecting two municipal separate storm sewers or pipes, tunnels or other conveyances that connect segments of the

same stream or other waters of the United States and are used to convey waters of the United States.

- If flow is observed at the outfall during the inventory, a sample of the flow shall be collected. At a minimum, the permittee shall sample for the following parameters: conductivity, turbidity, pH, chlorine, temperature, surfactants (as MBAS), potassium, ammonia and *E.coli* or enterococcus (as appropriate depending on whether a discharge is to a fresh water or a marine water). The outfall sampling conducted as part of the outfall inventory may be performed in conjunction with the Dry Weather Outfall Monitoring requirements of Part 3.0 provided the appropriate conditions have been met.
- Tracking and Identification of an Illicit Source –The systematic procedure shall describe a storm drain network investigation which involves systematically and progressively sampling and evaluating all junction manholes in the MS4 to narrow the location of a suspected illicit connection or discharge to an isolated pipe segment between two manholes. Prior to beginning the investigation, the permittee must determine where in the system to begin investigations and what indicators will be used to determine if the manhole is clean (no illicits) or dirty (suspected illicits). Each junction manhole shall be opened and inspected for visual evidence of illicit connections (e.g., excrement, toilet paper, or sanitary products present). If visual evidence is present, the permittee must identify the source in accordance with the procedure developed in Part 2.3.4.6(d). If flow is observed in a junction manhole, the permittee shall sample the flow for ammonia and surfactants and identify the source. The permittee may sample for other indicators. The permittee may use methods such as caulk damns, dye testing, video testing, or smoke testing to locate the source.

iii. When the source of an illicit discharge is identified and confirmed, the permittee must record the following information: the location of the discharge, a description of the discharge, the method of discovery, date of discovery, date of removal, repair, or enforcement action; date, and method of removal verification; and estimate of the volume of flow removed. Pursuant to Part 2.3.4.2, the time frame between detection of an illicit discharge or connection and elimination or enforcement must not be longer than six months. The permittee must include this information as part of each annual report.

e. The permittee must develop and implement mechanisms and procedures designed to prevent illicit discharges and SSOs. The following are examples that the permittee may use: spill response and prevention procedures including identification of spills, reporting procedures, containment procedures, and documentation; public awareness (this may be a part of the education program required by Part 2.3.2); reporting (hotlines) and training of public employees on ways to identify potential illicit discharges and SSOs.

f. The permittee must define or describe indicators for tracking program success. At a minimum, indicators must include measures that demonstrate an elimination of pollutant sources and/or improvement to water quality and number of illicit discharges removed. Other examples include number of days without beach closure; decrease in algae blooms; or water quality monitoring results. The permittee must evaluate and report the overall effectiveness of the program based on the tracking indicators in the annual report.

g. The permittee must, at a minimum, annually train employees about the IDDE program including how to recognize illicit discharges and SSOs. The permittee must document in the SWMP the training given to or received by employees. The permittee must report on the frequency and type of employee training in the annual report.

2.3.5 Construction Site Stormwater Runoff Control

Objective: The objective of an effective construction stormwater runoff control program is to minimize or eliminate erosion and maintain sediment on site so that it is not transported in stormwater and allowed to discharge to the MS4 or the environment.

Although there may be regulatory overlap, the construction site stormwater runoff control program required by this permit is a separate and distinct program from EPA's stormwater construction program.

2.3.5.1 – Permittees authorized under the MS4-2003 must continue to implement and enforce a program to reduce pollutants in any stormwater runoff discharged to the MS4 from construction activities that result in a land disturbance of greater than or equal to one acre. The permittee's program must include disturbances less than one acre if that disturbance is part of a larger common plan.

2.3.5.2 - The permittee does not need to apply its construction program provisions to projects that receive a waiver from EPA under the provisions of 40 CFR § 122.26(b) (15) (i).

2.3.5.3 - The construction site runoff control program must include the following elements in Paragraphs a through e of this Part:

a. An ordinance or regulatory mechanism that requires the use of sediment and erosion control practices at construction sites. Development of an ordinance or other regulatory mechanism was a requirement of the MS4-2003 (See Part II.B.4 and Part III.B.4).The ordinance or other regulatory mechanism required by the MS4-2003 must have been effective by May 1, 2008.

b. The construction site stormwater runoff control program must include written procedures for site inspections and enforcement of sediment and erosion control measures at construction sites. The procedures must clearly define who is responsible for site inspections as well as who has authority to implement enforcement procedures. The permittee must have the authority to the extent authorized by law to impose sanctions to ensure compliance with the local program. These procedures and regulatory authorities must be written and documented in the SWMP.

c. The construction site stormwater runoff control program must require construction site operators with the MS4 jurisdiction to implement a sediment and erosion control program that includes BMPs appropriate for the conditions at the construction site. The program may include references to BMP design standards in state manuals or design standards specific to the MS4. EPA supports and encourages the use of design standards in local programs. Examples of appropriate sediment and erosion control measures for construction sites include local requirements to:

i. minimize the amount of disturbed area and protect natural resources;
ii. stabilize sites when projects are complete or operations have temporarily ceased;
iii. protect slopes on the construction site;
iv. protect all storm drain inlets and armor all newly constructed outlets;
v. use perimeter controls at the site;
vi. stabilize construction site entrances and exits to prevent off-site tracking;
vii inspect stormwater controls at consistent intervals; and
viii. control or manage a specific volume of runoff (e.g. design sediment and erosion control measures to manage 1 inch of runoff).

d. The construction site stormwater runoff control program must require construction site operators within the MS4 jurisdiction to control wastes, including but not limited to, discarded building materials, concrete truck wash out, chemicals, litter, and sanitary wastes. These wastes may not be discharged to the MS4.

e. The construction site stormwater runoff control program must have written procedures for site plan review. Site plan review must include a review of the site design, the planned operations at the construction site, planned BMPs during the construction phase, and the planned BMPs to be used to manage runoff created after development. The review procedure must incorporate procedures for the consideration of potential water quality impacts; procedures for pre-construction review; and procedures for receipt and consideration of information submitted by the public. Site plan review procedure must include evaluation of opportunities for use of low impact design and green infrastructure and when the opportunity exists, encourage project proponents to incorporate into the site design. The permittee must track the number of site reviews, inspections, and enforcement actions in the SWMP. This information must be included as part of each annual report required by Part 5.3.

2.3.5.4 - EPA may notify a municipality that their local construction site stormwater runoff control program meets the requirement of a qualifying local program (QLP) (defined at 40 CFR 122.44(s)) or a municipality may ask EPA to make a determination that their program meets the requirements of a QLP. Being identified as a QLP means that the municipality's program can be referenced in EPA's Construction General Permit as being consistent with the terms of that permit. Construction projects in municipalities with a QLP would meet the requirements of the CGP by meeting the local requirements.

2.3.6 Stormwater Management in New Development and Redevelopment (Post Construction Stormwater Management)

Objective: The objective of this control measure is for the hydrology associated with new

development to mirror the pre-development hydrology of the previously undeveloped site or to improve the hydrology of a redeveloped site and reduce the discharge of stormwater.

2.3.6.1 – Permittees authorized under the MS4-2003 must continue to implement and enforce a program to address stormwater runoff from new development and redevelopment projects that disturb greater than one acre and discharge into the municipal stormwater system.

2.3.6.2 - The new development/ redevelopment program must include projects less than one acre if the project is part of a larger common plan of development or redevelopment which disturbs greater than one acre.

2.3.6.3. - The new development/redevelop program must include an ordinance or regulatory mechanism that regulates runoff from new development and redevelopment projects. Development of an ordinance or other regulatory mechanism was a requirement of the MS4-2003 (See Part II.B.5 and Part III.B.5). The ordinance must have been effective by May 1, 2008.

2.3.6.4 – The permittee's new development/redevelopment program must have procedures to ensure that any stormwater controls or management practices for new development and redevelopment will prevent or minimize impacts to water quality. These procedures may include requirements to avoid development in areas susceptible to erosion and sediment loss; requirements to preserve areas in the municipality that provide important water quality benefits; requirement to implement measures for flood control; and requirements to protect the integrity of natural resources. For new development or redevelopment projects greater than one acre, the program shall include a process, if practicable, to require the implementation of low impact development practices that infiltrate, evapotranspire, or capture for reuse the first 1 inch of rainfall from a 24 hour storm preceded by 48 hours of no measurable precipitation.

2.3.6.5 –The permittee shall require the submission of as-built plans within 90 days of completion of construction projects that include controls designed to manage the stormwater associated with the completed site (post construction stormwater management). The new development/redevelopment program must have procedures to ensure adequate long-term operation and maintenance of stormwater management practices that are put in place after the completion of a construction project. This may include the use of dedicated funds or escrow accounts for development projects or the adoption by the permittee of all privately owned BMPs. This may also include the development of maintenance contracts between the owner of the BMP and the permittee. The maintenance contract shall include verification of maintenance practices by the owner, allow the municipality to inspect the maintenance practices and perform maintenance if inspections indicate neglect by the owner. The procedures to require submission of as-built plans and ensure long term operation and maintenance shall be a part of the SWMP. The permittee shall report in the annual report on the measures that the permittee has utilized to meet this requirement.

2.3.6.6 Within two (2) years of the effective date of this permit, the permittee shall develop a report assessing current street design and parking lot guidelines and requirements that affect the creation of impervious cover. This assessment shall be used to provide information to allow the permittee to determine if changes to design standards for streets and parking lots can be modified

to support low impact design options. If the assessment indicates that changes can be made, the assessment shall include recommendations and proposed schedules to incorporate policies and standards to relevant documents and procedures to minimize impervious cover attributable to parking and street designs. The local planning board and local transportation board should be involved in this assessment. This assessment shall be part of the SWMP. The permittee must report in each annual report on the status of this assessment including any planned or completed changes to local regulations and guidelines.

2.3.6.7 Within three (3) years from the effective date of the permit, the permittee must develop a report assessing existing local regulations to determine the feasibility of making the following green infrastructure practices allowable when appropriate site conditions exist:
i. Green roofs;
ii. Infiltration practices such as rain gardens, curb extensions, planter gardens, porous and pervious pavements, and other designs where the intent is to manage stormwater using landscaping and structured or augmented soils; and
iii. Water harvesting devices such as rain barrels and cisterns, and the use of stormwater for non-potable uses.
The assessment should indicate if the practices are allowed in the MS4 jurisdiction and under what circumstances. If the practices are not allowed, the permittee shall determine what hinders the use of these practices, and what changes in local regulations must be made to make them allowable. The permittee must report in each annual report on its findings and progress towards making the practices allowable.

2.3.6.8 – Directly Connected Impervious Area

a. Within one (1) year from the effective date of the permit, the permittee shall estimate the number of acres of impervious area (IA) and directly connected impervious area (DCIA) tributary to its MS4 jurisdiction. The permittee shall report the tabulated results and its estimation methodology in the first annual report. The permittee shall tabulate its estimates by the sub-basins and receiving waterbodies[2]. EPA recommends that the sub-basins and watersheds be those included in the New Hampshire Hydrographic Database (http://www.granit.unh.edu). Alternatively, the permittee may tabulate its estimates by the catchments it has delineated pursuant to Part 2.3.4.6(b) (i) of this permit or an alternative delineation of sub-basins. To facilitate the permittee's implementation of this permit requirement, EPA will provide for the permittee's use estimates of IA and DCIA for each regulated small MS4 in New Hampshire.

For the purposed of this part, IA includes conventional pavements, sidewalks, driveways, roadways, parking lots, and rooftops. DCIA is the portion of IA with a direct hydraulic connection to the permittee's MS4 or a waterbody via continuous paved surfaces, gutters, pipes and other impervious features. DCIA typically does not include isolated impervious areas with an indirect hydraulic connected to the MS4 (e.g., swale or detention basin) or that otherwise drain to a pervious area.

b. Two (2) years from the effective date of this permit, the permittee shall complete an inventory

[2] At a minimum, the areas reported must include those portions located within the urbanized area of the MS4, but may also include the total area within permittee's jurisdiction.

and priority ranking of MS4-owned property and infrastructure (including public right-of-way) that may have the potential to be retrofitted with BMPs designed to reduce the frequency, volume, and peak intensity of stormwater discharges to and from its MS4. In determining the potential for retrofitting, the permittee shall consider factors such as the complexity and cost of implementation; public safety; access for maintenance purposes; subsurface geology; depth to water table, proximity to aquifers and subsurface infrastructure including sanitary sewers and septic systems; and opportunities for public use and education. In determining its priority ranking, the permittee shall consider factors such as schedules for planned capital improvements to storm and sanitary sewer infrastructure and paving projects; current storm sewer level of service; and control of discharges to impaired waters, first or second order streams, and critical receiving waters. For the purposes of this part, critical receiving waters include public swimming beaches, public drinking water supply sources, and shellfish growing areas. The permittee may also include in its inventory non-MS4 properties such as commercial or industrial parcels.

c. Beginning with the second year annual report and in each subsequent annual report, the permittee shall estimate for each sub-basin identified pursuant to Part 2.3.6.8(a) the number of acres of DCIA tributary to its MS4 that have been added or removed during the prior year. The permittee shall include in its estimates the additions or reductions resulting from development, redevelopment, or retrofit projects undertaken directly by the permittee; or by private developers and other parties in a voluntary manner or in compliance with the permittee's regulations pursuant to Part 2.3.6.3 of this permit.

d. Beginning with the third year annual report and in each subsequent annual report, the permittee shall report on those MS4 owned properties and infrastructure that have been retrofitted with BMPs designed to reduce the frequency, volume, and peak intensity of stormwater discharges. The permittee may also include in its annual report non-MS4 owned property that has been retrofitted with BMPs designed to reduce the frequency, volume, and peak intensity of stormwater discharges.

2.3.7 Good House Keeping and Pollution Prevention for Permittee Owned Operations

Objective: The permittee must implement an operations and maintenance program for permittee-owned operations that includes a training component and has an ultimate goal of preventing or reducing pollutant runoff from all permittee-owned operations and protecting water quality.

2.3.7.1 - Operations and Maintenance Programs

Within one (1) year from the effective date of the permit, the permittee must develop a written operations and maintenance procedures for the following municipal activities listed below in Parts 2.3.7.1 (a–c). These written procedures must be included as part of the SWMP.

The permittee must develop an inventory of all such facilities within six (6) months of the effective date of this permit. The permittee must review this inventory annually and update as necessary.

a. Parks and open space: Establish procedures to address the proper use, storage, and disposal of

pesticides and fertilizers including minimizing the use of these products and using only in accordance manufacturer's instruction. Evaluate lawn maintenance and landscaping activities to ensure practices are protective of water quality. Protective practices include reduced mowing frequencies, proper disposal of lawn clippings, and use of alternative landscaping materials (drought resistant planting). Establish procedures for management of trash containers at parks (scheduled cleanings; sufficient number), and for placing signage in areas concerning the proper disposal of pet wastes.

b. Buildings and facilities: This includes schools, town offices, police, and fire stations, pools, parking garages and other permittee-owned or operated buildings or utilities. Evaluate the use, storage, and disposal of both petroleum and non-petroleum products. Ensure, through employee training, that those responsible for handling these products know proper procedures. Ensure that Spill Prevention Plans are in place, if applicable, and coordinate with the fire department as necessary. Develop management procedures for dumpsters and other waste management equipment. Sweep parking lots and keep areas surrounding the facilities clean to minimize runoff of pollutants. Within 6 months of the effective date of the permit, develop an inventory of all floor drains within all permittee-owned buildings. The inventory must be updated annually. Ensure that all floor drains discharge to appropriate locations.

c. Vehicles and Equipment: Establish procedures for the storage of permittee-owned vehicles. Vehicles with fluid leaks shall be stored indoors or in contained areas until repaired. Evaluate fueling areas for permittee-owned vehicles. If possible, place fueling areas under cover in order to minimize exposure. Establish procedures to ensure that vehicle wash waters are not discharged to the municipal storm sewer system or to surface waters. This permit does not authorize such discharges.

d. Roadways and Storm Systems: Within six (6) months of the effective date of the permit:
i. establish procedures for catch basin inspections, cleaning, and repairs. Catch basins shall be inspected annually. Catch basins shall be cleaned a minimum of once every other year. The municipality shall clean a catch basin more frequently if the catch basin is located in a priority sub-catchment identified as part of the IDDE program or if inspections indicate an excessive accumulation of sediment. Excessive accumulation is greater than 50 percent filled.
ii. establish procedures for sweeping streets, sidewalks, and permittee-owned parking lots. These areas shall be swept a minimum of twice per year, once in the spring (following winter activities) and once in the fall (leaf clean up). Ensure proper disposal of the cleanings.
iii. establish procedures for winter road maintenance including the use and storage of salt and sand. Minimize the use of chloride and other salts, and evaluate opportunities for use of alternative materials. Ensure that areas used for snow disposal will not result in discharges to waters.
iv. establish inspection and maintenance frequencies and procedures for the storm drain systems and for all structural stormwater BMPs such as swales; retention/detention basins or other structures. All permittee-owned stormwater structures must be inspected annually at a minimum.

e. The permittee must report in the annual report on the status of the inventory and any subsequent updates; the status of the O&M programs for the permittee owned facilities and activities in Parts 2.3.7.1(a – d) of this section; and the maintenance activities associated with

each.

f. The permittee must maintain all records associated with maintenance and inspection activities consistent with Part 5.2.1.

2.3.7.2 - Stormwater Pollution Prevention Plan (SWPPP)

A SWPPP must be developed and implemented for each of the following permittee-owned facilities: maintenance garages, public works facilities, transfer stations, and other waste handling facilities. If facilities are located at the same property, the permittee may develop one SWPPP for the entire property. The SWPPP is a separate document from the SWMP required in Part 1.10. A SWPPP does not need to be developed if a permittee-owned facility is covered by a currently effective Multi-Sector General Permit or other NPDES permit.

a. One year from the effective date of the permit, the permittee must develop and implement a written SWPPP for the facilities described above. The SWPPP must be signed in accordance with the signatory requirements of Appendix B – Subparagraph 11.

b. The SWPPP must contain the following elements:

i. Pollution Prevention Team
Identify the staff on the team, by name and title. If the position is unstaffed, the title of the position should be included and the SWPPP updated when the position is filled. The role of the team is to develop, implement, maintain, and revise, as necessary, the SWPPP for the facility.

ii. Description of the facility and identification of potential pollutant sources
The SWPPP shall include a map of the facility and a description of the activities that occur at the facility. The map must show the location of the stormwater outfalls, receiving waters, and any structural controls. Identify all activities which occur at the facility and the potential pollutants associated with each activity including the location of any floor drains. These may be included as part of the inventory required by Part 2.3.7.1.

iii. Identification of stormwater controls

The permittee must select, design, install, and implement the best available control measures to minimize or eliminate pollutants in the stormwater discharges from the permittee owned facilities.

The selection, design, installation, and implementation of the control measures must be in accordance with good engineering practices and manufacturer's specifications. The permittee must also take all reasonable steps to control or address the quality of discharges from the site that may not originate at the facility.

If the discharge from the facility is to an impaired water and the facility has the potential to discharge the pollutant identified as causing the impairment, the permittee must identify the

control measures that will be used to address this pollutant at the facility so that the discharge doe not cause or contribute to a violation of a water quality standard.

iv. The SWPPP must include the following management practices:

Minimize or Prevent Exposure: The permittee must to the extent practicable either locate materials and activities inside, or protect them with storm-resistant coverings in order to prevent exposure to rain, snow, snowmelt and runoff (although significant enlargement of impervious surface area is not recommended). Materials do not need to be enclosed or covered if stormwater runoff from affected areas will not be discharged directly or indirectly to receiving waters or to the MS4 or if discharges are authorized under another NPDES permit.

Good Housekeeping: The permittee must keep clean all exposed areas that are potential sources of pollutants, using such measures as sweeping at regular intervals (at a minimum monthly). Ensure that trash containers are closed when not in use, keep storage areas well swept and free from leaking or damaged containers; and store leaking vehicles needing repair indoors.

Preventative Maintenance: The permittee must regularly inspect, test, maintain, and repair all equipment and systems to avoid situations that may result in leaks, spills, and other releases of pollutants in stormwater to receiving waters. Inspections must occur at a minimum once per quarter.

Spill Prevention and Response: The permittee must minimize the potential for leaks, spills, and other releases that may be exposed to stormwater and develop plans for effective response to such spills if or when they occur. At a minimum, the permittee must have procedures that include:

- Preventative measures such as barriers between material storage and traffic areas, secondary containment provisions, and procedures for material storage and handling.
- Response procedures that include notification of appropriate facility personnel, emergency agencies, and regulatory agencies, and procedures for stopping, containing, and cleaning up leaks, spills and other releases. Measures for cleaning up hazardous material spills or leaks must be consistent with applicable Resource Conservation and Recovery Act (RCRA) regulations at 40 CFR Part 264 and 40 CFR Part 265. Employees who may cause, detect, or respond to a spill or leak must be trained in these procedures and have necessary spill response equipment available. If possible, one of these individuals should be a member of the Pollution Prevention Team ; and
- Contact information for individuals and agencies that must be notified in the event of a leak, spill, or other release. Where a leak, spill, or other release containing a hazardous substance or oil in an amount equal to or in excess of a reportable quantity established under either 40 CFR 110, 40 CFR 117, or 40 CFR 302, occurs during a 24-hour period, the permittee must notify the National Response Center (NRC) at (800) 424-8802 in accordance with the requirements of 40 CFR 110, 40 CFR 117, and 40 CFR 302 as soon as the permittee has knowledge of the

discharge. State or local requirements may necessitate reporting spills or discharges to local emergency, public health or drinking water supply agencies, and owners of public drinking water supplies. Contact information must be in locations that are readily accessible and available.

Erosion and Sediment Control: The permittee shall use structural and non-structural control measures at the facility to stabilize and contain runoff from exposed areas minimize or eliminate onsite erosion and sedimentation. Efforts to achieve this may include the use of flow velocity dissipation devices at discharge locations and within outfall channels where necessary to reduce erosion.

Management of Runoff: The permittee must divert, infiltrate, reuse, contain, or otherwise reduce stormwater runoff, to minimize or, to the extent achievable, eliminate pollutants in the discharges. The permittee must implement stormwater runoff management practices, e.g., permanent structural control measures that are necessary to minimize or, to the extent achievable, eliminate pollutants in the discharge. Nothing in this permit relieves the permittee of the obligation to implement additional control measures required by other Federal authorities, or by a State or local authority. Nothing in this permit relieves the permittee of the obligation to obtain appropriate permits from other such authorities Structural control measures that inject stormwater below the surface of the ground may need to be registered or require an Underground Injection Control permit before the structural control measure will be authorized to operate. Structural control measures, which involve the discharge of dredge or fill material into any receiving waters (e.g., wetlands) may require a separate permit under section 404 of the CWA before installation.

Salt Storage Piles or Piles Containing Salt: In order to prevent exposure to precipitation, the permittee must enclose or cover storage piles of salt or piles containing salt used for deicing or other purposes, including maintenance of paved surfaces. The permittee must implement appropriate measures (e.g., good housekeeping, diversions, containment) to minimize exposure resulting from adding to or removing materials from the pile. Piles do not need to be enclosed or covered if stormwater runoff from the pile will not be discharged directly or indirectly to the MS4 or if discharges from the piles are authorized under another NPDES permit. The permittee is encouraged to store piles in such a manner as not to impact ground water resources, recharge areas, and wells.

Employee Training: The permittee must annually train all employees who work in areas where materials or activities are exposed to stormwater, or who are responsible for implementing activities identified in the SWPPP (e.g., inspectors, maintenance personnel), including all members of the Pollution Prevention Team. Training must cover both the specific components and scope of the SWPPP and the control measures required under this Part, including spill response, good housekeeping, material management practices, any best management practice operation and maintenance, etc.

Maintenance of Control Measures: The permittee must maintain all control measures, required by this permit, in effective operating condition. The permittee must keep documentation onsite that describes procedures and a regular schedule for preventative maintenance of all control

measures and discussions of back-up practices in place should a runoff event occur while a control measure is off-line. Nonstructural control measures must also be diligently maintained (e.g., spill response supplies available, personnel trained).

v. The permittee must conduct the following inspections:

Routine facility inspection: Inspect all areas that are exposed to stormwater and all stormwater control measures. Inspections must be conducted at least quarterly (i.e., once each calendar quarter). More frequent inspections may be required if significant activities are exposed to stormwater. Inspections shall be performed when the facility is in operation. At least one of the quarterly inspections shall occur during a period when a stormwater discharge is occurring.

Document the following information for each routine facility inspection:

- The inspection date and time
- The name of the inspector
- Weather information and a description of any discharge occurring at the time of the inspection
- Identification of any previously unidentified discharges from the site
- Any control measures needing maintenance or repair
- Any failed control measures that need replacement

Comprehensive Site Inspections: Annually inspect all areas of the facility affected by the requirements of this permit including the areas identified as potential pollutant sources, areas where materials or activities are exposed to stormwater, any control measures, and any areas where spills or leaks have occurred.

Document the following for each comprehensive site inspection:

- The date of the inspection
- The name of the inspector
- All observations relating to the implementation of control measures including: previously unidentified discharges; previously unidentified pollutant sources; control measure needing maintenance or repair; failed control measures that need replacement; and any additional control measures needed to address any condition requiring corrective action
- Any SWPPP changes required as a result of the inspection

vi. If during the inspections, or any other event or observation, the permittee identifies control measures that are not operating effectively, the permittee must repair or replace them before the next anticipated storm event if possible, or as soon as practicable following that storm event. In the interim, the permittee must have back-up measures in place to ensure that the quality of the stormwater discharge is not diminished. There is no grace period for making repairs to any control measures.

c. The permittee must report the information in Part 2.3.7.2. (b)(v) of this section in the annual report.

d. The permittee must maintain all records associated with the development and implementation of the SWPPP required by this section consistent with the requirements of Part 5.2.1.

3.0 Outfall Monitoring Program

3.1 Monitoring Frequency and Location

3.1.1 - The permittee shall implement an outfall monitoring program that shall begin no later than one (1) year from the effective date of the permit unless otherwise indicated in the permit. The monitoring program shall begin with the outfalls in the catchments with the highest priority ranking as designated pursuant to Part 2.3.4.6 (b) to the extent practicable.

3.1.2 - The permittee shall conduct at least one dry weather screening and analytical monitoring and at least one wet weather analytical monitoring of each outfall within 5 years of the effective date of this permit, attaining the schedule milestones described in Parts 3.2.1 and 3.3.2.

3.1.3 -In addition to conducting dry and wet weather screening and analytical monitoring of all outfalls as described in Part 3.2 and Part 3.3, the permittee must also conduct field screening and analytical monitoring at locations where stormwater from the MS4 is transferred to another MS4. The interconnected monitoring shall occur at the first accessible location upgradient of the MS4 jurisdictional boundary.

3.2 Dry Weather Screening and Analytical Monitoring

3.2.1 – Dry weather outfall screening shall proceed only when no more than 0.1 inches of rainfall has occurred in the previous 24-hour period. The permittee must conduct dry weather screening on a minimum of 25 percent of the outfalls each year of the permit beginning in the second year of the permit with completion by the end of the permit term. When a flow is observed at an outfall, a sample of the flow shall be collected and analyzed. The permittee must document the number of outfalls screened and any monitoring results each year in the SWMP and the annual report. Dry weather screening can be conducted at the same time the permittee conducts the outfall inventory required in Part 2.3.4.6(d).

3.2.2 - Dry weather discharges shall be analyzed for: ammonia, chlorine, conductivity; *E.Coli*. or enterococcus (as appropriate depending on whether a discharge is to a fresh water or a marine water); pH; potassium; surfactants (as MBAS); temperature and turbidity. The permittee must identify the source of any dry weather discharge and must identify any necessary follow-up actions consistent with the protocol required by Part 2.3.4.6(d).

3.2.3 - If the discharge is directly into an impaired water, the permittee must also monitor for the pollutants identified as the cause of the impairment provided an analytical method in 40 CFR 136 exists for that pollutant.

3.2.3.1 – If the pollutant identified as the cause of the impairment is present in the discharge, the permittee shall also undertake efforts designed to identify the source(s) of the pollutant(s) and

implement measures to eliminate it. The permittee must document the procedures in the SWMP and annual report.

3.2.4 - If no dry weather flow is observed at the outfall, the permittee shall record the location of the outfall, the condition of the outfall and other relevant information. See Part 2.3.4.6(d) of the permit. If no flow is observed, but evidence of flow exists, the permittee must revisit the outfall during dry weather within one week of the initial observation, if practicable. The permittee must identify in the SWMP and annual report any necessary follow-up provisions to identify the source flow.

3.3 Wet Weather Analytical Monitoring

3.3.1 - The permittee must conduct wet weather analytical monitoring of all outfalls and at interconnections with another MS4. Wet weather monitoring does not require a minimum rainfall event. Monitoring can occur for any storm event of sufficient intensity to produce a discharge.

3.3.2 – The permittee must conduct wet weather analysis on a minimum of 25 percent of the outfalls each year of the permit beginning in the second year of the permit with completion by the end of the permit term. This 25 percent must be the same outfalls that are monitored for dry weather to the extent practicable. If it is not practicable, the permittee shall explain why in the next annual report. The permittee must document the number of outfalls monitored and monitoring results each year in the annual report.

