

COMPREHENSIVE STORMWATER MANAGEMENT PLAN

**FOR
THE CITY OF GRAHAM**

JUNE 2017

CONTACT INFORMATION UPDATED

AUGUST 2021

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DEFINITIONS

BMP – Best Management Practice also known as a Stormwater Control Measure

Category 4b Plan – An EPA approved plan that is an alternative to a TMDL

DEMLR – Division of Energy, Mining, and Land Resources

DEQ – Department of Environmental Quality (formerly DENR)

EPA – Environmental Protection Agency

Illicit Discharge – Any discharge to an MS4 that is not entirely composed of stormwater. Exceptions include discharges from NPDES-Permitted industrial sources and discharges from fire-fighting activities

MS4 – Municipal Separate Storm Sewer System. A conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, manmade channels, or storm drains)

NPDES – National Pollutant Discharge Elimination System

SCM – Stormwater Control Measure

TMDL – Total Maximum Daily Load

1 STORM SEWER SYSTEM INFORMATION

Population Served: 14,812 (2016 Estimate from the NC Office of Budget & Management)

Annual Growth Rate: 4.7%

Jurisdictional and MS4 Service Areas: Jurisdictional area: 9.39 square miles,
MS4: 9.39 square miles

1.1 MS4 CONVEYANCE SYSTEM

The City of Graham MS4 consists of a combination of storm drain piping, roadside ditches, and sheet flow. New developments are required by City ordinance to have curb and gutter drainage systems and high density developments are required to treat the first 1" of runoff from the developed property. City streets are maintained by the City's Street Department, which is housed in the Public Works Department. State roads are maintained and managed by NCDOT.

1.2 LAND USE COMPOSITION ESTIMATES:

Residential:	50.04%
Commercial:	23.20%
Industrial:	6.52%
Open Space:	20.24%

1.3 ESTIMATE METHODOLOGY:

The land use estimate was based on the zoning within the jurisdictional area as of June 2009. The Piedmont Triad Council of Government's GIS system provided the zoning data, and includes the right-of-way areas.

1.4 TMDL IDENTIFICATION

Town Branch has a TMDL for fecal coli form. The TMDL lists the following non-point sources in the watershed: urban runoff (stormwater), sewer line systems (leaky sewer lines and sewer system overflows), wildlife, failing septic systems, and probably illicit

connections in unknown locations. The TMDL does not include an implementation plan. The City of Graham has begun addressing sanitary sewer overflows through sewer system infrastructure upgrading.

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-(10.5)	WS-V; NSW	1, 2, 3	Benthos
Town Branch	16-17	WS-V; NSW		Fecal Coliform
County Home Branch (Still House Branch)	16-17-1	WS-V; NSW	NR	N/A
Big Alamance Creek	16-19-(4.5)	WS-V; NSW	NR	N/A
Back Creek (Little Creek)	16-19-5	WS-V; NSW	NR	N/A
Little Alamance Creek	16-19-11	WS-V; NSW	1, 2	Urban Stormwater
Bowden Branch (Boyd Creek)	16-19-11-2	WS-V; NSW	NR	N/A

¹ Aquatic life and secondary recreation

² Fish consumption

³ On 303(d) list

3 EXISTING WATER QUALITY PROGRAMS

3.1 LOCAL PROGRAMS:

Additionally the City operates a Stage 1 Adaptive Management Program for Existing Development in the Jordan Lake Basin. The Stage 1 Adaptive Management Program is very similar to the NPDES Phase II Program and is part of a Jordan Lake Watershed Nutrient Sensitive Waters Strategy.

