

# CITY OF GRAHAM

## COMPREHENSIVE STORMWATER MANAGEMENT PROGRAM REPORT



# **CITY OF GRAHAM**

## **COMPREHENSIVE STORMWATER MANAGEMENT PROGRAM REPORT**

### **Graham City Council**

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**Adopted the 4th of March, 2003  
by the Graham City Council.**

# GRAHAM COMPREHENSIVE STORMWATER MANAGEMENT PROGRAM REPORT

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# City of Graham

## Comprehensive Stormwater Management Program Report

### 1. Storm Sewer System Information

#### 1.1. Population Served:

Permanent Population: 13,100

Seasonal: N/A

Basis of Information: NC Office of Budget, Planning, & Management, 2002 Estimate

**1.2. Growth Rate:** 2.3% The growth rate represents the annualized rate based on the relative change in 1990 and 2000 US Census.

**1.3. Jurisdictional and MS4 Service Areas:** Municipal: 8.296 square miles;  
Extraterritorial Jurisdiction: 8.18 square miles

**1.4. MS4 Conveyance System:** The City of Graham Stormwater System consists of a combination of piping, ditches, and sheet flow. Per City Ordinance all new city streets constructed by private developers must have curb and gutter stormwater systems. The City does not currently require structural BMP's to restrict or slow stormwater runoff. The system is maintained by the City's Streets Department, which is housed in the Public Works Department. The stormwater system for state maintained roads is managed by NCDOT.

#### 1.5. Land Use Composition Estimates:

Residential: 75 %

Commercial: 6 %

Industrial: 17 %

Open Space: 2 %

**1.6. Estimate Methodology:** The land use composition estimates were calculated from the City's Geographic Information System zoning land use data layer. The open space estimate is composed of City maintained parks and City cemeteries.

**1.7. TMDL Identification:** Yes. A TMDL for fecal coliform is currently under consideration for Town Branch. NCDENR DWQ conducted a public meeting on June 25, 2002 at Graham City Hall to present a draft copy of the TMDL. Chris Roesler with DWQ submitted a final draft to the US Environmental Protection Agency in August 2002. The City is working with the Piedmont Triad Council of Governments and has received a 319 grant with funding available in summer of 2003.

## 2. Receiving Streams

Table 1. Cape Fear River Basin

Receiving Stream Name	Stream Segment	Water Quality Classification	Use Support Rating	Water Quality Issues
Haw River	16-(1)	C; NSW	PS	N/A
Town Branch	16-17	C; NSW	NR	TMDL for fecal coliform under consideration
County Home Branch (Still House Branch)	16-17-1	C; NSW	NR	N/A
Big Alamance Creek	16-19-(4.5)	C; NSW	FS	N/A
Back Creek (Little Creek)	16-19-5	C; NSW	FS	N/A
Little Alamance Creek	16-19-11	C; NSW	NS	Urban Stormwater Surge
Bowden Branch (Boyd Creek)	16-19-11-2	C; NSW	NR	N/A
N/A denotes that data was not available				

**3. Existing Water Quality Programs**

**3.1. Local Programs:** N/A

**3.2. State Programs:** Erosion and Sediment Control

**4. Permitting Information.**

**4.1. Responsible Party Contact List:** See Appendix A (pg. 20) for a list of each measurable goal sorted by measure. Contact information for responsible parties is listed below.

	<b>BMP</b>	<b>Contact Person</b>	<b>Position</b>	<b>Phone #</b>	<b>Fax #</b>	<b>Email Address</b>
<b>BMP's and Measurable Goals for Public Education and Outreach</b>						
1	Draft articles for semi-annual newsletter	Jason Sullivan	Planner	336/570-6705	336/570-6703	jsullivan@cityograham.com
2	Distribute stormwater brochures through public library	Jason Sullivan	Planner	336/570-6705	336/570-6703	jsullivan@cityograham.com
3	Informational Website linked to City webpage	Chris Rollins	Assistant City Manager	336/570-6700	336/570-6703	crollins@cityofgraham.com
5	Establish Reporting Hotline	Donnell Braxton, Jr.	Public Works Director	336/570-6709	336/570-6703	grahampw@netpath.net
6	Statewide Program for Education	Donnell Braxton, Jr.	Public Works Director	336/570-6709	336/570-6703	grahampw@netpath.net
7	Coordinate with other in-house communication tools	Donnell Braxton, Jr.	Public Works Director	336/570-6709	336/570-6703	grahampw@netpath.net
<b>BMP's and Measurable Goals for Public Involvement and Participation</b>						
1	Hold Public Hearing for Stormwater Permit Application	Jason Sullivan	Planner	336/570-6705	336/570-6703	jsullivan@cityograham.com
<b>BMP's and Measurable Goals for Illicit Discharge and Elimination</b>						
1	Develop ordinance regarding illicit connections	Donnell Braxton, Jr.	Public Works Director	336/570-6709	336/570-6703	grahampw@netpath.net
2	Adopt Ordinance regarding illicit connections	Donnell Braxton, Jr.	Public Works Director	336/570-6709	336/570-6703	grahampw@netpath.net
3	Develop and distribute fact sheets for public education program on illicit connections and spill management.	Jason Sullivan	Planner	336/570-6705	336/570-6703	jsullivan@cityograham.com
4	Train employees on how to inspect for illicit connections and establish a tracking system for managing reported problem areas.	Donnell Braxton, Jr.	Public Works Director	336/570-6709	336/570-6703	grahampw@netpath.net