3.3.3 – Wet weather flows shall be monitored for the following parameters: conductivity; *E.Coli* or enterococcus (as appropriate depending on whether a discharge is to fresh water or marine water); chlorine; potassium; ammonia; pH; surfactants (as MBAS); temperature; and turbidity.

3.3.4 - If the discharge is directly into an impaired water, the permittee shall monitor the outfall for the pollutant(s) identified as the cause of impairment provided an analytical method in 40 CFR 136 exists for that pollutant.

3.3.5 - If the pollutant identified as the cause of impairment is present in the discharge, the permittee shall develop procedures for the control measures in Part 2.3 designed to minimize or eliminate the pollutant. The permittee shall also undertake efforts designed to identify the source(s) of the pollutant(s) and implement measures to eliminate it. The permittee must document the procedures in the SWMP and report in the annual report.

3.4 – The permittee must maintain all records associated with the monitoring program consistent with the requirements of Part 5.2.1.

4.0 Additional State Requirements

4.1 Requirements for MS4s in New Hampshire

The permittee must evaluate physical conditions, site design, and best management practices to promote ground water recharge and infiltration where feasible in the implementation of the control measures described in Part 2.3. The permittee must address recharge and infiltration for the control measures, as well as any reasons for electing not to implement recharge and infiltration. Loss of annual recharge to ground water should be minimized through the use of infiltration to the maximum extent practicable. Any subsurface disposal of stormwater must be in accordance with applicable groundwater; source water protection and underground injection control requirement (see Part 1.3.j).

Infiltration through stormwater practices shall be prohibited under certain circumstances, including:

- When stormwater originates from gasoline dispensing areas at locations with state registered underground storage tanks (UST) and above ground storage tanks (AST);
- Within groundwater protection areas (defined under Env-Wq 1502.24) when stormwater originates from land uses considered a "high load area" under Env-Wq 1502.26; and
- Within areas that have contaminants in groundwater above the ambient groundwater quality standards established in Env-Or 603.03 or in soil above site-specific soil standards developed pursuant to Env-Or 600.

The permittee is encouraged to adopt similar requirements or reference these state rule requirements under Env-Wq 1500 within local regulations for projects not subject to Env-Wq 1500.

4.1.1 - MS4s that discharge to coastal waters with public swimming beaches must consider these waters a priority in implementation of the stormwater management program.

4.1.2 – If New Hampshire Department of Environmental Services (NH DES) determines that additional water quality certification requirements are necessary to protect water quality, it may require individual applicants to meet additional conditions to obtain or continue coverage under this permit. Any such conditions shall be supplied to the permittee in writing. Any required pollutant loading analysis and any designs for structural best management practices necessary to protect water quality must be prepared by a civil or sanitary engineer registered in New Hampshire.

4.2 New Hampshire Public Drinking Water Requirements

4.2.1 – MS4s that discharge to public drinking water sources and their source protection areas must consider these sources priority resources when implementing control measures of Part 2.3.

4.2.2 – Discharge to public drinking water supply sources and their protection areas must provide pretreatment and spill control suitable to protect drinking water sources to the extent feasible.

4.2.3 – The permittee shall avoid direct discharges to groundwater and surface water drinking water sources and ensure any discharges near source protection areas of water supply wells or intakes comply with the applicable state requirements. Stormwater systems must meet the minimum discharge setback requirements of Env-Wq 1500 unless exempt under Env-Wq

1508.02(c). The following minimum setbacks apply to certain drinking water supply resources, including:

- Discharge setbacks from water supply wells in accordance with Env-Wq 1508.02(a); and
- Discharge setback of 100 feet within water supply intake protections areas as specified under Env-Wq 1508(b).

In groundwater protection areas and water supply intake protection areas, infiltration and filtration practices must provide addition vertical separation to the seasonal high water table in accordance with Env-Wq 1500 within local regulations for projects not subject to Env-Wq 1500.

The permittee is encouraged to adopt similar requirements or reference these state rule requirements under Env-Wq 1500 within local regulations for projects not subject to Env-Wq 1500.

4.2.4 – Develop and implement a plan to notify public water suppliers in the event of an emergency which has the potential to impact a water supply.

5.0 Program Evaluation, Record Keeping, and Reporting

5.1 Program Evaluation

5.1.1- The permittee must annually evaluate compliance with the terms and conditions of this permit. The permittee must maintain the annual evaluation documentation as part of the SWMP.

5.1.2- The permittee must evaluate the appropriateness of the selected BMPs in achieving the objectives of each control measure and the defined measurable goals. The permittee may change BMPs in accordance with the following provisions:

- Changes in adding (but not subtracting or replacing) components or controls may be made at any time upon written notification to EPA or the state or tribal agency.
- Changes replacing an ineffective or infeasible BMP specifically identified in the SWMP with an alternative BMP may be requested in writing to EPA and the state or tribal agency at any time. Unless denied, changes proposed in accordance with the criteria below may be implemented 60 days from submittal of the request. If the request is denied, EPA or the state or tribal agency will send a written explanation of the denial.

5.1.3 – BMP modification requests must include the following information:

- an analysis of why the BMP is ineffective or infeasible
- expectations on the effectiveness of the replacement BMP; and
- an analysis of why the replacement BMP is expected to achieve the defined goals of the BMP to be replaced.

5.1.4 - Change requests or notifications must be in writing and signed in accordance with the signatory requirements of Appendix B – Subparagraph 11.

5.1.5 - EPA or the state or tribal agency may require the permittee to change BMPs or other measures described in the annual reports as needed:

- to address impacts to receiving water quality caused or contributed to by discharges from the MS4;
- To include more stringent requirements necessary to comply with new Federal statutory or regulatory requirements; or
- To include such other conditions deemed necessary to comply with the goals and requirements of the CWA

Any changes requested by EPA or the state or tribal agency will be in writing and will set forth the schedule for the permittee to develop the changes and offer the opportunity to propose alternative program changes to meet the objective of the requested modification.

5.2 Record Keeping

5.2.1 – The permittee shall keep all records required by this permit for a period of at least five years. EPA may extend this period at any time. Records include information used in the development of any written program required by this permit, any monitoring results, copies of reports, and data used in the development of the notice of intent, SWMP, SWPPP, and annual reports.

5.2.2- Records other than those required to be include in the annual report, Part 5.3, must be submitted only when requested by the EPA or the state or tribal agency.

5.2.3 -The permittee must make the records relating to this permit available to the public, including the stormwater management program. The public may view the records during normal business hours. The permittee may charge a reasonable fee for copying requests.

5.3 Reporting

5.3.1 The permittee must submit an annual report. The reporting period will be from July 1 to June 30. The annual report due date is August 1.

5.3.2 - The annual reports must contain the following information:

5.3.2.1 - A self assessment review of compliance with the permit terms and conditions.

5.3.2.2 -An assessment of the appropriateness of the selected BMPs.

5.3.2.3 - An assessment of the progress towards achieving the measurable goals and objectives of each control measure in Part 2.3 including:

- Evaluation of the public education program including a description of the targeted messages for each audience; method of distribution and the dates of distribution; methods used to evaluate the program; and any changes to the program.
- Description of the activities used to promote public participation including documentation of compliance with state or tribal public notice regulations.

- Description of the activities related to implementation of the IDDE program including: status of the map; status and results of the illicit discharge potential ranking and assessment; status of protocols described in Parts 2.3.4.6 (c), (d) and (e); number of illicit discharges located, removed; identification of tracking indicators; and employee training.
- Evaluation of the construction runoff management including number of projects reviewed; number of inspections; and number of enforcement actions.
- Evaluation of stormwater management for new development and redevelopment including status of ordinance review; status of the street design assessment; and information on directly connected impervious area reductions.
- Status of the O&M Programs required by Part 2.3.7.1.
- Status of SWPPP required by Part 2.3.7.2 including inspection results.
- Any additional reporting requirements in Part 4.0.

5.3.2.4 - Outfall monitoring data that has been collected and analyzed. This includes data collected as part of the outfall inventory required in Part 2.3.4 and as part of the outfall monitoring program describe in Part 3.0. The following information shall be submitted for each outfall sampled:

- results of dry weather outfall screening and analytical monitoring;
- results of dry weather outfall analytical monitoring associated with discharges to impaired waters;
- results of wet weather outfall screening and analytical monitoring; and
- results of wet weather outfall analytical monitoring associated with discharges to impaired waters.

5.3.2.5 – For discharges to impaired waters, identification of specific BMPs used to address the pollutant identified as the cause of impairment and the BMPs effectiveness at controlling the pollutant.

5.3.2.6 – Description of activities for the next reporting cycle.

5.3.2.7 – Description of any changes in identified BMPs or measurable goals.

5.3.2.8 – Description of activities undertaken by any entity contracted for achieving any measurable goal or implementing any control measure.

5.3.3 - Reports must be submitted to both EPA and the state agency at the following addresses:

United State Environmental Protection Agency
Industrial Permits Branch - CIP
One Congress Street – Suite 1100
Boston, MA 02114

NH Department of Environmental Services
Wastewater Engineering Bureau
Permits and Compliance Section
P.O. Box 95

Concord, NH 03302-0095

6.0 Requirements for State or Tribal MS4s Non-Traditionals

State or Tribal MS4s are properties owned and operated by a State or a Tribe, respectively. All requirements and conditions of Parts 1 – 5 above apply to these MS4s with the following exceptions:

6.1 – Public education: For the purpose of this permit, the audiences for a state agency include the employees, visitors to the property, and any contractors working at the property. The permittee may use some of the educational topics included in Part 2.3.2.1 (c) as appropriate, or may focus on topics specific to the MS4. The permittee must document the educational topics for each target audience.

6.2 – Ordinances and regulatory mechanisms: State agencies do not typically have authority to enact an ordinance, by-law, or other regulatory mechanisms. These MS4s must ensure that written policies or procedures are in place to address the requirements of Part 2.3.4.6(a), Part 2.3.5.3(a) and Part 2.3.6.3. They may rely on EPA or the State environmental agency for enforcement assistance.

6.3 – Assessment of Regulations: The requirements of Part 2.3.6.5 and Part 2.3.6.6 do not apply. The permittee must instead evaluate opportunities to include green infrastructure practices in new development and redevelopment at the facility. The permittee must evaluate opportunities to reduce the amount of impervious cover due to parking areas and walkways. The permittee must report on these efforts in each annual report.

7.0 Requirements for Transportation Agencies

A transportation agency is the state agency responsible for operation and maintenance of the state owned roadways (New Hampshire Department of Transportation -NHDOT). All requirements and conditions of this permit apply with the following exceptions:

7.1 – Public education: For the purpose of this permit, the audiences for a transportation agency education program include the general public (users of the roadways), employees, and any contractors working at the location. The permittee may use some of the educational topics included in Part 2.3.2.1 (c) as appropriate, or may focus on topics specific to the agency. The permittee must document the educational topics for each target audience.

7.2 – Ordinances and regulatory mechanisms: The transportation agency does not typically have authority to enact an ordinance, by-law or other regulatory mechanisms. The agency must ensure that written agency policies or procedures are in place to address the requirements of Part 2.3.4.6(a), Part 2.3.5.3(a) and Part 2.3.6.3. These agencies may rely on EPA or the State environmental agency for enforcement assistance.

7.3 – Assessment of regulations: The requirements of Part 2.3.6.5 and Part 2.3.6.6 do not apply. The agency must instead evaluate opportunities to include green infrastructure practices in new

development and redevelopment at the facility. The agency must evaluate opportunities to reduce the amount of impervious cover due to parking areas and walkways. The permittee must report on these efforts in each annual report.

Appendix A

Definitions, Abbreviations and Acronyms

Definitions

Best Management Practices (BMPs) - schedules of activities, practices (and prohibitions of practices), structures, vegetation, maintenance procedures, and other management practices to prevent or reduce the discharge of pollutants to waters of the United States. BMPs also include treatment requirements, operating procedures, and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.

Control Measure - refers to any BMP or other method (including effluent limitations) used to prevent or reduce the discharge of pollutants to waters of the United States.

Director - a Regional Administrator of the Environmental Protection Agency or an authorized representative.

Discharge - when used without qualification, means the "discharge of a pollutant."

Discharge of a pollutant - any addition of any "pollutant" or combination of pollutants to "waters of the United States" from any "point source," or any addition of any pollutant or combination of pollutants to the waters of the "contiguous zone" or the ocean from any point source other than a vessel or other floating craft which is being used as a means of transportation. This includes additions of pollutants into waters of the United States from: surface runoff which is collected or channeled by man; discharges through pipes, sewers, or other conveyances, leading into privately owned treatment works.

Discharge-related activities - activities which cause, contribute to, or result in stormwater and allowable non-stormwater point source discharges, and measures such as the siting, construction and operation of BMPs to control, reduce, or prevent pollution in the discharges.

Existing Discharger – an operator applying for coverage under this permit for discharges covered previously under an NPDES general or individual permit.

Facility or Activity - any NPDES "point source" or any other facility or activity (including land or appurtenances thereto) that is subject to regulation under the NPDES program.

Federal Facility – Any buildings, installations, structures, land, public works, equipment, aircraft, vessels, and other vehicles and property, owned by, or constructed or manufactured for the purpose of leasing to, the federal government.

Impaired Water – A water is impaired if it does not meet one or more of its designated use(s). For purposes of this permit, 'impaired' refers to categories 4 and 5 of the five part categorization approach used for classifying the water quality standards attainment status for water segments under the TMDL program. Impaired waters compilations are

also sometimes referred to as "303(d) lists". Category 5 waters are impaired because at least one designated use is not being supported or is threatened and a TMDL is needed. Category 4 waters indicate that at least one designated use is not being supported but a TMDL is not needed (4a indicates that a TMDL has been approved or established by EPA; 4b indicates other required control measures are expected in result in the attainment of water quality standards in a reasonable period of time; and 4c indicates that the non-attainment of the water quality standard is the result of pollution (e.g. habitat) and is not caused by a pollutant. See *USEPA's 2006 Integrated Report Guidance, July 29, 2005* for more detail on the five part categorization of waters [under EPA National TMDL Guidance http://www.epa.gov/owow/tmdl/policy.html]).

Indian Country - (a) all land within the limits of any Indian reservation under the jurisdiction of the United States Government, notwithstanding the issuance of any patent, and including rights-of-way running through the reservation; (b) all dependent Indian communities within the borders of the United States, whether within the original or subsequently acquired territory thereof, and whether within or without the limits of a State, and (c) all Indian allotments, the Indian titles to which have not been extinguished, including rights-of-way running through the same. This definition includes all land held in trust for an Indian Tribe. (18 U.S.C. 1151)

Industrial Activity - the 10 categories of industrial activities included in the definition of "stormwater discharges associated with industrial activity", as defined in $) CFR § 122.26(b)(14)(i)-(ix) and (xi).

Industrial Stormwater - stormwater runoff associated with the definition of "stormwater discharges associated with industrial activity."

Municipal Separate Storm Sewer - a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains):

(i) Owned or operated by a State, city, town, borough, county, parish, district, association, or other public body (created by or pursuant to State law) having jurisdiction over disposal of sewage, industrial wastes, stormwater, or other wastes, including special districts under State law such as a sewer district, flood control district or drainage district, or similar entity, or an Indian tribe or an authorized Indian tribal organization, or a designated and approved management agency under section 208 of the CWA that discharges to waters of the United States;
(ii) Designed or used for collecting or conveying stormwater;
(iii) Which is not a combined sewer; and
(iv) Which is not part of a Publicly Owned Treatment Works (POTW) as defined at 40 CFR 122.2.

New Discharger - an operator applying for coverage under this permit for discharges not covered previously under an NPDES general or individual permit.

New Source - any building, structure, facility, or installation from which there is or may be a "discharge of pollutants," the construction of which commenced:

- after promulgation of standards of performance under section 306 of the CWA which are applicable to such source, or

- after proposal of standards of performance in accordance with section 306 of the CWA which are applicable to such source, but only if the standards are promulgated in accordance with section 306 within 120 days of their proposal.

New Source Performance Standards (NSPS) – Technology-based standards for facilities that qualify as new sources under 40 CFR 122.2 and 40 CFR 122.29.

No exposure - all industrial materials or activities are protected by a storm-resistant shelter to prevent exposure to rain, snow, snowmelt, and/or runoff.

Owner or operator - the owner or operator of any "facility or activity" subject to regulation under the NPDES program.

Person - an individual, association, partnership, corporation, municipality, State or Federal agency, or an agent or employee thereof.

Point source - any discernible, confined, and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, landfill leachate collection system, vessel, or other floating craft from which pollutants are or may be discharged. This term does not include return flows from irrigated agriculture or agricultural stormwater runoff.

Pollutant - dredged spoil, solid waste, incinerator residue, filter backwash, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, heat, wrecked or discarded equipment, rock, sand, cellar dirt, and industrial, municipal and agricultural waste discharged into water.

Pollutant of concern – A pollutant which causes or contributes to a violation of a water quality standard, including a pollutant which is identified as causing an impairment in a State's 303(d) list.

Reportable Quantity Release – a release of a hazardous substance at or above the established legal threshold that requires emergency notification. Refer to 40 CFR Parts 110, 177, and 302 for complete definitions and reportable quantities for which notification is required.

Runoff coefficient - the fraction of total rainfall that will appear at the conveyance as runoff.

Significant materials - includes, but is not limited to: raw materials; fuels; materials such as solvents, detergents, and plastic pellets; finished materials such as metallic products; raw materials used in food processing or production; hazardous substances designated under section 101(14) of CERCLA; any chemical the facility is required to report pursuant to section 313 of Title III of SARA; fertilizers; pesticides; and waste products such as ashes, slag and sludge that have the potential to be released with stormwater discharges.

Small Municipal Separate Storm Sewer System – means all separate storm sewer systems that are (i) owned or operated by the United States, a State, city, town, borough, county, parish, district, association, or other public body (created by or pursuant to State law) having jurisdiction over disposal of sewage, industrial wastes, storm water, or other wastes, including special districts under State law such as a sewer district, flood control district, or drainage district, or similar entity or an Indian tribe or an authorized Indian

tribal organization or a designated and approved management agency under section 208 of the CWA that discharges to waters of the United States. (ii) Not defined as "large" or "medium" municipal separate storm sewer system pursuant to paragraphs 40 CFR 122.26 (b)(4) and (b)(7), or designated under paragraph 40 126.26(a) (1)(v). (iii) This term includes systems similar to separate storm sewer systems in municipalities, such as systems at military bases, large hospital or prison complexes, and highways and other thoroughfares. This term does not include separate storm sewers in very discrete areas, such as individual buildings.

Small MS4 – means a small municipal separate storm sewer system.

Stormwater - stormwater runoff, snow melt runoff, and surface runoff and drainage.

Stormwater Discharges Associated with Construction Activity - a discharge of pollutants in stormwater runoff from areas where soil disturbing activities (e.g., clearing, grading, or excavating), construction materials, or equipment storage or maintenance (e.g., fill piles, borrow areas, concrete truck washout, fueling), or other industrial stormwater directly related to the construction process (e.g., concrete or asphalt batch plants) are located. (See 40 CFR 122.26(b)(14)(x) and 40 CFR 122.26(b)(15).

Stormwater Discharges Associated with Industrial Activity - the discharge from any conveyance that is used for collecting and conveying stormwater and that is directly related to manufacturing, processing or raw materials storage areas at an industrial plant. The term does not include discharges from facilities or activities excluded from the NPDES program under Part 122. For the categories of industries identified in this section, the term includes, but is not limited to, stormwater discharges from industrial plant yards; immediate access roads and rail lines used or traveled by carriers of raw materials, manufactured products, waste material, or by-products used or created by the facility; material handling sites; refuse sites; sites used for the application or disposal of process waste waters (as defined at part 401 of this chapter); sites used for the storage and maintenance of material handling equipment; sites used for residual treatment, storage, or disposal; shipping and receiving areas; manufacturing buildings; storage areas (including tank farms) for raw materials, and intermediate and final products; and areas where industrial activity has taken place in the past and significant materials remain and are exposed to stormwater. For the purposes of this paragraph, material handling activities include storage, loading and unloading, transportation, or conveyance of any raw material, intermediate product, final product, by-product or waste product. The term excludes areas located on plant lands separate from the plant's industrial activities, such as office buildings and accompanying parking lots as long as the drainage from the excluded areas is not mixed with stormwater drained from the above described areas. Industrial facilities include those that are federally, State, or municipally owned or operated that meet the description of the facilities listed in Appendix D of this permit. The term also includes those facilities designated under the provisions of 40 CFR 122.26(a)(1)(v).

Total Maximum Daily Loads (TMDLs) - A TMDL is a calculation of the maximum amount of a pollutant that a waterbody can receive and still meet water quality standards, and an allocation of that amount to the pollutant's sources. A TMDL includes wasteload allocations (WLAs) for point source discharges; load allocations (LAs) for nonpoint

sources and/or natural background, and must include a margin of safety (MOS) and account for seasonal variations. (See section 303(d) of the Clean Water Act and 40 CFR §130.2 and §130.7).

Water Quality Impaired – See 'Impaired Water'.

Water Quality Standards: A water quality standard defines the water quality goals of a water body, or portion thereof, by designating the use or uses to be made of the water and by setting criteria necessary to protect the uses. States and EPA adopt WQS to protect public health or welfare, enhance the quality of water and serve the purposes of the Clean Water Act (See CWA sections 101(a)2 and 303(c)).

"You" and "Your" - as used in this permit are intended to refer to the permittee, the operator, or the discharger as the context indicates and that party's facility or responsibilities. The use of "you" and "your" refers to a particular facility and not to all facilities operated by a particular entity. For example, "you must submit" means the permittee must submit something for that particular facility. Likewise, "all your discharges" would refer only to discharges at that one facility.

ABBREVIATIONS AND ACRONYMS

BMP – Best Management Practice

BPJ – Best Professional Judgment

CGP – Construction General Permit

CWA – Clean Water Act (or the Federal Water Pollution Control Act, 33 U.S.C. §1251 *et seq*)

EPA – U. S. Environmental Protection Agency

ESA – Endangered Species Act

FWS – U. S. Fish and Wildlife Service

LA – Load Allocations

MOS – Margin of Safety

MS4 – Municipal Separate Storm Sewer System

MSGP – Multi-Sector General Permit

NAICS – North American Industry Classification System

NEPA – National Environmental Policy Act

NHPA – National Historic Preservation Act

NMFS – U. S. National Marine Fisheries Service

NOI – Notice of Intent

NPDES – National Pollutant Discharge Elimination System

NRC – National Response Center

NRHP – National Register of Historic Places

NSPS – New Source Performance Standard

NTU – Nephelometric Turbidity Unit

OMB – U. S. Office of Management and Budget

ORW – Outstanding Resource Water

POTW – Publicly Owned Treatment Works

RCRA – Resource Conservation and Recovery Act

RQ – Reportable Quantity

SHPO – State Historic Preservation Officer

SIC – Standard Industrial Classification

SPCC – Spill Prevention, Control, and Countermeasure

SWMP - Stormwater Management Program

SWPPP – Stormwater Pollution Prevention Plan

THPO – Tribal Historic Preservation Officer

TMDL – Total Maximum Daily Load

TSS – Total Suspended Solids

USGS – United States Geological Survey

WLA – Wasteload Allocation

WQS – Water Quality Standard

Appendix B

Standard Permit Conditions

Standard Permit Conditions

Standard permit conditions in Appendix B are consistent with the general permit provisions required under 40 CFR 122.41.

B.1. Duty To Comply

You must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Clean Water Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application.

A. You must comply with effluent standards or prohibitions established under section 307(a) of the Clean Water Act for toxic pollutants and with standards for sewage sludge use or disposal established under section 405(d) of the CWA within the time provided in the regulations that establish these standards or prohibitions or standards for sewage sludge use or disposal, even if the permit has not yet been modified to incorporate the requirement.

B. Penalties for Violations of Permit Conditions: The Director will adjust the civil and administrative penalties listed below in accordance with the Civil Monetary Penalty Inflation Adjustment Rule (61 FR 252, December 31, 1996, pp. 69359-69366, as corrected in 62 FR 54, March 20, 1997, pp.13514-13517) as mandated by the Debt Collection Improvement Act of 1996 for inflation on a periodic basis. This rule allows EPA's penalties to keep pace with inflation. The Agency is required to review its penalties at least once every 4 years thereafter and to adjust them as necessary for inflation according to a specified formula. The civil and administrative penalties following were adjusted for inflation starting in 1996.

1. *Criminal Penalties*.

1.1 *Negligent Violations*. The CWA provides that any person who negligently violates permit conditions implementing Sections 301, 302, 306, 307, 308, 318, or 405 of the Act is subject to criminal penalties of $2,500 to $25,000 per day of violation, or imprisonment of not more than one year, or both. In the case of a second or subsequent conviction for a negligent violation, a person shall be subject to criminal penalties of not more than $50,000 per day of violation or by imprisonment of not more than two years, or both.

1.2. *Knowing Violations.* The CWA provides that any person who knowingly violates permit conditions implementing Sections 301, 302, 306, 307, 308, 318, or 405 of the Act is subject to a fine of not less than $5,000 nor more than $50,000 per day of violation, or by imprisonment for not more than 3 years, or both. In the case of a

second or subsequent conviction for a knowing violation, a person shall be subject to criminal penalties of not more than $100,000 per day of violation, or imprisonment of not more than 6 years, or both.

1.3. *Knowing Endangerment.* The CWA provides that any person who knowingly violates permit conditions implementing Sections 301, 302, 306, 307, 308, 318, or 405 of the Act and who knows at that time that he or she is placing another person in imminent danger of death or serious bodily injury shall upon conviction be subject to a fine of not more than $250,000 or by imprisonment of not more than 15 years, or both. In the case of a second or subsequent conviction for a knowing endangerment violation, a person shall be subject to a fine of not more than $500,000 or by imprisonment of not more than 30 years, or both. An organization, as defined in section 309(c)(3)(B)(iii) of the Act, shall, upon conviction of violating the imminent danger provision be subject to a fine of not more than $1,000,000 and can fined up to $2,000,000 for second or subsequent convictions.

1.4. *False Statement.* The CWA provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than $10,000, or by imprisonment for not more than 2 years, or both. If a conviction of a person is for a violation committed after a first conviction of such person under this paragraph, punishment is a fine of not more than $20,000 per day of violation, or by imprisonment of not more than 4 years, or both. The Act further provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or non-compliance shall, upon conviction, be punished by a fine of not more than $10,000 per violation, or by imprisonment for not more than 6 months per violation, or by both.

2. *Civil Penalties.* The CWA provides that any person who violates a permit condition implementing Sections 301, 302, 306, 307, 308, 318, or 405 of the Act is subject to a civil penalty not to exceed the maximum amounts authorized by Section 309(d) of the Act and the Federal Civil Penalties Inflation Adjustment Act (28 U.S.C. § 2461 note) as amended by the Debt Collection Improvement Act (31 U.S.C. § 3701 note) (currently $32,500 per day for each violation).

3. *Administrative Penalties.* The CWA provides that any person who violates a permit condition implementing Sections 301, 302, 306, 307, 308, 318, or 405 of the Act is subject to an administrative penalty, as follows:

3.1. *Class I Penalty.* Not to exceed the maximum amounts authorized by Section 309(g)(2)(A) of the Act and the Federal Civil Penalties Inflation Adjustment Act (28 U.S.C. § 2461 note) as amended by the Debt Collection Improvement Act (31 U.S.C. § 3701 note) (currently $11,000 per violation, with the maximum amount of any Class I penalty assessed not to exceed $32,500).

3.2. *Class II Penalty.* Not to exceed the maximum amounts authorized by Section 309(g)(2)(B) of the Act and the Federal Civil Penalties Inflation Adjustment Act (28 U.S.C. § 2461 note) as amended by the Debt Collection Improvement Act (31 U.S.C. § 3701 note) (currently $11,000 per day for each day during which the violation continues, with the maximum amount of any Class II penalty not to exceed $157,500).

B.2. Duty to Reapply

If you wish to continue an activity regulated by this permit after the expiration date of this permit, you must apply for and obtain a new permit.

B.3. Need to Halt or Reduce Activity Not a Defense

It shall not be a defense for you in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

B.4. Duty to Mitigate

You must take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

B.5. Proper Operation and Maintenance

You must at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by you to achieve compliance with the conditions of this permit, including the requirements of your SWPPP. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar systems which are installed by you only when the operation is necessary to achieve compliance with the conditions of this permit.

B.6. Permit Actions

This permit may be modified, revoked and reissued, or terminated for cause. Your filing of a request for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any permit condition.

B.7. Property Rights

This permit does not convey any property rights of any sort, or any exclusive privileges.

B.8. Duty to Provide Information

You must furnish to EPA or an authorized representative (including an authorized contractor acting as a representative of EPA), within a reasonable time, any information which EPA may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit or to determine compliance with this permit. You must also furnish to EPA upon request, copies of records required to be kept by this permit.

B.9. Inspection and Entry

You must allow EPA or an authorized representative (including an authorized contractor acting as a representative of EPA), upon presentation of credentials and other documents as may be required by law, to:

A. Enter upon your premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;

B. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;

C. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and

D. Sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the Clean Water Act, any substances or parameters at any location.