3.2 STATE PROGRAMS:

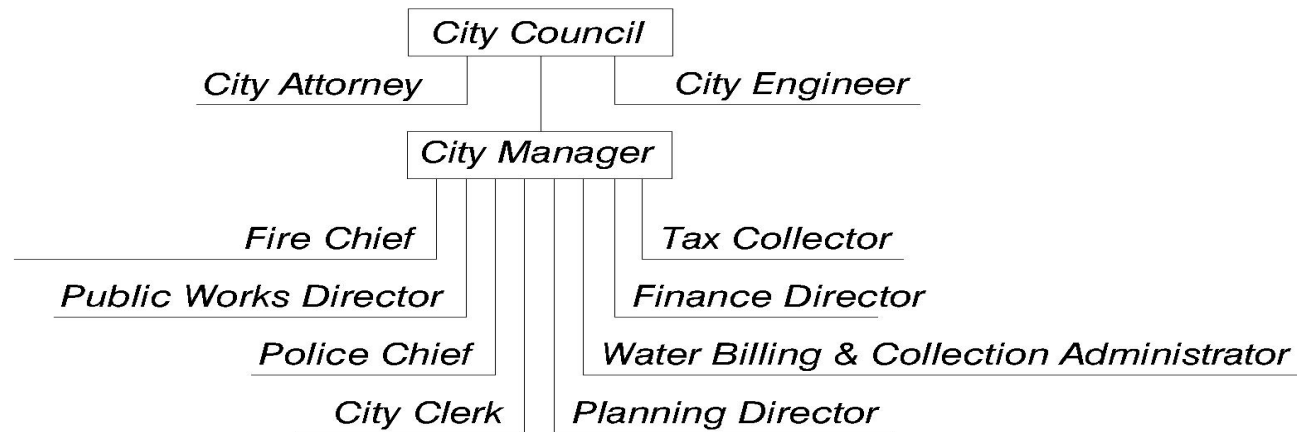
NCDEQ implements the NC Erosion and Sediment Control Program within the City of Graham.

4 PERMITTING INFORMATION.

Table 2. Responsible Contacts

Position	Name	Phone No.	Fax No.	Email
City Manager / Vacant	Frankie Maness	336/570-6700	336/570-6703	fmaness@cityofgraham.com
Interim / Asst. City Manager	Aaron Holland	336/570/6700	336/570-6703	aholland@cityofgraham.com
City Clerk	Darcy Sperry	336/570-6500	336/570-6703	dsperry@cityofgraham.com
Stormwater Engineer Alley, Williams, Carmen, & King, Inc.	Josh Johnson	336/226-5534	336/226-3034	josh@awck.com
City Public Works Director	Burke Robertson	336/570-6709	336/570-6703	brobertson@cityofgraham.com
City Attorneys	Robert (Bob) Ward J. Bryan Coleman	336/228-1433	336/570-6703	
City Planning Director	Justin Snyder	336/570-6700	336/570-6703	jsnyder@cityofgraham.com
Utilities Director	Tonya Mann	336/578-3264	336/570-6703	tmann@cityofgraham.com

City Of Graham Organizational Chart



Signing Official: City Manager – ~~Frankie Maness~~ - Interim City Manager - Aaron Holland

Duly Authorized Representative: NA

5 Co-PERMITTING INFORMATION

Not applicable

6 RELIANCE ON OTHER GOVERNMENT ENTITY TO SATISFY ONE OR MORE PERMIT OBLIGATIONS

The City of Graham will rely on the State Erosion and Sediment Control Program and the Department of Water Quality's general stormwater permit program for construction activities to meet the construction site stormwater runoff control requirement. There are no legal agreements in place to establish responsibilities.

The City also contracts with the Piedmont Triad Regional Council's Stormwater Smart program. The program handles most of the City's educational responsibilities.

Contact Information:

NC Sedimentation and Erosion Control Program

Winston-Salem Regional Office

Tamera Eplin, P.E.

