Certification Statement

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

_____ Date: 4-27-07

Frank C. Thomas, P.E.
Director of Public Works

BMP #1 Public Education and Outreach

#1-1, Assign Storm Water Coordinator - (BMP completed)
Current Status – The City of Manchester hired the storm water coordinator on May 17, 2003. The title for this position is Environmental Permits Coordinator.

BMP Effectiveness Evaluation: The Coordinator position allows the City to review, implement and enforce requirements of the stormwater program effectively. The responsibilities of the position meets, but in many cases exceeds, the level of expectations of the regulatory agencies. The hiring of the Coordinator has been able to fulfill all the requirements of the five-year program, one year ahead of schedule.

Future Goals: To continue to carry out the requirements of the stormwater program. To expand the program through implementation of storm water practices that go beyond the five-year program requirements.

In year five, the coordinator expects to perform an inspection of most outfalls along the Piscataquog and Merrimack Rivers.

The Coordinator believes that the continued development of inter-departmental cooperation between the Planning, Building, Parks & Recreation , Health and Highway Departments can expand to enhance the existing storm water program.

To utilize the City's engineering inspection staff to a greater degree when they do construction site inspections related to infrastructure. Each year they learn more about the storm water program and implementation of BMPs for erosion and sediment control.

#1-2, Add Stormwater Information to the City's Website – (BMP Completed)
Current Status: The City of Manchester uploaded the initial storm water website on October 7, 2003 consisting of four pages. Over the past three and a half years the site has expanded considerably. The site can be accessed at the following url: http://www.manchesternh.gov/CityGov/dpw/EPD/stormwater/home.html

A detailed description of each page was provided in last year's annual report. The total number of pages accessible within the stormwater site is well over fifty, which include outside pages related to stormwater and associated pdf files.

The Urban Pond web site is a site linked and referenced throughout the stormwater website. The Urban Pond site is an example of how stormwater controls can improve and enhance the quality of local ponds and lakes. The website may be accessed at: http://www.manchesternh.gov/CityGov/DPW/EPD/SEPP/Pond/Home.html

BMP Effectiveness Evaluation: This BMP continues to be a highly effective means of providing stormwater information for public access. Several cities and towns within New Hampshire and New England have reviewed and commented on the extensiveness and material included in Manchester's website.

Future Goals: To review the entire stormwater website over the fifth year of the permit. The City intends to update all links, material and content over the coming year. More pages will be added to inform the public of the status of the required tasks as outlined in the five year program.

#1-3, Conduct Outreach with Local Watershed Organizations – (Implemented & Ongoing)

Current Status: The City has provided funds for equipment and water analyses for the two watershed organizations (Crystal Lake Preservation Association – CLPA and the Pine Island Pond Environmental Society – PIPES). This commitment will continue through the fifth year of the Storm Water Program.

The Urban Pond Coordinator position was terminated in February of 2005 and was carried within the Planning Department through December 2005 when it was subsequently eliminated. There is no longer anyone assigned to coordinate these activities.

Without the Urban Pond Coordinator, outreach has continued through the Environmental Permits Coordinator and also the NHDES Coordinator for the Volunteer Rivers Assessment Program (VRAP - Jennifer Drociak).

The Supplemental Environmental Projects Program (SEPP) has set up a Conservation Endowment that will be used to support the ongoing urban pond sampling and analysis in the upcoming years. The level of sampling and analysis that was done when the Urban Pond Coordinator was with the City will remain the same. This work will be completed by the watershed organizations along with the Environmental Permits Coordinator and the NHDES, VRAP Coordinator. Both individuals will attend the PIPES annual meeting held on April 22, 2007. They also update and keep current the Urban Pond website.

BMP Effectiveness Evaluation: The outreach was highly effective through 2005. The City's Stormwater Coordinator, the NHDES, VRAP Coordinator and Conservation Commission will continue various aspects of the Urban Pond Program in the absence of the Urban Pond Coordinator. This program continues sufficiently to be effective for the City of Manchester.

Future Goals: To continue the support for the watershed organizations, participate in their annual meetings, support the sampling and analyses efforts and continue to update the website.

#1-4, Make Brochures Available at the DPW and Public Libraries – (BMP Completed)

Current Status: The City has a limited number of previously developed brochures that are still available. These will be used for the continued education of the public. These brochures will be targeted toward individuals/groups who would best benefit from this information . •

The City continues to stock a moderate supply of bookmarks, EPA children's crossword place mats, rulers with 10 "Earth Care Tips" and pencils. These are distributed at Earth Day events and other environmental days.