B.10. Monitoring and Records

A. Samples and measurements taken for the purpose of monitoring must be representative of the volume and nature of the monitored activity.

B. You must retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least three years from the date of the sample, measurement, report or application. This period may be extended by request of EPA at any time.

C. Records of monitoring information must include:

1. The date, exact place, and time of sampling or measurements;
2. The individual(s) who performed the sampling or measurements;
3. The date(s) analyses were performed

4. The individual(s) who performed the analyses;

5. The analytical techniques or methods used; and

6. The results of such analyses.

D. Monitoring results must be conducted according to test procedures approved under 40 CFR Part 136 or, in the case of sludge use or disposal, approved under 40 CFR Part 136 unless otherwise specified in 40 CFR Part 503, unless other test procedures have been specified in the permit.

E. The Clean Water Act provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than $10,000, or by imprisonment for not more than 2 years, or both. If a conviction of a person is for a violation committed after a first conviction of such person under this paragraph, punishment is a fine of not more than $20,000 per day of violation, or by imprisonment of not more than 4 years, or both.

B.11. Signatory Requirements

A. All applications, including NOIs, must be signed as follows:

1. For a corporation: By a responsible corporate officer. For the purpose of this subsection, a responsible corporate officer means: (i) a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy- or decision-making functions for the corporation, or (ii) the manager of one or more manufacturing, production, or operating facilities, provided, the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.

2. For a partnership or sole proprietorship: By a general partner or the proprietor, respectively; or

3. For a municipality, state, federal, or other public agency: By either a principal executive officer or ranking elected official. For purposes of this subsection, a principal executive officer of a federal agency includes (i) the chief executive officer of the agency, or (ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrator of EPA).

B. All reports, including SWPPPs, inspection reports, annual reports, monitoring reports, reports on training and other information required by this permit must be signed by a person described in Appendix B, Subsection 11.A above or by a duly authorized representative of that person. A person is a duly authorized representative only if:

1. The authorization is made in writing by a person described in Appendix B, Subsection 11.A;
2. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position); and
3. The signed and dated written authorization is included in the SWPPP. A copy must be submitted to EPA, if requested.

C. Changes to Authorization. If an authorization under Appendix B, Subsection 11.B is no longer accurate because a different operator has responsibility for the overall operation of the industrial facility, a new NOI satisfying the requirements of Subsection 11.B must be submitted to EPA prior to or together with any reports, information, or applications to be signed by an authorized representative.

D. Any person signing documents required under the terms of this permit must include the following 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 gathered and evaluated 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."

E. The CWA provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or non-compliance shall, upon conviction, be punished by a fine of not more than $10,000 per violation, or by imprisonment for not more than 6 months per violation, or by both.

B.12. Reporting Requirements

A. Planned changes. You must give notice to EPA as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required only when:

1. The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in 40 CFR §122.29(b); or

2. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants which are subject neither to effluent limitations in the permit, nor to notification requirements under 40 CFR §122.42(a)(1).

B. Anticipated noncompliance. You must give advance notice to EPA of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.

C. Transfers. This permit is not transferable to any person except after notice to EPA. EPA may require modification or revocation and reissuance of the permit to change the name of the permittee and incorporate such other requirements as may be necessary under the Clean Water Act. (See 40 CFR §122.61; in some cases, modification or revocation and reissuance is mandatory.)

D. Monitoring reports. Monitoring results must be reported at the intervals specified elsewhere in this permit.

1. Monitoring results must be reported on a Discharge Monitoring Report (DMR) or forms (paper or electronic) provided or specified by EPA for reporting results of monitoring of sludge use or disposal practices.

2. If you monitor any pollutant more frequently than required by the permit using test procedures approved under 40 CFR Part 136 or, in the case of sludge use or disposal, approved under 40 CFR Part 136 unless otherwise specified in 40 CFR Part 503, or as specified in the permit, the results of this monitoring must be included in the calculation and reporting of the data submitted in the DMR or sludge reporting form specified by EPA.

3. Calculations for all limitations which require averaging of measurements must use an arithmetic mean and non-detected results must be incorporated in calculations as the limit of quantitation for the analysis.

E. Compliance schedules. Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit must be submitted no later than 14 days following each schedule date.

F. Twenty-four hour reporting.

1 You must report any noncompliance which may endanger health or the environment. Any information must be provided orally within 24 hours

from the time you become aware of the circumstances. A written submission must also be provided within five days of the time you become aware of the circumstances. The written submission must contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

2 The following shall be included as information which must be reported within 24 hours under this paragraph.

a. Any unanticipated bypass which exceeds any effluent limitation in the permit. (See 40 CFR §122.41(g).)

b. Any upset which exceeds any effluent limitation in the permit

c. Violation of a maximum daily discharge limitation for any of the pollutants listed by EPA in the permit to be reported within 24 hours. (See 40 CFR §122.44(g).)

3. EPA may waive the written report on a case-by-case basis for reports under Appendix B, Subsection 12.F.2 if the oral report has been received within 24 hours.

G. Other noncompliance. You must report all instances of noncompliance not reported under Appendix B, Subsections 12.D, 12.E, and 12.F, at the time monitoring reports are submitted. The reports must contain the information listed in Appendix B, Subsection 12.F.

H. Other information. Where you become aware that you failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Permitting Authority, you must promptly submit such facts or information.

B.13. Bypass

A. Definitions.

1. Bypass means the intentional diversion of waste streams from any portion of a treatment facility

2. Severe property damage means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.

B. Bypass not exceeding limitations. You may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential

maintenance to assure efficient operation. These bypasses are not subject to the provisions of Appendix B, Subsections 13.C and 13.D.

C. Notice.

1. Anticipated bypass. If you know in advance of the need for a bypass, you must submit prior notice, if possible at least ten days before the date of the bypass.

2. Unanticipated bypass. You must submit notice of an unanticipated bypass as required in Appendix B, Subsection 12.F (24-hour notice).

D. Prohibition of bypass.

1. Bypass is prohibited, and EPA may take enforcement action against you for bypass, unless:

a. Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;

b. There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance; and

c. You submitted notices as required under Appendix B, Subsection 13.C.

2. EPA may approve an anticipated bypass, after considering its adverse effects, if EPA determines that it will meet the three conditions listed above in Appendix B, Subsection 13.D.1.

B.14. Upset

A. Definition. Upset means an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond your reasonable control. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.

B. Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology based permit effluent limitations if the requirements of Appendix B, Subsection 14.C are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review.

C. Conditions necessary for a demonstration of upset. A permittee who wishes to establish the affirmative defense of upset must demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:

1. An upset occurred and that you can identify the cause(s) of the upset;
2. The permitted facility was at the time being properly operated; and
3. You submitted notice of the upset as required in Appendix B, Subsection 12.F.2.b (24 hour notice).
4. You complied with any remedial measures required under Appendix B, Subsection 4.

D. Burden of proof. In any enforcement proceeding, you, as the one seeking to establish the occurrence of an upset, has the burden of proof.

APPENDIX C
ENDANGERED SPECIES GUIDANCE

A. Background

In order to meet its obligations under the Clean Water Act and the Endangered Species Act (ESA), and to promote the goals of those Acts, the Environmental Protection Agency (EPA) is seeking to ensure the activities regulated by this general permit do not adversely affect endangered and threatened species and critical habitat. Applicants applying for permit coverage must assess the impacts of their storm water discharges and discharge-related activities on Federally listed endangered and threatened species ("listed species") and designated critical habitat ("critical habitat") to ensure that those goals are met. Prior to obtaining general permit coverage, applicants must meet the ESA eligibility provisions of this permit. EPA strongly recommends that applicants follow the guidance in this Appendix at the earliest possible stage to ensure the notification requirements for general permit coverage are complete upon NOI submission.

Applicants also have an independent ESA obligation to ensure that their activities do not result in any prohibited "takes" of listed species[1a]. Many of the measures required in this general permit and in these instructions to protect species may also assist in ensuring that the applicant's activities do not result in a prohibited take of species in violation of section 9 of the ESA. If the applicant has plans or activities in an area where endangered and threatened species are located, they may wish to ensure that they are protected from potential takings liability under ESA section 9 by obtaining an ESA section 10 permit or by requesting formal consultation under ESA section 7. Applicants that are unsure whether to pursue a section 10 permit or a section 7 consultation for takings protection should confer with the appropriate United States Fish and Wildlife Service (USFWS) [b] office or the National Marine Fisheries Service (NMFS), (jointly the Services).

There are four species of concern for applicants applying for permit coverage, namely the dwarf wedgemussel, the shortnose sturgeon, the bog turtle, and the northern redbelly cooter. The shortnose sturgeon is listed under the jurisdiction of NOAA Fisheries and the dwarf wedge mussel, the bog turtle and the northern redbelly cooter are listed under the jurisdiction of the U.S. Fish and Wildlife Service.

The Federally-listed endangered dwarf wedgemussel (*Alasmidonta heterodon*) is found in the following area in New Hampshire:

- Connecticut River from North Cumberland to Dalton, New Hampshire (Coos County
- Connecticut River from Lebanon to North Walpole, New Hampshire (Grafton and Sullivan Counties)

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[a] Section 9 of the ESA prohibits any person from "taking" a listed species (e.g. harassing or harming it) unless: (1) the taking is authorized through an "incidental take statement" as part of completion of formal consultation according to ESA section 7; (2) where an incidental take permit is obtained under ESA section 10 (which requires the development of a habitat conversion plan; or (3) where otherwise authorized or exempted under the ESA. This prohibition applies to all entities including private individuals, businesses, and governments.

[b] Discharges to marine waters may require consultation with the National Marine Fisheries Service instead.

- Ashuelot River from the Surry Mountain Flood Control Project in Surry to Swanzey, New Hampshire (Cheshire County)
- South Branch of the Ashuelot River in East Swanzey, New Hampshire (Cheshire County)
- Mill River from Whately to Hatfield, Massachusetts (Hampshire County)
- Fort River in Amherst, Massachusetts (Hampshire County)
- Mill River south of State Route 10 in Northampton, Massachusetts (Hampshire County)

Any applicant seeking coverage under this general permit, which discharges to these rivers, must consult with the Services. EPA may designate the applicants as non-Federal representatives for the general permit for the purpose of carrying out informal consultation with NMFS and USFWS. By terms of this permit, EPA has automatically designated operators as non-Federal representatives for the purpose of conducting informal consultations. (See 50 CFR §402.08 and §402.13). Permit coverage is only available if the applicant contacts the Services to determine that discharges are not likely to adversely affect listed species or critical habitat and informal consultation with the Services has been concluded and results in written concurrence by the Services that the discharge is not likely to adversely affect an endangered or threatened species.

B. The ESA Eligibility Process

Before submitting a notice of intent (NOI) for coverage by this permit, applicants must determine whether they meet the ESA eligibility criteria by following the steps in Section D of this Appendix. Applicants that cannot meet any of the eligibility criteria must apply for an individual permit.

C. The ESA Eligibility Criteria

The ESA eligibility requirements of this permit may be satisfied by documenting that one or more of the following criteria has been met. Upon notification, EPA may direct an applicant to pursue eligibility under Criterion B.

Criterion A: No endangered or threatened species or critical habitat are in proximity to the storm water discharges or discharge related activities.

Criterion B: In the course of a separate federal action involving the municipality, formal or informal consultation with the Fish and Wildlife Service and/or the National Marine Fisheries Service under section 7 of the ESA has been concluded and that consultation (1) addressed the effects of the storm water discharges and discharge related activities on the listed species and critical habitat; and (2) the consultation resulted in either a no jeopardy opinion or a written concurrence by USFWS and/or NMFS on a finding that the storm water discharges and discharge related activities are not likely to adversely affect listed species or critical habitat.

Criterion C: The activities are authorized under section 10 of the ESA and that authorization addresses the effects of the storm water discharges and discharge elated activities on listed species and critical habitat.

(Eligibility under this criterion is not likely.) This criterion involves a municipality's activities being authorized through the issuance of a permit under section 10 of the ESA and that authorization addresses the effect of the municipality's storm water discharges and discharge related activities on listed species and designated critical habitat. Municipalities must follow USFWS and/or NMFS procedures when applying for an ESA section 10 permit (see 50 CFR §17.22(b)(1) for USFWS and §222.22 for NMFS). Application instructions for section 10 permits can be obtained by assessing the appropriate websites (www.fws.gov and www.nmfs.noaa.gov) or by contacting the appropriate regional office.

Criterion D: Using the best scientific and commercial data available, the effect of the storm water discharge and discharge related activities on listed species and critical habitat have been evaluated. Based on those evaluations a determination is made by the permittee and affirmed by EPA that the storm water discharges and discharge related activities are not likely to adversely affect any federally threatened or endangered listed species or designated critical habitat.

Criterion E: The storm water discharges and discharge related activities were already addressed in another operator's certification of eligibility which includes the municipality's storm water activities.

Criterion F: Eligibility under the criterion is restricted to a municipality which discharges to an area listed in section A with federally listed species.

D. The Steps to Determine if the ESA Eligibility Criteria Can Be Met

To determine eligibility, you must assess (or have previously assessed) the potential effects of your known storm water discharges and discharge related activities on listed species or critical habitat, PRIOR to completing and submitting a Notice of Intent (NOI). You must follow the steps outlined below and document the results of your eligibility determination.

Step 1 – Determine if you can meet Criterion "A"

Criterion A: You can certify eligibility, according to Criterion A, for coverage by this permit if you can answer "No" to all of the following questions:

- Are there any Endangered Species in your county? Are there any Critical Habitats in your county?
- Are there any Endangered Species or Critical Habitat in proximity to your storm water discharges?

Use the guidance below to answer these questions, and to "*Check for Listed Endangered Species in Your County,*" "*Check for Critical Habitat in Your County,*" and "*Check for Proximity to Your Storm water discharge locations or discharge related activities.*"

If you answered "No" to the questions above, you have met ESA eligibility Criterion A. Skip to Step # 5.

If you answered "Yes" to either of the questions above, go to Step # 2.

Check for Listed Endangered Species in Your County
Look at the latest county species list to see if any listed species are found in your county. If you are located in proximity to the border of a county or your municipality or activity is in one county and your discharge points are located in another, you must look under both counties. Since species are listed and de-listed periodically, you will need the most current list at the time you are conducting your endangered species assessment.

Check for Critical Habitat in your County
Some (but not all) listed species have designated critical habitat. Exact locations of such habitat are provided in the endangered species regulations at 50 CFR part 17 and part 226. To determine if the discharge locations or activities are within designated critical habitat, you should either:

- Review those regulations (50 CFR parts 17 and 226) that specify critical habitat. These regulations can be found in many larger libraries or via the Government Printing Office Website, www.access.gpo.gov; or
- Contact the USFWS office. A list of USFWS office for the areas of permit coverage is found in section F of this Appendix; or
- Contact the Natural Heritage Program for your state. Heritage programs gather, manage and distribute detailed information about the biological diversity found within their jurisdiction. They frequently have the most current information on listed species and critical habitat. Contact information for the Heritage program is provided in section G of this Appendix.

Check for Proximity to your Discharge locations or municipal activities

You must determine whether listed species or critical habitat are in proximity to your storm water discharges or discharge related activities. Listed species and critical habitat, including those in adjacent counties are in proximity when they are:

- Located in the path or immediate area through which or over which storm water flows from the municipality to the point of discharge into the receiving water. This includes areas in the receiving water downstream from the point of discharge.
- Located in the immediate vicinity of, or nearby, the point of discharge into receiving waters.
- Located in the area of the municipality where construction activities by the municipality are planned.

The area in proximity to be searched/surveyed for listed species will vary with the size and location of the outfall pipe, the nature and quantity of the storm water discharges, and the type of receiving waters. You should use the method(s) which allow you to determine, to the best of your knowledge, whether listed species, including those in adjacent counties, are in proximity to your particular outfall. These methods may include:

- Conducting visual inspections.

- Contacting the nearest State Wildlife Agency or USFWS Offices. Many endangered and threatened species are found in well defined habitats. This information is frequently known to state or federal wildlife.
- Contacting local/regional conservation groups such as natural heritage programs (see section G below). These groups inventory species and their locations maintain lists of sightings and habitats.
- Conducting a formal biological survey.

Step 2 – Determine if You Can Meet Eligibility Criteria "B", "C" or "E"

Criterion B: You can certify eligibility according to Criteria B for coverage by this permit if you answer "Yes" to all of the following questions:

- Has consultation under ESA section 7, already been completed for discharges from your municipality[c]?
- Did the previously completed ESA section 7 consultation consider all currently listed species and critical habitat and address your storm water discharges and discharge-related activities?
- Did the ESA section 7 consultation result in either a "no jeopardy" opinion by the Service (for formal consultation) or concurrence by the Service that your activities would be "unlikely to adversely affect" listed species or critical habitat?
- Do you agree to implement all measures upon which the consultation was conditioned?

If you answered "Yes" to all four questions above, you have met ESA eligibility Criteria B. Skip to Step 5.

If you answered "No" to any of the four questions above, check to see if you can meet Criteria C or E, or Go to Step 3.

Criterion C: You can certify eligibility according to Criterion C for coverage by this permit if you can answer "Yes" to all of the following questions:

- Has an ESA section 10 permit already been issued for discharges from your storm sewer system[d]?
- Does your ESA section 10 permit consider all currently listed species and critical habitat, and address your storm water discharges and discharge-related activities for you system?

If you answered "Yes" to the two questions above, you have met ESA eligibility Criteria C. Skip to Step 5.

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[c] A formal or informal ESA section 7 consultation on this or another federal action (e.g., New source review under NEPA, application for a dredge and fill permit under CWA Section 404, application for individual NPDES permit, etc.) addressed the effect of your storm water discharges and discharge related activities on listed species and critical habitat. (See 50 CFR 402.13).

[d] You have a permit under section 10 of the ESA and that authorization addresses the effects of your storm water discharges and discharge-related activities on listed species and critical habitat. You must follow USFWS procedures when applying for an ESA section 10 permit (See 50 CFR 17.22(b)(1)).

If you answered "No" to either of the two questions above, check to see if you can meet Criteria E or go to Step 3.

Criterion E: You can certify eligibility according to Criterion E for coverage by this permit if you can answer "Yes" to all of the following questions:

- Did another operator previously certify ESA eligibility for your system[e]?
- Did the other operator's certification of eligibility consider all currently listed species and critical habitat and address your storm water discharges and discharge-related activities?
- Do you agree to implement all measures upon which the other operator's certification was based?

Before you rely on another operator's certification, you should carefully review that certification along with any supporting information. You also need to confirm that no additional species have been listed or critical habitat designated in the area of your system since the other operator's endangered species assessment was done. If you do not believe that the other operator's certification provides adequate coverage for your system, you should provide your own independent endangered species assessment and certification.

If you answered "Yes" to all three questions above, you have met ESA eligibility Criteria E. Skip to Step 5.

If you answered "No" to any of the three questions above, go to Step 3.

Step 3 – Determine if You Can Meet Eligibility Criterion "D"

Criterion D: You can certify eligibility according to Criterion D for coverage by this permit if you answer "Yes" to all of the following questions:

- Have you determined that your storm water discharges and discharge related activities are "not likely to adversely affect" listed species or critical habitat, and/or have your received concurrence from the appropriate Service with a not likely to adversely affect determination?
- Do you agree to implement all measures upon which the determination was conditioned?

Use the guidance below to understand adverse effect determination and to answer these questions.

If you answered "Yes" to both questions above, you have met ESA eligibility Criterion D. Go to Step 5.

If you answered "No" to either of the questions above, you are not eligible for coverage by this permit. You must submit an application for an individual permit for your storm water discharges. (See 40 CFR 122.21).

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[e] In order to meet the permit eligibility requirements by relying on another operator's certification of eligibility, the other operator's certification must apply to the location of your system and must address the effects from your storm water discharges and discharge-related activities on listed species and critical habitat.

If you are unable to certify eligibility under Criterion A, B, C, E or F, you must assess whether your storm water discharges and discharge-related activities are likely to adversely affect listed species or critical habitat. "Discharge-related activities" include: activities which cause, contribute to, or result in point source storm water pollutant discharges; and measures to provide treatment for storm water discharges including the siting, construction and operational procedures to control, reduce or prevent water pollution. Please be aware that no protection from incidental takings liability is provided under this criterion.

The scope of effects to consider will vary with each system. If you are having difficulty in determining whether your system is likely to cause adverse effects to a listed species or critical habitat, you should contact the appropriate office of the USFWS, NMFS, or Natural Heritage Program for assistance. In order to complete the determination of effects it may be necessary to follow the consultation procedures in section 7 of the ESA (See Criterion B information above, and section 7 consultation web link in section F below).

Upon completion of your assessment, document the results of your effects determination. If adverse effects are not likely, you are eligible under Criterion D – proceed to Step 5 of this Attachment. Your determination may be based on measures that you implement to avoid, eliminate, or minimized adverse effects.

If the determination is "May adversely affect", you must contact the USFWS or NMFS to discuss your findings and measures you could implement to avoid, eliminate, or minimize adverse effects. If you and the Service(s) reach agreement on measures to avoid adverse effects, you are eligible under criterion "D". Any terms and/or conditions to protect listed species and critical habitat that you relied on in order to complete an adverse effects determination, must be incorporated into your Storm Water Management Program (required by this permit) and implemented in order to maintain permit eligibility.

If endangered species issues cannot be resolved: If you cannot reach agreement with the USFWS or NMFS on measures to avoid, eliminate or reduce adverse effects, and the likely adverse effects cannot be otherwise addressed through meeting the other criteria, then you are not eligible for coverage under this permit. You must seek coverage under an individual permit.

Effects from storm water discharges and discharge-related activities which could pose an adverse effect include:

- *Hydrological:* Storm water discharges may cause siltation, sedimentation, or induce other changes in receiving waters such as temperature, salinity or pH. These effects will vary with the amount of storm water discharged and the volume and condition of the receiving water. Where a discharge constitutes a minute portion of the total volume of the receiving water, adverse hydrological effects are less likely.
- *Habitat:* Excavation, site development, grading and other surface disturbance activities, including the installation or placement of treatment equipment may adversely affect listed species or their habitat. Storm water from the small MS4 may inundate a listed species habitat.

- *Toxicity:* In some cases, pollutants in the storm water may have toxic effects on listed species.

Step 4 – Determine if You Can Meet Eligibility Criterion "F"

Criterion "F": You can certify eligibility according to criterion F for coverage by this permit if you can answer "Yes" to all the following questions:

- Does your facility discharge to one of the nine areas in Section A with federally-listed endangered species?
- Did you contact the Services to determine that the discharges are not likely to adversely affect listed species or critical habitat and informal consultation with the Services has been concluded and results in a written concurrence by the Services that the discharge is not likely to adversely affect an endangered or threatened species?

If you answered "Yes" to both questions above, you have met ESA eligibility Criteria F. Go to step 5.

If you answered "No" to either of the questions above, you are not eligible for coverage by this permit. You must submit an individual permit application for your storm water discharges. (see 40 CFR 122.21).

Step 5 – Submit Notice of Intent and Document Results of the Eligibility Determination

Once the ESA eligibility requirements have been met, and you have determined NHPA eligibility (see Appendix D), you may submit the Notice of Intent. Signature and submittal of the NOI constitutes your certification, under penalty of law, of eligibility for permit coverage.

You must include documentation of ESA eligibility in the Storm Water Management Program required by the permit. Documentation for the various ESA eligibility criteria are as follows:

- Criterion A: A copy of the most current county species list pages for the counties where your storm water discharges and storm sewer system are located. You must also include a statement on how you determined that no listed species or critical habitat are in proximity to your storm water system or discharges.
- Criterion B: A copy of the USFWS and/or NMFS, as appropriate, biological opinion or concurrence on a finding of "unlikely to adversely affect" regarding the ESA section 7 consultation.
- Criterion C: A copy of the USFWS and/or NMFS, as appropriate, letter transmitting the ESA section 10 authorization.
- Criterion D: A copy of the appropriate Services' concurrence with the operator's determination that the storm water discharges and discharge-related activities were not likely to adversely affect listed species.
- Criterion E: A copy of the documents originally used by the other operator of your system to satisfy the documentation requirements of Criteria A, B, C, or D.

- Criterion F: A copy of the appropriate Services' concurrence that the discharge is not likely to adversely affect an endangered or threatened species.

E. Duty to Implement Terms and Conditions Upon Which Eligibility was Determined

You must comply with any terms and conditions imposed under the ESA eligibility requirements to ensure that your storm water discharges and discharge related activities do not pose adverse effects or jeopardy to listed species and/or critical habitat. You must incorporate such terms and conditions into your Storm Water Management Program as required by this permit. If the ESA eligibility requirements of this permit cannot be met, then you may not receive coverage under this permit and must apply for an individual permit.

F. United States Fish and Wildlife Service Office

National websites for Endangered Species Information:
Endangered Species home page: http://endangered.fws.gov
ESA Section 7 Consultations: http://endangered.fws.gov/consultation/index.html

U.S. FWS – Region 5
Supervisor
New England Field Office
U.S. Fish and Wildlife Services
70 Commercial Street, Suite 300
Concord, NH 03301

G. National Marine Fisheries Service Office

Website: http://www.nmfs.noaa.gov/pr/species/esa_species.htm

Northeast Regional Office

National Marine Fisheries Service
Northeast Region, Protected Resource Division
Attn: Endangered Species Coordinator
One Blackburn Drive
Gloucester, MA 01930

H. Natural Heritage Network

The Natural Heritage Network comprises 75 independent heritage program organizations located in all 50 states, 10 Canadian provinces, and 12 countries and territories located throughout Latin America and the Caribbean. These programs gather, manage, and distribute detailed information about the biological diversity found within their jurisdictions. Developers, businesses, and public agencies use natural heritage information to comply with environmental laws and to

improve the environmental sensitivity of economic development projects. Local governments use the information to aid in land use planning.

The Natural Heritage Network is overseen by NatureServe, the Network's parent organization, and is accessible on-line at: http://www.natureserve.org/nhp/us_programs.htm, which provides websites and other access to a large number of specific biodiversity centers.

New Hampshire Natural Heritage Inventory
Department of Resources & Economic Development
172 Pembroke Street, P.O. Box 30370
Concord, NH 03302
603.271.3623

Appendix D
Procedures Relating to Historic Properties Preservation

Section 106 of the National Historic Preservation Act (NHPA) requires Federal agencies to take into account the effects of Federal "undertakings" on historic properties that are either listed on, or eligible for listing on, the National Register of Historic Places. The term Federal "undertaking" is defined in the NHPA regulations to include a project, activity, or program of a Federal agency including those carried out by or on behalf of a Federal agency, those carried out with Federal financial assistance, and those requiring a Federal permit, license or approval. See 36 CFR 800.16(y). Historic properties are defined in the NHPA regulations to include prehistoric or historic districts, sites, buildings, structures, or objects that are included in, or are eligible for inclusion in, the National Register of Historic Places. This term includes artifacts, records, and remains that are related to and located within such properties. See 36 CFR 800.16(1).

EPA's issuance of the Small Municipal Separate Storm Sewer System General Permit is a Federal undertaking within the meaning of the NHPA regulations. To address any issues relating to historic properties in connection with issuance of the permit, EPA has included criteria for applicants to certify that potential impacts of their covered activities on historic properties have been appropriately considered and addressed. Although individual applications for coverage under the general permit do not constitute separate Federal undertakings, the screening criteria and certifications provide an appropriate site-specific means of addressing historic property issues in connection with EPA's issuance of the permit. Municipalities seeking coverage under the Small MS4 general permit are thus required to make certain certifications regarding the potential effects of their stormwater discharge, allowable non-stormwater discharge, and discharge-related activities on properties listed or eligible for listing on the National Register of Historic Places.

You must meet one or more of the following four criteria (A-D) to be eligible for coverage under this permit:

Criterion A. Your stormwater discharges and allowable non-stormwater discharges do not have the potential to have an effect on historic properties and you are not constructing or installing stormwater control measures that cause less than 1 acre of subsurface disturbance; or

Criterion B. Your discharge-related activities (i.e., construction and/or installation of stormwater control measures that involve subsurface disturbance) will not affect historic properties; or

Criterion C. Your stormwater discharges, allowable non-stormwater discharges, and discharge-related activities have the potential to have an effect on historic properties, and you have obtained and are in compliance with a written agreement with the State Historic Preservation Officer (SHPO), Tribal Historic Preservation Officer (THPO), or other tribal representative that outlines all measures you will carry out to mitigate or prevent any adverse effects on historic properties; or

Criterion D. You have contacted the State Historic Preservation Officer, Tribal Historic Preservation Officer, or other tribal representative and EPA in writing informing them that you have the potential to have an effect on historic properties and you did not receive a response from the SHPO, THPO, or tribal representative within 30 days of receiving your letter.

You are reminded that you must comply with applicable State, Tribal, and local laws concerning protection of historic properties and include documentation supporting your determination of permit eligibility in your Stormwater Management Program.