450 West Hanes Mill Road, Suite 300,

Winston Salem, NC 27105-7407

336/776-9800

Piedmont Triad Regional Council

Stormwater Smart

Dancia Heflin

1398 Carrollton Crossing Drive,

Kernersville, NC 27284

(336) 904-0300 ext. 3008

7 STORMWATER MANAGEMENT PROGRAM

7.1 PUBLIC EDUCATION AND OUTREACH ON STORM WATER IMPACTS

7.1.1 BMP Summary Table

BMP	Measurable Goals	YR 1	YR 2	YR 3	YR 4	YR 5	Responsible Position/Party
Maintain an education plan	Maintain education plan. Include in Plan the BMPs, schedule, targeted audiences, and measurable goals. Summarize plan and implementation progress in each annual report.	X	X	X	X	X	City Planner Stormwater Engineer
School Programs	Maintain school children education program. Focus on basic messages regarding clean water and the things they can do at home to help. Track the number of children reached and the subject covered and report annually.	X	X	X	X	X	City Planner Stormwater Engineer
Mailers, brochures, posters	Distribute bilingual mailer for insert in utility bills. Distribute bilingual brochures and posters for distribution at City Hall. Target homeowners and businesses with messages about how they can reduce pollution picked up by stormwater. Track number of homes and businesses reached by mailer and report annually.		X	X	X	X	City Planner Stormwater Engineer
City's web page	Link to other stormwater websites. Give tips on reducing pollution. Report annually.	X	X	X	X	X	City Planner Stormwater Engineer
Festivals, parades, local fairs	Participate in local festivals annually by providing a stormwater information booth starting. Provide bilingual messages on the importance of clean water and on specific activities that can be carried out to help keep stormwater clean.	X	X	X	X	X	City Planner Stormwater Engineer
Business and Industry education and outreach	Maintain program for educating business and industry using brochures or pamphlets and report annually on number of businesses reached and number of employees educated. Focus on workplace issues to reduce pollutant loading. Target hot spot businesses.		X		X		City Planner Stormwater Engineer
Helpline / Hotline	All stormwater related calls will be forwarded to the Public Works Dir. who will then distribute the information to other employees.	X	X	X	X	X	Public Works Director

7.1.2 Target Audience

Graham residents, school children, local businesses (including gas station owners and landscaping companies) and industry, will be targeted because these groups have the most impact on stormwater pollution prevention.

7.1.3 Target Pollutant Sources

The education program will target total suspended solids and nutrient loading because turbidity, sedimentation, and nutrients are the pollutants of concern in downstream waters. In addition, floatables, trash, and debris will also be targeted. The education program will also address the proper use and disposal of typical household chemicals, garden chemicals, and used motor oil.

7.1.4 Outreach Program

School programs, printed materials to be distributed via mail and public events, and participation in state cleanup programs will be used to reach the target audience. By using these methods, the education program will be expected to reach all residents of Graham, as well as those that do business here, over the course of the five year permit period. As a result of this outreach program, the target audience will be informed of the importance of reducing storm water pollution and ways they can incorporate pollution reduction in their daily lives.

Direct Education was chosen over mass media due to availability of the cooperative stormwater education program, Stormwater SMART, and due to studies showing the effectiveness of direct education over mass media.

7.1.5 Decision Process

The formation of the storm water public education and outreach program was based on the mechanisms currently in place, and their means and effectiveness of communicating and educating the public about the issues of stormwater pollution prevention. Each of the BMP's selected was judged to be an effective and economical tool for educating the general public and/or specific groups within the community, with a specific measurable goal with which to gauge its effectiveness.

7.1.6 Evaluation

The education and outreach program will be evaluated based on how each individual BMP is meeting its measurable goal at the end of each reporting period. Changes will be considered for any BMPs that are not meeting the measurable goals.

7.2 PUBLIC INVOLVEMENT AND PARTICIPATION

7.2.1 BMP Summary Table

BMP	Measurable Goals	YR 1	YR 2	YR 3	YR 4	YR 5	Responsible Position/Party
Public Meeting	A public meeting will be held annually to discuss the implementation of the permit. This meeting will provide the public with the opportunity to be involved with the stormwater program and will serve as a better conduit for public input than the stormwater committee used previously. More meetings may be held if public involvement is substantial.	X	X	X	X	X	City Planner City Clerk Stormwater Engineer Asst City Manager
Volunteer Stormwater Program	The City will promote various volunteer stormwater programs annually. These will include Big Sweep, Adopt-A-Stream programs, and Storm Drain Stenciling. The number of participants will be reported annually.	X	X	X	X	X	City Planner Stormwater Engineer
Helpline / Hotline	All stormwater related calls will be forwarded to the Public Works Director who will then distribute the information to other employees.	X	X	X	X	X	Public Works Director

7.2.2 Target Audience

The City's stormwater committee will be discarded in favor of an annual public meeting. The public meetings will allow the public an opportunity to review the stormwater management program and will target all interested and affected members of the Graham community. Additional meetings may be held if public involvement is substantial.

The City's committee was ineffective in soliciting widespread public input.