The City has developed and printed brochures explaining the "Wastewater Treatment Process" (provided in the first storm water report), when visiting classrooms to teach students. These will continue to be given during classroom educational sessions.

BMP Effectiveness Evaluation: There have been no surveys or feedback forms developed to gage the effectiveness of this BMP. The department has received limited feedback from its citizens.

Future Goals: To continue the outreach to the students. To develop and provide an information brochure that can be mailed with the 24,000 customer accounts during the fifth year of the program. The mailer will advertise the website, storm water hotline and places where information can be obtained.

#1-5, Develop, Install & Maintain Signage at Urban Ponds – (BMP Completed)

Current Status: The signage information that was presented in the first report is still applicable. There are issues with vandalism, but these signs are repaired in the spring when the Parks & Recreation department begins to prepare the Urban Pond areas for public usage. Volunteers went out and renewed the signs at the ponds during the month of April for the summer season. The kiosks will be repainted and protective plexi-glass either replaced or repaired to assure the support structures are such that the message on each individual pond can be presented with no distraction.

BMP Effectiveness Evaluation: It is difficult to gage the effectiveness of this BMP. The signs are only effective if read. The kiosks are at the popular entrance areas of each pond and are easily accessible. The individuals who frequent the area most will probably maintain more of the sign's information through subconscious familiarity.

Future Goals: The goal is to maintain these signs in serviceable and readable condition. Manchester has developed a survey for the Dorrs Pond informational kiosk and signage. The survey and informational sheet is included as Attachment A. The Department will do at least two random blocks of surveys over the summer use period to determine the level of observation of signage and kiosk materials.

#1-6, Distribute Pet Waste Brochures with Dog Licenses & Increase Signage at Parks – (BMP Completed)

Current Status: There are signs for "No Fouling By Pet Waste" erected at the entrances of the urban ponds and also at City Parks. These signs reference the City ordinance that enforces this law.

In 2005, 10,500 brochures were mailed to all registered dog owners within the City of Manchester. The City Clerk has additional brochures that are given to all newly registered dogs. Residents who are renewing their dog licenses do not receive an additional brochure.

There is also signage at the ponds that indicate it is improper to feed ducks. This will help prevent geese and birds from fouling the shores of the ponds that the residents frequent.

BMP Effectiveness Evaluation: Studies have been undertaken in several metropolitan areas to determine the effectiveness of "Pet Waste" brochures. It has been determined that approximately 65% of the dog owners will clean up after their pets regardless of whether or not they have been informed via a brochure. Twenty percent of dog owners can be encouraged to pick up after their pets where they didn't previously through the encouragement of informational brochures. There will always be 15% of pet owners who will continue to ignore the law even if provide information on a continuing basis.

Manchester is hoping that the original brochures encouraged the uninformed 20% (approximately 2,000 dog owners to clean up after their pets) where they hadn't before.

Our department continues to be encouraged and hopeful that pet owners are responding as there has been little evidence of animal waste during our shoreline surveys for illicit discharges.

Future Goals: To keep residents informed in regards to their obligations handling their pet waste. Resupply the City Clerks office with brochures when requested. To continue visual field observations for problem areas when higher amounts of pet waste are noted. To review kennels and animal shelters for compliance with pet waste disposal practices.

BMP #2 Public Participation

#2-1, Comply with State Public Notification Laws - (BMP Implemented & Ongoing)
Current Status: The City of Manchester continues to comply with all Public Notification Laws regarding the Storm Water Management Program process. The meetings that EPD scheduled in the early stages of ordinance development, with the Planning Board and the Department of Public Works Highway Commission, were announced on the weekly agenda for those perspective meetings, posted at City Hall, the Department of Highways and posted on the City's website.

Examples of public announcements announced in the local newspaper were included in last year's report.

Manchester went beyond the newspaper public notice and mailed agendas and draft documents to developers, contractors and engineering firms that usually do business within the City. The City incorporated many of the comments into the draft Ordinance and the Regulations.

In addition to the Public Notification Law, the City of Manchester has a guide that all departments, boards, committees and the Mayor and Aldermen must abide by. It references the rules on Meetings, the Formation of Committees, Rules for Ordinances, Resolutions and Orders, Access to Public Records and Meetings, and Minutes and Records Available for Public Inspection. These Rules comply with the State of New Hampshire Public Notification Laws as outlined in RSA 47:6, and RSA 91-A:1 through RSA 91-A:6. This guidebook is available in all departments for reference should questions arise in regards to the implementation of Public Notice Law regulations.

Future Goals: To continue the public notification policy whenever any changes are made to the ordinance, or when substantial changes are made to the Regulations.

