Stormwater Management Plan
City of Graham
NCS000408

May 23, 2024

Table of Contents

List of Tables

PART 1: INTRODUCTION

The purpose of this Stormwater Management Plan (SWMP) is to establish and define the means by which the City of Graham will comply with its National Pollutant Discharge Elimination System (NPDES) Municipal Separate Storm Sewer System (MS4) Permit and the applicable provisions of the Clean Water Act to meet the federal standard of reducing pollutants in stormwater runoff to the maximum extent practicable.

This SWMP identifies the specific elements and minimum measures that the City of Graham will develop, implement, enforce, evaluate and report to the North Carolina Department of Environmental Quality (NCDEQ) Division of Energy, Minerals and Land Resources (DEMLR) in order to comply with the MS4 Permit number **NCS000408** as issued by NCDEQ. This permit covers activities associated with the discharge of stormwater from the MS4 as owned and operated by the City of Graham and located within the corporate limits of the City of Graham.

In preparing this current SWMP, the City of Graham has evaluated its MS4, the permit requirements of it's MS4, and previous Comprehensive Stormwater Management Plans to develop a comprehensive 5-year SWMP that will meet the community's needs, address local water quality issues and provide the minimum measures necessary to comply with the permit. The SWMP will be evaluated and updated annually to ensure that the elements and minimum measures it contains continue to adequately provide for permit compliance and the community's needs.

Once the SWMP is approved by NCDEQ, all provisions contained and referenced in this SWMP, along with any approved modifications of the SWMP, are incorporated by reference into the permit and become enforceable parts of the permit. Any major changes to the approved SWMP will require resubmittal, review and approval by NCDEQ, and may require a new public comment period depending on the nature of the changes.

PART 2: CERTIFICATION

By my signature below I hereby 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 fines and imprisonment for knowing violations.

I am also aware that the contents of this document shall become an enforceable part of the NPDES MS4 Permit, and that both the Division and the Environmental Protection Agency have NPDES MS4 Permit compliance and enforcement authority.

☐ I am a ranking elected official.

☒ I am a principal executive officer for the permitted MS4.

☐ I am a duly authorized representative for the permitted MS4 and have attached the authorization made in writing by a principal executive officer or ranking elected official which specifies me as (*check one*):

- ☐ A specific individual having overall responsibility for stormwater matters.
- ☐ A specific position having overall responsibility for stormwater matters.

Signature:	
Print Name:	*Aaron Holland*
Title:	*Assistant City Manager*
Signed this 23rd day May of 20 24 .	

PART 3: MS4 INFORMATION

3.1 Permitted MS4 Area

This SWMP applies throughout the corporate limits of the City of Graham, including all regulated activities associated with the discharge of stormwater from the MS4. The map below shows the corporate limits of City of Graham as of the date of this document.

Corporate Limits are shown on the Map Below in Red

3.2 Existing MS4 Mapping

The current MS4 mapping includes mapping of Storm drain piping, Streams, Pumpstations, Outfall Locations and Industrial Permitted sites.

Table 1: Summary of Current MS4 Mapping

Percent of MS4 Area Mapped**	100	%
No. of Major Outfalls* Mapped	**125**	total

**An outfall is a point where the MS4 discharges from a pipe or other conveyance (e.g. a ditch) directly into surface waters. Major outfalls are required to be mapped to meet permit requirements. A major outfall is a 36-inch diameter pipe or discharge from a drainage area > 50-acres; and for industrial zoned areas a 12-inch diameter pipe or a drainage area ≥ 2-acres.*

***** Graham's entire stormwater system is mapped currently but due to rapid growth this is an ongoing task.***

3.3 Receiving Waters

The City of Graham MS4 is located within the Cape Fear River Basin and discharges directly into receiving waters as listed in Table 2 below. Applicable water quality standards listed below are compiled from the following NCDEQ sources:

- Waterbody Classification Map
- Impaired Waters and TMDL Map
- Most recent NCDEQ Final 303(d) List

Table 2: Summary of MS4 Receiving Waters

Receiving Water Name	Stream Index / AU Number	Water Quality Classification	303(d) Listed Parameter(s) of Interest
Haw River	16-(10.5)	WS-V; NSW	Benthos
Town Branch	16-17	WS-II, HQW, NSW	Fecal Coliform
County Home Branch (Still House Branch)	16-17-1	WS-V; NSW	N/A
Big Alamance Creek	16-19-(4.5)	WS-II, HQW, NSW	N/A
Back Creek (Little Creek)	16-19-5	WS-V; NSW	N/A
Little Alamance Creek	16-19-11	WS-V, NSW	Urban Stormwater
Bowden Branch (Boyd Creek)	16-19-11-2	WS-V; NSW	N/A

3.4 MS4 Interconnection

The City of Graham's MS4 is interconnected with the NCDOT MS4 within NCDOT owned right of ways.

3.5 Total Maximum Daily Loads (TMDLs)

The TMDL(s) listed in Table 3 below have been approved within the MS4 area, as determined by the map and list provided on the NCDEQ Modeling & Assessment Unit web page. The table also indicates

whether the approved TMDL has a specific stormwater Waste Load Allocation (WLA) for any watershed directly receiving discharges from the permitted MS4, and whether a Water Quality Recovery Program has been implemented to address the WLA.

Table 3: Summary of Approved TMDLs

Water Body Name	TMDL Pollutant(s) of Concern	Stormwater Waste Load Allocation (Y/N)	Water Quality Recovery Program (Y/N)
Jordan Lake TMDL	Nitrogen, Phosphorus	N	Y
Haw River	Turbidity, Fecal Coliform	N	Y

The Jordan Lake TMDL is the subject of extensive rulemaking, of which the City of Graham complies with and will comply with future rulemaking regarding.

The City is also a partner with the City of Burlington and NCDOT in the Little Alamance Creek Category 4b Demonstration Plan. That plan is outlined extensively at littlealamancecreek.com. Little Alamance Creek is impaired for stormwater runoff with an unknown pollutant.

3.6 Endangered and Threatened Species and Critical Habitat

Significant populations of threatened or endangered species and/or critical habitat are not identified within the regulated MS4 urbanized area. Based upon a review of the Endangered and Threatened Species and Species of Concern by County for North Carolina Map and Listed species believe to or known to occur in North Carolina map as provided by the U.S. Fish and Wildlife Service, the species listed in Table 4 have the potential to occur within the regulated MS4 urbanized area. Of those species listed, Table 4 summarizes the species that may be significantly impacted by the quality of surface waters within their habitat.