7.2.3 Participation Program

The public was originally involved in the development of the stormwater permit and management program through a public hearing in 2005. Public participation opportunities will be implemented throughout the life of the permit through the Volunteer Stormwater Programs and the Annual Public Meeting.

7.2.4 Decision Process

A public meeting is necessary for public participation and input. The other BMPs were selected to give the public a choice of both active and passive participation roles.

7.2.5 Evaluation

The Public Involvement and Participation program will be evaluated based on how each individual BMP is meeting its measurable goal at the end of each reporting period. Changes will be considered for any BMPs that are not meeting the measurable goals.

7.3 *ILLICIT DISCHARGE DETECTION AND ELIMINATION*

7.3.1 BMP Summary Table

BMP	Measurable Goals	YR 1	YR 2	YR 3	YR 4	YR 5	Responsible Position/Party
Review Illicit Discharge Ordinance	Review Illicit Discharge Ordinance and make any necessary revisions.	X	X	X	X	X	City Attorney Stormwater Engineer City Planner
Review Illicit Discharge Program	Review Illicit Discharge Program and make any necessary revisions.	X	X	X	X	X	Public Works Director Stormwater Engineer City Planner
Maintain storm sewer system map showing outfalls and the receiving body of water.	Maintain system map in support of inspection program. The map will note outfalls and receiving body of water for each outfall. Report annually on progress.	X	X	X	X	X	Stormwater Engineer City Planner Public Works Director
Maintain an inspection and elimination program within the community.	Investigate and track any sources of Illicit discharges. document date, discharge observed, results and the date problem was corrected.	X	X	X	X	X	Public Works Director Stormwater Engineer
Coordinate with local health department on failing septic systems, locating problem areas in the system map. Provide public information on septic system management.	Provide a fact sheet on septic system management, Record date of distribution and number of copies placed.		X		X		Public Works Director Stormwater Engineer City Planner
Train employees on how to inspect for illicit connections and establish a tracking system for managing reported problem areas.	Provide materials through HR to all public employees in illicit connections and how to recognize one. Summarize in annual report.	X	X	X	X	X	Public Works Director Stormwater Engineer City Planner
Dry Weather Flow Detection	Dry Weather testing will be done at least bi-annually in accordance with the IDDE program, dependent upon other IDDE investigations.	X	X	X	X	X	Stormwater Engineer Public Works Director

7.3.2 Storm Sewer System Map

Storm sewer system has been mapped and will be inspected during the course of normal maintenance operations by the public service department. The route of the system, locations of pipes, drainage ditches, and outfalls will be maintained on a paper map and/or electronic map. The map will be updated as needed during subsequent maintenance operations.

7.3.3 Regulatory Mechanism

The City has an Illicit Discharge Ordinance which allows for inspection, maintenance, and prohibits illicit discharges.

7.3.4 Enforcement:

There are provisions in the amended ordinance for enforcement actions and penalties for dumping, spills, and willful illicit connection.

7.3.5 Detection and Elimination

After the field screening is complete, the City will take measures to identify and remove illegal discharges. Identifying illegal discharges may require a combination of office and field work. After the field screening, staff will consult the jurisdiction-wide information they have compiled to obtain information about the land uses, infrastructure, industries, potential sources and types of pollution that may exist in the drainage area of the outfall.

After priority areas have been identified in the office, a systematic field investigation will be planned that minimizes the amount of resources required to identify the source. The following field methods may be used to identify and trace the source of illegal discharges:

- Site Investigation
- Dry weather flow observations
- Smoke Testing/Dye Testing
- Television Inspection

The right of entry established in the ordinance will provide access for inspection if the origin of the discharge is in doubt. Once an illegal discharge is located and confirmed through field screening, staff will notify the responsible party verbally if possible and follow-up with written notification. If the responsible party does not comply with the removal schedule provided by the City, or receive approval for a revised schedule, the City will take enforcement action and the connection will be removed at the responsible party's expense.

7.3.6 Non Stormwater Discharges

Currently there are no known non-stormwater discharges that are a significant contributor to the MS4. If any are identified in the future, they will be addressed at that time.