#2-2, Hold Annual Household Hazardous Waste Day
Current Status: The City of Manchester held two Household Hazardous Waste Days in Manchester during 2006. These dates have always fallen on the second Saturday of May and the second Saturday of October. The first collection was held on May 13, 2006 and the second was held on October 14, 2006. The date of collection is mentioned on the City's website, announced on flyers at Public Works and various other kiosks throughout the City and also announced in the newspaper the week of the collection. The City also sends out residential yard waste curbside collection schedules via sewer and/or water billing. This helps prevent residents disposing of their leaves and yard wastes in brooks, streams and wetlands. The following material amounts were collected during the 2006-reporting year.

Spring Haz-waste clean up – Hazardous materials consisting of the following components: Paint waste (9,200 lbs), Aerosols (600 lbs), Waste Oxidizing Liquid (100 lbs), Waste Caustic Alkali Liquids (200 lbs), Waste Corrosive Liquids (200 lbs), Pesticides Liquid (300 lbs), Mercury Waste (3 lbs), State regulated oil waste (3,240 lbs), Environmental hazardous waste (150 lbs), Acid filled batteries (200 lbs), Haz-waste solid (25 lbs) Non-RCRA, regulated material (110 lbs). Total waste stream collected:

Total Collected - 14,328 Pounds
Waste Oil Collected – 495 Gallons

Fall Haz-waste clean up – Hazardous materials consisting of the following components: Paint waste (24,200 lbs), Aerosols (500 lbs), Waste Oxidizing Liquid (75 lbs), Waste Caustic Alkali Liquids (250 lbs), Waste Corrosive Liquids (200 lbs), Pesticides Liquid (500 lbs), Mercury Waste (2 lbs), State regulated oil waste (3,200 lbs), Environmental hazardous waste (100 lbs), Acid filled batteries (400 lbs), Haz-waste solid (30 lbs) Non-RCRA, regulated material (400 lbs). Total waste stream collected:

Total Collected - 29,857 Pounds
Waste Oil Collected – 440 Gallons

During the course of the 2006 reporting year, Manchester also collected 42.25 tons of universal waste (consisting mainly of TVs, CRTs and computer peripherals).

BMP Effectiveness Evaluation: The collection this reporting year is significantly higher than in last year's report. This is possibly the most environmentally responsible successful program conducted semi-annually throughout Manchester. This program recovers a huge waste stream that could potentially be dumped in off road areas near brooks and ponds.

The City notifies all residents who receive a sewer bill regarding the pick up of yard waste and spring clean ups. This notification should help in the prevention of people dumping leaves and grass-clippings along roadsides and brooks, which help reduce nutrients that move into the Merrimack River from the tributary streams.

Future Goals: Manchester will hold two haz-waste collection days during the 2007 calendar year. One on May 12th and the other October 13^{h}.

#2-3, Continue Regular Used Oil, Battery and Tire Collection – (BMP Ongoing)

Current Status: The City collected 100.95 tons of tires, 2,675 gallons of used oil and 3.43 tons of used automotive batteries during the 2006 calendar year. Tire and oil waste collection was significantly increased over the same reporting period in 2005.

Future Goals: Continue the same level of accessibility and collection hours as currently established.

#2-4, Continue Urban Forestation through "Green Streets" Program

Current Status: The City of Manchester, through the Parks and Recreation "Green Streets Program," sold and installed 117 trees during the calendar year of 2006. There were fewer trees planted this year than in the previous year.

Future Goals: To continue the program as currently established. Assure the public is aware of the availability of this service through the City of Manchester.

#2-5, Publicize & Maintain Stormwater & Combined Sewer Hotline

Current Status: The City established the Storm Water / CSO Hotline on August 26, 2003. The phone number is (603) 665-6899. The City previously sent envelope stuffers with the 23,700 bills (residential, commercial and industrial customers) informing these users of the storm water hotline and how it can be used to address environmental concerns. Information on the hotline will be provided anytime a stormwater flyer is mailed with the residential billing.

The hotline number is also provided on the City's storm water website and on the Environmental Permits Coordinator's business cards.

BMP Effectiveness Evaluation: This BMP is effective after the residents receive a flyer in the mail. The impact of the flyer drops significantly a few weeks after receipt. Staff who answer the phone provide the stormwater hotline phone number or a direct transfer when a concern is received by any citizen.

Future Goals: To continue using the website, flyers, brochures and other methods to inform the public of the stormwater hotline.

BMP #3 Illicit Discharge Detection and Elimination

#3-1, Develop & Present Draft Storm Sewer Ordinance – (BMP Completed)
Current Status: The presentation of the storm water ordinance was done October 4, 2005. Comments were received, reviewed and where appropriate, incorporated. The Ordinance was approved by the Board of Mayor and Aldermen on August 1, 2006. A booklet with the approved Ordinance and adopted Regulations is included as Attachment B.