Activities with No Potential to Have an Effect on Historic Properties

A determination that a Federal undertaking has no potential to have an effect on historic properties fulfills an agency's obligations under the NHPA. EPA has reason to believe that the vast majority of activities authorized under the Small MS4 General Permit have no potential to have effects on historic properties. The purpose of this permit is to control pollutants that may be transported in stormwater runoff from municipal separate storm sewer systems. EPA does not anticipate effects on historic properties from the pollutants in the stormwater and allowable non-stormwater discharges. Thus, to the extent EPA's issuance of this general permit authorizes discharges of such constituents, confined to existing stormwater channels or natural drainage areas, the permitting action does not have the potential to cause effects on historic properties.

In addition, the overwhelming majority of sources covered under this permit will be facilities that are seeking renewal of previous permit coverage. These existing dischargers should have already addressed NHPA issues in the 2003 Small MS4 General Permit as they were required to certify that they were either not affecting historic properties or they had obtained written agreement from the applicable State Historic Preservation Officer (SHPO) or Tribal Historic Preservation Officer (THPO) regarding methods of mitigating potential impacts. Both existing and new dischargers must follow the historic property screening procedures to determine their eligibility. EPA is not aware of any impacts on historic properties from activities covered under the 2003 Small MS4 General Permit or, for that matter, any need for a written agreement. Therefore, to the extent this permit authorizes renewal of prior coverage without relevant changes in operations, it has no potential to have an effect on historic properties.

Activities with Potential to Have an Effect on Historic Properties

EPA believes this permit may have some potential to have an effect on historic properties where the Small MS4 General Permit authorizes the construction and/or installation of stormwater control measures that involve subsurface disturbance and impact less than 1 acre of land. (Ground disturbances of 1 acre or more require coverage under a different permit, the Construction General Permit.) Where you have to disturb the land through the construction and/or installation of control measures, there is a possibility that artifacts, records, or remains associated with historic properties could be impacted. Therefore, if you are establishing new or altering existing control measures to manage your stormwater that will involve subsurface ground disturbance of less than 1 acre, you will need to ensure (1) that historic properties will not be impacted by your activities or

(2) that you are in compliance with a written agreement with the SHPO, THPO, or other tribal representative that outlines all measures you will carry out to mitigate or prevent any adverse effects on historic properties.

Examples of Control Measures Which Involve Subsurface Disturbance

EPA reviewed typical control measures currently employed to determine which practices involve some level of earth disturbance. The types of control measures that are presumptively expected to cause subsurface ground disturbance include:

- Dikes
- Berms
- Catch Basins
- Ponds
- Ditches
- Trenches
- Culverts
- Land manipulation: contouring, sloping, and grading
- Channels
- Perimeter Drains
- Swales

EPA cautions dischargers that this list is non-inclusive. Other control measures that involve earth disturbing activities that are not on this list must also be examined for the potential to affect historic properties.

Historic Property Screening Process

You should follow the following screening process in order to certify your compliance with historic property eligibility requirements under this permit. The following four steps describe how applicants can meet the permit eligibility criteria for protection of historic properties under this permit:

Step One: *Are you a municipality that is reapplying for certification under the 2008 Small MS4?*

If you are a municipality previously covered by the 2003 Small MS4, you should have already addressed NHPA issues. To gain coverage under the 2003 Small MS4 you were required to certify that you were either not affecting historic properties or had obtained written agreement from the relevant SHPO or THPO regarding methods of mitigating potential impacts. As long as you are not constructing or installing any new stormwater control measures then you have met eligibility Criterion A of the Small MS4. After you submit your NOI, there is a minimum 30-day public notice period during which the SHPO, THPO, or other tribal representative may review your NOI. The SHPO, THPO, or other tribal representative may request that EPA hold authorization based on concerns about potential adverse impacts to historic properties.

If you are an existing municipality and will construct or install stormwater control measures that require subsurface disturbance of less than 1 acre then you should proceed to Step Two.

(Note: Construction activities disturbing 1 acre or more are not eligible for coverage under this permit.)

If you are a municipality not covered by the previous permit, then you should proceed to Step Two.

Step Two: *Are you constructing or installing any stormwater control measures that require subsurface disturbance of less than 1 acre?*

If, as part of your coverage under this permit, you are not building or installing control measures on your site that cause less than 1 acre of subsurface disturbance, then your discharge-related activities do not have the potential to have an effect on historic properties. You have no further obligations relating to historic properties. You have met eligibility Criterion A of the MSGP. After you submit your NOI, there is a minimum 30-day public notice period during which the SHPO, THPO, or other tribal representative may review your NOI. The SHPO, THPO, or other tribal representative may request that EPA hold authorization based on concerns about potential adverse impacts to historic properties.

If the answer to the Step Two question is yes, then you should proceed to Step Three.

Step Three: *Have prior earth disturbances determined that historic properties do not exist, or have prior disturbances precluded the existence of historic properties?*

If previous construction either revealed the absence of historic properties or prior disturbances preclude the existence of historic properties, then you have no further obligations relating to historic properties. You have met eligibility Criterion B of the Small MS4 General Pemit. After you submit your NOI, there is a minimum 30-day public comment period during which the SHPO, THPO, or other tribal representative may review your NOI. The SHPO, THPO, or other tribal representative may request that EPA hold authorization based on concerns about potential adverse impacts to historic properties.

If the answer to the Step Three question is no, then you should proceed to Step Four.

Step Four: *Contact the appropriate historic preservation authorities*

Where you are building and/or installing control measures affecting less than 1 acre of land to control stormwater or allowable non-stormwater discharges associated with this permit, and the answer to Step Three is no, then you should contact the relevant SHPO, THPO, or other tribal representative to determine the likelihood that artifacts, records, or remains are potentially present on your site. This may involve examining local records to determine if historic artifacts have been found in nearby areas, as well as limited surface and subsurface examination carried out by qualified professionals.

If through this process it is determined that such historic properties potentially exist and may be impacted by your construction or installation of control measures, you should contact the relevant SHPO, THPO, or tribal representative in writing and request to discuss mitigation or prevention of any adverse effects. You should also send a copy of this letter to the appropriate state agency and EPA. The letter should describe the nature and location of subsurface disturbance activities that are contemplated, any known or suspected historic properties in the area, and any anticipated effects on such properties. The letter should state that if the SHPO, THPO, or tribal representative does not respond within 30 days of receiving your letter, you may submit your NOI. EPA encourages applicants to contact the appropriate authorities as soon as possible in the event of a potential adverse effect to a historic property.

If the SHPO, THPO, or tribal representative sent you a response within 30 days of receiving your letter and you enter into, and comply with, a written agreement with the SHPO, THPO, or other tribal representative regarding how to address any adverse impacts on historic properties, you have met eligibility Criterion C. After you submit your NOI, there is a minimum 30-day public comment period during which the SHPO, THPO, or other tribal representative may review your NOI. The SHPO, THPO, or other tribal representative may request that EPA hold authorization based on concerns about potential adverse impacts to historic properties.

If you receive a response within 30 days after the SHPO, THPO, or tribal representative received your letter but an agreement cannot be reached between you and the SHPO, THPO, or other tribal representative, you should contact EPA.

If you have contacted the SHPO, THPO, or tribal representative and EPA in writing regarding your potential to have an effect on historic properties and the SHPO, THPO, or tribal representative did not respond within 30 days of receiving your letter, you have met eligibility Criterion D. After you submit your NOI, there is a minimum 30-day public comment period during which the SHPO, THPO, or other tribal representative may review your NOI. The SHPO, THPO, or other tribal representative may request that EPA hold authorization based on concerns about potential adverse impacts to historic properties.

Addresses for State Historic Preservation Officers and Tribal Historic Preservation Officers may be found on the Advisory Council on Historic Preservation's website (http://www.achp.gov/programs.html). In instances where a Tribe does not have a Tribal Historic Preservation Officer, you should contact the appropriate Tribal government office when responding to this permit e

Suggested Notice Of Intent (NOI)
Format

Part I - General Conditions

General Information	
Name of Municipality	
Permit #	
Mailing Address	
Contact Name	
Title	
Email	
Telephone	
Storm Water Management Program (SWMP) Location	(may either be a website address or physical location)
Legal Status of Municipality	(Town/City; State; Federal; Tribal; Other)
Endangered Species Act (ESA) Eligibility: yes or no	Please refer to Section 1.91 and Appendix C of the New Hampshire Small MS4 Permit for guidance
Criteria used to certify eligibility	
National Historic Preservation Act (NHPA) Eligibility: yes or no	Please refer to Section 1.92 and Appendix D of the New Hampshire Small MS4 Permit for guidance
Criteria used to certify eligibility	

MS4 Infrastructure Information	
Status of Outfall Map	Complete; if not complete, estimate date for completion

Ordinance Development	
Illicit Discharge Detection & Elimination	(Effective Date; if not adopted, estimate date of adoption)
Construction - Erosion and Soil Control	(Effective Date; if not adopted, estimate date of adoption)
Post Construction	(Effective Date; if not adopted, estimate date of adoption)

Part II - Summary of Receiving Waters

Name of Receiving Water	Number of Outfalls into Receiving Water	Impairment (yes/no)	Pollutant Causing Impairment
Name of waterbody that receives flow from the MS4.		Does this receiving water have a listed impairment?	List the pollutatns affecting the waterbody, along with any additional information, such as a Waste Load Allocation (WLA)

Part III - Summary of 2003 Stormwater Management Program

Please attach a copy of the 2003 Notice of Intent (NOI). For every measurable goal and associated BMP listed in the approved 2003 NOI, provide the following information:

BMP ID	Goal Achieved?	Continued in Next Permit Cycle?	Was BMP appropriate for the goal?	Modifications to goals or BMP for next permit cycle
	Yes/No	Please indicate if this BMP will appear in the 2008 NOI	Yes/No, along with a justification for the response	If applicable

Part IV - 2008 Stormwater Management Program Summary
Public Education & Outreach (See Section 2.3.2 for detailed information on required BMPs)

BMP ID	Education Topic	Outreach Method	Measurable Goals
1-X	Identify the issue your BMP is educating the public about. Can include general stormwater info, pet waste, proper lawn care, water conservation, etc.	Describe the method used to convey this topic. May include mailings, events, school curriculum, etc.	What is the end result of this program? What indicator will you use to determine if the goal is met? Could include number of mailings sent, number of people at event, class participation, etc.

Part IV - 2008 Stormwater Management Program Summary
Public Involvement & Participation (See Section 2.3.3 for detailed information on required BMPs)

BMP ID	Program Description	Measurable Goals
2-X	Describe the program and how it will inspire public participation. This can include special events, volunteer sampling and monitoring efforts, household hazardous waste recycling, etc.	What is the end result of this program? What indicator will you use to determine if the goal is met? Could include participation, amount of sampling performed, waste collected, etc.

Part IV - 2008 Stormwater Management Program Summary
Illicit Discharge Detection & Elimination (See Section 2.3.4 for detailed information on required BMPs)

BMP ID	Program Description	Measurable Goals
3-X	Describe the program and how it will identify and remove illicit connections from the MS4. Can include new regulations, investigation practices, removal of illicit connections, etc.	What is the end result of this program? What indicator will you use to determine if the goal is met? Could include the adoption of the regulation, number of investigations performed, number of illicit connected identified/removed, etc.

Part IV - 2008 Stormwater Management Program Summary
Construction Site Stormwater Runoff Control (See Section 2.3.5 for detailed information on required BMPs)

BMP ID	Program Description	Measurable Goals
4-X	Describe the program and how it will help control stormwater runoff during construction activities. This can include new regulations, construction practices, inspection protocols, etc.	What is the end result of this program? What indicator will you use to determine if the goal is met? Can include the adoption of regulations, number of inspections performed, number of sites actively regulated, etc.

Part IV - 2008 Stormwater Management Program Summary
Stormwater Management in New Developments and Redevelopment (See Section 2.3.6 for detailed information on required BMPs)

BMP ID	Program Description	Measurable Goals
5-X	Describe the program and how it will control stormwater runoff from properties after they have been developed. This can include new regulations, practices, or resources for contractors to utilize LID.	What is the end result of this program? What indicator will you use to determine if the goal is met? Can include the adoption of regulations, implementation of new practices, the development of knowledge resources, etc.

Part IV - 2008 Stormwater Management Program Summary
Good House Keeping and Pollution Prevention in Municipal Operations (See Section 2.3.7 for detailed information on required BMPs)

BMP ID	Program Description	Measurable Goals
6 - X	Describe the program and how it will mitigate stormwater runoff at municipal properties or through municipal activities. This can include installation of structural stormwater solutions on municipal properties, new municipal practices to reduce stormwater runoff, etc.	What is the end result of this program? What indicator will you use to determine if the goal is met? Can include structural BMPs installed, practices developed and implemented, etc.

Part V - 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, I certify that the information submitted is, to 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.

Print: _____ Title: _____

Signature: _____ Date: _____

APPENDIX F
REQUIREMENTS OF APPROVED TOTAL MAXIMUM DAILY LOADS

Hampton/Seabrook Harbor[1]

- Pollutant: Bacteria
- Municipalities: Hampton and Seabrook
- Water Quality Goal of TMDL: The goal for this TMDL is for the bacteria concentrations throughout Hampton/Seabrook Harbor to meet the water quality standards for the designated uses of the water body that are affected by bacteria. These uses include shellfishing, primary contact recreation (swimming), and secondary contact recreation (boating). The water quality standard is the most stringent for shellfishing: a geometric mean for fecal coliform of less than 14 MPN/100 ml and a 90th percentile of less than 43 MPN/100 ml as determined using National Shellfish Sanitation Program (NSSP) protocols (RSA 485-A: 8, V; ISSC, 1999). A 47 percent reduction in the total bacteria loading is necessary to meet the TMDL.
- Goal of the Implementation Plan: To remove all human sources of bacteria to the estuary to the extent practicable. NHDES expects that a phased and iterative approach will be used. NHDES will work with the towns of Hampton and Seabrook to develop specific projects to reduce human-related bacteria loads to the estuary.
- Measures to address the TMDL:
    - Public Education (Part 2.3.2): The permittee shall post information about proper management of pet waste in areas discharging to the harbor. The permittee shall provide information to owners of septic systems about proper maintenance.
    - Illicit Discharge (Part 2.3.4): The permittee shall implement the illicit discharge program required by this permit.
    - Good House Keeping (Part 2.3.7.1.d) the permittee shall increase the frequency of street sweeping in areas that discharge to the harbor. The permittee must sweep the streets more frequently than twice a year.

Little Harbor[2]

- Pollutant: Bacteria
- Municipalities: New Castle, Portsmouth and Rye
- Water Quality Goal of the TMDL: The goal for this TMDL is for the bacteria concentration in the Little Harbor assessment unit to meet the water quality standards for the designated uses of the water body that are affected by bacteria. These uses include shellfishing, primary contact recreation (swimming), and secondary contact recreation (boating). The water quality standard is the most stringent for shellfishing: a geometric mean for fecal coliform of less than 14 MPN/100 ml and a 90th percentile of less than 43 MPN/100 ml as determined using National Shellfish Sanitation Program (NSSP) protocols (RSA 485-A: 8, V; ISSC, 1999). The bacteria load to Little Harbor must be reduced by 12 percent to achieve the goal of the TMDL.
- Goal of the Implementation Plan: To achieve water quality standards for bacteria in the Little Harbor assessment unit and to characterize the bacteria concentrations and bacteria

[1] Hampton/Seabrook Harbor Bacteria TMDL, May 2004
[2] Little Harbor Bacteria TMDL, June 2006

sources in the Berrys Brook/ Witch Creek assessment unit.

- Measures to address the TMDL:
    - Illicit Discharge (Part 2.3.4) Implement the illicit discharge program required by this permit in all areas of the municipality. Ensure elimination of all failing septic systems within the urbanized area.

Appendix B
Municipal Budgets

Existing Stormwater Expenses

Existing Stormwater Personnel Budget Projected Over Five Years
Existing Stormwater Capital Budget Projected Over Five Years

NPDES Phase II MS4 General Permit Compliance Costs

Future CIP and Maintenance Activities

EXISTING STORMWATER PERSONNEL BUDGET PROJECTED OVER FIVE YEARS

POSITION	FY 10 SALARY	FTEs	FY 10	FY11	FY12	FY13	FY14	FY15	FY16	Annual Average (FY12-FY16)
PUBLIC WORKS - PUBLIC WORKS DIVISION & ENGINEERING										
Position										
Administrative Assistant I	$ 33,640	0.05	$ 1,682	$ 1,724	$ 1,767	$ 1,811	$ 1,857	$ 1,903	$ 1,951	$ 1,858
Administrative Assistant III	$ 45,650	0.05	$ 2,283	$ 2,340	$ 2,398	$ 2,458	$ 2,519	$ 2,582	$ 2,647	$ 2,521
Engineering Designer/Inspector	$ 54,641	0.10	$ 5,464	$ 5,601	$ 5,741	$ 5,884	$ 6,031	$ 6,182	$ 6,337	$ 6,035
Deputy City Engineer	$ 75,400	0.10	$ 7,540	$ 7,729	$ 7,922	$ 8,120	$ 8,323	$ 8,531	$ 8,744	$ 8,328
Director Public Works	$ 70,684	0.01	$ 707	$ 725	$ 743	$ 761	$ 780	$ 800	$ 820	$ 781
Engineering Inspector	$ 85,302	0.10	$ 8,530	$ 8,743	$ 8,962	$ 9,186	$ 9,416	$ 9,651	$ 9,892	$ 9,421
Survey Technician	$ 52,518	0.20	$ 10,504	$ 10,766	$ 11,035	$ 11,311	$ 11,594	$ 11,884	$ 12,181	$ 11,601
Street Construction Engineer	$ 61,213	0.10	$ 6,121	$ 6,274	$ 6,431	$ 6,592	$ 6,757	$ 6,926	$ 7,099	$ 6,761
SUBTOTAL			**$ 42,831**	**$ 43,901**	**$ 44,999**	**$ 46,124**	**$ 47,277**	**$ 48,459**	**$ 49,670**	**$ 47,306**
PUBLIC WORKS - STREET DEPARTMENT										
Position										
Equipment Operator	$ 282,400	0.04	$ 11,296	$ 11,578	$ 11,868	$ 12,165	$ 12,469	$ 12,780	$ 13,100	$ 12,476
Driver	$ 661,725	0.04	$ 26,469	$ 27,131	$ 27,809	$ 28,504	$ 29,217	$ 29,947	$ 30,696	$ 29,235
Mason	$ 291,275	0.04	$ 11,651	$ 11,942	$ 12,241	$ 12,547	$ 12,861	$ 13,182	$ 13,512	$ 12,868
Laborer	$ 12,875	0.04	$ 515	$ 528	$ 541	$ 555	$ 568	$ 583	$ 597	$ 569
Foreman	$ 229,800	0.04	$ 9,192	$ 9,422	$ 9,657	$ 9,899	$ 10,146	$ 10,400	$ 10,660	$ 10,152
Administration										
Operations Coordinator	$ 48,445	0.04	$ 1,938	$ 1,986	$ 2,036	$ 2,087	$ 2,139	$ 2,192	$ 2,247	$ 2,140
Operations Manager	$ 64,861	0.04	$ 2,594	$ 2,659	$ 2,726	$ 2,794	$ 2,864	$ 2,935	$ 3,009	$ 2,866
Admin. Assist	$ 35,827	0.04	$ 1,433	$ 1,469	$ 1,506	$ 1,543	$ 1,582	$ 1,621	$ 1,662	$ 1,583
Superintendent	$ 79,700	0.04	$ 3,188	$ 3,268	$ 3,349	$ 3,433	$ 3,519	$ 3,607	$ 3,697	$ 3,521
Fleet				$ -	$ -	$ -	$ -	$ -	$ -	
Mechanics (7)	$ 352,000	0.04	$ 14,080	$ 14,432	$ 14,793	$ 15,163	$ 15,542	$ 15,930	$ 16,328	$ 15,551
Storekeeper	$ 42,668	0.04	$ 1,707	$ 1,749	$ 1,793	$ 1,838	$ 1,884	$ 1,931	$ 1,979	$ 1,885
Serviceman (3)	$ 125,000	0.04	$ 5,000	$ 5,125	$ 5,253	$ 5,384	$ 5,519	$ 5,657	$ 5,798	$ 5,522
Supervisor	$ 53,124	0.04	$ 2,125	$ 2,178	$ 2,233	$ 2,288	$ 2,346	$ 2,404	$ 2,464	$ 2,347
Welder (2)	$ 87,527	0.04	$ 3,501	$ 3,589	$ 3,678	$ 3,770	$ 3,865	$ 3,961	$ 4,060	$ 3,867
SUBTOTAL			**$ 94,689**	**$ 97,056**	**$ 99,483**	**$ 101,970**	**$ 104,519**	**$ 107,132**	**$ 109,810**	**$ 104,583**
WASTEWATER										
Position										
Assistant City Engineer	$ 61,404	0.20	$ 12,281	$ 12,588	$ 12,903	$ 13,225	$ 13,556	$ 13,895	$ 14,242	$ 13,564
CSO Storm Water Engineer	$ 57,563	0.50	$ 28,782	$ 29,501	$ 30,239	$ 30,995	$ 31,769	$ 32,564	$ 33,378	$ 31,789
DPW Contract Administrator	$ 51,810	0.05	$ 2,591	$ 2,655	$ 2,722	$ 2,790	$ 2,859	$ 2,931	$ 3,004	$ 2,861
CSO Technician/Inspector	$ 47,589	0.20	$ 9,518	$ 9,756	$ 10,000	$ 10,250	$ 10,506	$ 10,769	$ 11,038	$ 10,512
Deputy Manager of Engineering	$ 68,896	0.10	$ 6,890	$ 7,062	$ 7,238	$ 7,419	$ 7,605	$ 7,795	$ 7,990	$ 7,609
City Engineer	$ 91,871	0.10	$ 9,187	$ 9,417	$ 9,652	$ 9,894	$ 10,141	$ 10,394	$ 10,654	$ 10,147
Wastewater Project Engineer	$ 61,600	0.10	$ 6,160	$ 6,314	$ 6,472	$ 6,634	$ 6,799	$ 6,969	$ 7,144	$ 6,804
CSO Street Sweeper	$ 37,316	1.00	$ 37,316	$ 38,249	$ 39,205	$ 40,185	$ 41,190	$ 42,220	$ 43,275	$ 41,215
Analytical Chemist	$ 46,027	0.05	$ 2,301	$ 2,359	$ 2,418	$ 2,478	$ 2,540	$ 2,604	$ 2,669	$ 2,542
Process Chemist	$ 51,347	0.05	$ 2,567	$ 2,632	$ 2,697	$ 2,765	$ 2,834	$ 2,905	$ 2,977	$ 2,836
Collections Specialist II	$ 37,345	0.10	$ 3,735	$ 3,828	$ 3,924	$ 4,022	$ 4,122	$ 4,225	$ 4,331	$ 4,125
Collection Systems Foreman	$ 52,083	0.25	$ 13,021	$ 13,346	$ 13,680	$ 14,022	$ 14,372	$ 14,732	$ 15,100	$ 14,381
Collection System Operator	$ 122,304	0.25	$ 30,576	$ 31,340	$ 32,124	$ 32,927	$ 33,750	$ 34,594	$ 35,459	$ 33,771
Collection System Technician	$ 87,527	0.15	$ 13,129	$ 13,457	$ 13,794	$ 14,139	$ 14,492	$ 14,854	$ 15,226	$ 14,501
Director of Public Works	$ 100,980	0.02	$ 2,020	$ 2,070	$ 2,122	$ 2,175	$ 2,229	$ 2,285	$ 2,342	$ 2,231
Superintendent WWTP	$ 81,915	0.25	$ 20,479	$ 20,991	$ 21,515	$ 22,053	$ 22,605	$ 23,170	$ 23,749	$ 22,618
WWT Business Coordinator	$ 45,124	0.05	$ 2,256	$ 2,313	$ 2,370	$ 2,430	$ 2,490	$ 2,553	$ 2,617	$ 2,492
Summer Intern	$ 38,100	0.75	$ 28,575	$ 29,289	$ 30,022	$ 30,772	$ 31,541	$ 32,330	$ 33,138	$ 31,561
SUBTOTAL			**$ 231,382**	**$ 237,166**	**$ 243,096**	**$ 249,173**	**$ 255,402**	**$ 261,787**	**$ 268,332**	**$ 255,558**
COMMUNITY DEVELOPMENT - PLANNING & ZONING										
Position										
Deputy Planning Managers	$ 184,451	0.05	$ 9,223	$ 9,453	$ 9,689	$ 9,932	$ 10,180	$ 10,434	$ 10,695	$ 10,186
Manager Planning Dpt	$ 89,441	0.01	$ 894	$ 917	$ 940	$ 963	$ 987	$ 1,012	$ 1,037	$ 988
Planner II	$ 52,408	0.05	$ 2,620	$ 2,686	$ 2,753	$ 2,822	$ 2,892	$ 2,965	$ 3,039	$ 2,894
SUBTOTAL			**$ 12,737**	**$ 13,056**	**$ 13,382**	**$ 13,717**	**$ 14,060**	**$ 14,411**	**$ 14,771**	**$ 14,068**
CODE ENFORCEMENT										
Enforcement Department Manager	$ 61,447	0.05	$ 3,072	$ 3,149	$ 3,228	$ 3,309	$ 3,391	$ 3,476	$ 3,563	$ 3,393
Enforcement Officer II	$ 104,129	0.05	$ 5,206	$ 5,337	$ 5,470	$ 5,607	$ 5,747	$ 5,891	$ 6,038	$ 5,750
SUBTOTAL			**$ 8,279**	**$ 8,486**	**$ 8,698**	**$ 8,915**	**$ 9,138**	**$ 9,367**	**$ 9,601**	**$ 9,144**
FINANCIAL SERVICES - ASSESSORS & GIS										
Chief Assessor/GIS Manager	$ 100,321	0.10	$ 10,032	$ 10,283	$ 10,540	$ 10,803	$ 11,074	$ 11,350	$ 11,634	$ 11,080
GIS Technician II	$ 49,781	0.10	$ 4,978	$ 5,103	$ 5,230	$ 5,361	$ 5,495	$ 5,632	$ 5,773	$ 5,498
SUBTOTAL			**$ 15,010**	**$ 15,385**	**$ 15,770**	**$ 16,164**	**$ 16,568**	**$ 16,983**	**$ 17,407**	**$ 16,579**
TOTAL OPERATING COSTS			**$ 404,928**	**$ 415,051**	**$ 425,427**	**$ 436,063**	**$ 446,965**	**$ 458,139**	**$ 469,592**	**$ 447,237**