7.3.7 Outreach

City employees will be informed of the hazards associated with illegal discharges and improper disposal of waste as part of their general training requirements. These will be addressed in the Pollution Prevention/Good Housekeeping section of this plan, and will include training in hazardous material handling and disposal, as well as notices and signs posted in the appropriate areas.

The general public will be educated through the BMP's listed in the Public Education section of this plan. These educational BMP's will include brochures, public service announcements, and business education and outreach programs.

7.3.8 Decision Process

The formation of the storm water Illicit Discharge Detection and Elimination program was based primarily on regulatory mechanisms. The regulatory, educational, procedural BMP's selected were judged to be an effective means of detecting and eliminating illicit discharges.

7.3.9 Evaluation

The effectiveness of the program will be gauged by the total number of illicit connections detected and removed each year and with public complaints. If the total number remains constant, or increases, changes will be made to the public education program and/or the City ordinance to allow for greater enforcement and penalties.

7.4 CONSTRUCTION SITE STORMWATER RUNOFF CONTROL

The City of Graham will rely on the North Carolina State Erosion and Sediment Control Program and the Department of Water Quality's general stormwater permit program for construction activities to meet the construction site stormwater runoff control requirement.

7.5 POST-CONSTRUCTION STORM WATER MANAGEMENT IN NEW DEVELOPMENT AND REDEVELOPMENT

7.5.1 BMP Summary Table

BMP	Measurable Goals	YR 1	YR 2	YR 3	YR 4	YR 5	Responsible Position/Party
Review the Post Construction Ordinance	Review the Post Construction Ordinance for compliance with NC DWQ guidance and local effectiveness. Phase II Post-Construction Ordinance will incorporate Jordan Lake Nutrient Strategy Regulations in conjunction with NC Session Law and DWQ regulations.			X			City Planner City Attorney Stormwater Engineer
Review standards and policies that ensure structural BMPs will be in conformance with the state's Stormwater Management Design Manual	Review local standards to remain in compliance with the NC DEQ BMP Manual. Additional measures and techniques may be added to the local ordinance as they are investigated.	X	X	X	X	X	Stormwater Engineer City Planner
Review maintenance standards and inspection program to ensure that on-site controls continue to function as designed.	Review the maintenance standards and inspection program for local on-site controls.		X		X		Stormwater Engineer City Planner
Maintain the education program created for land developers and the public.	Maintain the education program created for land developers and the public detailed in other BMP's. Report annually on progress made.		X		X		Stormwater Engineer City Public Works Director City Planner
Coordinate with the county health department on developing and implementing an oversight program to minimize the potential for fecal coliform contamination by ensuring proper operation and maintenance of on-site wastewater treatment systems.	Coordinate with county health department. Report Annually on progress made.		X	X	X	X	Stormwater Engineer City Planner City Public Works Director
Green Infrastructure Practices and Strategies will be encouraged.	Green Infrastructure Practices and Strategies will be encouraged and existing standards may be eased to encourage green projects.			X			Stormwater Engineer City Planner
Inspections and long-term maintenance of Stormwater Control Measures (SCMs)	Maintain an inspection and maintenance plan for SCM's. Annual SCM Inspections performed by a qualified professional. SCM maintenance and inspections will be reviewed by the town during the permit cycle.	X	X	X	X	X	City Engineer City Planner

7.5.2 Stormwater Management Options

The existing land usage ordinance has a post-construction stormwater runoff management program for new development and redevelopment projects that disturb greater than, or equal to, one acre. This ordinance may be revised prior to the end of year 3 of the permit to incorporate Low Impact Development (LID) provisions and Nutrient Reduction limits as defined in the Jordan Lake Nutrient Reduction Strategy will be adopted within the timeline established by NC Session Laws and NC DWQ Regulations.

7.5.3 Non-Structural BMP's

The receiving streams in the City's watershed are classified as Nutrient Sensitive Waters; therefore the post construction ordinance ensures that best management practices for reducing nutrient loading are implemented. In addition, a nutrient application (both inorganic fertilizer and organic nutrients) management program has been developed and is included in the stormwater management program.

7.5.4 Structural BMPs

The City has certified its BMP manual as equal to the NC DWQ BMP Manual. The City reviews structural BMP's based on the NC DWQ BMP Manual and will continue to do so in the future. The City may investigate additional qualified BMP's in the future. These additional techniques are to be evaluated based upon field testing and evaluation by the City's Engineer.