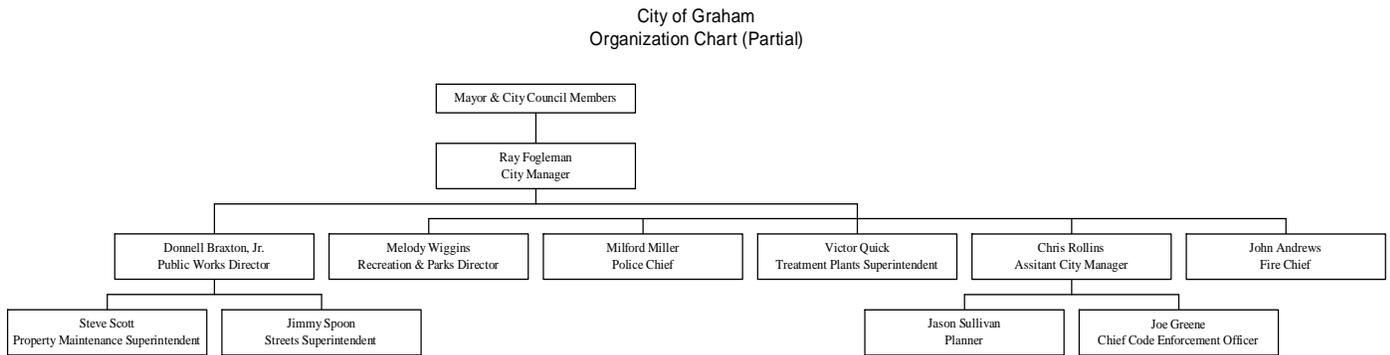
	<b>BMP</b>	<b>Contact Person</b>	<b>Position</b>	<b>Phone #</b>	<b>Fax #</b>	<b>Email Address</b>
5	Utilize local hotline set up under Public Involvement Program for public reporting of illicit connections.	Donnell Braxton, Jr.	Public Works Director	336/570-6709	336/570-6703	grahampw@netpath.net
6	Coordinate with local wastewater program on identification of potential cross connections between sanitary sewer and storm sewers.	Donnell Braxton, Jr.	Public Works Director	336/570-6709	336/570-6703	grahampw@netpath.net
7	Identify responsible party within organization to manage follow up and enforcement actions.	Donnell Braxton, Jr.	Public Works Director	336/570-6709	336/570-6703	grahampw@netpath.net
<b>BMP's and Measurable Goals for Construction Site Stormwater Runoff Control</b>						
1	Rely on existing measures implemented through NCDENR Land Quality Section.	Matthew Gantt	Regional Engineer	336/771-4600	336/771-4631	Matt.Gantt@ncmail.net
<b>BMP's and Measurable Goals for Post Construction Storm Water Management in New Development and Redevelopment</b>						
1	Develop ordinance for development and redevelopment of properties meeting the minimum criteria established by NCDENR	Donnell Braxton, Jr.	Public Works Director	336/570-6709	336/570-6703	grahampw@netpath.net
2	Establish regulatory controls for ensuring long-term maintenance of on-site structures.	Donnell Braxton, Jr.	Public Works Director	336/570-6709	336/570-6703	grahampw@netpath.net
3	Develop ordinance for development and redevelopment activities draining to Nutrient Sensitive Waters.	Donnell Braxton, Jr.	Public Works Director	336/570-6709	336/570-6703	grahampw@netpath.net
4	Develop nutrient application management program	Donnell Braxton, Jr.	Public Works Director	336/570-6709	336/570-6703	grahampw@netpath.net

	BMP	Contact Person	Position	Phone #	Fax #	Email Address
<b>BMP's and Measurable Goals for Pollution Prevention/Good Housekeeping for Municipal Operations</b>						
1	Develop training materials on pollution prevention for public facilities, using existing materials gathered from other organizations or creating new tools as needed. Educate all employees annually on the need for controls to protect stormwater from exposure to potential pollutants.	Donnell Braxton, Jr.	Public Works Director	336/570-6709	336/570-6703	grahampw@netpath.net
2	Provide training for those employees that maintain the drainage system with the focus on disposal of floatables, grit, sediment, and other pollutants removed from the system.	Donnell Braxton, Jr.	Public Works Director	336/570-6709	336/570-6703	grahampw@netpath.net
3	Provide training to employees that manage and apply chemicals for control of dust, pests, vermin, and weeds and/or are used to enhance the growth or condition of public urban landscape and recreation facilities. Training will target the safe and effective application, storage and disposal of chemicals used.	Steve Scott	Property Maintenance Superintendent	336/570-6709	336/570-6703	N/A
4	Annually inspect vehicle washing and fueling operations to ensure that they are in good working order and that they minimize exposure of stormwater to chemicals, fuels, and other liquids.	Jimmy Spoon	Streets Superintendent	336/570-6709	336/570-6703	N/A

	<b>BMP</b>	<b>Contact Person</b>	<b>Position</b>	<b>Phone #</b>	<b>Fax #</b>	<b>Email Address</b>
5	Inspect all materials storage facilities to determine priority for reducing exposure to stormwater.	Donnell Braxton, Jr.	Public Works Director	336/570-6709	336/570-6703	grahampw@netpath.net
6	Inspect salt storage facility and application equipment annually to identify and eliminate exposure to stormwater and/or ineffective/inappropriate application. Evaluate current snow and ice management program and ensure that effective measures are in place to minimize contamination of stormwater.	Jimmy Spoon	Streets Superintendent	336/570-6709	336/570-6703	N/A
7	Develop standard operating procedures for various facilities and/or operations such as street sweeping activities and parking lot (garage) maintenance activities to ensure that the greatest reduction of pollutant loading to stormwater that can be achieved.	Donnell Braxton, Jr.	Public Works Director	336/570-6709	336/570-6703	grahampw@netpath.net
8	Evaluate your procedures for managing trash and garbage collection to ensure that exposure of contaminant materials is minimized.	Donnell Braxton, Jr.	Public Works Director	336/570-6709	336/570-6703	grahampw@netpath.net
9	Evaluate spill response program for in-house activities as well as community response and adjust as needed to ensure highest potential for minimizing impacts on stormwater.	John Andrews	Fire Chief	336/570-6707	336/570-6703	N/A