EXISTING STORMWATER CAPITAL BUDGET PROJECTED OVER FIVE YEARS

	Baseline (FY10)	FTEs	FY10	FY11	FY12	FY13	FY14	FY15	FY16	Total FY12-FY16	Annual Average
PUBLIC WORKS - PUBLIC WORKS DIVISION & ENGINEERING											
Electricity, Basic Service CHG	$ 11,789	0.20	$ 2,358	$ 2,417	$ 2,477	$ 2,539	$ 2,603	$ 2,668	$ 2,734	$ 13,021	$ 2,604
Water, Basic Service Charges	$ 1,520	0.20	$ 304	$ 312	$ 319	$ 327	$ 336	$ 344	$ 353	$ 1,679	$ 336
Heating, Propane & Natural Gas	$ 4,000	0.20	$ 800	$ 820	$ 841	$ 862	$ 883	$ 905	$ 928	$ 4,418	$ 884
Office Supplies	$ 8,000	0.20	$ 1,600	$ 1,640	$ 1,681	$ 1,723	$ 1,766	$ 1,810	$ 1,856	$ 8,836	$ 1,767
Gasoline	$ 3,500	0.20	$ 700	$ 718	$ 735	$ 754	$ 773	$ 792	$ 812	$ 3,866	$ 773
Miscellaneous Services	$ 13,965	0.20	$ 2,793	$ 2,863	$ 2,934	$ 3,008	$ 3,083	$ 3,160	$ 3,239	$ 15,424	$ 3,085
Computer Software	$ 4,320	0.20	$ 864	$ 886	$ 908	$ 930	$ 954	$ 978	$ 1,002	$ 4,771	$ 954
Surveying Equipment	$ 3,500	0.20	$ 700	$ 718	$ 735	$ 754	$ 773	$ 792	$ 812	$ 3,866	$ 773
Maint. Contract, Photocopiers	$ 3,351	0.20	$ 670	$ 687	$ 704	$ 722	$ 740	$ 758	$ 777	$ 3,701	$ 740
Maint., Computer Equipment	$ 1,000	0.20	$ 200	$ 205	$ 210	$ 215	$ 221	$ 226	$ 232	$ 1,104	$ 221
Repairs, Surveying Equipment	$ 1,500	0.20	$ 300	$ 308	$ 315	$ 323	$ 331	$ 339	$ 348	$ 1,657	$ 331
Maint., General Bldgs & Ground	$ 1,000	0.20	$ 200	$ 205	$ 210	$ 215	$ 221	$ 226	$ 232	$ 1,104	$ 221
Vehicle Maintenance	$ 2,000	0.20	$ 400	$ 410	$ 420	$ 431	$ 442	$ 453	$ 464	$ 2,209	$ 442
Travel, Local - Mileage Basis	$ 900	0.20	$ 180	$ 185	$ 189	$ 194	$ 199	$ 204	$ 209	$ 994	$ 199
Travel, Local - Fixed Rate	$ 23,662	0.20	$ 4,732	$ 4,851	$ 4,972	$ 5,096	$ 5,224	$ 5,354	$ 5,488	$ 26,134	$ 5,227
Conferences & Seminars	$ 5,000	0.20	$ 1,000	$ 1,025	$ 1,051	$ 1,077	$ 1,104	$ 1,131	$ 1,160	$ 5,522	$ 1,104
Educational Assistance	$ 5,400	0.20	$ 1,080	$ 1,107	$ 1,135	$ 1,163	$ 1,192	$ 1,222	$ 1,252	$ 5,964	$ 1,193
Membership Dues	$ 1,500	0.20	$ 300	$ 308	$ 315	$ 323	$ 331	$ 339	$ 348	$ 1,657	$ 331
SUBTOTAL			**$ 19,181**	**$ 19,661**	**$ 20,152**	**$ 20,656**	**$ 21,173**	**$ 21,702**	**$ 22,245**	**$ 105,928**	**$ 21,186**
PUBLIC WORKS - STREET DEPARTMENT											
2000 Johnston/Sterling Vacuum Street Sweeper Model 650											
Replacement	$ 165,375	1.00			$ 165,375					$ 165,375	$ 33,075
Repair	$ 3,880	1.00	$ 3,880	$ 3,977	$ 4,077	$ 4,179	$ 4,283	$ 4,390	$ 4,500	$ 21,429	$ 4,286
2001 Johnston/Sterling Vacuum Street Sweeper Model 650											
Replacement	$ 173,644	1.00				$ 173,644				$ 173,644	$ 34,729
Repair	$ 10,237	1.00	$ 10,237	$ 10,493	$ 10,755	$ 11,024	$ 11,300	$ 11,582	$ 11,872	$ 56,533	$ 11,307
2007 Johnston/Sterling Vacuum Street Sweeper Model 650											
Replacement										$ -	$ -
Repair	$ 3,122	1.00	$ 3,122	$ 3,200	$ 3,280	$ 3,362	$ 3,446	$ 3,533	$ 3,621	$ 17,243	$ 3,449
2007 Johnston/Sterling Vacuum Street Sweeper Model 650											
Replacement										$ -	$ -
Repair	$ 2,600	1.00	$ 2,600	$ 2,665	$ 2,731	$ 2,800	$ 2,870	$ 2,941	$ 3,015	$ 14,356	$ 2,871
2002 Tenant Sidewalk Sweeper Model 400											
Replacement	$ 45,167	1.00					$ 45,167			$ 45,167	$ 9,033
Repair	$ 1,733	1.00	$ 1,733	$ 1,777	$ 1,821	$ 1,867	$ 1,913	$ 1,961	$ 2,010	$ 9,572	$ 1,914
Fuel Costs for All Sweepers	$ 18,900	1.00	$ 18,900	$ 19,373	$ 19,857	$ 20,353	$ 20,862	$ 21,384	$ 21,918	$ 104,374	$ 20,875
Construction Related Material Costs											
Asphalt	$ 5,000	1.00	$ 5,000	$ 5,125	$ 5,253	$ 5,384	$ 5,519	$ 5,657	$ 5,798	$ 27,612	$ 5,522
Structures	$ 7,000	1.00	$ 7,000	$ 7,175	$ 7,354	$ 7,538	$ 7,727	$ 7,920	$ 8,118	$ 38,657	$ 7,731
Castings - Frames and Covers	$ 9,000	1.00	$ 9,000	$ 9,225	$ 9,456	$ 9,692	$ 9,934	$ 10,183	$ 10,437	$ 49,702	$ 9,940
Pipe	$ 3,000	1.00	$ 3,000	$ 3,075	$ 3,152	$ 3,231	$ 3,311	$ 3,394	$ 3,479	$ 16,567	$ 3,313
Concrete/Cement/Brick	$ 3,000	1.00	$ 3,000	$ 3,075	$ 3,152	$ 3,231	$ 3,311	$ 3,394	$ 3,479	$ 16,567	$ 3,313
Gravel	$ 3,200	1.00	$ 3,200	$ 3,280	$ 3,362	$ 3,446	$ 3,532	$ 3,621	$ 3,711	$ 17,672	$ 3,534
SUBTOTAL			**$ 70,673**	**$ 72,439**	**$ 239,625**	**$ 249,751**	**$ 123,176**	**$ 79,960**	**$ 81,959**	**$ 774,471**	**$ 154,894**

EXISTING STORMWATER CAPITAL BUDGET PROJECTED OVER FIVE YEARS

	Baseline (FY10)	FTEs	FY10	FY11	FY12	FY13	FY14	FY15	FY16	Total FY12-FY16	Annual Average
WASTEWATER											
Sewer/Stormwater Maintenance	$ 210,000	0.40	$ 84,000	$ 86,100	$ 88,253	$ 90,459	$ 92,720	$ 95,038	$ 97,414	$ 463,884	$ 92,777
Truck 62 - '04 Chevy 2WD - Plant											
Replacement	$ 18,000	0.15					$ 2,700			$ 2,700	$ 540
Repair	$ 2,000	0.15	$ 300	$ 308	$ 315	$ 323	$ 331	$ 339	$ 348	$ 1,657	$ 331
Truck 86 - '05 Ford											
Replacement	$ 18,000	0.15						$ 2,700		$ 2,700	$ 540
Repair	$ 2,000	0.15	$ 300	$ 308	$ 315	$ 323	$ 331	$ 339	$ 348	$ 1,657	$ 331
Truck 136 - 1/2 Ton Chevy w/crane											
Replacement	$ 32,000	0.15							$ 4,800	$ 4,800	$ 960
Repair	$ 2,000	0.15	$ 300	$ 308	$ 315	$ 323	$ 331	$ 339	$ 348	$ 1,657	$ 331
Truck 135 - 3/4 Ton Chevy											
Replacement	$ 24,000	0.15							$ 3,600	$ 3,600	$ 720
Repair	$ 2,000	0.15	$ 300	$ 308	$ 315	$ 323	$ 331	$ 339	$ 348	$ 1,657	$ 331
Truck 4 - CB Cleaner w/ Clamshell Bucket											
Replacement	$ 69,000	1.00								$ -	$ -
Repair	$ 2,000	1.00	$ 2,000	$ 2,050	$ 2,101	$ 2,154	$ 2,208	$ 2,263	$ 2,319	$ 11,045	$ 2,209
Collection Truck 82 (1 Ton w/crane)											
Replacement	$ 42,000	0.15								$ -	$ -
Repair	$ 2,000	0.15	$ 300	$ 308	$ 315	$ 323	$ 331	$ 339	$ 348	$ 1,657	$ 331
Vacuum Truck 87											
Replacement	$ 320,000	0.15			$ 48,000					$ 48,000	$ 9,600
Repair	$ 3,200	0.15	$ 480	$ 492	$ 504	$ 517	$ 530	$ 543	$ 557	$ 2,651	$ 530
TV Video Truck 112											
Replacement	$ 198,000	0.15								$ -	$ -
Repair	$ 2,000	0.15	$ 300	$ 308	$ 315	$ 323	$ 331	$ 339	$ 348	$ 1,657	$ 331
Vacuum Truck 171											
Replacement	$ 360,000	0.15								$ -	$ -
Repair	$ 3,200	0.15	$ 480	$ 492	$ 504	$ 517	$ 530	$ 543	$ 557	$ 2,651	$ 530
Kubota Tractor											
Replacement	$ 27,000	0.15								$ -	$ -
Repair	$ 2,000	0.15	$ 300	$ 308	$ 315	$ 323	$ 331	$ 339	$ 348	$ 1,657	$ 331
Street Sweeper (Acquired 2004)											
Replacement	$ 162,000	1.00								$ -	$ -
Repair	$ 3,201	1.00	$ 3,201	$ 3,281	$ 3,363	$ 3,447	$ 3,533	$ 3,621	$ 3,712	$ 17,676	$ 3,535
6" Dewatering Pump (Flood Relief)											
Replacement	$ 11,000	0.15								$ -	$ -
Repair	$ 2,000	0.15	$ 300	$ 308	$ 315	$ 323	$ 331	$ 339	$ 348	$ 1,657	$ 331
Portable Generator											
Replacement	$ 44,000	0.15								$ -	$ -
Repair	$ 2,000	0.15	$ 300	$ 308	$ 315	$ 323	$ 331	$ 339	$ 348	$ 1,657	$ 331
Fuel Costs for All Equipment	$ 17,701	0.15	$ 2,655	$ 2,722	$ 2,790	$ 2,859	$ 2,931	$ 3,004	$ 3,079	$ 14,663	$ 2,933
Catch Basin Cleaning Disposal	$ -	1.00	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Laboratory Supplies	$ 41,400	0.05	$ 2,070	$ 2,122	$ 2,175	$ 2,229	$ 2,285	$ 2,342	$ 2,401	$ 11,431	$ 2,286
SUBTOTAL			**$ 97,586**	**$ 100,026**	**$ 150,526**	**$ 105,089**	**$ 110,417**	**$ 113,110**	**$ 121,570**	**$ 600,711**	**$ 120,142**
COMMUNITY DEVELOPMENT - PLANNING & ZONING											
SUBTOTAL	**$ -**		**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	$ -	$ -
CODE ENFORCEMENT											
SUBTOTAL	**$ -**		**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	$ -	$ -

EXISTING STORMWATER CAPITAL BUDGET PROJECTED OVER FIVE YEARS

	Baseline (FY10)	FTEs	FY10	FY11	FY12	FY13	FY14	FY15	FY16	Total FY12-FY16	Annual Average
FINANCIAL SERVICES - ASSESSORS & GIS											
Consulting Services	$ 2,725	0.10	$ 273	$ 279	$ 286	$ 293	$ 301	$ 308	$ 316	$ 1,505	$ 301
Computer Software	$ 2,800	0.10	$ 280	$ 287	$ 294	$ 302	$ 309	$ 317	$ 325	$ 1,546	$ 309
Maintenance, Computer Software	$ 20,000	0.10	$ 2,000	$ 2,050	$ 2,101	$ 2,154	$ 2,208	$ 2,263	$ 2,319	$ 11,045	$ 2,209
Conferences & Seminars	$ 2,500	0.10	$ 250	$ 256	$ 263	$ 269	$ 276	$ 283	$ 290	$ 1,381	$ 276
SUBTOTAL			**$ 2,803**	**$ 2,873**	**$ 2,944**	**$ 3,018**	**$ 3,093**	**$ 3,171**	**$ 3,250**	**$ 15,477**	**$ 3,095**
TOTAL			**$ 190,242**	**$ 194,999**	**$ 413,249**	**$ 378,514**	**$ 257,859**	**$ 217,942**	**$ 229,023**	**$ 1,496,587**	**$ 299,317**

NPDES Phase II MS4 General Permit Compliance Costs							
		Compliance Year					
Requirement	**Description**	**1**	**2**	**3**	**4**	**5**	**Average Annual Costs Over 5-Year Period**
NOI		$ 12,000					$ 12,000
Review TMDLs/Impaired Waters and Develop Plan to Address Pollutants		$ 17,000					$ 17,000
SWMP		$ 50,000					$ 50,000
Public Education and Outreach	develop public education messages and distribute year 1	$ 9,000	$ 9,000	$ 9,000	$ 9,000	$ 9,000	$ 9,000
IDDE Program							
IDDE Plan	delineate and prioritize catchments, plan documenting prioritization, how to identify illicit discharges and procedures to correct them, identification of problem catchments	$ 79,000					$ 79,000
Dry Weather Screening	200 outfalls per year, 20 outfalls per day, 10% with flow (analytical includes ammonia, chlorine, conductivity, E. Coli or enterococcus, pH, potassium, surfactants, temperature, turbidity)		$ 22,000	$ 22,000	$ 22,000	$ 22,000	$ 22,000
Regulatory							
Assess Street Design & Parking Lot Guidelines	review regulations & prepare a report of findings and recommendations with schedule for implementation		$ 5,000				$ 5,000
Assess Regulations for Green Practices	review regulations & prepare a report of findings and recommendations with schedule for implementation			$ 5,000			$ 5,000
Estimate acreas of IA using EPA as baseline		$ 2,000					$ 2,000
Inventory & Rank MS4-Owned Property for BMPs	map MS4-owned parcels with soils, visit sites, identify BMP options, prepare preliminary cost estimates, rank sites, prepare report of findings		$ 10,000				$ 10,000
Estimate acres of DCIA added/removed each year			$ 2,000	$ 2,000	$ 2,000	$ 2,000	$ 2,000
Good Housekeeping and Pollution Prevention							
O&M Procedures for Facilities	inventory MS4 facilities (all parks, buildings, maintenance) - visit in field, prepare written procedures for each facility on proper management to minimize pollutants	$ 5,000					$ 5,000
Catch Basin Cleaning	establish procedures for CB inspection, cleaning & repair, clean every other year	$ 141,000	$ 141,000	$ 141,000	$ 141,000	$ 141,000	$ 141,000
Street Sweeping	establish procedures for sweeping streets, sidewalks & permittee-owned parking lots, sweep streets 2x/year						
Procedures for Winter Road Maintenance	evaluate use and storage of salt and sand, evaluate opportunities for alternative materials, review snow disposal, develop recommendations	$ 4,000					$ 4,000
Procedures for Maintaining Town-owned BMPs	outline future inspection and maintenance procedures/needs for town-owned BMPs based on existing inventory, perform annual inspections and document findings	$ 8,000					$ 8,000
SWPPPs - maint garages, public works facilities, transfer stations, waste handling	visit facilities, prepare map and plan with recommendations and conceptual BMPs where warranted	$ 8,000					$ 8,000
Training	perform annual training of employees	$ 1,500	$ 1,500	$ 1,500	$ 1,500	$ 1,500	$ 1,500
Monitoring							
Wet Weather Analysis	200 outfalls per year, 8 outfalls per day, (analytical includes ammonia, chlorine, conductivity, E. Coli or enterococcus, pH, potassium, surfactants, temperature, turbidity)		$ 128,000	$ 128,000	$ 128,000	$ 128,000	$ 128,000
Other Requirements							
Develop measures to minimize impacts to public water supply		$ 1,000					$ 1,000
Prepare annual report			$ 2,500	$ 2,500	$ 2,500	$ 2,500	$ 2,500
TOTAL		**$ 337,500**	**$ 321,000**	**$ 311,000**	**$ 306,000**	**$ 306,000**	**$ 316,000**

Note: Costs assume a consultant is used to provide services.

Future CIP and Maintenance Activities							
							Average Annual Costs Over 5-Year Period (FY12-FY16)
Activity	**Description**	**FY12**	**FY13**	**FY14**	**FY15**	**FY16**	
CAPITAL IMPROVEMENT PROJECTS							
Correct flooding at Shelley Drive and Browning Ave. associated with Old Maid's Brook	Replace culverts to correct flooding on Shelly Drive and Browning Ave. Includes design, permitting and construction.	$ 185,400					$ 37,080
Correct flooding at Northeastern Blvd/Murphy Drive	Install additional detention and replace infrastructure. Includes final design, permitting and construction.		$ 375,000				$ 75,000
Correct flooding at Courtland/Hall				$ 252,000			$ 50,400
Correct flooding at intersection of Manchester and Charlotte					$ 428,000		$ 85,600
Replace culvert pipe at Main Dunstable Road that is carrying Hale Brook	Top of pipe is missing. Cost includes replacement and cleaning of culvert at location and downstream.		$ 75,000				$ 15,000
Pipe replacement (1% of closed drainage per year)	Replace 1% or 1.3 miles of drainage infrastructure (e.g., pipe and associated structures) at $200/linear foot.	$ 1,372,720	$ 1,407,038	$ 1,442,214	$ 1,478,269	$ 1,515,226	$ 1,443,093
Retrofit existing stormwater BMPs - 1 per year	Most existing BMPs were designed for flow control only, providing little to no water quality treatment. Retrofitting these BMPs to provide water quality treatment is a cost effective way to treat existing runoff. Allowance of $50,000 per year to retrofit existing BMPs.	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000
Install stormwater BMPs throughout City - 1 per year	Allowance of $100,000 per year to install stormwater BMPs based on initial TMDL evaluation and evaluation of City properties.	$ 100,000	$ 100,000	$ 100,000	$ 100,000	$ 100,000	$ 100,000
STORMWATER FEE MANAGEMENT & STAFF							
Stormwater utility implementation and administration	Refined analysis to set up rates; set up billing; ongoing administration.	$ 100,000	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 24,000
Staff person	Track and enforce O&M reporting and maintenance requirements, perform inspections at construction sites, inspect city-owned BMPs, assist with Phase II implementation.	$ 60,000	$ 60,000	$ 60,000	$ 60,000	$ 60,000	$ 60,000
ONGOING MAINTENANCE							
Maintain existing stormwater BMPs	Annually clean/mow 43 City-owned BMPs (detention ponds and treatment structures).	$ 22,000	$ 22,000	$ 22,000	$ 22,000	$ 22,000	$ 22,000
Clean stormwater outfalls of heavy sediment and debris	Allowance to clean outfalls and dispose of residuals	$ 20,000	$ 20,000	$ 20,000	$ 20,000	$ 20,000	$ 20,000
TOTAL		**$ 1,910,120**	**$ 2,114,038**	**$ 1,951,214**	**$ 2,163,269**	**$ 1,772,226**	**$ 1,982,173**

Appendix C
Impervious Areas by Land Use

Summary of Impervious Area by LandUse				
	Number of Parcels	Total Impervious Surface for All Parcels (s.f.)	Average Impervious Surface for All Parcels (s.f.)	Percent of City-wide Impervious Area
Residential	18,232	64,275,244	3,525	43%
Commercial-Industrial	1,700	64,813,584	38,126	43%
Current Use	78	927,070	11,886	1%
Government	427	21,112,496	49,444	14%
Total	20,437	151,128,394		100%

Residential Property Information				
	Zoning Code	Number of Residential Parcels	Total Impervious Surface for All Residential Parcels (s.f.)	Average Impervious Surface for All Residential Parcels (s.f.)
MUNICIPAL ZONING CATEGORY				
A Urban Residence	R-A	3,969	10,318,983	2600
Suburban Residence	R-9	6,638	20,912,753	3150
B Urban Residence	R-B	2,728	6,329,304	2320
Suburban Residence	R-18	1,924	8,757,356	4552
C Urban Residence	R-C	1,353	4,120,314	3045
Suburban Residence	R-30	549	3,080,609	5611
Rural Residence	R-40	593	8,051,249	13577
General Business	GB	23	257,695	11204
Highway Business	HB	27	594,349	22013
Local Business	LB	70	158,514	2264
General Industrial	GI	176	366,022	2080
General Industrial/Mixed Use	GI/MU	8	17,944	2243
Park Industrial	PI	62	1,022,015	16484
Airport Industrial	AI	26	104,789	4030
Downtown	D-1	61	138,732	2274
Downtown	D-3	25	44,616	1785
TOTALS		**18,232**	**64,275,244**	
AVERAGE			3,525	

Commercial/Industrial Property Information				
	Zoning Code	Number of Business Parcels	Total Impervious Surface for All Commercial/Industrial Parcels (s.f.)	Average Impervious Surface for All Commercial/Industrial Parcels (s.f.)
MUNICIPAL ZONING CATEGORY				
A Urban Residence	R-A	99	914,806	9240
Suburban Residence	R-9	38	3,086,960	81236
B Urban Residence	R-B	121	1,714,673	14171
Suburban Residence	R-18	29	2,726,142	94005
C Urban Residence	R-C	295	5,827,305	19754
Suburban Residence	R-30	13	2,240,357	172335
Rural Residence	R-40	19	911,294	47963
General Business	GB	159	11,432,628	71903
Highway Business	HB	139	8,979,591	64601
Local Business	LB	64	1,376,920	21514
General Industrial	GI	144	2,609,474	18121
General Industrial/Mixed Use	GI/MU	47	1,342,180	28557
Park Industrial	PI	183	16,141,288	88204
Airport Industrial	AI	89	3,869,310	43475
Downtown	D-1	217	1,314,547	6058
Downtown	D-3	44	326,109	7412
TOTALS		**1,700**	**64,813,584**	
AVERAGE			38,126	

Note: Includes electric, gas, water and mobile homes.

Current Use Property Information				
	Zoning Code	Number of Industrial Parcels	Total Impervious Surface for All Industrial Parcels (s.f.)	Average Impervious Surface for All Industrial Parcels (s.f.)
MUNICIPAL ZONING CATEGORY				
A Urban Residence	R-A	3	10,603	3534
Suburban Residence	R-9	1	-	0
B Urban Residence	R-B	1	-	0
Suburban Residence	R-18	4	58,011	14503
C Urban Residence	R-C	8	6,344	793
Suburban Residence	R-30	15	260,582	17372
Rural Residence	R-40	37	511,621	13828
General Business	GB			
Highway Business	HB			
Local Business	LB			
General Industrial	GI			
General Industrial/Mixed Use	GI/MU			
Park Industrial	PI	9	79,909	8879
Airport Industrial	AI			
Downtown	D-1			
Downtown	D-3			
TOTALS		**78**	**927,070**	
AVERAGE			11,886	

Government Property Information (Local, State, and Federal Lands)				
	Zoning Code	Number of Government Parcels	Total Impervious Surface for All Government Parcels (s.f.)	Average Impervious Surface for All Government Parcels (s.f.)
MUNICIPAL ZONING CATEGORY				
A Urban Residence	R-A	53	1,745,790	32939
Suburban Residence	R-9	73	4,036,719	55298
B Urban Residence	R-B	36	1,256,151	34893
Suburban Residence	R-18	28	995,189	35542
C Urban Residence	R-C	68	1,336,953	19661
Suburban Residence	R-30	19	2,683,617	141243
Rural Residence	R-40	30	444,786	14826
General Business	GB	9	248,633	27626
Highway Business	HB	7	197,465	28209
Local Business	LB	8	224,381	28048
General Industrial	GI	21	308,935	14711
General Industrial/Mixed Use	GI/MU	10	251,673	25167
Park Industrial	PI	18	2,911,257	161737
Airport Industrial	AI	8	4,029,126	503641
Downtown	D-1	37	415,275	11224
Downtown	D-3	2	26,546	13273
TOTALS		**427**	**21,112,496**	
AVERAGE			49,444	

Appendix D
Fee Calculation Worksheet

Fee Calculation Worksheet

Summary of Impervious Area by Land Use				
	Number of Parcels	Total Impervious Surface for All Parcels (s.f.)	Average Impervious Surface for All Parcels (s.f.)	Percent of City-wide Impervious Area
Residential	18,232	64,275,244	3,525	43%
Commercial-Industrial	1,700	64,813,584	38,126	43%
Current Use	78	927,070	11,886	1%
Government	427	21,112,496	49,444	14%
Total	20,437	151,128,394		100%

1 Equivalent Residential Unit (ERU) = Average Residential Impervious Area

1 ERU = 3,525 square feet

Total Non-Residential Impervious Area

Commercial-Industrial =	64,813,584	square feet
Current Use =	927,070	square feet
Government =	21,112,496	square feet
Total	86,853,150	square feet

Number of ERUs in Nashua

Residential ERUs =	18,232	ERUs	
Non-Residential ERUs =	24,636	ERUs	(86,853,150 square feet ÷ 3,525 square feet/ERU)
Total =	42,868	ERUs	
Average Non-Residential ERUs per Parcel =	11		(24,636 ERUs ÷ 2,205 non-residential parcels)

Estimated Residential Stormwater Fee ($/ERU/year)		
	Estimated Average Annual Costs	**Stormwater Fee ($/ERU/year)[1]**
Existing Stormwater Program Costs	$ 750,000	$ 18
Existing Plus NPDES Compliance	$ 1,070,000	$ 26
Existing Plus NPDES Compliance & Future CIP & Maintenance[2]	$ 3,050,000	$ 73

[1]All fees are adjusted to account for 3% revenue losses expected with a credit program.

[2]Future CIP & Maintenance costs include $1.4 million per year to replace 1% of the drainage infrastructure annually. The stormwater fee without these improvements is $38/ERU/year.

Estimated Non-Residential Stormwater Fee			
	Stormwater Fee ($/ERU/year)	**Average Non-Residential ERUs/Parcel**	**Average Non-Residential Stormwater Fee per Year[1]**
Existing Stormwater Program Costs	$ 18	11	$ 201
Existing Plus NPDES Compliance	$ 26	11	$ 287
Existing Plus NPDES Compliance & Future CIP & Maintenance[2]	$ 73	11	$ 819

Appendix E
Stormwater Fee Development Workshops Materials
(agendas, presentations, meeting minutes)

MEETING MEMO

ATTENDEES:	Steve Dookran, DPW, City Engineer, City of Nashua Lisa Fauteux, DPW, Director, City of Nashua Amy Gill, DPW, Engineering, City of Nashua Kathy Hersh, CDD, Director, City of Nashua Carolyn O'Conner, Financial Services, Financial Manager, City of Nashua Michael Gallagher, Public Citizen Jillian McCarthy, Environmentalist IV, Water Division, NHDES Barbara McMillan, Principal Planner, Water Division, NHDES Rebecca Balke, CEI Eileen Pannetier, CEI
FROM:	Rebecca Balke, CEI
SUBJECT:	Nashua Stormwater Fee Feasibility Workshop #1
JOB NUMBER:	162-9
MEETING DATE:	July 20, 2011

The first of three workshop meetings was held to discuss the development of a stormwater fee in the City of Nashua. The purpose of the first meeting was to introduce stormwater concepts, the problems stormwater cause, associated responsibilities and costs of the City, and options for funding stormwater management needs, providing the group with some background information before getting into the details of what a stormwater fee would look like.

CEI prepared a presentation following the meeting agenda. Copies of the agenda and presentation are attached with a brief summary of key presentation points provided below.

Key Points of the Presentation

- Older developments that replaced forested lands with buildings and pavement have over time increased stormwater runoff, which in turn causes flooding, potholes, poor water quality (increased pollutant loads, warmer waters) and decline in recreational uses.
- Nashua has several waters on the 303d list of impaired waters. This is a list of waters that are polluted and need attention.
- Nashua is regulated under the National Pollutant Discharge Elimination System (NPDES) permit program and must perform specific actions to comply with this permit. The City has limited staff and budget to comply!
- A new NPDES permit is anticipated to come out in 2011 and the draft reveals even more and stricter requirements that will cost the City more to comply.
- Current stormwater responsibilities are spread between Engineering, Street, Wastewater and Community Development departments in the City and funded through a combination of the general fund (taxes) and through sewer rates.
- The concept of a stormwater fee was introduced – its primary advantage is that it provided a stable source of funding that is dedicated to stormwater (e.g., can't be transferred for use elsewhere) and offers a fairer distribution of costs based on the property owner's contribution to stormwater.

The above text summarizes the events of the meeting at the above date and time.
If this information is not correct, please contact me as soon as possible.

- More than 500 communities in the United Stated have established stormwater fees. Several Massachusetts communities have established fees and several towns in New England are working on fee systems.
- Options for a fee system were briefly discussed and will be the focus of the next meeting.
- Public outreach opportunities were also discussed briefly with the introduction of the concept of a theme to get resident buy in.

Discussion Points

- Mr. Gallagher asked whether some communities have put the entire fee on commercial businesses or the entire fee on residences or exempted/credited certain areas because they were trying to attract businesses to that area. Ms. Pannetier responded that yes, the rates could be set to favor one sector such as to protect business. The City has flexibility in how they would like to set it up and what credits they would like to offer, it just needs to be fair and equitable so it cannot be challenged.
- Mr. Gallagher would like to see the budget figures for what the City currently spends on stormwater management and what is anticipated to be spent based on the new permit. He questioned whether the existing costs would be taken out of the general fund if a fee were established and suggested that it may be "cleaner" and more acceptable to voters if the fee only covered the additional anticipated costs with the new permit. This can be discussed more at the next meeting.
- There was discussion of handing out the draft feasibility study report before the next meeting. This would provide the group with more background information to facilitate future discussions. CEI also suggested distributing a Question and Answer sheet that addresses commonly asked questions misconceptions about stormwater fees.
- Ms. Hersh suggested that an Alderman attend the workgroup meetings so they are familiar with the concept before it comes to them. Mr. Dookran pointed out that the Aldermen approved the grant and CEI contract and is aware of the project and is kept up to date during internal monthly meetings.
- There was a question on the link between the NPDES Phase II Permit and Total Maximum Daily Load (TMDL) reports and compliance. The NPDES Phase II Permit is being used as a tool to get communities to implement and comply with TMDLs. The NPDES Phase II Permit is applied to communities based on population densities, regardless of the water quality within that community.

Next Steps

The next meeting is scheduled for August 3, 2011 from 2:00 to 4:00 pm. Rate options and billing methods will be discussed at this meeting.

The above text summarizes the events of the meeting at the above date and time.
If this information is not correct, please contact me as soon as possible.