BMP Effectiveness Evaluation: The adoption of the ordinance and regulations has given the City the ability to cite codified references for enforcement actions.

Future Goals: To make full use of the Ordinance and Regulations to assure that the Storm Water Program is being enforced and managed properly.

#3-2, Continue Dry Weather Screening of Outfalls – (BMP Completed)
Current Status: The requirement of two inspections during the five-year program was completed. Manchester did screen all outfalls within the urban ponds during the summer of 2006. The pond that is within Hooksett (Goldfish Pond that abuts Manchester in the Dorrs Pond area) was also included in the screening. Bacterial samples were taken where a dry weather discharge was noted.

Two streams (Ray Brook and an unnamed tributary that feeds Dorrs Pond) were sampled and inspect a couple of times to determine potential coliform concentration. Ray Brook samples were negative. The unnamed tributary had varying counts as high as 4000 colonies per 100 mg. An intensive investigation was done within that waster shed contributory area and no source could be located. The small stream had two small impoundment areas. The count immediately above the impoundment area was < 300 colonies. The count within the impoundment area was between 3,000 and 4,000 colonies. It is believed that the stagnant water and warm temperatures caused the increase in bacterial count.

BMP Effectiveness Evaluation: The City has catalogued observable outfalls along the Merrimack and Piscataquog River along with the ponds. The City has collected samples from outfalls that run in dry weather (usually the result of small streams), has tested them and has found that only background levels of bacteria are present.

The urban ponds, being more environmentally sensitive, have several pollutants tested during the course of the summer. The summary of this testing can be found by visiting this url: http://www.manchesternh.gov/CityGov/DPW/EPD/SEPP/Pond/Home.html

Future Goals: The City expects to do another complete survey of the river and the urban ponds during the low flow season of 2007. The goal is to incorporate an updated numbering system that is easier to use that includes the outfalls that were missed in the Malcolm-Pirnie study. The system will cross-reference the Malcolm-Pirnie listing to be all inclusive.

#3-3, Develop and Implement System for Detection & Elimination of Illicit Discharges – (BMP Completed)

Current Status: This program was developed and submitted with the first year's report. The program has been a good baseline document for detecting illicit discharges. The New Hampshire Seacoast Coalition developed a document entitled "Guidelines and Standard Operating Procedures" for IDDE. Manchester did review this manual and included some of the procedures and suggestions into our developed Illicit Discharge Program.

BMP Effectiveness Evaluation: This BMP is effective in providing guidance when trying to determine the source of an illicit discharge that proves to be a difficult source to locate.

Future Goals: Our goal is to continue to aggressively respond to illicit discharges as they are found. Also, the City wants to continue to monitor the outfalls as outlined in BMP #3-2, for any illicit discharge connection that may become apparent in the future.

#3-4, Map Outfalls and Receiving Waters – (BMP Completed)

Current Status: The City's engineer mapped the outfalls from earlier engineering studies in 2001. An extensive GIS mapping system was developed for the City to include both sewage and drainage systems. This mapping has been extended to include tax maps, City assessing information and the water department's infrastructure.

Once annually, the City commissions CDM to input all the new growth and sewer extension updates into the GIS to assure it is a dynamic mapping system rather than a dated static system. The City's engineering department does periodic updates of the GIS from work that has been completed by city crews.

Errors to the developed GIS system continue to be found in the field. The discrepancies are noted and brought to the City's engineering staff so the GIS information can be updated and corrected.

BMP Effectiveness Evaluation: This tool has proven invaluable to our Storm Water Management Program. It is being used to track cleaning of lines, location of baffle tanks, sectioning off catch basin cleaning areas and for review to determine potential locations for illicit discharges.

Aerial Orthographic photos were used this year to determine the amount of fill in a rear lot. The 2000 aerial photo exhibited a distinct line of fill some 60 feet behind a rear deck. The 2003 aerial photo showed the fill had extended an additional 20 feet, exhibiting the fill extended over 80 feet beyond the rear deck. Measurements done in 2006 on the site illustrate the filling has continued for another 25 or so feet. The fill extends over 100 feet beyond the deck and is now encroaching upon the lot behind the home. This research work would not have been possible without the timeline provided by the aerial photographs. The GIS is a great tool to show established baselines from 2000 and 2003 throughout the City. These can be compared to construction encroachment beyond the approved boundary lines

Future Goals: The department is hoping to take advantage of more of the capabilities available with GIS system use. The staff will continue to review the existing aerial photographs before a construction project is started and reference these against the construction as it progresses.