Table 4: Potential Federally Listed Species/Habitat Impacted by Surface Water Quality

Scientific Name	Common name	Species Group	Federal Listing Status
Helianthus Schweinitzil	Schweinitz's Sunflower	Flowering Plants	Endangered
Danus Plexippus	Monarch Butterfly	Insects	Candidate
Fusconaia Masoni	Atlantic Pigtoe	Clams	Proposed Threatened
Notropis Mekistocholas	Cape Fear Shiner	Fishes	Endangered

3.7 Industrial Facility Discharges

The City of Graham MS4 jurisdictional area includes the following industrial facilities which hold NPDES Industrial Stormwater Permits, as determined from the NCDEQ Maps & Permit Data web page.

Table 5: NPDES Stormwater Permitted Industrial Facilities

Permit Number	Owner Organization Name	Facility Name
NCG050243	Acucote Inc	Acucote Incorporated - Graham
NCG080662	City of Graham	City of Graham - Public Works Facility
NCG081025	Waste Industries LLC	GFL Alamance Hauling Facility
NCG110021	City of Graham	Graham WWTP
NCG030016	Luxfer Gas Cylinders	Luxfer Gas Cylinders
NCG160229	Neyra Industries Inc	Neyra Industries, Inc.
NCG070071	Permatech LLC	Vesuvius
NCG08455	Pilot Travel Center, LLC	PTL#6955

3.8 Non-Stormwater Discharges

The water quality impacts of non-stormwater discharges have been evaluated by the City of Graham as summarized in Table 6 below. The unpermitted non-stormwater flows listed as incidental do not significantly impact water quality. The City of Graham has evaluated residential and charity car washing and street washing for possible significant water quality impacts.

Street washing discharges are addressed under the Pavement Management Program in Part 10 of this SWMP. The Division has not required that other non-stormwater flows be specifically controlled by the City of Graham.

Wash water associated with car washing that does not contain detergents or does not discharge directly into the MS4 is considered incidental. However, these types of non-stormwater discharges that do contain detergents have been evaluated by the City of Graham to determine whether they may significantly impact water quality. Currently runoff from car washing in The City of Graham would be considered incidental.

Table 6: Non-Stormwater Discharges

Non-Stormwater Discharge	Water Quality Impacts
Water line and fire hydrant flushing	Incidental
Landscape irrigation	Incidental
Diverted stream flows	Incidental
Rising groundwater	Incidental
Uncontaminated groundwater infiltration	Incidental
Uncontaminated pumped groundwater	Incidental
Uncontaminated potable water sources	Incidental
Foundation drains	Incidental
Air conditioning condensate	Incidental
Irrigation waters	Incidental
Springs	Incidental
Water from crawl space pumps	Incidental
Footing drains	Incidental

Lawn watering	Incidental
Residential and charity car washing	**Possible**
Flows from riparian habitats and wetlands	Incidental
Dechlorinated swimming pool discharges	Incidental
Street wash water	**Possible**
Flows from firefighting activities	Incidental

3.9 Target Pollutants and Sources

In addition to those target pollutants identified below, the City of Graham is not aware of other significant water quality issues within the permitted MS4 area.

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.

Table 7 below summarizes the water quality pollutants identified throughout Part 3 of this SWMP, the likely activities/sources/targeted audiences attributed to each pollutant and identifies the associated SWMP program(s) that address each. In addition, the City of Graham has evaluated schools, homeowners and businesses as target audiences that are likely to have significant stormwater impacts.

Table 7: Summary of Target Pollutants and Sources

Target Pollutant(s)	Likely Source(s)/Target Audience(s)	SWMP Program Addressing Target Pollutant(s)/Audience(s)
Litter	Residents, Businesses, Schools	Public Education & Outreach
Sediment	Residents, Businesses	Public Education & Outreach
Nitrogen and Phosphorous	Fertilizer/Residents	Public Education & Outreach

The City of Graham is a partner in the Little Alamance Creek Category 4B Implementation Plan. The plan is available at littlealmancecreek.com and includes extensive discussions regarding potential pollutants in stormwater.