Agenda

Nashua Stormwater Fee Feasibility Study

Comprehensive Environmental Inc, 21 Depot Street, Merrimack, NH 03054 *Tel: (603) 424-8444*

Date:	Wednesday July 20, 2011
Time:	2:00 pm
Location:	9 Riverside Street, Nashua, NH
Re:	Workshop #1

Introductions

Overview of Project and Meetings

Meeting #1: Broad Overview

1. **Why do we have an issue?**
   (a) Stormwater causes problems
   (b) Citizens expectations are not being met:
      (i) No flooding
      (ii) No potholes, well maintained streets
      (iii) Fishing/swimming
      (iv) Other recreation that depends on water quality
   (c) Permit requirements are changing
      (i) 2003 mandate not being fully met
      (ii) More, much stricter, mandates are on the way

2. **How can we deal with the issue?**
   (a) Separate stormwater fee
   (b) Add costs to sewer bill
   (c) Pay for in tax rate
   (d) No action

Agenda

Nashua Stormwater Fee Feasibility Study

Comprehensive Environmental Inc, 21 Depot Street, Merrimack, NH 03054 *Tel: (603) 424-8444*

Date:	Wednesday July 20, 2011
Time:	2:00 pm
Location:	9 Riverside Street, Nashua, NH
Re:	Workshop #1

3. **Implementation Choices**
   (a) Rate options
   (b) Billing methods
   (c) Public education options
      (i) Create a theme – Mine Falls Park
      (ii) News articles
      (iii) Presentations to public and private groups

Meeting #2: Implementation Choices

Meeting #3: Outreach Options & Plan of Action

Acknowledgements

Funding for this project was provided in part by a Watershed Assistance grant from the NH Department of Environmental Services with Clean Water Act Section 319 funds from the U. S. Environmental Protection Agency

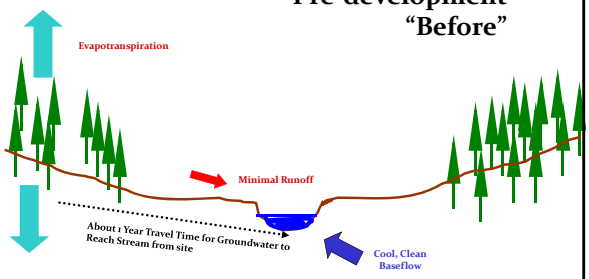
Overview

- Meeting #1 Overview
  - What is the issue and why?
  - Methods to deal with the issue?
  - Implementation Choices
- Meeting #2 Implementation Choices
- Meeting #3 Outreach Options & Plan of Action

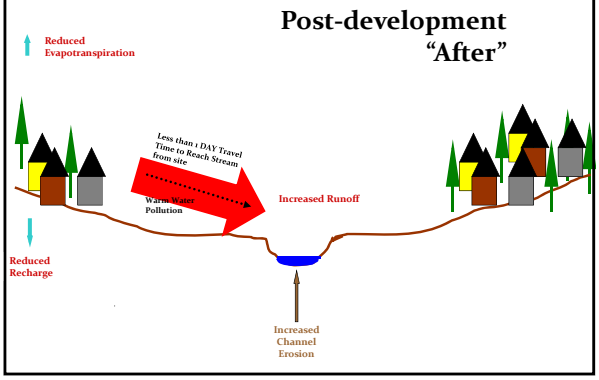
Introduction to Stormwater

Note: The City of Nashua has progressive stormwater standards that reduce the impacts of new developments on the environment. However, there are still considerable impacts from pre-existing structures.

Pre-development "Before"



Post-development "After"



The Issues

- Stormwater creates many problems
- Flooding, potholes and other road damage, and water quality issues result from stormwater
- Permit requirements are changing

Problems

Flooding:

- Damages roads and businesses, homes
- Creates access problems and business losses

Potholes:

- Undesirable travel conditions

"Impaired" Waters

- Nashua River
- Harris Pond/Pennichuck Brook
- Bowers Pond
- Holt Pond
- Lyle Reed Brook
- Muddy Brook
- Unnamed Brook to Pennichuck Brook
- Merrimack River
- Salmon Brook

Permit Requirements Are Changing

2003 NPDES Mandate

- 1972 Clean Water Act established the NPDES program
  - Point sources (industrial and municipal discharges) first
  - Non-point sources (stormwater) came later
- 1998 Large cities covered under individual permits
- 2003 EPA established NPDES Phase II for small Municipal Separate Storm Sewer Systems (MS4s)
- Nashua is classified as a 'Small MS4' (<100,000 pop.) and is located partially/fully in an urbanized area

Other Regulated MS4s in NH

2003 NPDES Mandate 6 Minimum Measures

1. Public education and outreach
2. Public involvement and participation
3. Illicit discharge detection and elimination

2003 NPDES Mandate 6 Minimum Measures

4. Construction site stormwater runoff control
5. Post-construction site stormwater runoff control
6. Pollution prevention and good housekeeping in municipal operations
   - Catch basin cleaning
   - Infrastructure maintenance

Staff & budget limitations limit the level of stormwater management activities that were/are performed.

Existing Infrastructure & Maintenance

- 8,069 catch basins – clean 400/year
- 2,931 manholes – clean as needed
- 1,191 headwalls – dredge sediments as needed
- 253 culverts – clean as needed
- 130 miles of drain pipe – clean as needed
- 807 outfalls – clean as needed
- 35 detention ponds – no maintenance
- 8 stormwater treatment facilities – no maintenance

Stormwater Responsibilities and Funding Mechanism by City Department		
Department	**Responsibility**	**Funding Mechanism**
Engineering Department	• NPDES Phase II Compliance – SWMP implementation and reporting • Review subdivision and site • Inspection of construction projects	General Fund
Street Department	• Catch basin repairs • Dredging headwalls • Replacing drainage pipes (≤10' deep) • Street sweeping – 2x/year with downtown more frequently	General Fund
Wastewater Treatment Facility	• Catch basin cleaning • Stormwater pipe flushing and root removal • Laboratory analysis of outfall samples for IDDE • Disposal of catch basin cleanings	Sewer Rates
Community Development – Planning Department	• Review, accept and track O&M Plans and maintenance records required under 1998 Stormwater Ordinance • Review development plans • Inspect BMPs during construction	General Fund

Summary 2011 NPDES Mandate

More specific, stricter mandates

1. Targeted public education
2. More mapping – catch basins, manholes, pipes, treatment facilities
3. Written IDDE program / rank drainage systems
4. Dry weather screening -- all outfalls
5. Wet weather monitoring -- all outfalls
6. Written procedures for site plan review, inspections/enforcement
7. Procedures for O&M on stormwater BMPs

Summary 2011 NPDES Mandate

More specific, stricter mandates

8. Assessment of regulations to allow Low Impact Development (LID) and green infrastructure
9. Estimate Directly Connected Impervious Area (DCIA)
10. Written O&M for parks, building and facilities, vehicles and equipment, road way and sewer, and salt storage, etc.
11. Written Stormwater Pollution Prevention Plans (SWPPPs) for all facilities where maintenance occurs
12. Comply with Total Maximum Daily Loads (TMDLs)

How Can We Deal With the Issue?

Now

- General fund
- Sewer Rates
- Grants

Options

- All General Fund
- ~~All Grants and loans~~
- All Sewer rates
- Separate stormwater fee
- Continue as is

General Fund

- Competes with other City expenses
- Not always reliable as funds can be used for more visible projects and expenses
- Tax exempt entities pay nothing
- Residents bear the greatest burden while commercial/industrial entities pay little in spite of having the greatest impact

Grants and Loans

- "Free" money or low interest loans
- Only good for specific one-time implementation projects
- Cannot be used for ongoing maintenance
- Limited funds available and highly competitive
- Not enough funds and no funds for operations and maintenance

Sewer Rates

- Sewer costs are closely related to stormwater and budgets for stormwater could be included
- Water use not related to stormwater generation, so there would be some inequity

Separate Stormwater Fees

- Stable source of funding dedicated to stormwater
- Allow for comprehensive long-term programs
- Fairer distribution of costs – based on property owner contribution to stormwater
- Increase awareness of stormwater impacts & need to address them
- Incentives encourage better stormwater management

More than 500 communities have established stormwater fees.

Established Stormwater Fees Nearby

Towns with Fees

- Chicopee, MA
- Reading, MA
- Newton, MA
- Gloucester, MA
- Franklin, MA
- S. Burlington, VT
- Augusta, ME
- Lewiston, ME

Towns working on Fee systems

- Manchester, NH
- Portsmouth, NH
- Northampton, MA
- Bellingham, MA
- Many others

No Action – Costs?

- Potential fines/sanctions from EPA
- Increased repair / replacement costs from avoided maintenance (buried drainage pipes and failed/collapsed roads)
- Increased pollution
- Decreased recreational opportunities
- Increased flooding of public/private properties
- Potential lawsuits due to increased flooding

Fee Rate Structure Options

Fees Must:

- Be reasonable and directly related to cost of services
- Properties charged must receive proportional benefit
- Structure must have a voluntary aspect (credit or abatement)

Impervious Area

- Simplest, most common
- Define Equivalent Residential Unit (ERU) representing average impervious area for single residential unit
- Typically assess flat fee to residences, but could be tiered
- Non-residential is impervious area divided by residential ERU

Commercial/Industrial Fees

- Used impervious area and equivalent residential units (ERUs).

Abatements

- Credits confirm the voluntary aspect of the fee system
- Often limited to 50% of the fee
- Recommend including design standards to earn the abatement

Billing Methods

Billing Options

- Property tax
- Sewer
- Separate Stormwater Billing

Recommend Using Sewer Bill

- Uses existing software
- Billed more frequently than tax bill
- Stormwater fee similar in concept to a sewer fee – pay for your contribution/usage

Public Education Options

Public Education

- Build consensus
- Communicate “what’s in it for me?” to residents
- News articles, presentations, stakeholder groups

Next Steps

- Committee to review report
- Meeting #2 focuses on options
- Meeting #3 focuses on public outreach

MEETING MEMO

ATTENDEES:	Dory Clarke, Legal, Deputy Corp Counsel, City of Nashua Steve Dookran, DPW, City Engineer, City of Nashua Lisa Fauteux, DPW, Director, City of Nashua Amy Gill, DPW, Engineering, City of Nashua Kathy Hersh, CDD, Director, City of Nashua Carolyn O'Conner, Financial Services, Financial Manager, City of Nashua Michael Gallagher, Public Citizen Jillian McCarthy, NHDES Watershed Assistance Section Eric Williams, Supervisor, NHDES Watershed Assistance Section Rebecca Balke, CEI Eileen Pannetier, CEI
FROM:	Rebecca Balke, CEI
SUBJECT:	Nashua Stormwater Fee Feasibility Workshop #2
JOB NUMBER:	162-9
MEETING DATE:	August 3, 2011

The second of three workshop meetings was held to discuss the development of a stormwater fee in the City of Nashua. The purpose of the second meeting was to discuss City budgets and the methodology for developing the stormwater fee rate.

CEI prepared a presentation and handed out a Questions and Answers (Q&A) fact sheet that addresses some of the most commonly asked questions associated with developing a stormwater fee. Copies of the presentation and Q&A are attached with a brief summary of key presentation points provided below, followed by a summary of discussion points.

Key Points of the Presentation

- Current stormwater responsibilities are spread between Engineering, Street, Wastewater and Community Development departments in the City and funded through a combination of the general fund (taxes) and through sewer rates.
- The existing stormwater operating budget was broken into personnel and capital costs through discussions with City staff. The draft budget figures are "light" as some components are missing. These missing components will be added to the final figures.
- Details of the upcoming NPDES Phase II permit requirements were presented to explain the anticipated increased annual costs.
- Other recommendations were also presented. Other recommendations represent items that are currently not required under the existing permit, but that may be required in the future and the City should be doing to maintain its infrastructure and meet water quality objectives.
- The methodology used to develop the rate was presented, along with billing options.
- Several questions were posed to facilitate discussions on the next steps to move the stormwater fee forward.

The above text summarizes the events of the meeting at the above date and time.
If this information is not correct, please contact me as soon as possible.

MEETING MEMO

Discussion Points

Legal Authority

Legislation enabling a stormwater fee was passed a couple of years ago. CEI will send a copy to the City.

Rate Methodology

Impervious Area

- What does the "Current Use" land use represent in the impervious area calculations used to estimate the rate? The current use properties are those properties that receive a tax benefit by preserving a large portion of their property as undeveloped. It may include a mix of residential, commercial and industrial properties. Since the stormwater fee is based on the total impervious area in the City, it does not significantly impact the base fee calculated in the feasibility study.
- What is included under "Government" properties? These are properties that are exempt from paying property taxes and include municipally owned properties and federal government properties.

Stormwater Program Budgets

- Someone commented that the existing stormwater program costs seem low. The draft figures are not yet complete and are expected to increase as the remaining budget information comes in. Still waiting for capital expenditures from the Wastewater Department. The costs also do not include proposed drainage improvements, such as culvert replacements. CEI will look at incorporating this information into the final figures and report. City staff also noted that DPW gets a lot of drainage complaints and that stormwater related work is often lumped in with other work such as roadway repair, as components of the drainage system may be repaired during road repairs.
- The Stormwater Fee is lower than fees in other communities, partly because the budget information is not yet complete and partly because there is a greater "economy of scale" in a City like Nashua, with the fee spread over a greater population and business base.
- The fee as presented does not account for possible abatements that the City may offer businesses. The cost savings to businesses from abatements will need to be spread to the remaining customers, thus will impact the base fee. CEI can recalculate the fee in the final report to account for an anticipated abatement factor.

Next Steps

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MEETING MEMO

Public Education – Demonstrating the Need for a Stormwater Fee

- Is there a relationship between stormwater runoff/raw water quality and drinking water treatment costs?
    - Cyanobacteria blooms do increase treatment costs as they are more difficult to treat, requiring more chemical use. Cyanobacteria blooms can be tied to water quality and stormwater runoff, as stormwater runoff carries nutrients into the surface water, providing a food source for the cyanobacteria and other algae.
    - Pennichuck Water Works developed a watershed restoration plan outlining a 10-year capital improvement program that targets water quality improvements, including stormwater management.
- The draft fee shows $7 increase for NPDES compliance. Residents will want to know what the $7 is paying for and what improvements they can expect to see. This could be accomplished with detailed tracking of the budget and what it was spent on.
- When will waters become fishable/swimmable?
    - This is difficult to predict and can depend on how targeted the program is to address specific areas.
    - People that have lived in the City for a long time will not believe that the Nashua River can ever be cleaned up to allow swimming. City officials pointed out that sediment in the river contains PCBs so even if the water quality improves, can't touch the sediments. CEI commented that PCBs are not mobile and do not penetrate through the skin. If there were certain areas desirable for beaches, these would be dredged to remove contaminated sediments in these areas, eliminating this exposure pathway.
    - Some residents may already consider the waters fishable, even though they may only be catching sunfish. It depends on an individual's definition of fishable. Some define it as catch and release no matter what the species (e.g., sunfish).
- NPDES targets public property, how is private property addressed?
    - NHDES commented that stormwater should be thought of the same as wastewater. The City requires pre-treatment standards for wastewater discharges to its plant and Phase II is setup to require pre-treatment of stormwater before it enters the municipal storm sewer system by requiring municipalities to regulate stormwater management on development and redevelopment projects.
    - EPA/DEP recognize that more work is needed to address impacts of existing properties and this will likely be coming in the future.
- The "other recommendations or additional needs" presented in the draft report should be included in the NPDES permit compliance requirements since they really should be performed to comply and meet water quality objectives and are likely to be required in the future.
- There was discussion on whether or not to separate the water quality benefits from the permit requirements. One school of thought is that people don't care about the permit, but will care about water quality improvement therefore may want to emphasize the water quality improvements and de-emphasize the permit requirements

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and show separate budgets/costs for each, as is currently presented in the draft (NPDES permit requirements are called out with other recommendations called out which focus on water quality improvements). The other school of thought is that many people in Nashua don't care about the water. They don't use it now and never plan to, thus it may be better to present the fee as what is necessary to comply with regulations and then highlight the benefits that come along with doing these things (e.g., improved water quality, roadways, flooding, etc.).

- Public education should include:
    - Target a broad audience – identify six different reasons to have a stormwater fee to address the range of concerns. These may include: fishing; boating; aesthetics; drinking water; flooding; and water quality.
    - Defining catch basins, what they do and how they are not connected to the sewer system and treatment plant. Many people still refer to catch basins as sewers and don't realize the difference between a stormwater drain and the sewer system.
    - The visuals from the first presentation should be used in a public forum to provide some of the basics and help explain why stormwater is a problem that needs to be addressed.
    - Highlight benefits of a stormwater fee and improved maintenance of the drainage system, including water quality improvements, reduced flooding, better roadways.
    - Tie invasive species control into the fee. People are familiar with invasive species as they are highly visible and impede recreational activities such as canoeing.
    - Explain the similarities between a stormwater fee and sewer fee.
    - Compare the fee to other communities to show it is reasonable and lower than other places.
    - Show the cost of inaction. How will the City pay for stormwater compliance, maintenance, etc. without a fee?
    - Show the anticipated return on investment.
    - Show a comparison of the stormwater costs paid through taxes vs. a stormwater fee. Highlight the reduction to property taxes and wastewater sewer rates from moving existing stormwater expenses into the stormwater fee.
    - Start by meeting with the Aldermen separately and getting at least two Aldermen on board to help shepherd it through. This was successful with the Broad Street Parkway project. One of the Aldermen was originally against the project and then turned out to be one of the biggest advocates. However, elections are coming up so it may be better to wait until January to involve the Alderman.
    - Possibly tie into conservation lands and corridors and actions of the Conservation Commission to promote recreation on these properties.
    - Provide a map showing the stormwater drainage system and include City owned properties, historic beaches and hazardous waste properties.

<u>Final Report</u>

The above text summarizes the events of the meeting at the above date and time.
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MEETING MEMO

The NHDES contract expires in December 2011 and cannot be extended. The City indicated that it may not be able to present the report to the Aldermen this year, so may have to break this out of the grant contract. CEI will finalize the report to include the meetings and recommend moving forward with the public education in January after election.

Workgroup Meeting #3 Schedule

The next meeting is scheduled for August 17, 2011 from 2:00 to 4:00 pm. A public education outreach plan will be discussed along with the steps needed to move a stormwater fee forward.

The above text summarizes the events of the meeting at the above date and time.
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Acknowledgements

Funding for this project was provided in part by a Watershed Assistance grant from the NH Department of Environmental Services with Clean Water Act Section 319 funds from the U. S. Environmental Protection Agency

Overview

- Meeting #2 Overview:
  - Existing stormwater program & costs
  - Future needs and costs
  - Developing the rate
  - Billing options
- Next Steps

Stormwater Responsibilities and Funding Mechanism by City Department

Department	Responsibility	Funding Mechanism
Engineering Department	• NPDES Phase II Compliance – SWMP implementation and reporting • Review subdivision and site • Inspection of construction projects	General Fund
Street Department	• Catch basin repairs • Dredging headwalls • Replacing drainage pipes (≤10' deep) • Street sweeping – 2x/year with downtown more frequently	General Fund
Wastewater Treatment Facility	• Catch basin cleaning • Stormwater pipe flushing and root removal • Laboratory analysis of outfall samples for IDDE • Disposal of catch basin cleanings	Sewer Rates
Community Development – Planning Department	• Review, accept and track O&M Plans and maintenance records required under 1998 Stormwater Ordinance • Review development plans • Inspect BMPs during construction	General Fund

Existing Infrastructure & Maintenance

- 8,069 catch basins – clean 400/year; repair ~120/year
- 2,931 manholes – clean as needed
- 1,191 headwalls – dredge sediments as needed
- 253 culverts – clean as needed
- 130 miles of drain pipe – clean as needed
- 807 outfalls – clean as needed
- 35 detention ponds – no maintenance
- 8 stormwater treatment facilities – no maintenance

Existing Stormwater Program Costs[1]

Department	Personnel Costs[2]	Capital Costs[3]	Total Existing Budget
Engineering Department	$ 126,000	$ 20,000	$ 146,000
Street Department	$ 101,000	$ 139,000	$ 240,000
Wastewater Treatment Facility	$ 166,000	$ 46,000	$ 212,000
Community Development - Planning Department	$ 14,000	$ -	$ 14,000
Financial Services - Assessors & GIS	$ 16,000	$ 3,000	$ 19,000
Total	$ 423,000	$ 208,000	$ 631,000

[1]Existing Stormwater Program Costs represent an average annual cost between FY11 and FY16, which accounts for a 2.5% increase per year.
[2]Personnel costs include staff salaries and all fringe benefits.
[3]Capital costs include utility service costs (e.g., electricity, water heating), office supplies and equipment, general maintenance, educational training, membership dues, minor equipment (e.g., survey equipment), machinery and equipment (e.g., street sweepers), fleet maintenance, vehicle fuels, construction materials for drainage improvements (e.g., catch basin frames and covers, pipe, asphalt, cement, gravel), residuals disposal.

Future Needs – NPDES MS4 Requirements

Future Needs - Targeted Public Education

- Must target 4 audiences:
  - Residents
  - Businesses, institutions and commercial facilities
  - Developers
  - Industrial facilities
- Target a minimum of 2 educational messages to each audience over the permit term
- Distribute audience materials with at least 1 year in between

Future Needs – Stormwater Management Plan (SWMP)

- Notice of Intent
  - Endangered species & historic sites review
  - Discharges to impaired waters
  - Proposed actions
- SWMP
- Responsibilities
- Listing of receiving waters
- Detailed plan of action to comply

Future Needs - More Mapping

- Map MS4 system, not just outfalls:
  - Pipes and interconnections with other MS4s
  - Catch basins and manholes
  - Treatment structures
  - Resource waters
  - Receiving waters, etc.
- Inventory 200 outfalls each year
- Sample any flowing outfalls

Future Needs - Illicit Discharge Detection and Elimination (IDDE) Program

- Prepare written plan outlining:
  - Prohibition of sanitary sewer overflows (SSO's) to the MS4
  - Personnel responsibilities
  - Prioritization & ranking of catchment areas for IDDE
  - Process for documenting and verifying
  - Appropriate methods to correct illicit discharges
  - Tracking progress of IDDE progress
- Perform annual employee training

Future Needs - Prioritization & Ranking of Catchment Areas

- Delineate all outfalls by catchment
- Outline problem catchment areas, or areas with known or suspected illicit discharges
- Rank other catchments as "high", "medium", or "low" potential to have illicit discharges
- Prioritize all catchments for illicit discharge

Future Needs - Wet Weather Screening

- Conduct wet weather sampling on 200 outfalls per year
- Sample for:
  - Conductivity
  - Bacteria
  - Chlorine
  - Potassium
  - Ammonia
  - pH
  - Surfactants
  - Temperature
  - Turbidity
- Also sample for any approved TMDL parameters

Future Needs - Procedures for Plan Review, Inspections/Enforcement

- Must cover:
  - Site design
  - Planned construction site operations
  - Construction stormwater BMPs
  - Post-construction stormwater BMPs
  - Encourage use of LID techniques
- Track number of site reviews, inspections and enforcement actions taken

Future Needs – Regulatory Review

- Develop report assessing current street design and parking lot guidelines
- Develop report assessing green infrastructure
- Develop recommendations & schedule for changes

Future Needs – Impervious Area

- Estimate acres of impervious area (IA) & directly connected impervious area (DCIA) by sub-basin and receiving water
- Update annually

Future Needs – Inventory MS4 Owned Property & Infrastructure

- Identify BMP opportunities to reduce & treat stormwater runoff
- Prioritize & rank
- Report retrofits annually (beginning Year 3)

Future Needs - Procedures for O&M

- Develop written O&M procedures
  - Parks and open space *(pesticides, fertilizers, etc.)*
  - Buildings and facilities *(petroleum, floor drains, etc.)*
  - Vehicles and equipment *(leaks, fueling, etc.)*
  - Roadways and storm systems *(catch basin inspections, cleaning, repairs, street sweeping, etc.)*
- Train personnel

Future Needs - Procedures for O&M

- Roadway and storm systems
  - Clean all catch basins every other year – 4,035/year
  - Sweep streets 2x/year – spring & fall
  - Establish inspection & maintenance frequencies for storm drain system and BMPs - minimum annual inspection

Future Needs - Written SWPPPs for Maintenance Facilities

- Prepare written Stormwater Pollution Prevention Plans for maintenance facilities (e.g., maintenance garages, public works facilities, transfer stations, etc.)
- Must outline:
  - Pollution prevention team
  - Facility description and pollutant sources
  - Stormwater controls
  - Management practices
  - Inspections

Future Needs - TMDL Compliance

- Follow recommendations outlined in the TMDL
- Must not exceed applicable water quality standards
- Implement stormwater BMPs

Other Recommendations

- Costs to set up, implement & maintain a stormwater fee
- Additional staff person – field inspections, tracking & enforcing O&M
- Maintenance of existing 43 City BMPs
- Cleaning of stormwater outfalls
- Installing water quality BMPs
- Retrofitting existing BMPs
- Additional catch basin repair

Future Stormwater Program Costs[1]

Description	Anticipated Yearly Cost
Existing Stormwater Program Costs	$ 630,000 per year
Additional Costs for NPDES Compliance	$ 320,000 per year
Additional Recommended Actions	$ 340,000 per year
Total Program Cost	$ 1,290,000 per year

[1]All costs represent an average annual cost between FY11 and FY16. Existing costs include a 2.5% increase per year increase over the period. NPDES MS4 Requirements include compliance costs for the 5-year permit term.

Funding Options

Now

- General fund
- Sewer Rates
- Grants

Options

- General Fund
- Sewer Rates
- Separate Stormwater Fee
- Continue as is (combination)

Developing the Rate

Impervious Area by Land Use

	Number of Parcels	Total Impervious Surface for All Parcels - square feet (s.f.)
Residential	18,232	64,275,244
Commercial-Industrial	1,700	64,813,584
Current Use	78	927,070
Government	427	21,112,496
Total	20,437	151,128,394

Residential ERUs

1 Equivalent Residential Unit (ERU) = Average Residential Impervious Area

1 ERU = 64,275,244 s.f. / 18,232 parcels = 3,525 s.f.

Residential ERUs = 18,232 ERUs

Non-Residential ERUs

Total Non-Residential Impervious Area

Commercial-Industrial =	64,813,584 s.f.
Current Use =	927,070 s.f.
Government =	21,112,496 s.f.
Total =	86,853,150 s.f.

Non-Residential ERUs = 86,853,150 s.f. / 3,525 s.f./ERU = 24,636

Residential Fee Calculation

Total ERUs

Non-Residential ERUs =	24,636
Residential ERUs =	18,232
Total =	42,868

Residential Fee Calculation

Total Annual Program Cost / Total ERUs ($/ERU/year)

$1,290,000 / 42,868 = $30/ERU/year

Estimated Residential Stormwater Fee ($/ERU/year)

	Estimated Average Annual Costs	Stormwater Fee ($/ERU/year)
Existing Stormwater Program Costs	$630,000	$ 15
Additional Costs for NPDES Compliance	$320,000	$ 7
Additional Recommended Actions	$340,000	$ 8
Existing Program Plus NPDES Compliance & Recommended Actions	$1,290,000	$ 30

Non-Residential Fees

- Example Calculation
  - Impervious Area = 39,389 s.f. (average parcel size)
  - #ERUs = 39,389/3,525 = 11 ERUs
  - Annual Stormwater Fee = $30/ERU/year X 11 ERUs = $330

Abatements

- Credits confirm the voluntary aspect of the fee system
- Often limited to 50% of the fee
- Recommend including design standards to earn the abatement

Billing Options

- Property tax
- Sewer
- Separate stormwater billing
- Individual line item on sewer bill recommended:
  - Existing software
  - Billed more frequently than property tax
  - Similar in concept to sewer fee – pay for your share

Next Steps

1. Should Nashua move forward with a stormwater fee or another alternative?
   - Fee?
   - Increase taxes?
   - No action?

Next Steps (continued)

2. If so, how do we demonstrate:
   a. that stormwater is a problem?
      - Photos of problems?
      - Map of stormwater outfalls to Nashua River & others?
      - Pollutant load calculations comparing "with stormwater improvements" to "without stormwater improvements"?
      - Water quality results showing "what quality should be" compared to "what it is"?
      - Other ideas?

Next Steps (continued)

   b. that surface waters really can become fishable/swimmable?
      - Examples where water quality has been restored?
      - Others?

Next Steps (continued)

c. that the fee will only be used for stormwater management/improvements and is worth it?
   - Provide detailed budgets?
   - Provide accounting of where money was spent each year?
   - Document improvements – flooding fixes, pothole fixes, water quality improvements?

Next Steps (continued)

3. What else do people need to know to go along with a fee increase?

Next Steps (continued)

4. How should the fee be introduced to the public (e.g., components of a public outreach plan)?
   - Messages – stormwater is bad, NPDES compliance, equity, theme?
   - Mailings?
   - Website?
   - Public broadcast?

Summary
The U.S. EPA has identified non-point source runoff (a.k.a. stormwater) as the leading cause of water quality problems in the United States today. Stormwater has been regulated in large cities since the 1990s and smaller communities like Nashua since 2003. . New and much tougher stormwater standards are on the way, and to address them, Nashua is considering developing a stormwater fee. The fee would fund compliance with the rules and address routine maintenance that is outside the current budget. The additional maintenance is needed to protect water quality, the roadways' integrity and to reduce flooding. This Q&A was developed to address some of the most commonly asked questions and concerns raised by the public pertaining to stormwater fees.