7.5.5 Regulatory Mechanism

The City's Post-Construction Ordinance establishes the City's ability to regulate new development for water quality compliance.

7.5.6 Operation and Maintenance

The City's Post-Construction Ordinance establishes the City's ability to regulate new development for water quality compliance. The ordinance includes guidelines for delegating routine and non-routine maintenance responsibilities to ensure access for inspections, and providing a mechanism for enforcement.

The City will require annual submissions of BMP inspection reports and the City will inspect each BMP during each permit cycle.

7.5.7 Education

An education process for developers and citizens about new development with respect to stormwater and water quality has been established and is ongoing.

7.5.8 Decision Process

The post-construction stormwater management program ensures that controls are in place that will prevent or minimize water quality impacts from new development and redevelopment projects. These controls include post-construction ordinance to address post-construction runoff control from new development and redevelopment projects and ensure adequate long-term operation and maintenance of BMPs. Future revisions to this ordinance will be intended to enhance water quality.

7.5.9 Evaluation

The post-construction site management for new and re-development activities program will be evaluated based on how each individual BMP is meeting its measurable goal at the end of each reporting period. Changes will be considered for any BMPs that are not meeting the measurable goals.

7.6 POLLUTION PREVENTION/GOOD HOUSEKEEPING FOR MUNICIPAL OPERATIONS

7.6.1 BMP Summary Table

BMP	Measurable Goals	YR 1	YR 2	YR 3	YR 4	YR 5	Responsible Position/Party
Maintain Inventory and O&M Manual of Municipal Facilities and Operations	Maintain, update, inspect annually all Municipal Facilities and update as needed Operation and Maintenance Manual for every facility and operation.	X	X	X	X	X	Public Works Director Stormwater Engineer
Spill Response Procedures	Maintain or create Spill Response Procedures	X	X	X	X	X	Public Works Director
Streets, Roads, and Public Parking Lots Maintenance Program	Maintain Implementation of BMP's. Evaluate Annually for cost and effectiveness.	X	X	X	X	X	Stormwater Engineer Public Works Director
O&M for municipally owned or maintained catch basins and conveyance systems	Continue implementation of O&M Program for the MS4, including catch basins and conveyance systems. Reassess program annually.	X	X	X	X	X	Stormwater Engineer Public Works Director
O&M for municipally-owned or maintained structural stormwater controls	Continue to implement/and maintain the O&M Program for municipally-owned or maintained structural stormwater controls. Document inspections and maintenance	X	X	X	X	X	Stormwater Engineer Public Works Director
Pesticide, Herbicide and Fertilizer Application Management	Ensure municipal employees and contractors are properly trained and all permits, certifications, and other measures for applicators are followed.	X	X	X	X	X	Public Works Director
Staff Training	Maintain an employee training program for employees involved in pollution prevention and good housekeeping practices.	X	X	X	X	X	Stormwater Engineer Public Works Director
Vehicle Washing	Maintain measures to minimize or prevent contamination of stormwater runoff from all areas used for vehicle and equipment cleaning.	X	X	X	X	X	Stormwater Engineer Public Works Director

7.6.2 Affected Operations

The City of Graham operates a municipal building that serves as a City hall and fire station, a police station, a Public Works vehicle and equipment storage yard, and a maintenance facility for the Parks & Recreation Department. All vehicles, equipment, and materials at the storage yard and Park maintenance facility are stored in covered buildings. There are no floor drains in any of the buildings at these two facilities.

7.6.3 Training

Training materials have been developed on pollution prevention for public facilities, using similar materials as will be used in the public outreach program. All employees will be educated on the need for controls to protect stormwater from exposure to potential pollutants. This training will also serve as the training requirement for public employees as specified in the outreach component of the Illicit Discharge section of this program.

All public employees involved in vehicle, open space, or building maintenance operations will be provided training in BMPs, the processes and materials they are working with, safety hazards, practices for preventing discharges, and procedures for responding quickly and properly to toxic and hazardous material incidents.

All public employees involved in stormwater drainage system maintenance will be specifically trained in the disposal of floatables, grit, sediment, and other pollutants removed from the system. Additional training, or certification, will be provided to employees that manage and apply chemicals for control of dust, pests, vermin, and weeds and/or 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.