PART 4: STORMWATER MANAGEMENT PROGRAM ADMINISTRATION

4.1 Organizational Structure

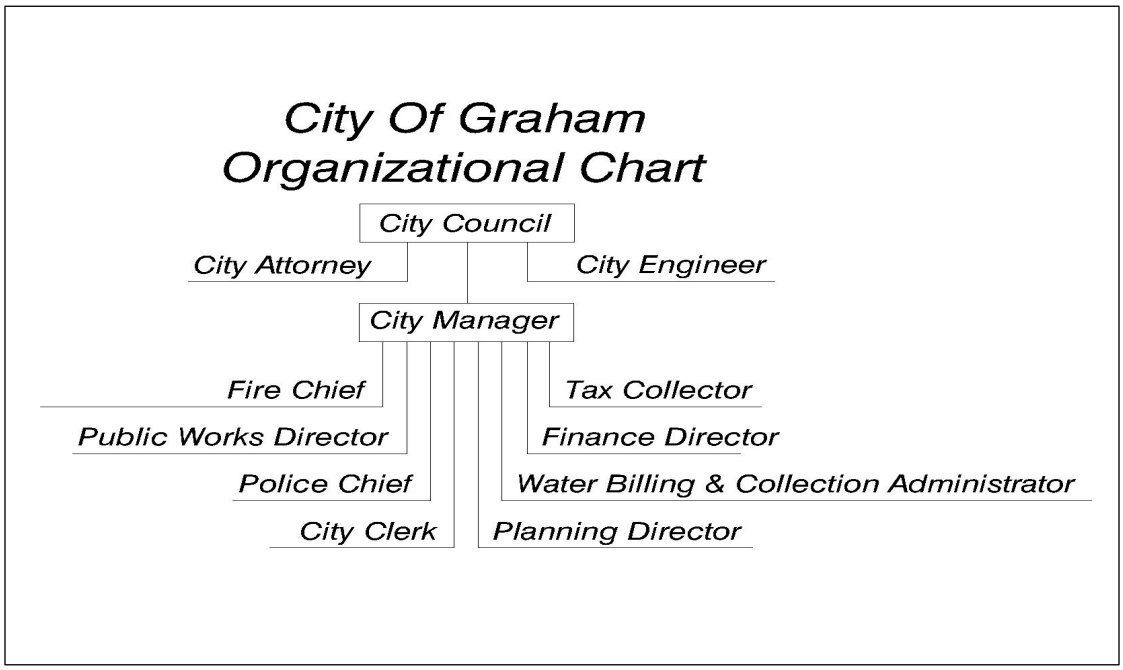

Table 8: Summary of Responsible Parties

Position	Name	Phone No.	Fax No.	Email
City Manager	Megan Garner	336-570-6700	336-570-6703	mgarner@cityofgraham.com
Assistant City Manager	Aaron Holland	336-570-6700	336-570-6703	aholland@cityofgraham.com
City Clerk	Renee Ward	336-570-6500	336-570-6703	rward@cityofgraham.com
Public Works Director	Burke Robertson	336-570-6709	336-570-6703	brobertson@cityofgraham.com
Utilities Director	Tonya Mann	336-578-3264	336-570-6703	tmann@cityofgraham.com
City Planner	Cameron West	336-570-6700	336-570-6703	cwest@cityofgraham.com
City Attorney	Robert (Bob) Ward J. Bryan Coleman	336-228-1433	336-570-6703	law@cityofgraham.com
City Engineer /Stormwater Manager	Josh Johnson, P.E.	(336) 226-5534	(336) 226-3034	josh@awck.com
Stormwater Coordinator	Janet Paith	(336)226-5534	(336) 226-3034	jpaith@awck.com
General contacts for Stormwater program should be referred to Burke Robertson & Josh Johnson				
Designated Stormwater Administrator – Josh Johnson, P.E. – Contracted				

SWMP Component	Responsible Position	Staff Name	Department
Stormwater Program Administration	Assistant City Manager Stormwater Engineer	See Table 8	Administration
SWMP Management	Assistant City Manager Stormwater Engineer	See Table 8	Administration
Public Education & Outreach	Assistant City Manager Stormwater Manager	See Table 8	Administration
Public Involvement & Participation	Assistant City Manager Stormwater Manager	See Table 8	Administration
Illicit Discharge Detection & Elimination	Assistant City Manager Stormwater Engineer	See Table 8	Administration
Construction Site Runoff Control	Assistant City Manager Stormwater Engineer	See Table 8	Administration
Post-Construction Stormwater Management	City Manager Stormwater Manager	See Table 8	Administration
Pollution Prevention/Good Housekeeping for Municipal Operations	Assistant City Manager Stormwater Engineer Public Works Director Utilities Director	See Table 8	Administration Public Works
Municipal Facilities Operation & Maintenance Program	Assistant City Manager Stormwater Engineer Public Works Director	See Table 8	Administration Public Works
Spill Response Program	Assistant City Manager Stormwater Engineer Public Works Director	See Table 8	Administration Public Works
MS4 Operation & Maintenance Program	Assistant City Manager Stormwater Engineer Public Works Director	See Table 8	Administration Public Works
Municipal SCM Operation & Maintenance Program	Assistant City Manager Stormwater Engineer Public Works Director	See Table 8	Administration Public Works
Pesticide, Herbicide & Fertilizer Management Program	Assistant City Manager Stormwater Engineer Public Works Director	See Table 8	Administration Public Works
Vehicle & Equipment Cleaning Program	Assistant City Manager Stormwater Engineer Public Works Director	See Table 8	Administration Public Works

Pavement Management Program	Assistant City Manager Stormwater Engineer Public Works Director	See Table 8	Administration Public Works
Total Maximum Daily Load (TMDL) Requirements	Assistant City Manager Stormwater Engineer	See Table 8	Administration

Program Funding and Budget
In accordance with the issued permit, the City of Graham shall maintain adequate funding and staffing to implement and manage the provisions of the SWMP and comply with the requirements of the NPDES MS4 Permit. The budget includes the permit administering and compliance fee, which is billed by the Division annually.

The City of Graham funds it's Stormwater Programs through a Stormwater Fee. The City collects a flat fee of $2/month from utility users within the City Limits. For the 2021-22 fiscal year the City budgeted $70,000 for stormwater services. The City uses its budget to pay for its Water Quality Programs including its NPDES Phase II and Jordan Lake Programs. The City's Water Supply Watershed Inspection Program is funded through fees collected during the permitting and review process. The City has also used excess funding from the stormwater fund to fund other stormwater or water quality projects. This includes investigating drainage complaints from residents and investigating potential inflow/infiltration/exfiltration between the collections system and the MS4.

4.2 Shared Responsibility/Contracted Services

The City of Graham implements 5 of the 6 minimum control measures, with the 6th measure being construction site runoff controls which is implemented through NC DEMLR's Erosion and Sediment Control program.

The City of Graham contracts with Stormwater Smart for assistance with Public Education and Public Involvement and Outreach. Stormwater Smart is not directly responsible for any items but rather assists the City of Graham.

The City of Graham contracts engineering services with Alley, Williams, Carmen, and King, Inc. Alley, Williams, Carmen, and King is not directly responsible for any items but rather assists the City of Graham.

4.3 Co-Permittees

The are no other entities applying for co-permittee status under the NPDES MS4 permit number NCS000408 for the City of Graham.

4.4 Measurable Goals for Program Administration

The City of Graham will manage and report the following Best Management Practices (BMPs) for the administration of the Stormwater Management Program.