1. Are all New Hampshire communities regulated?
   No. Only communities with certain population densities as identified by the U.S. Census are regulated. Refer to the attached map of regulated communities.

2. What has to be done?
   The required actions mandated by EPA include the following key components:
   - public education/outreach and public involvement/participation
   - sampling for illegal or illicit discharges to the drainage system or to waterways
   - elimination of illegal or illicit discharges to the drainage system or to waterways
   - construction site stormwater runoff control
   - post-construction stormwater management
   - maintenance of the drainage system and municipal facilities

3. When does this have to be implemented?
   The current NPDES Phase II permit went into effect in 2003 and requires activities to be completed within the first 5 year permit period (technically expired April 2008). A second 5-year permit is now in draft form.

4. Why is more money needed?
   The funds are needed to improve the City's maintenance of the drainage system, to correct flooding problems and to improve water quality. Several of the City's surface waters are considered "impaired" by NHDES. Most impairments are due to high bacteria and low dissolved oxygen. Stormwater is the biggest factor in causing poor water quality and a lack of fishing and swimming opportunities for residents.

5. Why not cover these costs under the general fund?
   Multiple City expenses compete for funds through the general fund. Funds budgeted for stormwater services under the general fund can be reallocated to other services at any time. There is also inequity in that residences pay the brunt of stormwater services even though businesses typically produce the most stormwater runoff.

6. What would be the advantage of a stormwater fee?
   It is more consistent and fair. Fees are assessed based on the stormwater runoff associated with a particular property based on how much stormwater they generate. Also, a fee brings in landowners not covered by taxes such as state and federally owned properties and non-profits.

7. Won't charging businesses for stormwater cause them to leave Nashua?
   Not likely. Larger businesses locate primarily based on demographics, transportation factors, and sometimes property taxes, which are quite large compared to the proposed fees. Since businesses depend on the city's infrastructure including its' drainage system and roads, it is important to them that these valuable resources be maintained. Many big box stores pay stormwater fees elsewhere in the U.S. without

complaint. In addition, Nashua could work with businesses to upgrade their drainage systems and receive abatements.

8. Is there a compelling case for more funding?
   Yes. Funding is necessary to:
   - Comply with the EPA program requirements
   - Repair and fix roadway problems caused by poor drainage
   - Replace or rehabilitate deteriorating infrastructure
   - Address pollution in the City's waters

   These actions will help: improve quality of life; increase business attraction; preserve property values; preserve source waters; avoid lawsuits due to flooding of private property; protect recreation opportunities such as fishing and boating; and reduce road repair/replacement costs.

9. If the City goes forward with a fee system, how will residents know funds are being used wisely?
   A detailed budget will be provided to the Board of Aldermen annually, showing how funds will be expended, including any funds used for administrative costs, operations and maintenance and for repairs/rehabilitation and replacement activities. A similar report can be provided outlining previous year's expenditures.

10. Will stormwater compliance costs rise in the future & will the fee be adjusted if stormwater compliance is achieved?
    Possibly but it is not currently known. Compliance actions are dictated by the EPA through the NPDES permit program, which is renewed every 5 years. Compliance costs could rise based on future permit requirements. Theoretically, the stormwater fee would fluctuate as the compliance costs fluctuate.

11. Will a separate City entity be created?
    Not likely. The management of the fees will be done within existing City government to minimize administrative costs and bureaucracy. Decisions would be through existing channels rather than creating a new entity or bureaucracy. Funds would go to a dedicated Stormwater Fund, similar to a savings account, that requires funds be spent on stormwater related expenditures.

12. Will the state roads and highways be assessed a fee?
    No. However, state owned properties that have impervious parking lots and the like will be assessed a fee similar to any other non-residential property. Public roads (State owned and City owned) will not be assessed any stormwater fee. State highways are covered under their own NPDES compliance permit.

13. Will newer developments meeting City stormwater design criteria be considered for abatements?
    Maybe. If the City chooses to implement a fee, abatements for properties that implement good stormwater design meeting City design criteria will likely be done. A potential abatement of up to 50% of the stormwater fee is typical for larger properties in other stormwater fee systems, depending on the level of onsite stormwater treatment performed.

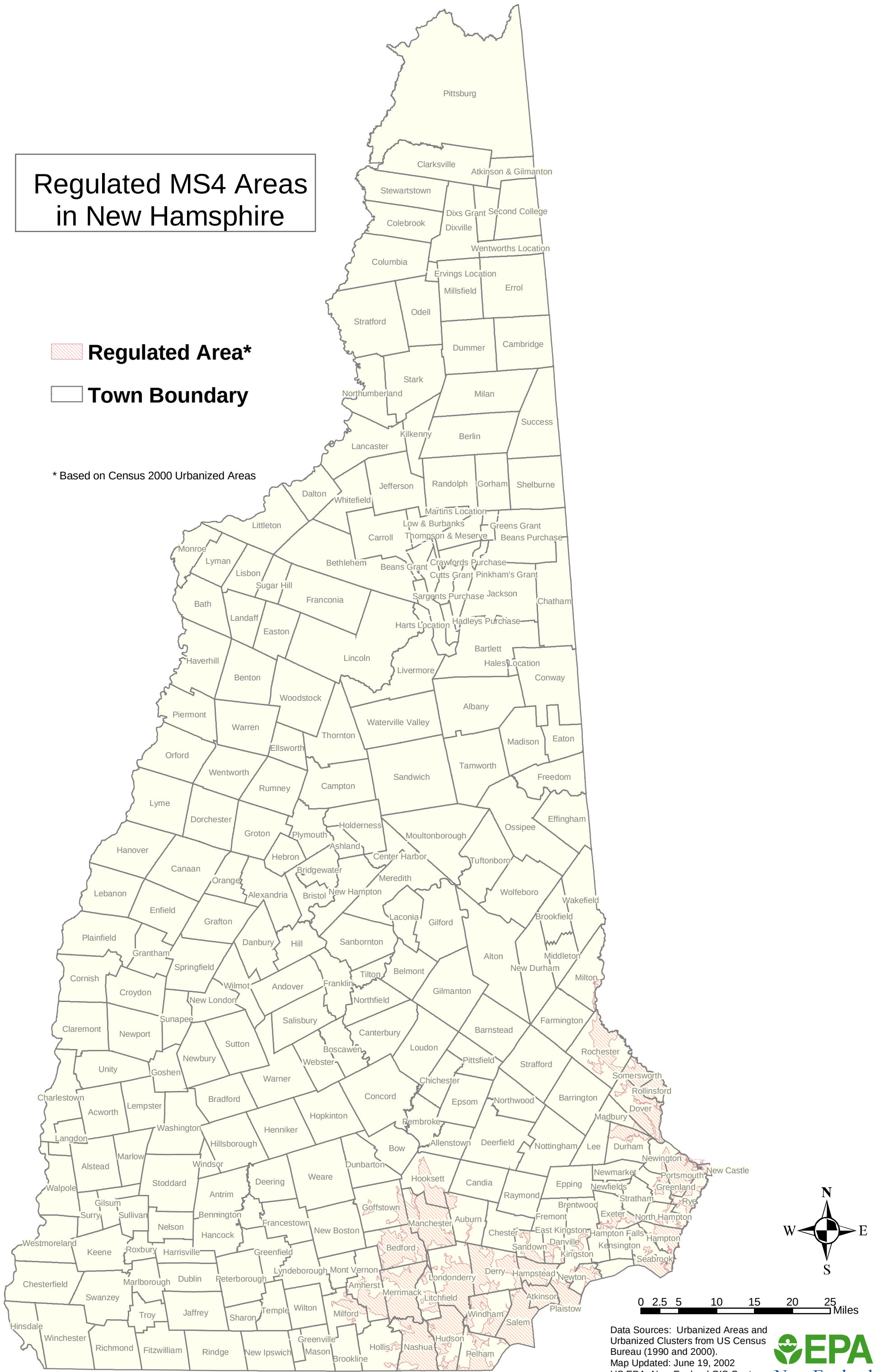
14. How was the impervious area determined for every property?
    Impervious areas were extracted from a GIS impervious layer that was developed as part of a Spring 2010 flyover of the City.

Regulated MS4 Areas in New Hamsphire

Regulated Area*

Town Boundary

* Based on Census 2000 Urbanized Areas



Data Sources: Urbanized Areas and Urbanized Clusters from US Census Bureau (1990 and 2000).
Map Updated: June 19, 2002
US EPA- New England GIS Center
L:/projects/stormwater/nhurb2000.mxd

EPA New England

MEETING MEMO

ATTENDEES:	Dory Clarke, Legal, Deputy Corp Counsel, City of Nashua Steve Dookran, DPW, City Engineer, City of Nashua Amy Gill, DPW, Engineering, City of Nashua Kathy Hersh, CDD, Director, City of Nashua Mario Leclerc, DPW, Wastewater, Superintendent Michael Gallagher, Public Citizen Jillian McCarthy, NHDES Watershed Assistance Section Rebecca Balke, CEI Eileen Pannetier, CEI
FROM:	Rebecca Balke, CEI
SUBJECT:	Nashua Stormwater Fee Feasibility Workshop #3
JOB NUMBER:	162-9
MEETING DATE:	August 17, 2011

The third of three workshop meetings was held to discuss the development of a stormwater fee in the City of Nashua. The purpose of the third meeting was to discuss public outreach, including potential barriers, targeted audiences and potential messages.

CEI prepared a presentation (attached) with a brief summary of key presentation points provided below, followed by a summary of discussion points.

Key Points of the Presentation

- Potential sediment loads to City waters based on loadings performed in similar cities is 2,300 tons per year, which is equivalent to 115 dump trucks.
- Perceived barriers and potential messages were presented for target audiences including:
    - Businesses & city
    - Tax payers
    - Fishermen
    - Boaters
    - Environmentalists
    - Swimmers/other recreationalists
    - Drinking water advocates
    - People affected by flooding
- A project schedule outlining the work that has been completed and what remains to be completed was outlined.

Discussion Points

The above text summarizes the events of the meeting at the above date and time.
If this information is not correct, please contact me as soon as possible.

MEETING MEMO

Sediment Loads

The potential sediment loads into City waters was provided as an example. This can be refined to incorporate actual sanding rates/amounts used in the City and the amount collected through catch basin cleaning and street sweeping.

Barriers, Audiences and Messages

Businesses & City

- The key message for this audience is "Where communities have visible, useable water resources, economic development follows."
- The Merrimack River is not very visible in Nashua, perhaps because it is located on the City border. It does open up as you drive into Massachusetts. It is also very visible from the train. The Lowell to Manchester train will provide a beautiful view of the River.
- Even the Nashua River, which runs through the center of the City, is not completely visible or accessible. Greeley Park has a nice view of the River but the railroad crossing is an issue for access.

Tax Payers

- Part of the message for this group is that stormwater is not the same as wastewater and is not treated or covered in sewer rates.
- The City noted that 25% of the downtown area is combined (sewer and stormwater) and treated at the wastewater treatment facility. This opens up another level of complexity. For example, will people that live in the outskirts of the City not in combined systems question why they are paying for CSOs elsewhere in the City? It may be better to keep it simple and not link the two any more than needed

Fishermen

- In January, the library offers fishing programs every Saturday. It has been very successful in the past with high attendance so will likely be offered again in the upcoming January. This would be a good opportunity to reach this group.

Boaters

- One of the messages draws a connection between stormwater runoff and invasive species. Stormwater runoff can cause infilling of waterbodies with sediments deposited from the runoff. This creates more "land" area in the waterbody for the invasives to spread, particularly those that thrive in shallow waters. Stormwater runoff also contributes to the growth of other invasives as it carries nutrients that feed the invasive species and can carry salt that allows certain invasives to grow and prosper where they otherwise wouldn't.

Environmentalists

- There were no comments on this section.

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- Deb Chisholm is the Brownfields coordinator for the City and has hazardous waste sites mapped.

Swimmers/Other Recreationalists

- The City does not want to target the rivers as swimmable as they don't want to promise something that may not be achieved. The target should be "Other Recreationalists".
- The City did have a beach many years ago. Chlorine was pumped into the beach area to keep it clean and maintain it as swimmable.

Drinking Water Advocates

- Add to the messages:
    - Sediment carried in stormwater runoff fills the reservoir and reduces its capacity. The cost of dredging is very expensive. Ms. Hersh said the Rizzo report showed a cost of $27 million to dredge four ponds.
    - Can we tie the rising costs in drinking water to stormwater runoff and increased treatment, etc? PUC has approved several steep increases over the last few years that water customers will be aware of. Pennichuck Water Works has attributed to the costs to infrastructure improvements. CEI stated that EPA keeps imposing stricter treatment requirements, which will increase the costs to supply water.

People Affected by Flooding

- NHDES commented that during the last two years they have received more calls about basements flooding than in the past and asked if Nashua has had a similar experience. She suggested pulling in these experiences into the public outreach effort to make it more personal to residents. The City does keep records of the phone calls they receive and can use this list to contact a specific group of people regarding flooding. The City noted that some of the flooding is due to high groundwater in the area.
- The City noted there are more flooding problems in CSO areas as the infrastructure can't hold the flows. The pipes always have some level of baseflow (e.g., during dry weather), which limits the capacity for wet weather events.
- Beaver control is also performed by the Wastewater Department. This is considered part of drainage improvements.

Schedule

- A schedule was presented showing public outreach to begin in the first quarter of 2012 and final fee preparation the first quarter of 2013. Is it better to begin the public outreach and present the stormwater fee as a concept or wait until concrete numbers are developed and then go out with it?
- Mr. Gallagher would like to see something tangible, even if illustrative and general numbers, when introducing the fee. He would like to see the benefits up front. People will want to know: "What is this going to cost me?"

The above text summarizes the events of the meeting at the above date and time.
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- The idea behind the schedule was to have the City begin their public outreach effort under the Phase II program, introducing stormwater concepts and requirements of the regulations, etc. to bring everyone up to speed. This will help build support before the fee is introduced.

Other Public Education Ideas

- The City should highlight that it has done what it can with the budget it has to help promote better stormwater runoff. For example, the City improved stormwater design requirements for new development in 1998 and looks at sanding, salting, sweeping and catch basin cleaning under the Phase II program. The City should identify areas such as regulatory changes that can be improved for free or at low cost. The regulations should be revisited to determine whether they should be updated based on more recent State stormwater guidance, which will also gain the attention of the public and provide an opportunity for education. When the regulations were updated in 1998, they covered parking lots, but only applied to new development. The City is mostly built out so it doesn't address all of the existing development. Most businesses also argue that their redevelopment project should not count as development. Some businesses may not have room to implement BMPs. Better redevelopment regulations are needed. A fee would also provide an incentive for businesses to implement stormwater BMPs to reduce their fee through an abatement process.
- Someone suggested having things that the public can do when they receive public outreach information. Some will be looking for opportunities to take action. There will be actions citizens can take such as using less fertilizer, picking up dog waste, and properly disposing of leaves and yard waste.
- There was a suggestion to reach out to Nashua's Economic Development Director, Tom Galligani, the Chamber of Commerce and other influential groups to gain their support before the fee is introduced to the public. NHDES commented that Manchester took this approach and it really helped to get the public on board. People were calling their peers (e.g., the key people the City talked with) to discuss the fee and ask questions and felt more comfortable with them than with City officials.
- The DPW Engineering Department has done some outreach with schools pertaining to catch basins and stormwater runoff and where it goes. The City has found this to be an effective means of reaching the public and would like to incorporate that into the public outreach program. Ms. Gill commented that she ran into someone at a shopping center ten years after giving a stormwater presentation at a school and he stopped her tell her he remembered her talk.
- The education should initially focus on stormwater problems, how the various departments are involved in stormwater management and highlight how money is being pulled from other budgets. Homeowners may be able to relate to the woes of borrowing from other budgets as they may experience this. For example, a homeowner may have a budget to pay for monthly bills and receive an unexpected bill at some point which requires them to pull other dedicated money to cover it, leaving them to fall short in another area.
- Take a "total environmental" approach to the public outreach, similar to the recycling program.

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- The Conservation Commission will be doing more public education on their properties. Maybe they could expand this to incorporate some education on stormwater.
- Show various ways that communities have paid for stormwater management.
- Who will initiate public outreach? In the past it has gone through DPW as part of the Phase II program. It will likely continue that way.
- Ms. Clarke suggested talking to the Mayor first to find out whether she wants staff spending time on the stormwater fee, and whether she will support it.
- Ms. Hersh commented that the how the fee is established is an internal policy issue and does not need to be presented to the public. The facts behind the fee, including the budget information do need to be presented to the public, but not how it will ultimately get implemented.
- NHDES called attention to a stormwater survey that surveys the states and presents which States have stormwater fees and how many communities within the state have stormwater fees. It has been implemented in numerous locations throughout the country and can be used to help support it.
- There is a new government education channel (local public television) coming. The City has two now and a third is coming. The City can provide us with schedule information to include in the report.

Next Steps

City to do:

1. Provide CEI comments and final budget figures to finalize feasibility report.
2. Provide CEI with winter sanding rates or total of quantity of sand used on City roads in the winter and the amount of sand/sediment removed through street sweeping and catch basin cleaning each year.
3. Provide CEI with schedule information for local cable network to incorporate into public outreach plan.

CEI to do:

1. Develop public outreach plan incorporating workshop feedback.
2. Finalize the feasibility study with budget information and comments provided by the City.

The above text summarizes the events of the meeting at the above date and time.
If this information is not correct, please contact me as soon as possible.

Agenda

Nashua Stormwater Fee Feasibility Study

Comprehensive Environmental Inc, 21 Depot Street, Merrimack, NH 03054 *Tel: (603) 424-8444*

Date:	Wednesday August 17, 2011
Time:	2:00 pm
Location:	9 Riverside Street, Nashua, NH
Re:	Workshop #3

Putting Things in Perspective – Sediment Loads

- Sanding Loads – 2,430 tons per winter for 270 miles of City roads
- 5% of sand is removed through catch basin cleaning – then 2,300 tons can potentially reach rivers and streams – that's equivalent to 115 dump trucks

Breaking Down the Barriers One "Audience" at a Time

Businesses & City

Perceived Barrier(s):

"Water Resources are unrelated to economic development."

"Businesses might leave Nashua if we charge them a fee for stormwater."

Other Barriers?

How best to reach this group?

Potential Message(s):

1. Where communities have visible, useable water resources, economic development follows. For example, in Hartford, CT, residents flock to the river for festivals, art walks and dozens of other events annually – all organized around the Connecticut River. Another example, Peterborough, NH has Pack Monadnock and athletic companies like EMS seek to locate there to take advantage of the recreational resources.
2. Other Messages?

Agenda

Nashua Stormwater Fee Feasibility Study

Comprehensive Environmental Inc, 21 Depot Street, Merrimack, NH 03054 *Tel: (603) 424-8444*

Date:	Wednesday August 17, 2011
Time:	2:00 pm
Location:	9 Riverside Street, Nashua, NH
Re:	Workshop #3

Tax Payers

Perceived Barrier(s):

"We pay a sewer bill already. Isn't stormwater covered in this?"

"Why should we pay for rain? Isn't this a rain tax?"

Other Barriers?

How best to reach this group?

Potential Message(s):

1. Runoff increases as impervious area increases; properties with greater impervious areas like parking lots produce more runoff than homes.
2. The drainage system is not connected to the wastewater treatment plant, it goes directly into the rivers and streams.
3. Existing stormwater management costs are paid through property taxes and sewer rates; placing most of the burden on homeowners even though most of the problem is from big parking lots.
4. A stormwater fee is like the sewer fee where residents and businesses pay for the amount of wastewater they generate.
5. Other Messages?

Fishermen

Potential Barrier(s):

"I catch plenty of fish in the Nashua River. What's the problem?"

Other Barriers?

How best to reach this group?

Agenda

Nashua Stormwater Fee Feasibility Study

Comprehensive Environmental Inc, 21 Depot Street, Merrimack, NH 03054 *Tel: (603) 424-8444*

Date:	Wednesday August 17, 2011
Time:	2:00 pm
Location:	9 Riverside Street, Nashua, NH
Re:	Workshop #3

Potential Message(s):

1. Temperature affects fishery & stormwater leads to higher temperatures.
2. Pollution reduces fish diversity; stormwater pollutes.
3. What could fishing be? Compare fish species in the Nashua River to a similar river.
4. Other Messages?

Boaters

Potential Barrier(s):

"I go to the lakes region to boat. There is no boating in Nashua."

Other Barriers?

How best to reach this group?

Potential Message(s):

1. Nashua has X miles of boatable riverways. This could be improved to X miles if stormwater were treated.
2. Aquatic weeds interfere with boating; untreated stormwater fills in water bodies & promotes aquatic weeds
3. The rivers are an underused resource – let's take them back
4. Other Messages?

Environmentalists

Potential Barrier(s):

"Nashua's rivers will always be contaminated from all the old mills. There is no point in trying to restore them."

Other Barriers?

How best to reach this group?

Potential Message(s):

1. There are limited locations where old mills left significant contamination (prepare a map). This type of pollution has been stopped and will eventually go away.
2. Ongoing stormwater pollution raises the water temperature, invites invasive species, and increases foul, green water. This can and should be stopped but further work is needed.
3. Other Messages?

Swimmers/Other Recreationalists

Potential Barrier(s):

"No one swims in Nashua. Too many PCBs from old mills."

Other Barriers?

How best to reach this group?

Potential Message(s):

1. Some cities are retaking long lost beaches. Nashua once had beaches, but stormwater prevents Nashua from having useable beaches today – let's take them back.
2. A transparency of 3 feet is good for swimming, Nashua's transparency is only 1 foot; stormwater is the cause.
3. Beaches are still possible despite existing hazardous waste sites in Nashua, but the ongoing stormwater pollution must be stopped.
4. Other Messages?

Agenda

Nashua Stormwater Fee Feasibility Study

Comprehensive Environmental Inc, 21 Depot Street, Merrimack, NH 03054 *Tel: (603) 424-8444*

Date:	Wednesday August 17, 2011
Time:	2:00 pm
Location:	9 Riverside Street, Nashua, NH
Re:	Workshop #3

Drinking Water Advocates

Potential Barrier(s):

"What does runoff have to do with drinking water?"

"We have full treatment and don't need to worry about stormwater."

Other Barriers?

How best to reach this group?

Potential Message(s):

1. Source protection (keeping contaminants out) is the first step to providing clean drinking water.
2. Pollution increases treatment needs/chemical additives; stormwater pollutes
3. More treatment is more expensive – let's protect our investment.
4. Other Messages?

People Affected by Flooding

Potential Barrier(s):

"Nashua doesn't have any flooding."

"Flooding is caused by blocked culverts. What does this have to do with stormwater?"

"Nothing can be done about flooding."

Other Barriers?

How best to reach this group?

Agenda

Nashua Stormwater Fee Feasibility Study

Comprehensive Environmental Inc, 21 Depot Street, Merrimack, NH 03054 *Tel: (603) 424-8444*

Date:	Wednesday August 17, 2011
Time:	2:00 pm
Location:	9 Riverside Street, Nashua, NH
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Potential Message(s):

1. Flooding and damaged stormwater drainage infrastructure can damage property and roads (e.g., limited access, roadway washout, potholes).
2. Flooding is sometimes caused by blocked culverts/pipes. More intensive maintenance of the City's huge drainage network is needed and this costs money that is not in the current budgets.
3. Flooding cannot always be corrected, but in many cases it can be improved by better engineering solutions but these also cost money.
4. Other Messages?

Schedule

Acknowledgements

Funding for this project was provided in part by a Watershed Assistance grant from the NH Department of Environmental Services with Clean Water Act Section 319 funds from the U. S. Environmental Protection Agency

Overview

- Meeting #3 Overview:
  - Putting Things in Perspective – Sediment Loads
  - Breaking Down the Barriers One "Audience" at a Time
  - Schedule

Putting Things in Perspective – Sediment Loads

- Sanding loads – 2,430 tons per winter for 270 miles of City roads
- 5% of sand is removed through catch basin cleaning – then 2,300 tons can potentially reach rivers and streams – that's equivalent to 115 dump trucks

Breaking Down the Barriers One "Audience" at a Time

Businesses & City

- Perceived Barrier(s):
  - "Water Resources are unrelated to economic development."
  - "Businesses might leave Nashua if we charge them a fee for stormwater."
- Other barriers?
- How best to reach this group?

Businesses & City

- Potential Message(s):
  - Where communities have visible, useable water resources, economic development follows
  - CT River, Hartford, CT – residents come for festivals, art walks and dozens of other events
  - Peterborough, NH – Pack Monadnock & athletic companies (i.e., EMS) seek to locate there
- Other messages?

Tax Payers

- Perceived Barrier(s):
  - "We pay a sewer bill already. Isn't stormwater covered in this?"
  - "Why should we pay for rain? Isn't this a rain tax?"
- Other barriers?
- How best to reach this group?

Tax Payers

- Potential Message(s):
  - Runoff increases with impervious area
  - Parking lots produce more runoff than homes
  - Existing stormwater costs paid through property taxes & sewer rates
  - Burden is on homeowners though most of the problem is from big parking lots

Tax Payers

- Potential Message(s):
  - Drainage is not connected to the wastewater treatment plant
  - Drainage goes directly into rivers & streams
  - Stormwater fee is similar to sewer fee
- Other messages?

Fishermen

- Potential Barrier(s):
  - "I catch plenty of fish in the Nashua River. What's the problem?"
- Other barriers?
- How best to reach this group?

Fishermen

- Potential Message(s):
  - Higher temperatures from stormwater affect fishery
  - Stormwater pollution reduces fish diversity
  - What could fishing be? Comparison to similar rivers
- Other messages?

Boaters

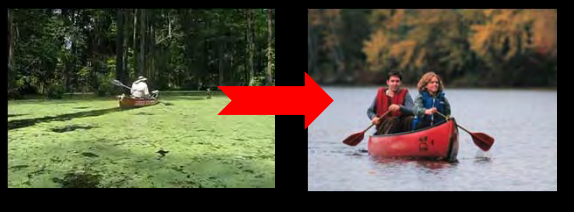
- Potential Barrier(s):
  - "I go to the lakes region to boat. There is no boating in Nashua."
- Other barriers?
- How best to reach this group?

Boaters

- Potential Message(s):
  - Nashua has X miles of boatable riverways. Could be XX miles if stormwater were treated
  - Stormwater promotes aquatic weeds that interfere with boating
    - Stormwater fills in water bodies
    - Stormwater carries nutrients that feed aquatic growth

Boaters

- Potential Message(s):
  - The rivers are an underused resource – let's take them back.
- Other messages?



Environmentalists

- Potential Barrier(s):
  - "Nashua's rivers will always be contaminated from all the old mills. There is no point in trying to restore them."
- Other barriers?
- How best to reach this group?

Environmentalists

- Potential Message(s):
  - Contamination from old mills is limited & will eventually go away
  - Ongoing stormwater pollution
    - Raises the water temperature
    - Invites invasive species
    - Increases foul, green water
  - Further work is needed to stop stormwater pollution
- Other messages?

Swimmers/Other Recreationalists

- Potential Barrier(s):
  - "No one swims in Nashua. Too many PCBs from old mills."
- Other barriers?
- How best to reach this group?

Swimmers/Other Recreationalists

- Potential Message(s):
  - Stormwater pollution prevents the use of beaches
  - Stormwater affects transparency
    - 3 feet transparency is good for swimming
    - Nashua's transparency is only 1 foot

Swimmers/Other Recreationalists

- Potential Message(s):
  - Nashua once had beaches
  - Beaches are still possible
    - Hazardous waste contamination is limited
    - Ongoing stormwater pollution must be stopped
  - Some cities are retaking long lost beaches – let's take them back in Nashua
- Other messages?

Drinking Water Advocates

- Potential Barrier(s):
  - "What does runoff have to do with drinking water?"
  - "We have full treatment and don't need to worry about stormwater."
- Other barriers?
- How best to reach this group?

Drinking Water Advocates

- Potential Message(s):
  - Protect the source – cheaper to keep contamination out than treat it – let's protect our investment
  - Stormwater pollution increases treatment needs/chemical additives
- Other messages?

People Affected by Flooding

- Potential Barrier(s):
  - "Nashua doesn't have any flooding."
  - "Flooding is caused by blocked culverts. What does this have to do with stormwater?"
  - "Nothing can be done about flooding."
- Other barriers?
- How best to reach this group?

People Affected by Flooding

- Potential Message(s):
  - Flooding can damage property and roads (e.g., limited access, roadway washout, potholes).

People Affected by Flooding

- Potential Message(s):
  - Preventing flooding costs money not currently budgeted
    - More intensive maintenance to prevent blocked culverts/pipes
    - Better engineering solutions
- Other messages?