	<b>BMP</b>	<b>Contact Person</b>	<b>Position</b>	<b>Phone #</b>	<b>Fax #</b>	<b>Email Address</b>
10	Maintain inventory of hazardous chemicals and other potentially hazardous materials and ensure that limited but sufficient quantity of items are on hand to minimize risk of spill or contamination of stormwater.	John Andrews	Fire Chief	336/570-6707	336/570-6703	N/A

#### 4.2. Organizational Chart:



#### 4.3. Signing Official:

**Authorized Representative:** City Manager

**Name:** Ray Fogleman

The City Manager is designated by resolution adopted by the City Council as the signing official.

#### 4.4. Duly Authorized Representative

- 4.4.1. Resolution designating City Manager as the responsible party is attached in Appendix A (pg. 20).

**5. Co-Permitting Information**

N/A

**6. Reliance on other government entity to satisfy one or more permit obligations**

**6.1. Organization:** North Carolina Department of Environment and Natural Resources

**6.2. Element to be Implemented:** Construction Site Stormwater Runoff Controls

**6.3. Contact Information for the Responsible Party:**

- Name: Matthew Gantt, Regional Engineer
- Address: 585 Waughtown St., Winston-Salem, NC 27107-2241
- Phone Number: 336-771-4600

**6.4. Legal Agreement:** Yes, the Sedimentation Pollution Control Act of 1973 (SPCA)

## 7. Stormwater Management Program Plan

### 7.1. Public Education and Outreach on Storm Water Impacts

7.1.1. **BMP Summary Table:** See Appendix B (pg. 24) for the details on the following BMP's:

- Draft articles for semi-annual newsletters.
- Distribute stormwater brochures through public library.
- Informational website linked to City web page.
- Establish reporting hotline.
- Statewide program for education.
- Coordinate with other in-house communication tools.

7.1.2. **Target Audience:** The target audience for this measure will be households, businesses, and industries. Efforts will be made to target materials to school age children, the general public, and City employees. Materials will also be created to focus on different types of uses, such as residential, commercial, and industrial.

7.1.3. **Target Pollutant Sources:**

- **Trash:** An accumulation of trash and debris can clog stormsewer pipes, creating hazards for vehicles, pedestrians, and homes.
- **Sediment:** Sediment removal reduces sedimentation of waterways and improves water quality for aquatic life, recreational uses, and drinking water supplies.
- **Car Washing:** Car washing can introduce pollutants into the stormsewer system and is normally done under conditions where the runoff is not diluted.
- **Disposal of Household Chemicals and used Oil:** Improper disposal of chemicals and oil degrades waterways and water quality.
- **Application of Lawn Care Products:** Overuse and improper application of lawn products poses risks to the natural environment, as well as people and animals.
- **Fecal Coliform:** Point and non-point pollution sources can increase levels of fecal coliform in a waterway.

7.1.4. **Outreach Program:** The City of Graham's approach for the outreach program will use different methods to distribute information and inform the public. Initially, outreach efforts will focus on mailers, flyers, and brochures to make the public aware of the stormwater program. Outreach efforts will also include updates to the City's website that will include general stormwater information and email links to report violations. In addition to the web-based information a hotline will also be established for the public to contact City Staff.

- 7.1.5. Decision Process:** The overall purpose of the City of Graham stormwater plan is to provide a solid foundation of information for the public over the next five years. The City has not had a comprehensive stormwater program and these BMP's represent the initial steps in starting a program. Due to the extensiveness of the changes that are required, the City is not prepared to deal with all aspects of stormwater management simultaneously. However, the approach outlined in this application represents progressive steps designed to build on each other. It also allows for an evaluation of the BMP's effectiveness and the ability to make adjustments as needed. This approach will also accommodate any future revisions to the final stormwater rules that will be adopted by the State.
- 7.1.6. Evaluation:** The effectiveness of this measure will be evaluated on an annual basis through a review of the number of materials developed and distributed. Additionally, the number of contacts through the hotline and email will be tracked to document the impact that the materials are having on the public.

## **7.2. Public Involvement and Participation**

- 7.2.1. BMP Summary Table:** See Appendix B (pg. 24) for the details on the following BMP's.
- Hold public hearing for stormwater permit application.
- 7.2.2. Target Audience:** The target audience will be the general public.
- 7.2.3. Participation Program:** A public hearing was held by the City Council allowing the general public to comment on the Stormwater Permit Application and Management Program. Public hearing notices are drafted by City Staff and forwarded to a local weekly newspaper for publication. All legal notices are published for two consecutive weeks prior to the public hearing date. The City Planner was responsible for creating the legal advertisement and forwarding it to the newspaper.
- 7.2.4. Decision Process:** The public hearing process was chosen because it gives any interested party an opportunity to comment on proposed regulations. A public hearing also ensures that the elected officials have an opportunity to hear comments directly from the public.
- 7.2.5. Evaluation:** The effectiveness will be evaluated by holding a public hearing in compliance with State and Local requirements. A certified copy of the public hearing notice is also attached to the application (See Appendix A, pg. 20).