Table 11: Program Administration BMPs				
Permit Ref.	**1.6: Permit Renewal Application** Measures to submit a permit renewal application no later than 180 days prior to the expiration date of the NPDES MS4 permit.			
BMP No.	**A**	**B**	**C**	**D**
	Description of BMP	**Measurable Goal(s)**	**Schedule for Implementation**	**Annual Reporting Metric**
1.	**Permit Renewal Application**			
	Submit a permit renewal application and Draft SWMP no later than 180 prior to permit expiration.	1. Draft SWMP applicable to the proceeding 5 years following permit re-issuance.	1. Permit Year 5	1. Yes / No
		2. Certify the stormwater permit renewal application (Permit renewal application form and Draft SWMP for the next 5-year permit cycle) and submit to NCDEQ at least 180 days prior to permit expiration.	2. Permit Year 5	2. Date of permit renewal application submittal
Permit Ref.	**2.1.1 Review Adequate Funding and Staffing** Review adequate funding and staffing to implement and manage the provisions of the SWMP and meet the requirements of the permit.			
BMP No.	**A**	**B**	**C**	**D**
	Description of BMP	**Measurable Goal(s)**	**Schedule for Implementation**	**Annual Reporting Metric**
2.	**Review Adequate Funding and Staffing needs**.			
	Confirm that the program is adequately funded and staffed.	1.Verify adequate funding in the City's Budget.	1. Permit Year 1-5	1. Adequate/Inadequate
	Stormwater Services Contract	1. Sign contract	1. Permit Year 1	1. Yes / No
		2. Review contract for all permit required items.	2. Review Permit Years 2-5	2. Yes / No
Permit Ref.	**2.1.2 Program Implementation** **Measures to evaluate the performance and effectiveness of the SWMP program components at least annually. Results shall be used by the permittee to modify the program components as necessary to accomplish the intent of the Stormwater Program.**			
BMP No.	**A**	**B**	**C**	**D**
	Description of BMP	**Measurable Goal(s)**	**Schedule for Implementation**	**Annual Reporting Metric**

Table 11: Program Administration BMPs				
3.	**Annual Self-Assessment**			
	Evaluate the performance and effectiveness of the program components at least annually. Results shall be used to modify the program components as necessary to accomplish the intent of the Stormwater Program.	1. Prepare, conduct and document an annual evaluation of the program components.	1. Annually Permit Year 1 – 5	1. Yes / No
Permit Ref.	**2.2 Minimum Control Measures** Maintain written procedures for implementing the six minimum control measures (MCM's), which identify specific action steps, schedules, resources and responsibilities for implementing the MCM's.			
BMP No.	**A**	**B**	**C**	**D**
	Description of BMP	**Measurable Goal(s)**	**Schedule for Implementation**	**Annual Reporting Metric**
4.	**Procedures for implementing the Minimum Control Measures (MCM's)**			
		1. Create all required written procedures for implementing the six MCM's.	1. Permit Year 1	1. Yes / No
		2. Review and update all written procedures as needed.	2. Permit Year 2-5	2. Yes / No
Permit Ref.	**2.1.7, 3.2.3 and 3.6.5(c): Web Site** Measures to provide a web site designed to convey the program's message(s) and provide online materials including ordinances, or other regulatory mechanisms, or a list identifying the ordinances or other regulatory mechanisms, providing the legal authority necessary to implement and enforce the requirements of the permit and SWMP. The web page shall also provide developers with all relevant post-construction requirements, design standards, checklists and/or other materials.			
BMP No.	**A**	**B**	**C**	**D**
	Description of BMP	**Measurable Goal(s)**	**Schedule for Implementation**	**Annual Reporting Metric**
5.	**City's Stormwater Webpage**			
	Update and maintain the City's Stormwater Webpage.	1. Verify City's stormwater webpage is current.	1. Annually Permit Year 1-5	1. Yes / No
Permit Ref.	**3.2.5: Stormwater Hotline** Measures for a stormwater hotline/helpline for the purpose of public education and outreach.			
BMP No.	**A**	**B**	**C**	**D**
	Description of BMP	**Measurable Goal(s)**	**Schedule for Implementation**	**Annual Reporting Metric**

Table 11: Program Administration BMPs				
6.	**Helpline/ Hotline**			
	All stormwater related calls will be forwarded to the Public Works Director who will then distribute the information to appropriate employees.	1. Confirm hotline number works and log calls.	1. Continuously Permit Year 1- 5	1. Total annual number of calls

PART 5: PUBLIC EDUCATION AND OUTREACH PROGRAM

The City of Graham will implement a Public Education and Outreach Program to distribute educational materials to the community or conduct equivalent outreach activities about the impacts of storm water discharges on water bodies and steps the public can take to reduce pollutants in storm water runoff.

The target audiences and identified pollutants listed in Part 3.9 of this SWMP, which will be addressed by the Public Education and Outreach Program, are summarized in Table 12 below. In addition, the City of Graham is required to inform businesses and the general public of the hazards associated with illicit discharges, illegal dumping and improper disposal of waste.

Table 12: Summary of Target Pollutants & Audiences

Target Pollutants/Sources	Target Audience(s)
Litter	Residents, Businesses, Schools
Sediment	Residents, Businesses
Nitrogen and Phosphorous	Fertilizer/Residents

The City of Graham will manage, implement, and report the following public education and outreach BMPs.

The City partners with Stormwater SMART, an education and outreach organization hosted by the Piedmont Triad Regional Council (PTRC). Stormwater SMART is a cooperative group that is funded by several Piedmont municipalities. It was created in 2005 to provide education and outreach for MS4 Permittees (like Graham) and concentrates on direct education of school children and residents.

Piedmont Triad Regional Council
Stormwater Smart
Danica Heflin
1398 Carrollton Crossing Drive, Kernersville, NC 27284
(336) 904-0300

Table 13: Public Education and Outreach BMPs				
Permit Ref.	**3.2.2 and 3.2.4: Outreach to Targeted Audiences** Measures to identify the specific elements and implementation of a Public Education and Outreach Program to share educational materials to the community or conduct equivalent outreach activities about the impacts of stormwater discharges on water bodies and how the public can reduce pollutants in stormwater runoff. The permittee shall provide educational information to identified target audiences on pollutants/sources identified in table 12 above; and shall document the extent of exposure of each media, event or activity, including those elements implemented locally or through a cooperative agreement.			
BMP No.	**A**	**B**	**C**	**D**
	Description of BMP	**Measurable Goal(s)**	**Schedule for Implementation**	**Annual Reporting Metric**
7.	**Maintain a Stormwater 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.	1.Maintain Public Education and Engagement Plan, documenting the existing outreach and education program implemented by City staff, including process for identifying target audiences for each pollutant and source.	1. Annually Permit Year 1-5	1. Yes / No
8.	**Educational Stormwater Mailers, Brochures, and Posters**			
	Distribute Public Education Materials to identified user groups. Materials may be supplied through outside Stormwater information sources.	Distribute public education materials at: 1. public events 2. schools 3. mailings 4. municipal facilities	1. Annual 2. Annual 3. Annual 4. Annual	1. Contact Hours 2. Contact Hours 3. Number of Educational Materials Distributed. 4. Number of Educational Materials Distributed. 5.