BMP #4 Construction Site Runoff Controls

#4-1, Develop & Present Ordinance to Require Erosion & Sediment Control Plan (to include construction material management plan and plan review for sites disturbing more than one acre) – (BMP Completed)

Current Status: The Ordinance was drafted, reviewed, modified and adopted on August 1, 2006. A copy of the booklet containing both the Ordinance and Regulations is at the end of section three. The Board of Mayor and Aldermen authorized the Director of Public Works to develop a set of Regulations to expand upon and detail the content of the Ordinance. These Regulations were adopted by the Director of Public Works with approval by the Highway Commission on December 5, 2006.

BMP Effectiveness Evaluation: Manchester is possibly the first City in New England, and certainly New Hampshire that has adopted a specific Storm Water Ordinance and supporting Regulations. These documents will promote compliance at construction sites with subsequent enforcement capability should the contractor neglect Storm Water Pollution Prevention Plan requirements.

Future Goals: The same goal would apply here as that outlined in BMP #3-1.

#4-2, Develop Procedure for Receipt and Consideration of Public Comment – (Completed)

Current Status: The attachments outlined in BMP #2-1 illustrate how the City processes public comment. All comments are taken seriously, the citizens are contacted, the issues discussed and if the suggestion is sound, incorporated into the storm water management program.

Manchester will continue to receive suggestions via the website, phoned comments, statements made at hearings and by letter.

BMP Effectiveness Evaluation: The process used during the public hearing regarding the storm water ordinance was well received and most of the comments were incorporated into the adopted Ordinance (August 1, 2006). This process is working well.

Future Goals: The goal is to continue following the City's protocol with any future changes to the adopted Storm Water Ordinance or the approved Regulations.

#4-3, Check Erosion Control Measures and Construction Material Management on Site Inspection - (Implemented and Ongoing)

Current Status: The City developed an inspection checklist for site visits. This inspection sheet has proven to be a comprehensive document when referring back to conditions that existed at a particular time during project development. The inspection sheet includes information regarding the site, historical rainfall for the past few weeks, and the conditions of BMPs.

The inspection of BMPs is gauged against the Erosion and Sediment Control Plan and SWPPP that was submitted by the developer during the site plan approval process. Any deviance from the plan is noted and a clean typed copy is made from the field inspection notes. The clean copy is signed by the inspector and delivered to the contractor for action. Pictures taken at the site are referenced by link on the sheet and can be easily retrieved in the computer to evaluate the current findings with those from previous reports. An example of a site inspection form is included as Attachment C.

Since the adoption of the Ordinance, the City has developed a two-part "Notice of Violation" that can be used in the enforcement process. The inspection report serves as the first notice to the contractor that they need to come in compliance with their Storm Water Pollution Prevention Plan or Best Management Practices for site disturbances. A time frame for correction is outlined in the inspection report.

If the non-compliance has not been corrected at the time of the second inspection, a "Notice of Violation" is prepared and sent via certified mail, return receipt requested. A copy of the notice is presented to the site superintendent. More stringent time limitations are included for compliance. A copy of the two-part "Notice of Violation" is provided as Attachment D.

If upon reinspection, the site non-compliance has not been corrected, the enforcement actions proceed, with associated fines and penalties, as outlined in the Ordinance.

BMP Effectiveness Evaluation: The field inspection checklist, "Notice of Violation," Regulations and Ordinance provide the City with all the tools needed for compliance and enforcement regarding the Stormwater Program.

Future Goals: The future goal is to make use of the tools available for inspection and enforcement. Also, to follow up on minor enforcement actions to assure that these issues are corrected. Without follow up, the process of escalating enforcement would not be possible.

BMP #5 Post-Construction Stormwater Management in New Development & Redevelopment

#5-1, Develop Ordinance to Require Runoff Controls for New & Re-Development for Projects Disturbing > One Acre (BMP Completed)

Current Status: This requirement is incorporated in the approved Ordinance and adopted Regulations. The booklet containing these two documents can be found at the end of Section 3.

Post construction consists of maintaining BMPs and structures that have been installed within a development after the contractor has left. The City spent many hours over the past two years reviewing documents that required long-term maintenance for installed BMPs.

The department developed a Long-Term Maintenance Agreement to be signed by any new developments that are completed within the City. This will assure that the structures that are installed are maintained. The maintenance of structures after the construction was completed has always been the achielles heel throughout the country. Manchester believes this document, that will be registered with Hillsboro County and part of an Associations' covenants will assure that these structures are being maintained.

A copy of a draft agreement for a proposed development is included as Attachment E.