## **7.3. Illicit Discharge Detection and Elimination**

- 7.3.1. BMP Summary Table:** See Appendix B (pg. 24) for the details on the following BMP's.
- Develop ordinance regarding illicit connections.
  - Adopt ordinance regarding illicit connections.
  - Develop and distribute fact sheets for public education program on illicit connections and spill management.

- Train employees on how to inspect for illicit connections and establish a tracking system for managing reported problem areas.
- Utilize local hotline set up under Public Involvement Program for public reporting of illicit connections.
- Coordinate with local wastewater program on identification of potential cross connections between sanitary sewer and storm sewers.
- Identify responsible party within organization to manage follow up and enforcement actions.

**7.3.2. Storm Sewer System Map:** The City currently has paper maps of the stormsewer system dated June 1975. In addition, the City has construction drawings of all stormsewer projects since 1975 on file. This information will provide a base for an updated comprehensive stormsewer map. At a minimum the map will identify stormsewer outfalls and receiving waters. All maps will be available through the City of Graham Planning Department for review and comment.

**7.3.3. Regulatory Mechanism:** The City will develop and adopt ordinances for defining and correcting illicit connections and discharges to the stormsewer system. City Staff will also develop procedures to identify problem areas and trace it to the source.

**7.3.4. Enforcement:** The Code of Ordinances will be amended to allow for enforcement actions to be initiated for stormwater violations. At a minimum the methodology will involve notification of the property owner, establishing a remediation period, and issuance of fines as needed.

**7.3.5. Detection and Elimination:** The City's proposed approach to detect and eliminate illicit discharges will start with a general evaluation of the stormsewer system. The evaluations will primarily be conducted during prolonged dry periods during the summer months. Once the preliminary evaluation is complete a more detailed investigation of the stormsewer system will be conducted. Once discharges are detected enforcement actions will taken.

**7.3.5.1. Procedures for locating priority areas:** The City will use several different methods to identify illicit connections. First, dry weather evaluations of stormsewer outfalls will be conducted to identify problems areas. Second, on-site inspections of industries and businesses will be conducted on an as-needed basis. These inspections will be coordinated through existing inspections programs in various City Departments. Third, the general public will be provided with reporting mechanisms to notify City personnel of illicit connections. The City will also train employees to identify illicit connections and report possible violations to appropriate staff members. Additional detection methods will be evaluated during the permit cycle and changes will be made as needed.

**7.3.5.2. Procedures for removing the source of the illicit discharge:** The City will adopt an ordinance specifying the procedures and authority to eliminate an illicit connection or discharge. The ordinance will give City employees the right to perform on-site inspections, grant right-of-entry powers, outline corrective actions, and specify procedures for issuing fines and citations.

**7.3.5.3. Procedures for evaluation of illicit connection and discharge component:** A stormwater advisory group composed of designated City employees will evaluate the program on an annual basis. The group will evaluate the suggested BMP's for that year and determine whether they were met. If the goals of the suggested BMP's are not fulfilled the group will decide whether to devise a new strategy for the BMP, modify the implementation method, or extend the time frame for the strategy.

**7.3.6. Non Stormwater Discharges:**

Water line flushing: Allowable  
Landscape irrigation: Allowable  
Diverted stream flows: Allowable  
Rising ground waters: Allowable  
Uncontaminated ground water infiltration(as defined at 40 CFR §35.2005(20)):  
Allowable  
Uncontaminated pumped ground water: Allowable  
Discharges from potable water sources: Allowable  
Foundation drains: Allowable  
Air conditioning condensation: Allowable  
Irrigation water: Allowable  
Springs: Allowable  
Water from crawl space pumps: Allowable  
Footing drains: Allowable  
Lawn watering: Allowable  
Individual residential car washing: Allowable  
Flows from riparian habitats and wetlands: Allowable  
Dechlorinated swimming pool discharges: Allowable  
Street wash water: Allowable

**7.3.7. Outreach:** The City will inform the public about the hazards of illicit connections and illegal dumping through the methods discussed in the Public Education component. As for City employees, this information will be integrated into training programs.

**7.3.8. Decision Process:** The program approach for illicit discharge detection and elimination was developed by reviewing technical documents from NCDENR and USEPA. It was determined that inspections would need to be coordinated with other City Departments. From these inspections corrective measures would be initiated and followed up by designated staff members. It was determined that outreach activities should be combined with the public education program.

**7.3.9. Evaluation:** The success of the program will be evaluated on meeting the proposed deadlines and finding and correcting illicit discharges into the stormsewer system. The measurable goals for each BMP are listed in the BMP Summary Table.

**7.4. Construction Site Stormwater Runoff Control**

**7.4.1 BMP Summary Table:** See Appendix B (pg. 24) for the details on the following BMP's.

- Rely on existing measures implemented through NCDENR Land Quality Section.

## 7.5. Post-Construction Storm Water Management in New Development and Redevelopment

### 7.5.1. **BMP Summary Table:** See Appendix B (pg. 24) for the details on the following BMP's.

- Develop ordinance for development and redevelopment of properties meeting the minimum criteria established by NCDENR.
- Establish regulatory mechanism for ensuring long-term maintenance of on-site structures.
- Develop ordinance for development and redevelopment activities draining to Nutrient Sensitive Waters.
- Develop nutrient application management program.

### 7.5.2. **Non-Structural BMPs:** The following non-structural BMP's have been adopted by the City Council.

- *City of Graham Growth Management Plan 2000-2020:* The comprehensive land use plan identifies future growth areas for the City. The plan also identifies environmentally sensitive areas and recommends policies for protecting those areas.
- The *City of Graham Development Ordinance* allows for voluntary open space set-asides in certain residential zoning districts. If a developer chooses this option they are allowed smaller lots sizes and widths, as well as reductions in applicable acreage fees.
- Landscaping Ordinance requires all new non-residential developments to provide on-site landscaping.