PART 6: PUBLIC INVOLVEMENT AND PARTICIPATION PROGRAM

This SWMP identifies the minimum elements and implementation of a Public Involvement and Participation Program that complies with applicable State, Tribal and local public notice requirements. The City of Graham will manage, implement and report the following public involvement and participation BMPs.

Table 14: Public Involvement and Participation BMPs

Permit Ref.	**3.3.1: Public Input** Mechanisms for public involvement that provide for input on stormwater issues and the stormwater program.			
BMP No.	**A**	**B**	**C**	**D**
	Description of BMP	**Measurable Goal(s)**	**Schedule for Implementation**	**Annual Reporting Metric**
9.	**Public Stormwater Program Meeting**			
	A public meeting will be held Bi -annually to discuss the implementation of the permit. This meeting will provide the public with the opportunity to be involved with the stormwater program.	1. Hold a public meeting to solicit information about the City's Stormwater Program.	1. Permit Years 2 and 4	1. Date of Event
Permit Ref.	**3.3.2: Volunteer Opportunities** Measures to provide volunteer opportunities designed to promote ongoing citizen participation.			
	A	B	C	D
BMP No.	**Description of BMP**	**Measurable Goal(s)**	**Schedule for Implementation**	**Annual Reporting Metric**
10.	**Volunteer Stormwater Program**			
	The City will promote various volunteer stormwater programs annually. These may include Big Sweep, Creek Week, Adopt-A-Stream programs, and Storm Drain Stenciling.	1. Hold one event per year in the community.	1.Fall and Spring Permit Years 1-5	1. Number of Events
		2. Participants per program	2. Fall and Spring Permit Years 1-5	2. The number of participants. 3. Estimate of Effectiveness of Event: Amount of Bags Collected, Number of Storm Drains Marked

PART 7: ILLICIT DISCHARGE DETECTION AND ELIMINATION PROGRAM

The City of Graham will develop, manage, implement, document, report and enforce an Illicit Discharge Detection and Elimination Program which shall, at a minimum, include the following illicit discharge detection and elimination BMPs.

Table 15: Illicit Discharge Detection and Elimination BMPs				
Permit Ref.	**3.4.1: MS4 Map** Measures to develop, update and maintain a municipal storm sewer system map including stormwater conveyances, flow direction, major outfalls and waters of the United States receiving stormwater discharges.			
BMP No.	**A**	**B**	**C**	**D**
	Description of BMP	**Measurable Goal(s)**	**Schedule for Implementation**	**Annual Reporting Metric**
11.	**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.	1. Maintain mapping as System changes.	1.Continuously, with updates made annually.	1. Yes / No
Permit Ref.	**3.4.2: Regulatory Mechanism** Measures to provide an IDDE ordinance or other regulatory mechanism that provides legal authority to prohibit, detect, and eliminate illicit connections and discharges, illegal dumping and spills into the MS4, including enforcement procedures and actions.			
BMP No.	**A**	**B**	**C**	**D**
	Description of BMP	**Measurable Goal(s)**	**Schedule for Implementation**	**Annual Reporting Metric**
12.	**Review Illicit Discharge Ordinance**			
	Maintain adequate ordinance or other legal authorities to prohibit illicit connections and discharges and enforce the approved IDDE program.	1. Maintain and enforce public ordinances. Update, if necessary, to maintain legal authority.	1. Review ordinance biannually - Permit Years 2 & 4	1. Yes / No

Table 15: Illicit Discharge Detection and Elimination BMPs				
Permit Ref.	**3.4.3: IDDE Plan** Measures to maintain and implement a written IDDE Plan to detect and address illicit discharges, illegal dumping and any non-stormwater discharges identified as significant contributors of pollutants to the MS4. The plan shall provide standard procedures and documentation to: a) Locate priority areas likely to have illicit discharges, b) Conduct routine dry weather outfall inspections, c) Identify illicit discharges and trace sources, d) Eliminate the source(s) of an illicit discharge, and e) Evaluate and assess the IDDE Program.			
BMP No.	**A**	**B**	**C**	**D**
	Description of BMP	**Measurable Goal(s)**	**Schedule for Implementation**	**Annual Reporting Metric**
13.	**Inspection/detection program to detect dry weather flows at MS4 outfalls.**			
	Maintain written procedures and/or SOPs for detecting and tracing the sources of illicit discharges and for removing the sources or reporting the sources to the State to be properly permitted.	1.Maintain IDDE Plan. Review and update IDDE Plan as needed.	1. Annually Permit Years 1-5	1. Yes/ No
14.	Stream walks/ Dry weather testing and Outfall Inspections	1.Inspect 20% outfalls.	1.Annually Permit Year 1-5	1. Number of outfalls inspected for year
Permit Ref.	**3.4.4: IDDE Tracking** Measures for tracking and documenting the date(s) an illicit discharge, illicit connection or illegal dumping was observed, the results of the investigation, any follow-up of the investigation, the date the investigation was closed, the issuance of enforcement actions, and the ability to identify chronic violators.			
BMP No.	**A**	**B**	**C**	**D**
	Description of BMP	**Measurable Goal(s)**	**Schedule for Implementation**	**Annual Reporting Metric**
15.	**Establish/ Maintain a tracking system for managing reported problem areas.**			
	Document the date of investigations, any enforcement action(s) or remediation that occurred.	1. Maintain IDDE investigation records, notices of violations and compliance and other program records.	1. Continuously	1. Report number of IDDE investigations, number of NOVs issued, number of enforcement actions taken, number of NOVs closed.