BMP Effectiveness: It is early to determine the effectiveness of this document. If it is signed, registered and carried by the Association it should prove to be a highly effective means of assuring maintenance of BMPs long after the development is completed.

Future Goals: To assure that this agreement is signed by the owner and registered by the City before issuing the final certificate of occupancy for all future developments within the City of Manchester.

#5-2, Recommend a BMP Manual for Use by Planners and Developers

Current Status: The suggested manuals referenced are outlined in the approved Regulations. These manuals are:

- New Hampshire Department of Environmental Services Sediment and Erosion Control Manual, (Rockingham County "Storm Water Management and Erosion Control Handbook for Urban and Developing Areas");
- Manchester's "Standard Specifications for Road, Drain & Sewer Construction";
- Innovative Stormwater Treatment Technologies BMP Manual, NHDES, May 2003;
- New Hampshire DOT Guidelines for Temporary Erosion and Sediment Control and Storm Water Management – NHDOT Bureau of Construction.

Other reference manuals and materials are mentioned on the website. These have not been incorporated into the Regulations, but warrant a mention on the website. The listing of references mentioned on the website is listed below:

EPA's BMPs for Stormwater Phase II
State of New Hampshire BMPs
International Stormwater BMP Database
California Stormwater Quality Associations's Handbook for Construction Site BMPs
U.S. DOT Guide to BMPs
State of Oregon Recommended BMP Guide
EPA Guide to Developing a SWPPP
Overview of Minnesota's Construction Stormwater Permit
National Resource Defense Council Stormwater Fact Sheet

BMP Effectiveness: These references are voluntary guidance. The manuals can be an effective approach as most New Hampshire contractors are familiar with the contents of these manuals and refer to these guidelines when developing their sediment and erosion control plans.

Future Goals: Continue to review other manuals to determine if these would be suitable for reference within the Stormwater Regulations.

BMP #6 Pollution Prevention/Good Housekeeping for Municipal Operations

#6-1, Install Silt Fence Around Snow Dump Area – (BMP Ongoing)

Current Status: Silt fences continue to be erected around the snow dumping areas in Manchester. The erection of these fences is verified during the month of November and early December.

In the spring after the snow has melted, any accumulated trash, debris and the silt fence is removed from the site until the next season.

During the previous two years the City used a snow-melter to reduce the congestion caused by accumulating snow. This practice helped in reducing the spring peak runoff as the snow was melted during the colder days. The snow melter was used to a lesser extent last year and not used at all this year due to the high price of fuel to run the unit.

BMP Effectiveness: The silt fence keeps the trash and sand that is collected with the plowed snow from entering the waterways.

Future Goals: Continue with the existing program and assure silt fence is erected in areas where first time snow dump areas are set up.

#6-2, Catch Basin Cleaning Program, Including Priority Catch Basins – (Ongoing)

Current Status: The City's catch basin cleaning program was on a high priority listing before the Storm Water Phase II program was initiated. The City contracts annually to have catch basins cleaned by a private company. The usual amount of funding dedicated to catch basin cleaning is $50,000. The number of basins cleaned depends on the per basin cost bid. A listing of basins cleaned by the private contractor is included as Attachment F. More than 1,100 catch basins were cleaned over this reporting year.

There is a listing of priority catch basins adjacent to the Urban Ponds and in trouble areas within the City that must be inspected semi-annually, and cleaned if warranted. The priority status for these basins assures that a significantly reduced pollutant load enters the ponds.

The catch basin cleaning list completed by municipal crews is included as Attachment G. The catch basins surrounding the urban ponds receive top priority. In the May/June time frame of 06 there were 94 basins cleaned and in September/October 06 there were 112 basins cleaned by the City crews. An estimate of 0.4 cubic yards per of material per basin is assumed. That would equate to 520 yards (1,300 basins X =0.4) of debris removed from catch basins over the reporting year.

BMP Effectiveness: This process continues to work well. The ongoing development of the problem areas listing sheet allows the City to trend areas that need more attention and response. The listing of the City's 2006 catch basin complaint/response sheet is provided as Attachment H.

Sewer calls are tracked to determine if roots, grease or other maintenance issues are the cause of the blockages. The log of sewer back up calls and the investigative findings are included as Attachment I.

The sewer problem areas are noted and inspected on a minimum annual basis and sometimes more frequently, depending on the type and/or frequency of the problem. Greater than 50% of the City's sewer system is combined. Heavy rains will cause sewer problems beyond maintenance issues. The sewer problem areas listing for 2006 is included as Attachment J.

Future Goals: To continue designation of the urban pond catch basins as a priority for cleaning. To reinforce to the City the need to finance the private contractor to clean additional catch basins within the City.