### 7.5.3 **Structural BMPs:** City staff members will perform technical reviews and compile a list of post-construction controls for City Council adoption. Strategies will also be developed for long-term inspection of these controls. Amendments to the City's *Development Ordinance, Code of Ordinances, and Standard Specifications and Details Manual* will be required for post-construction management.

### 7.5.4 **Regulatory Mechanism:** The mechanism the City will use to develop post-construction run-off controls will primarily be based on internal technical reviews and consultations with other municipalities. City staff members will perform technical reviews of methods that are proven to meet the required Total Suspended Solid (TSS) removal criteria and reduced nutrient loading. City staff members will also contact other municipalities that currently use these controls and evaluate their effectiveness and cost burden. A list of controls that have been proven to meet the required TSS and nutrient sensitive loading criteria will be compiled and forwarded to the City Council for adoption by March 10, 2005.

### 7.5.5 **Operation and Maintenance:** All long-term maintenance activities will be the responsibility of the property owner or a homeowner's association. City staff members will be responsible for receiving annual maintenance inspection reports from a qualified professional. The City will establish a reporting, notification, and enforcement mechanism for corrective action in its ordinance.

**7.5.6 Decision Process:** To meet this requirement City staff reviewed current City Ordinances and determined that revisions were needed to ensure that non-structural and structural BMP's would meet or exceed State requirements.

**7.5.6.1 Priority Areas:** One of the priority areas in Graham is property adjoining the Haw River, which runs through the jurisdiction. The River is a primary water supply for many municipalities downstream and is a major recreational source. Another area of interest is a section of Town Branch in Graham's jurisdiction that is under consideration for a Total Maximum Daily Load (TMDL) for Fecal Coliform Bacteria.

**7.5.6.2 Specific Concerns:** Graham's program will have to address nutrient loading due to the Nutrient Sensitive Water (NSW) designation on all of the receiving streams listed in Section 2.

**7.5.7 Evaluation:** All of the measurable goals require the development and adoption of City ordinances. Once these revisions have been completed each measure will be evaluated for its effectiveness on an annual basis. Included in this evaluation will be an internal review of record keeping for post-construction controls by the Public Works Director or his designee.

## **7.6 Pollution Prevention/Good Housekeeping for Municipal Operations**

**7.6.1 BMP Summary Table:** See Appendix B (pg. 24) for the details on the following BMP's.

- Develop training materials on pollution prevention for public facilities, using existing materials gathered from other organizations or creating new tools as needed. Educate employees on the need for controls to protect stormwater from exposure to potential pollutants.
- Provide training for those employees that maintain the drainage system with a focus on disposal of floatables, grit, sediment, and other pollutants removed from the system.
- Provide training to employees that manage and apply chemicals for control of dust, pests, vermin, and weeds and/or are used to enhance the growth or condition of public urban landscape and recreation facilities. Training will target the safe and effective application, storage and disposal of chemicals used.
- Annually inspect vehicle washing and fueling operations to ensure that they are in good working order and that they minimize exposure of stormwater to chemicals, fuels, and other liquids.
- Inspect all materials storage facilities to determine priority for reducing exposure to stormwater.
- Inspect salt storage facility and application equipment annually to identify and eliminate exposure to stormwater and/or ineffective/inappropriate application. Evaluate current snow and ice management program and ensure that effective measures are in place to minimize contamination of stormwater.
- Develop standard operating procedures for various facilities and/or operations such as street sweeping activities and parking lot (garage) maintenance activities to ensure that the greatest reduction of pollutant loading to stormwater that can be achieved.

- Evaluate your procedures for managing trash and garbage collection to ensure that exposure of contaminant materials is minimized.
- Evaluate spill response program for in-house activities as well as community response and adjust as needed to ensure highest potential for minimizing impacts on stormwater.
- Maintain inventory of hazardous chemicals and other potentially hazardous materials and ensure that limited but sufficient quantity of items are on hand to minimize risk of spill or contamination of stormwater.

**7.6.2 Affected Operations:** City staff reviewed the operations listed below and determined that the wastewater plant and garage required individual permits.

- Maintenance Yard
- Parks and Cemeteries Maintenance
- Vehicle and Equipment Maintenance
- Drainage System Maintenance
- Material Storage Yard
- Equipment Storage
- Wastewater Treatment Plant
- Parking Lot Maintenance
- Street Sweeping
- Grounds Maintenance and Chemical Application

**7.6.2.1 Individual NPDES Permitted Operations:**

- Wastewater Treatment Plant (Permit NC 00-21211)
- City Garage: application has been submitted to NCDENR

**7.6.3 Training:** Municipal employee education will be done by holding training sessions for various City Departments. Particular emphasis will be placed on the Public Works Department and target street sweeping, chemical application, mowing and clearing activities, and automotive fluid and chemical disposal. Handouts and posters will also be developed to inform other City Departments about the stormwater program, how to report violations, and good housekeeping measures for municipal operations.

**7.6.4 Maintenance and Inspections:** The Public Works Department provides street sweeping for all City-maintained streets. The downtown area is swept daily and the entire City is covered every six weeks. The City also maintains trash receptacles in the downtown area, some city parking lots, and city parks. The City also provides garbage and recycling collection for all City residents, with weekly collection. The City currently does not have a drainage system inspection program, but does clean storm sewer piping on an as needed basis. The City will implement an inspection program as part of the illicit discharge and detection program.