Table 15: Illicit Discharge Detection and Elimination BMPs				
Permit Ref.	**3.4.5: Staff IDDE Training** Measures to provide training for municipal staff and contractors who, as part of their normal job responsibilities, may observe an illicit discharge, illicit connection, illegal dumping or spills. Training shall include how to identify and report illicit discharges, illicit connections, illegal dumping and spills. Each staff training event shall be documented, including the agenda/materials, date, and number of staff participating.			
BMP No.	**A**	**B**	**C**	**D**
	Description of BMP	**Measurable Goal(s)**	**Schedule for Implementation**	**Annual Reporting Metric**
16.	**Train employees on how to inspect for illicit connections**			
	Conduct in person or virtual training for appropriate municipal staff on detecting and reporting illicit connections and discharges.	1. Conduct employee training and document attendance.	1. Annually Permit Year 1-5	1. Report number of staff who completed IDDE training.
Permit Ref.	**3.4.6: IDDE Reporting** Measures for the public and staff to report illicit discharges, illegal dumping and spills. The mechanism shall be publicized to facilitate reporting and shall be managed to provide rapid response by appropriately trained personnel.			
BMP No.	**A**	**B**	**C**	**D**
	Description of BMP	**Measurable Goal(s)**	**Schedule for Implementation**	**Annual Reporting Metric**
17.	**Maintain Program to report discharges to personnel and the public**			
	Maintain and publicize reporting mechanism(s) for the public to report illicit connections and discharges.	1. Maintain reporting helpline and email address.	1. Annually Permit Year 1-5	1. Yes / No

PART 8: CONSTRUCTION SITE RUNOFF CONTROL PROGRAM

In accordance with 15A NCAC 02H .0153, the City of Graham relies upon the North Carolina Sedimentation Pollution Control Act (SPCA) of 1973 as a qualifying alternative program to meet a portion of the NPDES MS4 Permit requirements for construction site runoff control measures. The SPCA requirements include reducing pollutants in stormwater runoff from construction activities that result in land disturbance of greater than or equal to one acre and includes any construction activity that is part of a larger common plan of development that would disturb one acre or more.

The contact information for the responsible party for Construction Site Runoff Controls within the City of Graham is:

NC Sedimentation and Erosion Control Program
Winston-Salem Regional Office
Tamera Eplin, P.E. Regional Environmental Engineer
450 west Hanes Mill Rd., Suite 300,
Winston Salem, NC 27105-7407
Phone: 336/776-9800

www.deq.nc.gov

The City of Graham implements minimal BMP's regarding NC Sedimentation and Erosion Control due to lack of legal authority. All calls regarding erosion control are to be referred to NC DEQ as noted above.

Table 17: Construction Site Runoff Control BMPs

Permit Ref.	**3.5.6: Public Input** Measures to provide and promote a means for the public to notify the appropriate authorities of observed erosion and sedimentation problems.			
	A	**B**	**C**	**D**
BMP No.	**Description of BMP**	**Measurable Goal(s)**	**Schedule for Implementation**	**Annual Reporting Metric**
18.	**Municipal Staff Training**			
	Train municipal staff who receive calls from the public on the protocols for referral and tracking of construction site runoff control complaints.	1. Train municipal staff on proper handling of construction site runoff control complaints.	1. Annually Permit Year 1-5	1. Number of staff trained.
19.	**Construction Site Waste Management**			
	Construction material and construction waste pollutant control code.	1. Confirm city authority on construction site pollutant controls when pollutant is "leaving or likely leaving the site".	1. Permit Year 1	1. Yes / No

Table 17: Construction Site Runoff Control BMPs				
		2. Maintain Authority	2. Permit Year 2-5 Maintain.	2. Yes / No

PART 9: POST-CONSTRUCTION SITE RUNOFF CONTROL PROGRAM

The City of Graham operates a Post Construction Site Runoff Control Program that regulates stormwater runoff from new development and redevelopment projects that disturb greater than or equal to one acre, including projects less than one acre that are part of a larger common plan of development or sale, that are located within the City of Graham and discharge into the MS4. These elements are designed to minimize water quality impacts utilizing a combination of structural Stormwater Control Measures (SCMs) and/or non-structural BMPs appropriate for the community and ensure adequate long-term operation and maintenance of SCMs.

The City also operates a high-density water supply watershed program that is handled similarly to it's Post Construction runoff program but which includes reduced triggers and more stringent regulations.

The City's post construction ordinance is contained in Section 157 of it's Code of Ordinances. The City maintains a stormwater design manual that is deemed equal or more stringent than the NC DEQ BMP Manual.

The annual reporting metrics for the post construction program are provided in Table 20: Post Construction Site Runoff Control BMPs below.

Table 20: Post Construction Site Runoff Control BMPs

Permit Ref.	**3.6.5(a), 3.6.5(b), and 4.1.3: Minimum Post-Construction Reporting Requirements** Measures to document activities over the course of the fiscal year (July 1 – June 30) including appropriate information to accurately describe progress, status, and results.			
BMP No.	**A**	**B**	**C**	**D**
	Description of BMP	**Measurable Goal(s)**	**Schedule for Implementation**	**Annual Reporting Metric**
20.	**Standard Reporting**			
	Implement standardized tracking, documentation, inspections and reporting mechanisms to compile appropriate data for the annual self-assessment process. Data shall be provided for each Post-Construction/ Qualifying Alternative Program being implemented as listed in Tables 18 and 19.	1. Track number of low density and high density plan reviews performed.	1. Continuously Permit Year 1-5	1. Number of plan reviews performed for low density and high density.
		2. Track number of low density and high density plans approved.	2. Continuously Permit Year 1-5	2. Number of plan approvals issued for low density and high density.
		3. Maintain a current inventory of low density projects and constructed SCMs including SCM type or low density location and last inspection date.	3. Continuously Permit Year 1-5	3. Summary of number and type of SCMs added to the inventory; and number of low density projects constructed.
		4. Track number of SCM inspections performed.	4. Continuously Permit Year 1-5	4. Number of SCM inspections.
		5. Track number and type of enforcement actions taken.	5. Continuously Permit Year 1-5	5. Number of enforcement actions issued.