#6-3, Sweep Streets Three Times Annually – (Ongoing)

Current Status: The City continues to follow a schedule of street sweeping presented in the first year's report. This year's winter was a typical winter with little sweeping performed during this season. The City has two vacuum and two mechanical sweepers.

Most of the sand found on City streets comes from winter sanding and some small amounts of sediment from erosion on residential lawns. Sand is applied to sidewalks and schoolyards during snowstorms. Salt is applied to the highways during snowstorms. A sand/salt mix is used during icing conditions or ice storms.

The amount of sand applied varies yearly. It is all weather dependent. The sweepers will pick up aluminum cans, cigarette butts, leaves, paper cups, plastics, articles of discarded clothes, foot-ware and a host of material that is not sand related. When sand is mostly absent from the streets these items make up the bulk of the material collected by the sweeper. When sand is present it may make up the bulk of the material. Most of the sand is collected off the streets during the first few neighborhood runs immediately after the winter storm season. Otherwise, most of the material collected is what is listed above. Therefore, it would be difficult to determine the amount of sand collected.

BMP Effectiveness: This BMP continues to be quite effective as some sections of the inner City business district are swept on a biweekly basis. The current sweeping schedule assures all City streets are swept more than three times annually.

Future Goals: To continue the street sweeping program at its current rate.

#6-4, Continue to Follow SOPs for Disposal of Catch Basin Cleaning and Street Sweeping Residuals – (Ongiong)

Current Status: The City continues to place street sweeping debris and catch basin debris up in the rear lot of the recycling facility. The street sweepings are placed on a concrete pad with three-sided cement block walls. These sweepings are dried out, mixed with the gravel/asphalt pile and eventually ground up to make road base for streets and sidewalks.

The catch basin waste is piled across from the street sweeping debris in a compacted depression. This catch basin waste is allowed to evaporate to a certain extent then it is also mixed with the gravel/asphalt pile and eventually ground up to also make road base for streets and sidewalks.

The regional Stormwater Committee had discussions regarding the amount of debris that is typically pulled from a catch basin during cleaning. The consensus was that typically a wheelbarrow of material is pulled from a basin when it is cleaned. A full wheelbarrow carries six cubic feet of sand. This is approximately ¼ of a cubic yard. Manchester will use this figure when figuring totals for catch basin cleaning.

BMP Effectiveness: This BMP is effective as designed and provides a reuse for the material collected that would otherwise be sent to landfill.

Future Goals: Monitor the catch basin disposal area for evidence of pollution to the surrounding area. Take any BMP measures necessary to assure pollution is contained.

#6-5, Minimize Salt Usage and Maintain Cover over Salt Storage Area – (Ongoing)

Current Status: The majority of the salt the City uses for highway treatment in the winter is kept under cover at the Highway Garage. There is also a satellite location up at Dunbarton Road that is active during the winter period. This salt pile is covered with a tarp.

All salting trucks are calibrated once annually before the winter sand/salt application season begins to assure the greatest efficiency and minimal salt use during spreading. The amount of salt added in any season is dependent to the number of snowstorms, the amount of freezing rain received and the nightly refreeze conditions of early spring.

The State of New Hampshire is leading an effort to control salt application in the area of Interstate 93. The State is looking to expand this section of turnpike to four-lanes, but have yet to receive EPA approval because of the chloride contamination to adjacent waterways. There are other factors playing a role in the full implementation of this BMP.

Manchester is beginning to undertake a sub-watershed review around the Nutts Pond area for salting and sanding reduction. This will be a pilot study with a developed model to see what improvements can be made to reduce the sand and salt application in this area and quantify the success.

The draft model and particulars of the program will be developed over the summer and implemented next winter.

BMP Effectiveness: Salt usage is weather dependent and it is hard to gage effectiveness. Manchester can compare the current chloride analyses taken at the urban ponds and compare those to past years to determine if there is a reduction. The unknown factor is the number of homes around any pond that have water-softening units, which contribute chlorides to the water table.

Future Goals: To complete the Nutts Pond sand/salt reduction program and modeling so the plan can be implemented next winter. Report the findings in next year's report and if it proves successful, consider implementing it in another sub-watershed.

#6-6, Develop/Implement Program for Cleaning Pond Inlets & Trash Racks

Current Status: There will be two upgraded structures at Nutts Pond along with new drainage structures. These include three forebays, diversion manholes, deep sumps along with the retrofits of the north and south inlet tanks. There are plans underway to retrofit the inlet racks for easier access and cleaning. These new and expanded structures will be added to the baffle tank maintenance list (expected completion is June of 2007).