Schedule

Additional Data Needs for Public Outreach

- City map
- Photos of stormwater problems
- Examples of long-term costs to "temporarily" fix on-going problems vs. to permanently fix
- Pollutant load calculations – with and without stormwater improvements
- Fish species and population for varying water quality
- Water quality examples – "should be" compared to "what it is"

City Map

1. Drainage system, outfalls, receiving waters, impairments
2. City owned properties/conservation lands
3. Flooding areas/potholes
4. Fishing areas
5. Boating access/areas
6. Historic beaches
7. Hazardous waste properties

Appendix F
Stormwater Fee Public Outreach Plan

Stormwater Fee Public Outreach Plan

Introduction

The City of Nashua is evaluating the feasibility of implementing a stormwater fee to fund the City's stormwater management program and infrastructure improvement and maintenance. With more stringent permit requirements[1] coming in the near future, and existing funds already competing with other city funded projects, the City is evaluating a stormwater fee as an alternative funding mechanism to cover these costs. A stormwater fee would provide the City a stable source of funding dedicated to fulfilling mandated requirements for stormwater management and allow the City to pro-actively maintain its drainage infrastructure.

The most significant constraint to implementing a stormwater fee is anticipated to be the public's lack of understanding of the importance of maintaining the City's infrastructure and stormwater quality and how this will benefit them. This public outreach program was developed to educate the public on the need for a stormwater fee to gain support for implementation of the fee.

In developing this plan, three stormwater fee development workshops were held to discuss the components and benefits of a stormwater fee, how it may be perceived by the public and how to gain public support. Participants included Comprehensive Environmental Inc. (CEI), City staff, the New Hampshire Department of Environmental Services (NH DES), and a resident of the City. The input received during these workshops, combined with past experience, was used to develop an overall public outreach strategy, which is summarized in Figure 1 and described further below. The proposed program focuses on targeting specific groups within Nashua and highlighting the benefits a stormwater fee would have to each of these groups. A summary of the targeted audience groups and benefits is provided in Figure 2. The idea is to break down the "perceived barriers" to fee implementation, that were identified during the workshops, in general and for each group specifically.

Perceived Barriers to Implementing a Stormwater Fee

Common General Perceived Barriers:

- Stormwater catch basins are perceived as sewer drains that are treated through the wastewater treatment plant, which is already covered in sewer rates
- A stormwater fee is another "tax"
- Waters in Nashua are not dirty, therefore a fee is not needed
- Waters in Nashua are dirty and it is hopeless to clean them (wasted effort)
- Even if the water is cleaned, it cannot be used because of contaminated sediments and soils from hazardous waste sites

Target Audience Groups – Perceived Barriers and Breaking Them Down:

Seven target audience groups were identified based on their potential concerns. Refer to Table 1 for target audiences, perceived barriers, potential messages and how to reach these groups.

[1] The U.S. Environmental Protection Agency's National Pollutant Discharge Elimination System (NPDES) Municipal Separate Storm Sewer System (MS4) Permit requires regulated communities to develop a stormwater management program meeting minimum requirements. The original permit was released in 2003 and a draft permit renewal was released in December 2008, requiring more actions that will result in an increased compliance cost.

Figure 1. Public Outreach Strategy:
How to Fund Stormwater Improvements & Comply with Phase II Regulations

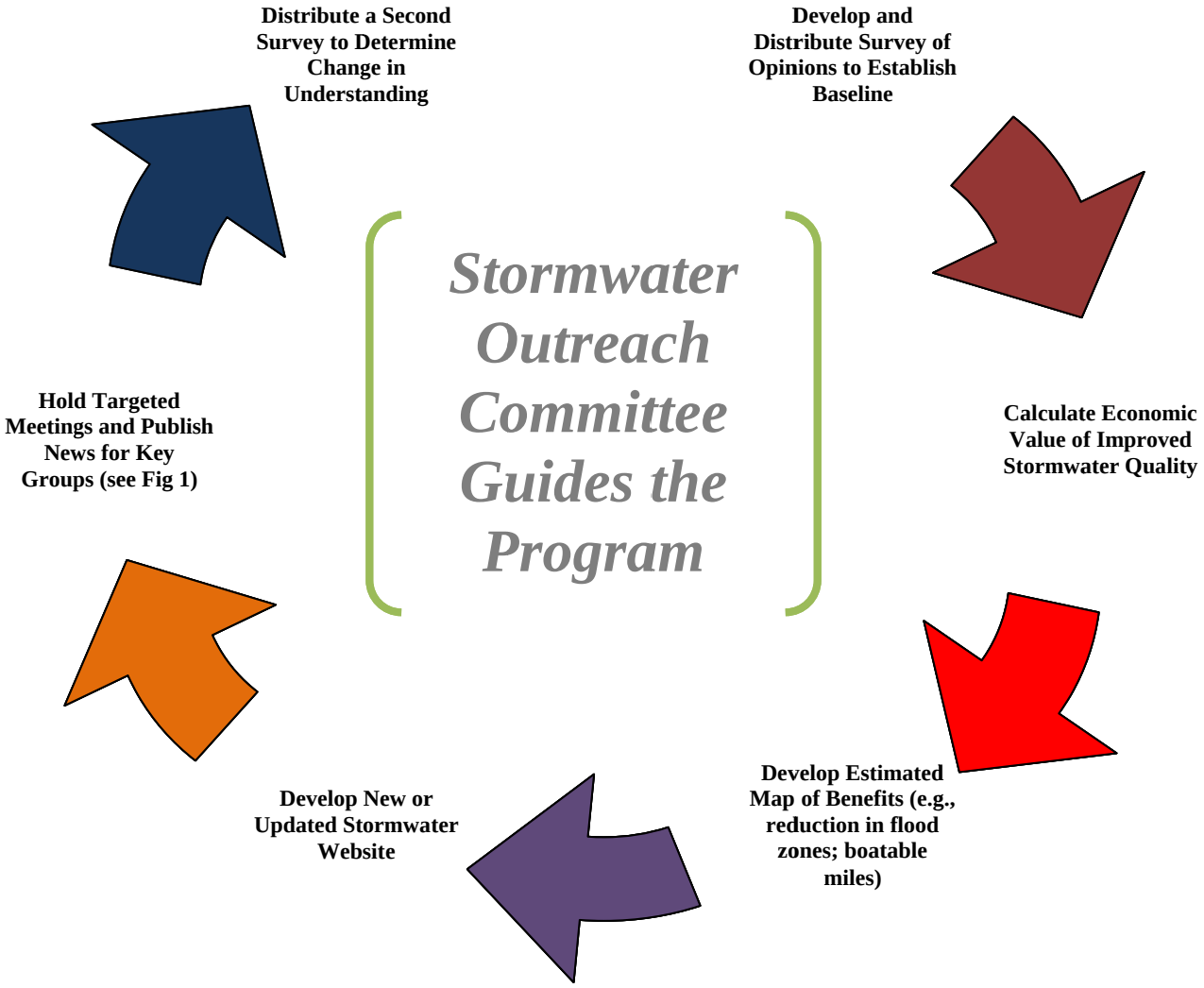


Figure 2. Nashua Groups That Would Benefit from Stormwater Fees

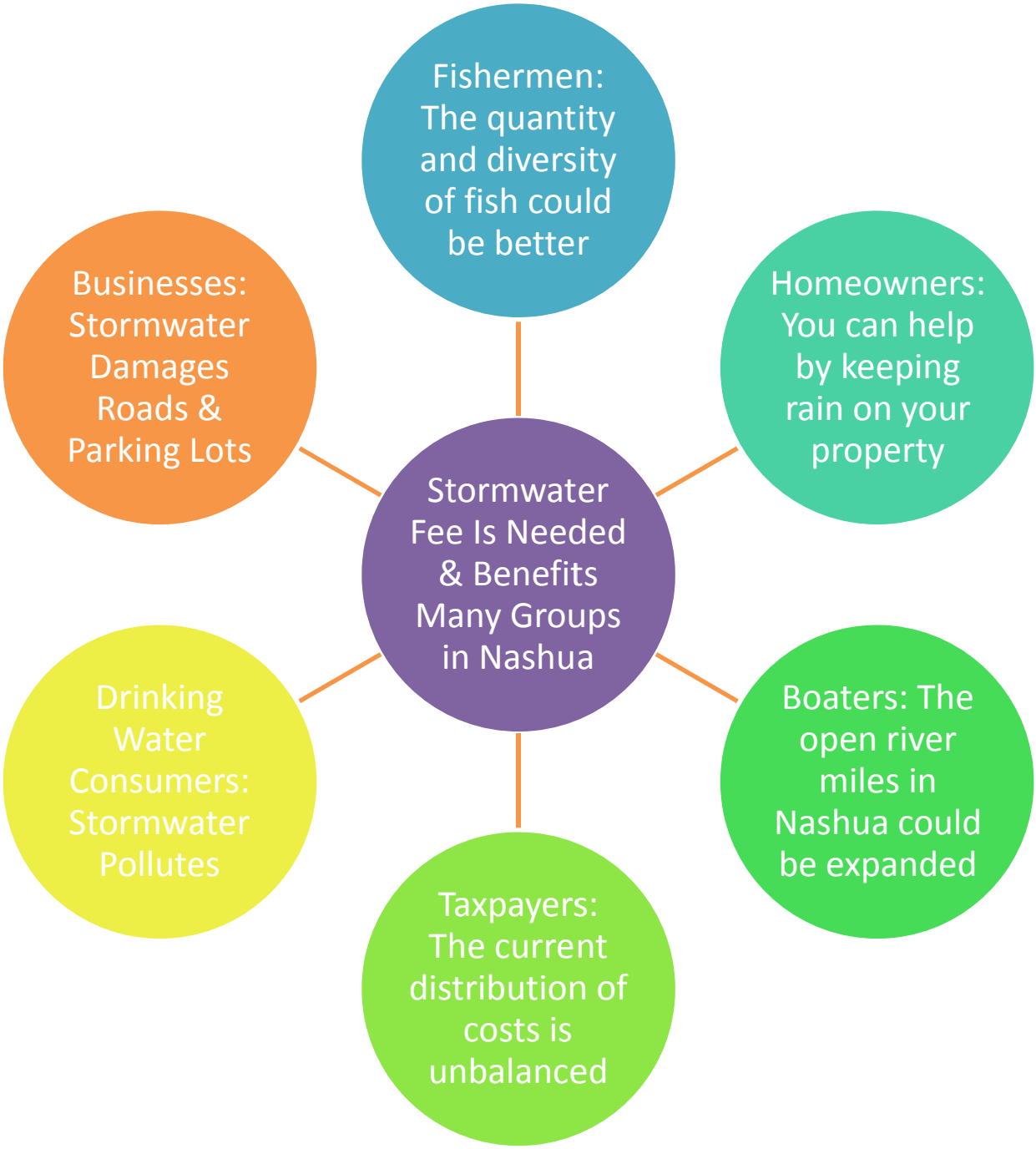


Table 1. Breaking Down the Barriers One "Audience" at a Time		
Audience	**Perceived Barriers**	**Potential Messages**
Businesses and City	• Water resources are unrelated to economic development. • Businesses might leave Nashua if we charge them a fee for stormwater.	• Where communities have visible, useable water resources, economic development follows • Provide examples (CT River, Hartford, CT – residents come for festivals, art walks and dozens of other events; Peterborough, NH – Pack Monadnock & athletic companies (i.e., EMS) seek to locate there) – typically, costs to businesses are not high enough to be a barrier
Tax Payers	• We pay a sewer bill already. Isn't stormwater covered in this? • Why should we pay for rain? Isn't this a rain tax?	• Stormwater is not the same as wastewater and is not connected to the wastewater treatment plant • Runoff increases with impervious area • Parking lots produce more runoff than homes • Existing stormwater costs paid primarily through property taxes with a small portion through sewer rates • Cost burden is on homeowners though most of the problem is from big parking lots • Drainage goes directly into rivers & streams • A stormwater fee is similar to a sewer fee, with residents and businesses paying for their portion Reach tax payers through property tax bills and sewer bills.
Fishermen	I catch plenty of fish in the Nashua River. What's the problem?	• Higher temperatures from stormwater affect fishery • Stormwater pollution reduces fish diversity • What could fishing be? Provide a comparison to similar rivers In January, the library offers fishing programs every Saturday, which are well attended. Give a presentation and handouts at one of these meetings.

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Audience	**Perceived Barriers**	**Potential Messages**
Boaters	I go to the lakes region to boat. There is no boating in Nashua.	• Nashua has X miles of boatable riverways. Could be XX miles if stormwater were treated. • Stormwater promotes aquatic weeds that interfere with boating (e.g., stormwater runoff can cause infilling of waterbodies with sediments deposited from the runoff. This creates more "land" area in the waterbody for the invasives to spread, particularly those that thrive in shallow waters. Stormwater runoff also contributes to the growth of other invasives as it carries nutrients that feed the invasive species and can carry salt that allows certain invasives to grow and prosper where they otherwise wouldn't) • The rivers are an underused resource – let's take them back Obtain a list of people with boat registrations for targeted outreach.
Environmentalists	Nashua's rivers will always be contaminated from all the old mills. There is no point in trying to restore them.	• Contamination from old mills is limited & will eventually go away • Ongoing stormwater pollution raises the water temperature, invites invasive species and increases foul, green water • Stormwater affects transparency • Further work is needed to stop stormwater pollution
Drinking Water Advocates	• What does runoff have to do with drinking water? • We have full treatment and don't need to worry about stormwater	• Protect the source – cheaper to keep contamination out than treat it – let's protect our investment • Stormwater pollution increases treatment needs/chemical additives • Sediment carried in stormwater runoff fills the reservoir and reduces its capacity. The cost of dredging is very expensive • EPA continues to impose stricter treatment requirements, which will increase the costs to supply water. A cleaner source is less expensive to treat Obtain a list of water customers and work with Pennichuck Water Works to include message on water bills.
People Affected by Flooding	• Nashua doesn't have flooding • Flooding is caused by blocked culverts. What does this have to do with stormwater? • Nothing can be done about flooding	• Flooding can damage property and roads (e.g., limited access, roadway washout, potholes) • Preventing flooding costs money not currently budgeted (e.g., more intensive maintenance to prevent blocked culverts/pipes, better engineering solutions)

Other Messages

The following information should also be included in the public outreach program to provide all audiences with background information on stormwater problems and the need for a fee.

- Definition of catch basins – what they do and how they are not connected to the sewer system and treatment plant. Many people still refer to catch basins as sewers and don't realize the difference between a stormwater drain and the sewer system.
- Stormwater problems – Use the visuals from the first public outreach workshop presentation to provide some of the basics and help explain why stormwater is a problem that needs to be addressed.
- NPDES Phase II Requirements – Outline what the City is required to do to comply with the Phase II regulations and associated costs.
- Highlight benefits of a stormwater fee – allows for improved maintenance of the drainage system that leads to water quality improvements, reduced flooding, better roadways.
- Tie invasive species control into the fee – Some people are familiar with invasive species as they are highly visible and impede recreational activities such as canoeing. This targets the boaters highlighted above.
- Explain the similarities between a stormwater fee and sewer fee – Most residents and businesses pay a wastewater bill and understand the concept of paying for their "share". The analogy may help with the explanation of a stormwater fee.
- Compare the fee to other communities – show it is reasonable and lower than other places.
- Show the cost of inaction – provide specific examples such as the cost of replacing a culvert before it fails vs. the cost of replacing a culvert after it fails, which would likely include repair of the road and repair of property damage. Use real scenarios that occurred in Nashua. Also highlight fines imposed on municipalities that do not comply with regulations.
- Show the anticipated return on investment – identify benefits fee payers can expect from paying the fee.
- Show a comparison of the stormwater costs paid through taxes vs. a stormwater fee – Highlight the reduction to property taxes and wastewater sewer rates from moving existing stormwater expenses into the stormwater fee.
- Provide a map – show the stormwater drainage system, outfalls, receiving waters, City owned properties, historic beaches and hazardous waste properties. This serves multiple purposes including: providing a visual of the extent of the drainage system that needs to be maintained; a visual of the number of stormwater outfalls to City waters; the potential for connecting recreational opportunities.

Targeted Public Outreach Program

Implement the public outreach program as follows:

Stormwater Outreach Committee

Develop a stormwater outreach committee to spearhead the outreach efforts. The outreach committee would be responsible for developing or identifying the best EPA toolbox tools that would fit for Nashua, and distributing materials to the various target groups. The outreach committee can be formed as a subcommittee to the stormwater advisory committee, which will be responsible for helping to make key decisions and provide direction on the implementation of the fee. Invite the original participants of the three workshop meetings held under the feasibility study to participate in an advisory and stormwater outreach committee. The committee should also include representatives from each of the target audiences identified to help develop and tailor education materials for each target audience group.

Refer back to Figure 1 for an overview of the public outreach strategy. The individual components of this strategy, to be headed by the stormwater outreach committee are discussed further below.

Obtain City Consensus

Before beginning a public outreach program that targets residents and businesses, City officials, including City staff and elected officials should be brought up to speed on the need for and benefits of a stormwater fee. Begin by meeting with the Aldermen separately and getting at least two Aldermen on board to help shepherd it through.

Develop and Distribute Survey of Opinions to Establish Baseline and Change in Understanding

Before developing and performing targeted public education outreach, develop a survey to gage the public's understanding of stormwater and its impacts. This survey will help determine appropriate topics for inclusion in the public education program and serve as a baseline for later comparison to a second survey after the program has been established.

Calculate Economic Value Benefits of Improved Stormwater Quality

As previously outlined in the targeted "potential messages" for each audience group, it is important to highlight the benefits a stormwater fee will provide to City residents and businesses. Expand upon the "potential messages" provided and include examples of the economic value of improved stormwater quality.

Website

Develop a stormwater website page providing education materials pertaining to stormwater runoff, its impacts on water quality and flooding and information on how residents and businesses can help reduce pollution to Nashua's waters. The website can also be used to post information on projects and maintenance activities performed by the City to increase the awareness of the services the City provides and the benefits of these services. Specific links targeting each of the individual audiences outlined above can also be provided with the targeted messages and links to other relevant information.

The website should also include a map of the City that highlights the drainage system, outfalls, receiving waters, impairments, city owned properties, conservation lands, flooding areas/potholes, fishing areas, boating access/areas and hazardous waste properties. This can also be used to show progress of the fees benefits such as a reduction in flood zones and increased boatable miles along the rivers.

The website would serve two purposes: 1) it would educate the public on the impacts of stormwater runoff, the relationship between the drainage infrastructure, stormwater runoff and maintenance services and associated costs and benefits provided by the City to help gain support for a stormwater fee; and 2) meet some of the public education requirements of the Phase II MS4 permit.

Once a fee has been established, the website can also be used to track and relay the progress of services provided using the stormwater fee. For example, post the observed benefits of the fee such as the reduced acreage of flooding areas and reduction of miles of roads with potholes.

The website should be highlighted through the other outreach venues (i.e., under targeted radio and news ads, meetings with influential organizers, etc.) to encourage people to go to the site. The City should also advertise the website through any related press (e.g., flooding events or other "issues") and pursue providing links to its website on other websites or venues.

Targeted News Articles and Radio Ads

Develop a series of news articles for publication in local newspapers. Begin by highlighting current stormwater problems the City is facing and what the City is doing or needs to do to address them. Paint a story that connects roadway and infrastructure maintenance needs to stormwater and water quality issues.

Follow this with a series of articles that targets the audiences identified in "Table 1. Breaking Down the Barriers Once 'Audience' at a Time", incorporating the identified messages.

Use radio Public Service Announcements and local cable television and radio shows to relay these same messages. Create a theme that people can connect with and understand.

EPA has "canned" public education materials as part of its Nonpoint Source (NPS) Outreach Toolbox at http://cfpub.epa.gov/npstbx/index.html, including hard copy materials and radio ads pertaining to stormwater runoff, its impacts and what residents and businesses can do to reduce pollution. The material can be downloaded and tailored to Nashua for incorporation into its public outreach efforts. The stormwater outreach committee could identify the best tools for Nashua.

After the themes and messages are well established and distributed, begin introducing the concept of a stormwater fee and its benefits. Incorporate Q&A topics addressing the most commonly asked questions pertaining to a stormwater fee into the education program. The Q&A developed for Nashua is included in Attachment A.

Meet with Influential Organizations

Identify and work with stakeholders that would be willing to support a stormwater fee to gain their assistance in convincing others of the benefits and need for the fee. Meet with other organizations such as the Chamber of Commerce and tax payers association to personally explain stormwater issues, the need for the fee and anticipated impact on businesses. This will help get the word out to businesses and other stakeholders.

Summary
The U.S. EPA has identified non-point source runoff (a.k.a. stormwater) as the leading cause of water quality problems in the United States today. Stormwater has been regulated in large cities since the 1990s and smaller communities like Nashua since 2003. . New and much tougher stormwater standards are on the way, and to address them, Nashua is considering developing a stormwater fee. The fee would fund compliance with the rules and address routine maintenance that is outside the current budget. The additional maintenance is needed to protect water quality, the roadways' integrity and to reduce flooding. This Q&A was developed to address some of the most commonly asked questions and concerns raised by the public pertaining to stormwater fees.

1. Are all New Hampshire communities regulated?
   No. Only communities with certain population densities as identified by the U.S. Census are regulated. Refer to the attached map of regulated communities.

2. What has to be done?
   The required actions mandated by EPA include the following key components:
   - public education/outreach and public involvement/participation
   - sampling for illegal or illicit discharges to the drainage system or to waterways
   - elimination of illegal or illicit discharges to the drainage system or to waterways
   - construction site stormwater runoff control
   - post-construction stormwater management
   - maintenance of the drainage system and municipal facilities

3. When does this have to be implemented?
   The current NPDES Phase II permit went into effect in 2003 and requires activities to be completed within the first 5 year permit period (technically expired April 2008). A second 5-year permit is now in draft form.

4. Why is more money needed?
   The funds are needed to improve the City's maintenance of the drainage system, to correct flooding problems and to improve water quality. Several of the City's surface waters are considered "impaired" by NHDES. Most impairments are due to high bacteria and low dissolved oxygen. Stormwater is the biggest factor in causing poor water quality and a lack of fishing and swimming opportunities for residents.

5. Why not cover these costs under the general fund?
   Multiple City expenses compete for funds through the general fund. Funds budgeted for stormwater services under the general fund can be reallocated to other services at any time. There is also inequity in that residences pay the brunt of stormwater services even though businesses typically produce the most stormwater runoff.

6. What would be the advantage of a stormwater fee?
   It is more consistent and fair. Fees are assessed based on the stormwater runoff associated with a particular property based on how much stormwater they generate. Also, a fee brings in landowners not covered by taxes such as state and federally owned properties and non-profits.

7. Won't charging businesses for stormwater cause them to leave Nashua?
   Not likely. Larger businesses locate primarily based on demographics, transportation factors, and sometimes property taxes, which are quite large compared to the proposed fees. Since businesses depend on the city's infrastructure including its' drainage system and roads, it is important to them that these valuable resources be maintained. Many big box stores pay stormwater fees elsewhere in the U.S. without

complaint. In addition, Nashua could work with businesses to upgrade their drainage systems and receive abatements.

8. Is there a compelling case for more funding?
   Yes. Funding is necessary to:
   - Comply with the EPA program requirements
   - Repair and fix roadway problems caused by poor drainage
   - Replace or rehabilitate deteriorating infrastructure
   - Address pollution in the City's waters

   These actions will help: improve quality of life; increase business attraction; preserve property values; preserve source waters; avoid lawsuits due to flooding of private property; protect recreation opportunities such as fishing and boating; and reduce road repair/replacement costs.

9. If the City goes forward with a fee system, how will residents know funds are being used wisely?
   A detailed budget will be provided to the Board of Aldermen annually, showing how funds will be expended, including any funds used for administrative costs, operations and maintenance and for repairs/rehabilitation and replacement activities. A similar report can be provided outlining previous year's expenditures.

10. Will stormwater compliance costs rise in the future & will the fee be adjusted if stormwater compliance is achieved?
    Possibly but it is not currently known. Compliance actions are dictated by the EPA through the NPDES permit program, which is renewed every 5 years. Compliance costs could rise based on future permit requirements. Theoretically, the stormwater fee would fluctuate as the compliance costs fluctuate.

11. Will a separate City entity be created?
    Not likely. The management of the fees will be done within existing City government to minimize administrative costs and bureaucracy. Decisions would be through existing channels rather than creating a new entity or bureaucracy. Funds would go to a dedicated Stormwater Fund, similar to a savings account, that requires funds be spent on stormwater related expenditures.

12. Will the state roads and highways be assessed a fee?
    No. However, state owned properties that have impervious parking lots and the like will be assessed a fee similar to any other non-residential property. Public roads (State owned and City owned) will not be assessed any stormwater fee. State highways are covered under their own NPDES compliance permit.

13. Will newer developments meeting City stormwater design criteria be considered for abatements?
    Maybe. If the City chooses to implement a fee, abatements for properties that implement good stormwater design meeting City design criteria will likely be done. A potential abatement of up to 50% of the stormwater fee is typical for larger properties in other stormwater fee systems, depending on the level of onsite stormwater treatment performed.

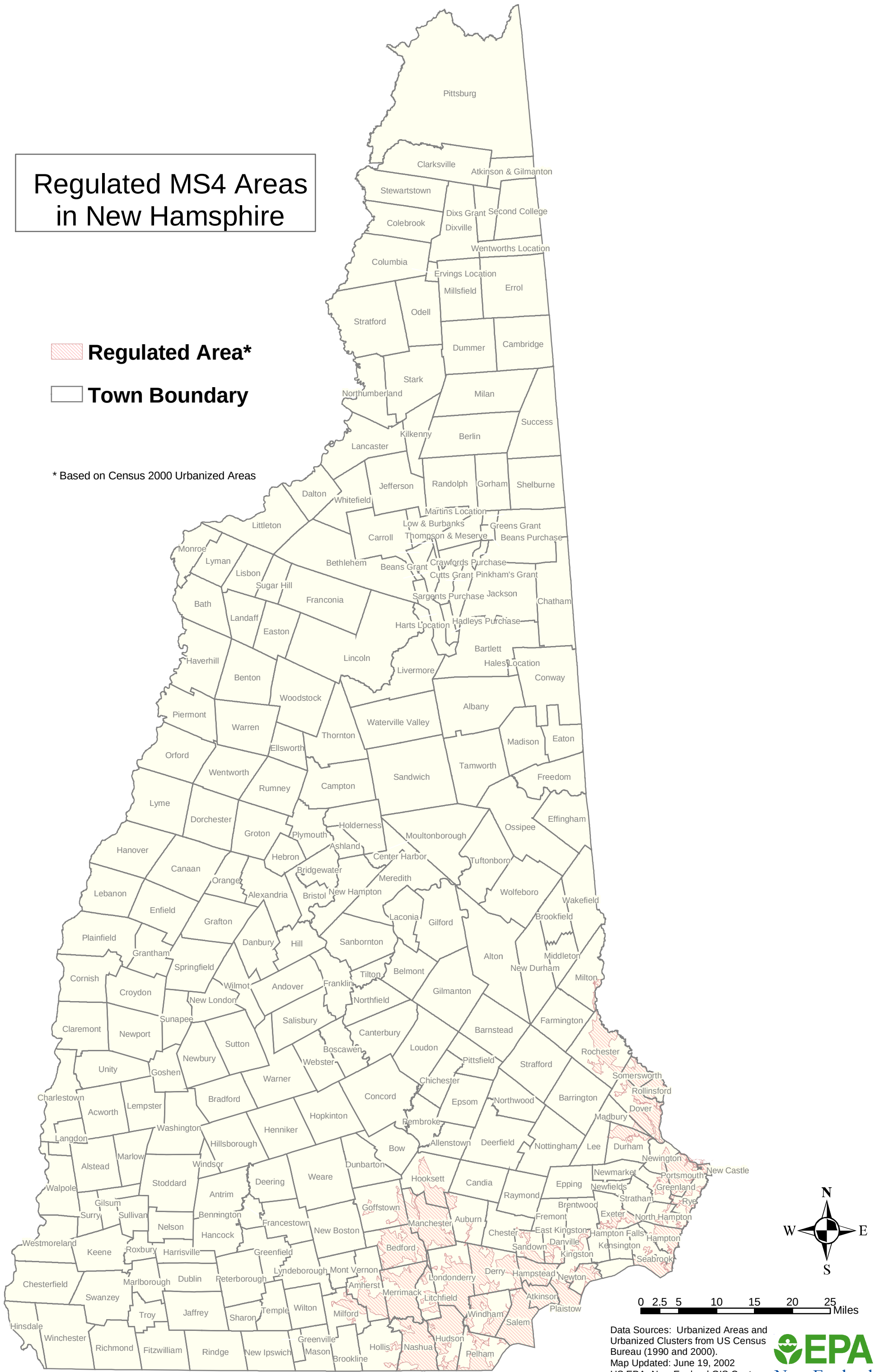
14. How was the impervious area determined for every property?
    Impervious areas were extracted from a GIS impervious layer that was developed as part of a Spring 2010 flyover of the City.

Regulated MS4 Areas in New Hamsphire

Regulated Area*

Town Boundary

* Based on Census 2000 Urbanized Areas



Data Sources: Urbanized Areas and Urbanized Clusters from US Census Bureau (1990 and 2000).
Map Updated: June 19, 2002
US EPA- New England GIS Center
L:/projects/stormwater/nhurb2000.mxd

EPA New England