**7.6.5 Vehicular Operations:** Street Sweeper is used on an as needed basis to clean all city maintained parking lots. Salt storage areas are covered under a permanent structure.

**7.6.6 Waste Disposal:** All waste collected from the storm sewer system is deposited in the Alamance County Landfill.

**7.6.7 Flood Management Projects:** Flood Management Projects will be evaluated for water quality impacts once a Stormsewer Ordinance is adopted and post-construction BMP's are implemented.

**7.6.8 Existing ordinances:** City Staff members identified the following ordinances that impact water quality.

- City Parks - Littering ordinance at all park facilities, except in designated containers, and a prohibition on disposal of domestic, commercial, and industrial waste at these facilities.
- General Littering Ordinance - Littering prohibited on any city street, sidewalk, or public property.
- Nuisance Ordinance - Accumulation of junk, trash, and debris on private property is prohibited. The nuisance ordinance is enforced by a full-time zoning enforcement officer.
- City Garage - All used automotive fluids are stored in containers and disposed of through private contractor; salt storage is covered; vehicle wash area is connected to sanitary sewer system.
- Fire Department - Operational Manual lists Hazardous Materials Response Procedures.
- Sanitary Sewer Overflows (SSO) Plan - Specifies response procedures and reporting for all sanitary sewer overflows.
- Water and Wastewater Treatment Plants Pager - On-site operators can use pager procedures for reporting level of emergency, type of emergency, and location to supervisors or department head.

**7.6.9 Decision Process:** The pollution prevention plan was developed by reviewing existing policies and ordinances that impact water quality. The deficiencies in these policies were noted and incorporated into the BMP's. Important factors considered were the importance of employee training, implementing new BMP's, and documenting current practices that impact water quality.

**7.6.10 Evaluation:** The measurable goals are to increase the awareness of water quality among all employees and to introduce new BMP's into everyday work activities. The measurable goals will be evaluated through documenting of daily activities and closer monitoring and reporting of chemicals that are used on a daily basis.

## **Appendix A: Resolution and Public Hearing Notice**

**Appendix B: BMP Summary Table**

**1. BMP's and Measurable Goals for Public Education and Outreach**

	<b>BMP</b>	<b>Measurable Goals</b>	<b>Target Audience/Selection Criteria</b>	<b>YR 1</b>	<b>YR 2</b>	<b>YR 3</b>	<b>YR 4</b>	<b>YR 5</b>	<b>Responsible Position</b>
1	Draft articles for semi-annual newsletter	Distribute semi-annual City newsletter (City-Gram) to all utility billing customers. Include articles in the newsletter that targets a specific stormwater problem and how citizens and businesses can reduce their impacts. Track the number of articles or inserts included in the newsletter.	Households, Business & Industry City prints newsletter 2 to 4 times a year. Valuable resource for informing citizens of City activities and programs.	X	X	X	X	X	Planner
2	Distribute stormwater brochures through public library	Distribute brochures through displays at Graham Public Library. Include information on steps to reduce pollution sources including proper disposal of used oil and toxic materials, public reporting of illicit discharges and awareness of nutrient and fecal coliform issues. Track the number of brochures distributed at the library.	Households Public library is a central location for reaching a diverse group of citizens spanning all social and economic backgrounds. Also provides a neutral environment for disseminating information.	X	X	X	X	X	Planner
3	Informational Website linked to City webpage	Develop and maintain a stormwater information page for the existing internet website. Provide information on water quality, stormwater pollutants and ways to minimize them, municipal stormwater projects and activities. Also provide contacts for reporting and questions. Add a counter to record number of users.	Households, Business & Industry Many businesses and homes have access to the internet and use this resource as an aid in obtaining information		X	X	X	X	Assistant City Manager
4	Establish Reporting Hotline	Establish a hotline for communication with the public. Track number and type of issues as well as disposition of calls. Report annually on data gathered and issues addressed.	Households A hotline offers the public a resource for obtaining information and reporting violations				X	X	Public Works Director
5	Statewide Program for Education	Determine if State has established a public education program for stormwater pollution prevention. Track program activities within the community and report annually.	Households, Schoolchildren, Farmers, Business & Industry, Elderly, Hispanic Community, Gardeners A statewide program would avoid duplication of effort by all phase 2 communities in the state.	X	X	X	X	X	Public Works Director

	BMP	Measurable Goals	Target Audience/Selection Criteria	YR 1	YR 2	YR 3	YR 4	YR 5	Responsible Position
6	Coordinate with other in-house communication tools	Provide educational materials for City employees once a year using existing distribution methods. Focus on the importance of carrying out duties without impacting clean water.	City Employees City employees are responsible for the maintenance of an extensive portion of the stormsewer system and their activities directly impact water quality. City Employees actions are also visible to the public and can be used as an outreach tool.			X	X	X	Public Works Director

## 2. BMP's and Measurable Goals for Public Involvement and Participation

	BMP	Measurable Goals	Target Audience/Selection Criteria	YR 1	YR 2	YR 3	YR 4	YR 5	Responsible Position/Party
1	Hold Public Hearing for Stormwater Permit Application	Conduct a public hearing presenting the stormwater program. Include affidavit of publication with application (See Appendix A, pg. 20).	Households, Business & Industry Valuable mechanism for informing citizens of City activities and programs.	N/A	N/A	N/A	N/A	N/A	Planner