The three, three-chamber baffle tanks at Dorrs Pond, the one, three-chamber baffle tank at Crystal Lake and the Vortechnics swirl concentrator at Douglas street have all been inspected. The city has added a swirl concentrator to the listing that was in the Hooksett Plaza, but has not received any regular maintenance before last summer.

The city continues to use the checklist for the spring and fall inspections (Attachment K) of these units to assure they are cleaned when they begin to get filled with sediment.

There is a StormTreat™ System at Crystal Lake that the City is currently operating. It was restarted in May of 2005. The City cleaned the lines, retrofitted the baffle tank and now has the unit on the semi-annual inspection checklist. The system worked fine during 2006 and all day lilies bloomed. There was enough rain over the last summer and fall season that the day lilies did not have to be watered.

BMP Effectiveness: The amounts of sediment that are removed from the various structures indicate that the program is highly effective.

Future Goals: To include all the new structures on the inspection sheets. To assure that the structures continue to be checked on a semi-annual basis and that they are cleaned when they are partially full.

#6-7, Develop/Implement Employee Education Program – (Ongoing)

Current Status: The City continues to provide training to the staff who are involved with any aspect of storm water management. Power Point presentations, videos, and how-to demonstrations were given to the employees during March. Those presentations reflect knowledge gained over this reporting year, and new methods for BMP placement.

This year's sewer crew training was held on March 14th and March 15th of 2007. The training involved the following:

- Biology of watersheds;
- Wastewater treatment 101;
- General housekeeping practices for work and home;
- Erosion mistakes while performing construction;
- Erosion problems at construction sites.

The second training session focused on the engineering staffers who are involved with inspections at construction sites, site design review and approvals. This training was held on March 29th and included the following:

- Stormwater Management Program Overview;
- Overview of Adopted Ordinance;
- Review of Notice of Violation Form;
- Installation of Proper BMPs;
- Overview of approved Regulations;
- Review of Long-term Maintenance Agreement Form;
- BMP missed steps and mistakes;
- Overview of Erosion Examples;
- Review of Inspection Forms;

The training log for the sewer crew is Attachment L and Engineering is Attachment M.

Employee training goes beyond the Department of Public Works employees. The City of Manchester prints and distributes a bi-monthly newsletter entitled "The City Matters" to all City employees. As with last year, copies of the articles for this reporting year are provided as Attachment N.

The SEPP funding has ended for the Merrimack River "MATTERS" Program. Our department will continue to make presentations at the schools in spite of the reduced program activity that results from the cutbacks. The Amoskeag Fishways will also greatly reduce their involvement with the "MATTERS" Program.

Manchester structures a training module for storm water coordinators in surrounding communities during the bi-monthly meetings. Copies of the minutes of previous meetings and examples of the training are included as Attachment O.

BMP Effectiveness: This BMP continues to grow, and with previous experience, is more effective with each passing year. The only area that will see a decrease in training is the work with the middle school students. Employees who work in the field and inspect construction sites are more familiar with the requirements of the Manchester's Storm Water Program.

Future Goals: To continue making presentations at schools when requested. To continue the training of City staff regarding the storm water program. Keep storm water issues in the forefront through the efforts of the "City Matters" newsletter. Continue hosting the regional S.W.A.T. meetings. To meet with the water department and find out what they are doing for student training regarding watershed activities and events. The storm water program could include and expand upon some of the Water Department's outreach.

#6-8, Design & Construct Pond Specific Pollution Prevention Projects – (Completed)

Current Status: All pond specific pollution projects have been designed in accordance with the five-year program and the Supplemental Environmental Projects Programs requirements. This is a completed task.

The Nutts Pond project is ongoing and will be completed by June of 2007. This will be the last pond specific project. Maintenance will be ongoing as detailed in a previous section.

BMP Effectiveness: Many of the benefits of these pond specific projects are outlined in BMP 6-6. These structures have removed several hundred cubic yards of material from the river and ponds that would have otherwise entered these water bodies.

Future Goals: Continue the upkeep and inspections of these structures. Include all structures implemented at Nutts Pond site on the semi-annual inspection checklist.

#6-9, Best Management Practices for Derryfield Country Club - (BMP Completed)
Current Status: This BMP was completed over the last two years. The asphalt cart path has held up well and has almost eliminated erosion in a location that was previously heavily eroded.

BMP Effectiveness: This BMP reduces the amount of sediment contributed from the second hole at the Country Club. Each year approximately 10 to 15 cubic yards of fill was brought in to repair the erosion caused by the winter snowmelt in this area. Since the installation of the asphalt cart path this has not been necessary.

Future Goals: There are no future goals regarding this BMP.