Table 20: Post Construction Site Runoff Control BMPs				
Permit Ref.	**3.6.2: Legal Authority** Measures to maintain adequate legal authorities through ordinance or other regulatory mechanism to: (a) review designs and proposals for new development and redevelopment to determine whether adequate stormwater control measures will be installed, implemented, and maintained, (b) request information such as stormwater plans, inspection reports, monitoring results, and other information deemed necessary to evaluate compliance with the Post-Construction Stormwater Management Program, and (c) enter private property for the purpose of inspecting at reasonable times any facilities, equipment, practices, or operations related to stormwater discharges to determine whether there is compliance with the Post-Construction Stormwater Management Program.			
BMP No.	**A**	**B**	**C**	**D**
	Description of BMP	**Measurable Goal(s)**	**Schedule for Implementation**	**Annual Reporting Metric**
21.	**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.	1. Add additional Measures as needed	1.Permit Year 1	1. Yes / No
Permit Ref.	**3.6.3: Plan Review and Approval** Measures to maintain plan review and approval authority, standards and procedures to: (a) Require Federal, State, and local government projects to comply with Post-Construction Program requirements throughout the entire MS4 permitted area, unless the entity is subject to its own NPDES MS4 permit or a qualifying alternative program, (b) Conduct site plan reviews of all new development and redeveloped sites that disturb greater than or equal to one acre, and sites that disturb less than one acre that are part of a larger common plan of development or sale for compliance with 15A NCAC 02H .1017 and the qualifying alternative programs that apply within your jurisdiction, (c) Ensure that each project has an Operation and Maintenance Agreement that complies with 15A NCAC 02H .1050(12), (d) Ensure that each project has an Operation and Maintenance Plan that complies with 15A NCAC 02H .1050(13), (e) Ensure that each project has recorded deed restrictions and protective covenants, that require the project to be maintained consistent with approved plans, and (f) Ensure that each SCM and associated maintenance accesses be protected in a permanent recorded easement per 15A NCAC 02H 1050 (9) and (10).			
BMP No.	**A**	**B**	**C**	**D**
	Description of BMP	**Measurable Goal(s)**	**Schedule for Implementation**	**Annual Reporting Metric**
22.	**Review standards and policies that ensure structural BMPs continue to be in conformance with the state's Stormwater Management Design Manual**			
	Review local standards to remain in compliance with the NC DWQ BMP Manual. Additional measures and techniques may be added to the local ordinance as they are investigated.	1. Add additional Measures as needed.	1. Annually Permit Year 1-5	1. Yes / No

Table 20: Post Construction Site Runoff Control BMPs				
23.	**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.	1. Add additional Measures as needed.	1. Annually Permit Year 1-5	1. Yes / No
24.	**Maintain the education program created for land developers and the public.**			
	Provide educational materials and training for developers.	1. Maintain stormwater permitting guidance document for developers and designers.	1. Continuous Permit Year 1-5	1. Yes / No
Permit Ref.	**3.6.4: Inspections and Enforcement** Measures to maintain inspection and enforcement authority, standards and procedures to: (a) Conduct post-construction inspections prior to issuing a Certificate of Occupancy or a Temporary Certificate of Occupancy. Alternatively, the project owner may provide a surety bond to guarantee compliance with the approved plan(s), (b) Ensure that the project has been constructed in accordance with the approved plan(s), (c) Ensure annual inspection of each permitted SCM to ensure compliance with the approved Operation and Maintenance Agreement, (d) Ensure inspection of low-density projects at least once during the permit term, and (e) Require that inspections be conducted by a qualified professional.			
BMP No.	**A** **Description of BMP**	**B** **Measurable Goal(s)**	**C** **Schedule for Implementation**	**D** **Annual Reporting Metric**
25.	**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 City during the permit cycle.	1. Maintain and receive SCM inspection reports and follow up on the functioning status of SCM's.	1. Annually Permit Year 1-5	1. Report number of sites with SCMs 2. Report number of sites where SCM inspections have been received 3. Report SCM enforcement activities
26.	**Operation and Maintenance Plan**			
	Require submittal of operation and maintenance plan(s) prior to certificate of occupancy and maintain records of each plan.	1. Require submittal of operation and maintenance plan(s) prior to certificate of occupancy and maintain records of each plan.	1. Continuously Permit Year 1-5	1. Report number of sites with newly approved operation and maintenance plan(s).

Table 20: Post Construction Site Runoff Control BMPs				
Permit Ref.	**3.6.6: Fecal Coliform Reduction** Measures to control, to the maximum extent practicable, sources of fecal coliform per 15A NCAC 02H .1017(7). At a minimum, the program shall include: (a) A pet waste management component, which may be achieved by revising an existing litter ordinance, and (b) An on-site domestic wastewater treatment system component, if applicable, which may be coordinated with local county health department, to ensure proper operation and maintenance of such systems.			
BMP No.	**A**	**B**	**C**	**D**
	Description of BMP	**Measurable Goal(s)**	**Schedule for Implementation**	**Annual Reporting Metric**
27.	**Pet Waste Stations at Parks**			
	Provide Pet waste stations at City owned parks as needed.	1. Maintain Pet Waste Stations in City owned parks.	1. Continuously Permit Year 1-5	1. Report the number of Pet Waste stations the City maintains.

PART 10: POLLUTION PREVENTION AND GOOD HOUSEKEEPING PROGRAMS

This SWMP provides a comprehensive pollution prevention and good housekeeping strategy for the City of Graham municipal facilities and operations. Pollution prevention and good housekeeping is accomplished through the implementation of seven required programs, which collectively address the ultimate goal of preventing or reducing pollutant runoff from municipal operations such as parks and open space maintenance, fleet and building maintenance, new construction and land disturbances, and municipal storm sewer system maintenance.

Pollution prevention and good housekeeping for municipal operations includes the following programs:

1. Municipal Facilities Operation and Maintenance Program
2. Spill Response Program
3. MS4 Operation and Maintenance Program
4. Municipal SCM Operation and Maintenance Program
5. Pesticide, Herbicide and Fertilizer Management Program
6. Vehicle and Equipment Maintenance Program
7. Pavement Management Program

The City of Graham will manage, implement and report the pollution prevention and good housekeeping BMPs as specified in Table 21 below for each required program.