## 3. BMP's and Measurable Goals for Illicit Discharge and Elimination

	BMP	Measurable Goals	Target Audience/Selection Criteria	YR 1	YR 2	YR 3	YR 4	YR 5	Responsible Position/Party
1	Develop ordinance regarding illicit connections	In year 1 develop ordinance to include illicit detection, right of entry, prohibition of certain discharges, enforcement actions and penalties for dumping, spills, and willful illicit connections. Adopt by elected officials and have copy of ordinance in annual report file.	Households, Business & Industry Ordinances will impact all property within the City.	X					Public Works Director
2	Adopt ordinance regarding illicit connections	In year 2 or by March 10, 2005 adopt illicit connections ordinance	Households, Business & Industry All property owners in the City will be subject to these regulations.		X				Public Works Director

	<b>BMP</b>	<b>Measurable Goals</b>	<b>Target Audience/Selection Criteria</b>	<b>YR 1</b>	<b>YR 2</b>	<b>YR 3</b>	<b>YR 4</b>	<b>YR 5</b>	<b>Responsible Position/Party</b>
3	Develop and distribute fact sheets for public education program on illicit connections and spill management.	Prepare a fact sheet and distribute copies to Graham Public Library, City Hall, and Fire Department for public distribution. Fact sheets will focus on illicit connections and spill management. Note date completed and number of copies placed for distribution. This element will be combined with the Public Education component.	General Public Public Library accessible to a wider audience.	X	X	X	X	X	Planner
4	Train employees on how to inspect for illicit connections and establish a tracking system for managing reported problem areas.	Develop program in years 1 and 2 and implement in year 3. Provide materials to all employees in the City on illicit connections, how to recognize them, and develop a reporting procedure. Note training method and number of employees trained. Summarize in annual report.	City Employees City employees are a constant presence and travel throughout the City.	X	X	X	X	X	Public Works Director
5	Utilize local hotline set up under Public Involvement Program for public reporting of illicit connections.	Maintain log of hotline calls and disposition. Note the numbers that are related to illicit connections. Set up in Year4 (four) and report annually.	General Public A hotline offers the public an easy mechanism for reporting possible violations.				X	X	Public Works Director
6	Coordinate with local wastewater program on identification of potential cross connections between sanitary sewer and storm sewers.	Using system map, review with wastewater staff potential cross connections and place on hot spot list to be included in inspection program. Report annually on the number of potential cross connections sites and disposition of those found.	City Employees Wastewater program may identify illicit discharges and connections.			X	X	X	Public Works Director
7	Identify responsible party within organization to manage follow up and enforcement actions.	Establish enforcement standard operating procedures in Year 3 (three) and report on enforcement actions in each annual report. Provide SOP in first annual report.	City Employee Ensures consistency in reporting			X	X	X	Public Works Director

**4. BMP's and Measurable Goals for Construction Site Stormwater Runoff Control**

	<b>BMP</b>	<b>Measurable Goals</b>	<b>Target Audience/Selection Criteria</b>	<b>YR 1</b>	<b>YR 2</b>	<b>YR 3</b>	<b>YR 4</b>	<b>YR 5</b>	<b>Responsible Position/Party</b>
1	Rely on existing measures implemented through NCDENR Land Quality Section.	All plan approvals and enforcement actions will be conducted by NCDENR Land Quality Section.	Developers and Contractors All land disturbing activities over 1 acre are impacted	X	X	X	X	X	NCDENR Regional Engineer

**5. BMP's and Measurable Goals for Post Construction Storm Water Management in New Development and Redevelopment**

	<b>BMP</b>	<b>Measurable Goals</b>	<b>Target Audience/Selection Criteria</b>	<b>YR 1</b>	<b>YR 2</b>	<b>YR 3</b>	<b>YR 4</b>	<b>YR 5</b>	<b>Responsible Position/Party</b>
1	Develop ordinance for development and redevelopment of properties meeting the minimum criteria established by NCDENR	Initiate the development of standards and practices for post-construction controls. Report annually on progress made in developing and adopting the ordinance. Adopt ordinance by March 10, 2005 and submit to NCDENR for review and approval.	Households, Developers, and Contractors Post-construction measures will have a significant impact on many construction projects.	X	X	X	X	X	Public Works Director
2	Establish regulatory controls for ensuring long-term maintenance of on-site structures.	In Year 2 or by March 10, 2005 adopt ordinance that requires the long-term maintenance of structural controls for new and redevelopment projects. After City Council adoption and approval by NCDENR a program will be implemented for issuing permits and compliance monitoring and enforcement. In annual report, identify date of adoption, controls and procedures to be followed. Annually report on program status.	Households, Developers, and Contractors. Adoption and implementation will impact the entire community.		X	X	X	X	Public Works Director
3	Develop ordinance for development and redevelopment activities draining to Nutrient Sensitive Waters.	Develop, adopt, and implement ordinance for reducing nutrient loading in NSW designated waters. Adopt ordinance by March 10, 2005.	Households, Developers, and Contractors Homeowners and land development projects can have an impact on nutrient loading.	X	X	X	X	X	Public Works Director

	BMP	Measurable Goals	Target Audience/Selection Criteria	YR 1	YR 2	YR 3	YR 4	YR 5	Responsible Position/Party
4	Develop nutrient application management program	Develop nutrient application management program as part of the stormsewer management ordinance. Adopt by March 10, 2005.	General Public Households, business, and industry can all contribute to nutrient loading.	X	X	X	X	X	Public Works Director