7.6.4 Maintenance and Inspections

A preventive maintenance program has been developed that includes routine inspections of catch basins and other stormwater systems for the municipal building and vehicle storage yard. The objective of the inspections is to reduce pollutant loading from municipal sites. Inspections include noting any problems or issues that may have an impact on stormwater quality, and any corrective actions needed. Schedules, procedures, and a record-keeping system are used to schedule and document inspections.

7.6.5 Vehicular Operations

All vehicles, equipment, and associated material at both the Public Works and Parks & Rec. facilities are stored inside buildings. The Public Works vehicles (pickup and dump trucks) are currently washed outside, with the untreated wash water discharging into a nearby drainage ditch. Washing of these vehicles at another location has been investigated but is non-cost effective and pollution runoff is minimized by runoff not going across impervious areas and not going directly into surface waters. Minor vehicle and equipment maintenance take place at these facilities.

7.6.6 Waste Disposal

Garbage, recyclables, and heavy trash collection are contracted out to private companies.

7.6.7 Flood Management Projects

Future flood management projects will be reviewed from a water quality standpoint.

7.6.8 Decision Process

The most effective and practical BMPs for minimizing stormwater pollution were selected for this program.

7.6.9 Evaluation

The pollution prevention/good housekeeping for municipal operations program will be evaluated based on how each individual BMP is meeting its measurable goal at the end of each reporting period. Changes will be considered for any BMPs that are not meeting the measurable goals.

7.7 TOTAL MAXIMUM DAILY LOADS (TMDL)

7.7.1 BMP Summary Table

	BMP	Measurable Goals	YR 1	YR 2	YR 3	YR 4	YR 5	Responsible Position/Party
	Establish if a TMDL exists on a receiving water of the MS4	Verify TMDL's annually.	X	X	X	X	X	Stormwater Engineer
	Identify, Describe, and Map watershed, outfalls, and streams.	Identify watershed WLA for stormwater, describe watershed, map watershed, identify location of major outfalls in watershed, identify impaired streams in watershed, and identify schedule to discover and locate other possible contributing sources.	X					Stormwater Engineer
	Existing Measures	Create Water Quality Recovery Program.		X				Stormwater Engineer
	Monitoring Plan	Create and submit to NC DWQ a monitoring program for each pollutant of concern in the TMDL.			X			Stormwater Engineer
	Additional Measures	Additional measures that improve water quality may be started as needed.			X	X	X	Stormwater Engineer
	Implementation Plan	Determine final implementation schedule, including when in the permit additional items will be implemented.				X		Stormwater Engineer
	Incremental Success	Determine if and/or how incremental success will be measured.					X	Stormwater Engineer
	Annual Assessment	Submit Annual Report on program to DWQ	X	X	X	X	X	Stormwater Engineer

7.7.2 Determination of TMDL's

A TMDL on a receiving water with a stormwater Waste Load Allocation (WLA) will trigger the need for compliance with this section of the CSWMP. A TMDL with no WLA will not require a Water Quality Recovery Plan, but rather the need to evaluate existing strategies and if any can be tailored or expanded to improve the water quality in the TMDL watershed.

7.7.3 Establishing a Water Quality Recovery Plan

Based on the above schedule the City of Graham would begin creating a Water Quality Recovery Plan (WQRP) within 12 months of establishment of the TMDL, would have evaluated existing measures within 24 months, developed a monitoring plan within 36 months, and would be implementing or have planned for implementation within 48 months. The WQRP would be submitted and approved by NC DWQ and EPA.

7.7.4 Decision Process

TMDL planning and implementation will be done in an effort to improve water quality and with the approval of NC DWQ staff.

7.7.5 Evaluation

Progress toward restoring water quality standards will be difficult to determine and most evaluation tools will be based upon programs rather than through water quality monitoring or water quality improvements. While the goal of a WQRP is to improve water quality standards, the NPDES MS4 permit obligation is to reduce non-point source pollutant loading to the maximum extent practicable (MEP). The MS4 is not required to meet water quality standards. Evaluation of successful techniques will be evaluated over time, probably multiple permit cycles.