Table 21: Pollution Prevention and Good Housekeeping BMPs

Permit Ref.	**3.7.1: Municipal Facilities Operation and Maintenance Program** Measures to manage facilities that are owned and operated by the permittee and have the potential for generating polluted stormwater runoff. The permittee shall maintain a current inventory of municipal facilities; perform facility inspections and routine maintenance; establish specific frequencies, schedules, and standard documentation; provide staff training on general stormwater awareness and implementing pollution prevention and good housekeeping practices.			
BMP No.	**A**	**B**	**C**	**D**
	Description of BMP	**Measurable Goal(s)**	**Schedule for Implementation**	**Annual Reporting Metric**
28.	**Maintain Inventory and O&M Manual of Municipal Facilities and Operations**			
	Document and maintain municipal facility inspections program for sources of polluted runoff.	1. Maintain inventory of municipal facilities that are determined to be potential sources of polluted runoff.	1. Review Annually Permit Year 1-5	1. Total number of facilities
29.	Inspect Municipal Facilities and Operations for sources of polluted runoff.	1. Inspect Municipal Facilities and Operations	1. Annually Permit Year 1- 5	1. Report Number of facilities inspected

Permit Ref.	**3.7.2: Spill Response Program** Measures for facilities and operations that store and/or use materials that have the potential to contaminate stormwater runoff if spilled. The permittee shall maintain written spill response procedures and train staff on spill response procedures.			
BMP No.	**A**	**B**	**C**	**D**
	Description of BMP	**Measurable Goal(s)**	**Schedule for Implementation**	**Annual Reporting Metric**
30.	**Spill Response Procedures**			
	Maintain spill response procedures for municipal facilities and operations owned and operated by the permittee that have been determined by the permittee to have significant potential for generating polluted stormwater runoff.	1. Maintain City-wide spill and site-specific response procedures.	1. Annually Permit Year 1-5	1. Yes / No
31.	**Staff Training**			
	Train Staff on proper procedures and protocol to handle spills	1. Conduct employee training and document attendance.	1. Annually Permit Year 1-5	1. Number of staff who completed PPGH training
Permit Ref.	**3.7.3: MS4 Operation and Maintenance Program** Measures to minimize pollutants in the stormwater collection system. The permittee shall provide operation and maintenance staff training on stormwater awareness and pollution prevention, perform MS4 inspections, maintain the collection system including catch basins and conveyances; and establish specific frequencies, schedules, and standard documentation.			
BMP No.	**A**	**B**	**C**	**D**
	Description of BMP	**Measurable Goal(s)**	**Schedule for Implementation**	**Annual Reporting Metric**
32.	**O&M for municipally owned or maintained catch basins and conveyance systems**			
	Continue to implement/and maintain the O&M Program for the municipal storm sewer system including catch basins, and the conveyance system.	1. Inspect and maintain MS4 to verify they function as conduits of stormwater.	1. Annually Permit Year 1-5	1. Yes / No
		2. Review the MS4 Plan, and revise, if necessary. Implement inspection and maintenance programs documented in the MS4 Plan.	2. Annually Permit Year 1-5	2. Yes / No.
Permit Ref.	**3.7.4: Municipal SCM Operation and Maintenance Program** Measures to manage municipally owned, operated, and/or maintained structural stormwater control measures (SCMs) that are installed for compliance with the permittee's post-construction program. The permittee shall maintain a current inventory of SCMs, perform SCM inspections and maintenance, and shall establish specific frequencies, schedules, and documentation.			
BMP No.	**A**	**B**	**C**	**D**
	Description of BMP	**Measurable Goal(s)**	**Schedule for Implementation**	**Annual Reporting Metric**

33.	**O&M for municipally owned or maintained structural stormwater controls**			
	Develop and maintain an O&M program for all municipally owned SCMs.	1. Create a municipal SCM Inventory.	1. Annually Permit Year 1-5	1. Report number of municipal SCMs
		2. Inspect and maintain SCMs so that they function as designed.	2. Annually Permit Year 1-5	2. Report number of SCMs inspected
Permit Ref.	**3.7.5: Pesticide, Herbicide and Fertilizer Management Program** Measures to minimize water quality impacts from the use of landscape chemicals. The permittee shall provide routine pollution prevention and chemical use, storage and handling training, and shall ensure compliance with permits and applicator certifications.			
BMP No.	**A**	**B**	**C**	**D**
	Description of BMP	**Measurable Goal(s)**	**Schedule for Implementation**	**Annual Reporting Metric**
34.	**Pesticide, Herbicide and Fertilizer Application Management**			
	Manage Staff Pesticide license and follow all requirements to safely handle and apply pesticides, herbicides, and fertilizers.	1. Review staff license that they are up to date.	1. Annually Permit Year 1-5	1. Report number of staff with license
		2. Provide training for staff on the use of chemicals.	2. Annually Permit Year 1-5	2. Report number of staff that attended training and type of training.
Permit Ref.	**3.7.6: Vehicle and Equipment Maintenance Program** Measures to prevent and minimize contamination of stormwater runoff from areas used for municipal vehicle and equipment maintenance and/or cleaning. The permittee shall ensure that municipal industrial facilities subject to NPDES industrial permitting comply with those permit requirements, provide routine pollution prevention training to staff, perform routine inspections, and establish specific frequencies, schedules, and documentation.			
BMP No.	**A**	**B**	**C**	**D**
	Description of BMP	**Measurable Goal(s)**	**Schedule for Implementation**	**Annual Reporting Metric**
35.	**Vehicle Washing and Maintenance Program**			
	Document and maintain procedures to prevent or minimize contamination of stormwater runoff from all areas used for vehicle and equipment cleaning.	1. Maintain procedures for vehicle and equipment cleaning operations and update, if necessary.	1. Annually Permit Year 1-5	1. Yes / No

Permit Ref.	**3.7.7: Pavement Management Program** Measures to reduce pollutants in stormwater runoff from municipally owned streets, roads, and parking lots within the permittee's corporate limits. The permittee shall implement measures to control litter, leaves, debris, particulate and fluid pollutants associated with vehicles, and establish specific frequencies, schedules, and documentation.			
BMP No.	**A**	**B**	**C**	**D**
	Description of BMP	**Measurable Goal(s)**	**Schedule for Implementation**	**Annual Reporting Metric**
36.	**Streets, Roads, and Public Parking Lots Maintenance Program**			
	Implement and maintain street sweeping program to reduce polluted stormwater runoff from municipally owned streets, roads, and public parking lots within the city as fiscally **feasible**.	1. Evaluate options to implement BMPs to reduce polluted stormwater runoff from municipally owned streets, roads, and public parking lots. Factors for evaluation are water quality benefits, technical feasibility, safety, and fiscal responsibility.	1. Permit Year 1	1. Yes / No
		2. Create and maintain street sweeping program for reducing polluted stormwater runoff from municipally owned streets, roads, and public parking lots.	2. Permit Year 2-5	2. Cubic Yards of Debris & Pollutant Collected.