**6. BMP's and Measurable Goals for Pollution Prevention/Good Housekeeping for Municipal Operations**

	BMP	Measurable Goals	Target Audience/Selection Criteria	YR 1	YR 2	YR 3	YR 4	YR 5	Responsible Position/Party
1	Develop training materials on pollution prevention for public facilities, using existing materials gathered from other organizations or creating new tools as needed. Educate all employees annually on the need for controls to protect stormwater from exposure to potential pollutants.	Develop program in years 1 and 2 and begin in Year 3 (three) to educate all employees on clean water issues and on workplace responsibilities to reduce or eliminate pollutants from stormwater. Maintain program annually and report on number of employees trained and subjects covered.	City Employees All employees need to be aware of stormwater issues and know where to direct any questions from citizens.	X	X	X	X	X	Public Works Director
2	Provide training for those employees that maintain the drainage system with the focus on disposal of floatables, grit, sediment, and other pollutants removed from the system.	Develop program in years 1 and 2 and beginning in Year 3 (three) provide training to all employees who maintain the drainage system with a focus on floatable, grit, sediment, and disposal of pollutants removed from the drainage system. Report annually on number of employees trained and subjects covered.	Public Works Employees (Stormsewer Maintenance) Employees that maintain the stormsewer system need to know of new ordinances that impact daily activities.	X	X	X	X	X	Public Works Director

	<b>BMP</b>	<b>Measurable Goals</b>	<b>Target Audience/Selection Criteria</b>	<b>YR 1</b>	<b>YR 2</b>	<b>YR 3</b>	<b>YR 4</b>	<b>YR 5</b>	<b>Responsible Position/Party</b>
3	Provide training to employees that manage and apply chemicals for control of dust, pests, vermin, and weeds and/or are used to enhance the growth or condition of public urban landscape and recreation facilities. Training will target the safe and effective application, storage and disposal of chemicals used.	Develop in years 1 and 2 and beginning in Year 3 (three), provide training to all employees who manage and apply chemicals to address safe storage, application and disposal of residual chemicals. Repeat training annually throughout the permit. Report on number of employees trained and subjects covered.	Public Works Employees (Property Maintenance) Employees that apply chemicals need to know proper handling and dispensing procedures.	X	X	X	X	X	Property Maintenance Superintendent
4	Annually inspect vehicle washing and fueling operations to ensure that they are in good working order and that they minimize exposure of stormwater to chemicals, fuels, and other liquids.	Begin annual inspection in Year 2 (two) and document findings and actions taken to address any problems identified. Report on finding in annual permit report.	Public Works Employees Employees that maintain vehicle washing and fueling areas need to know ordinances that impact these work areas.		X	X	X	X	Streets Superintendent
5	Inspect all materials storage facilities to determine priority for reducing exposure to stormwater.	Initiate inspection of material storage facilities in Year 2 (two) and establish priorities for addressing issues identified. Address corrective activity in next fiscal year unless high hazard was identified. Report on number and type of sites inspected and actions taken in each annual report.	Public Works Employees Improper materials storage could introduce contaminants into the stormsewer system.		X	X	X	X	Public Works Director

	<b>BMP</b>	<b>Measurable Goals</b>	<b>Target Audience/Selection Criteria</b>	<b>YR 1</b>	<b>YR 2</b>	<b>YR 3</b>	<b>YR 4</b>	<b>YR 5</b>	<b>Responsible Position/Party</b>
6	Inspect salt storage facility and application equipment annually to identify and eliminate exposure to stormwater and/or ineffective/inappropriate application. Evaluate current snow and ice management program and ensure that effective measures are in place to minimize contamination of stormwater.	Initiate inspection of salt storage facilities and application equipment in Year 2. Identify problems and address when found. Report annually on inspections and resulting actions.	Public Works Employees (Streets Maintenance) Proper storage keeps high concentrations of salt from entering the stormsewer system and vehicle maintenance ensures proper application.		X	X	X	X	Streets Superintendent
7	Develop standard operating procedures for various facilities and/or operations such as street sweeping activities and parking lot (garage) maintenance activities to ensure that the greatest reduction of pollutant loading to stormwater that can be achieved.	Beginning in Year 4 (four), develop and then implement standard operating procedures for facilities and operations. Annually report on facilities and/or operations targeted and results of activities.	Public Works Routine activities should be documented for reporting.				X	X	Public Works Director

	<b>BMP</b>	<b>Measurable Goals</b>	<b>Target Audience/Selection Criteria</b>	<b>YR 1</b>	<b>YR 2</b>	<b>YR 3</b>	<b>YR 4</b>	<b>YR 5</b>	<b>Responsible Position/Party</b>
8	Evaluate procedures for managing trash and garbage collection to ensure that exposure of contaminant materials is minimized.	Beginning in Year 3 (three), evaluate garbage collection practices to determine if procedures or equipment adjustments need to be made to address potential for pollution of stormwater. Focus on issues such as spills in the street, hydraulic hose ruptures, customer storage practices. Report on findings and any work plan that develops as a result.	Public Works Employees Can identify problems that may exist with current procedures.			X	X	X	Public Works Director
9	Evaluate spill response program for in-house activities as well as community response and adjust as needed to ensure highest potential for minimizing impacts on stormwater.	In Year 2 (two) evaluate current spill response practices and determine if adjustments are needed to reduce the risk of polluting bodies of water (streams, ponds, lakes, ocean). Implement recommended changes in Year 3 (three) and report on findings and strategies in annual reports.	Fire Department Employees Ensures that employees responding to spills protect receiving waters.		X	X	X	X	Fire Chief
10	Maintain inventory of hazardous chemicals and other potentially hazardous materials and ensure that limited but sufficient quantity of items are on hand to minimize risk of spill or contamination of stormwater.	Beginning in Year 1 (one), determine if inventory of hazardous chemicals used by the organization has been completed. If not, complete inventory in same year. Determine if quantities are appropriate and set up standards for purchasing by end of Year 2 (two).	Fire Department Employees Ensures that chemical handling is done properly.	X	X	X	X	X	Fire Chief