



NCS000426

STORMWATER MANAGEMENT PLAN

- CITY OF HICKORY -



STORMWATER MANAGEMENT
CITY OF HICKORY

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PART 1: INTRODUCTION

The purpose of this Stormwater Management Plan (SWMP) is to establish and define the means by which the City of Hickory 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 Hickory 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 NCS000426, 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 Hickory and located within the corporate limits of the City of Hickory.

In preparing this SWMP, the City of Hickory has evaluated its MS4 and the permit requirements 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.

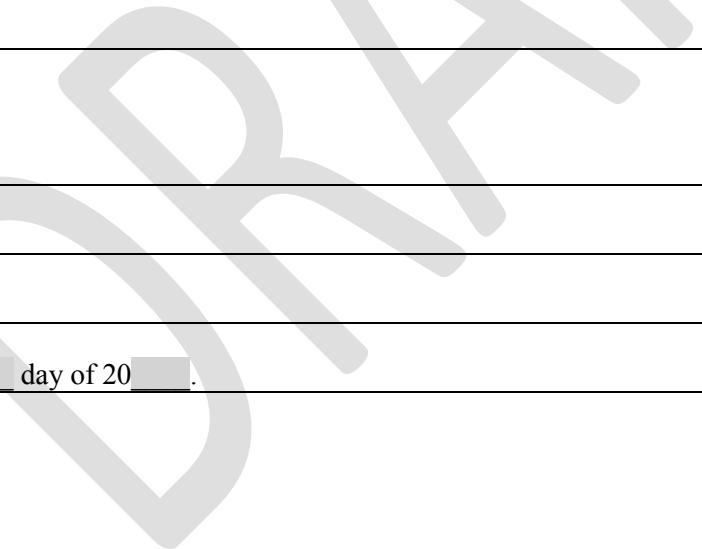
PART 2: CERTIFICATION

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 principal executive officer or ranking elected official.
- I am a duly authorized representative and have attached the authorization made in writing by a principal executive officer or ranking elected official which specifies me as:
 - A specific individual having overall responsibility for stormwater matters.
 - A specific position having overall responsibility for stormwater matters.

<i>Signature:</i>	
<i>Name:</i>	
<i>Title:</i>	
Signed this _____ day of 20_____. 	

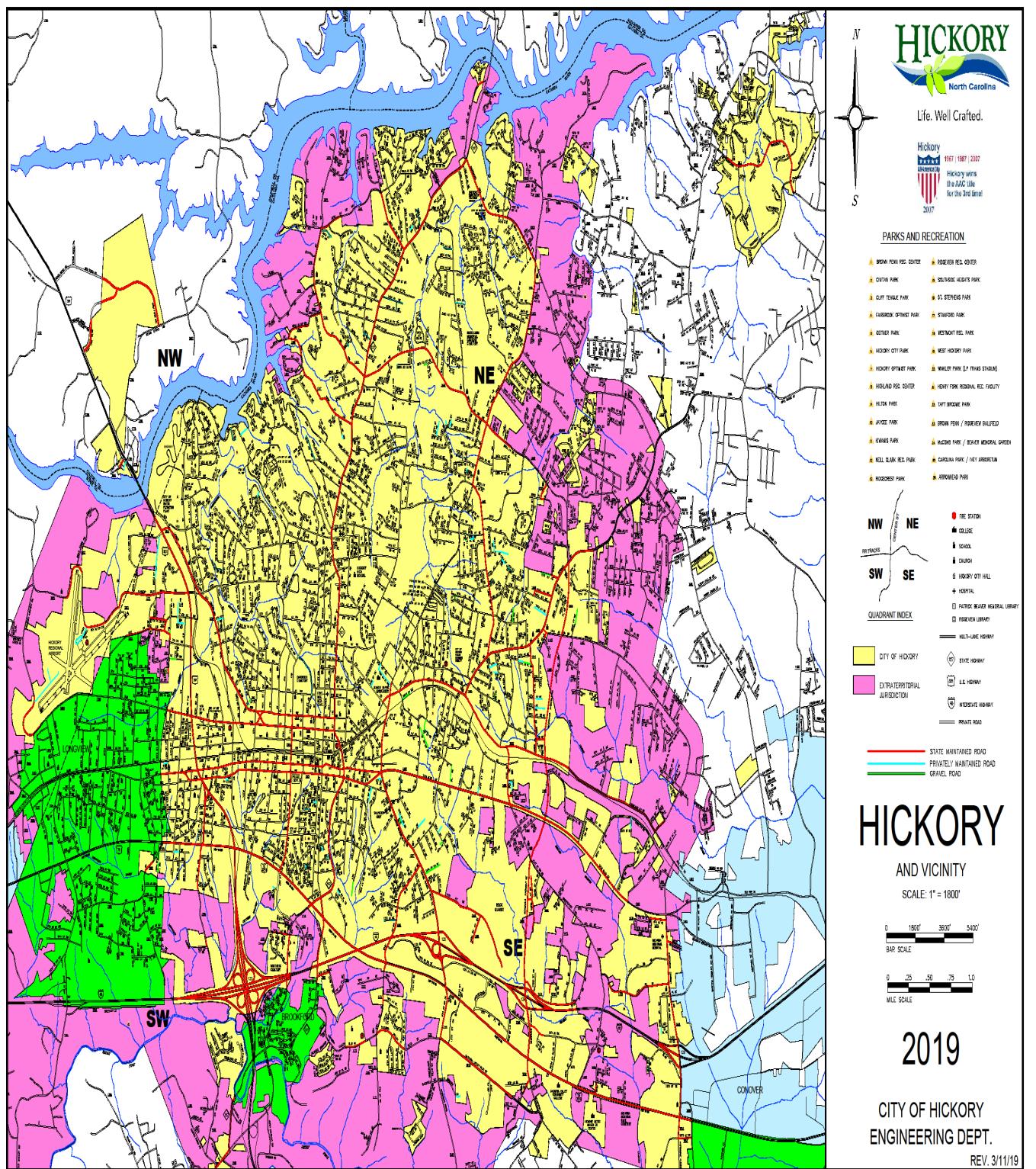
PART 3: MS4 INFORMATION

3.1 Permitted MS4 Area

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

The total area included within the City limits is 30.38 square miles. The area within the Extra Territorial Jurisdictional (ETJ) area is 18.43 sq. miles. Therefore the municipal separate storm sewer system (MS4) service area is 30.38 sq. miles, and the jurisdictional area is 48.81 square miles.

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3.2 Existing MS4 Mapping

The current MS4 mapping includes stormwater pipes including sizes and type. The MS4 mapping also includes outfalls, flow direction, culverts, ditches, catch basins, manholes and inlets. We are currently working on identifying all major outfalls. Twelve major outfalls have been identified according to criteria, but only 90% of the MS4 area has been mapped.

Table 1: Summary of MS4 Mapping

Percent of MS4 Area Mapped	90.0	%
No. of Major Outfalls* Mapped	12**	total

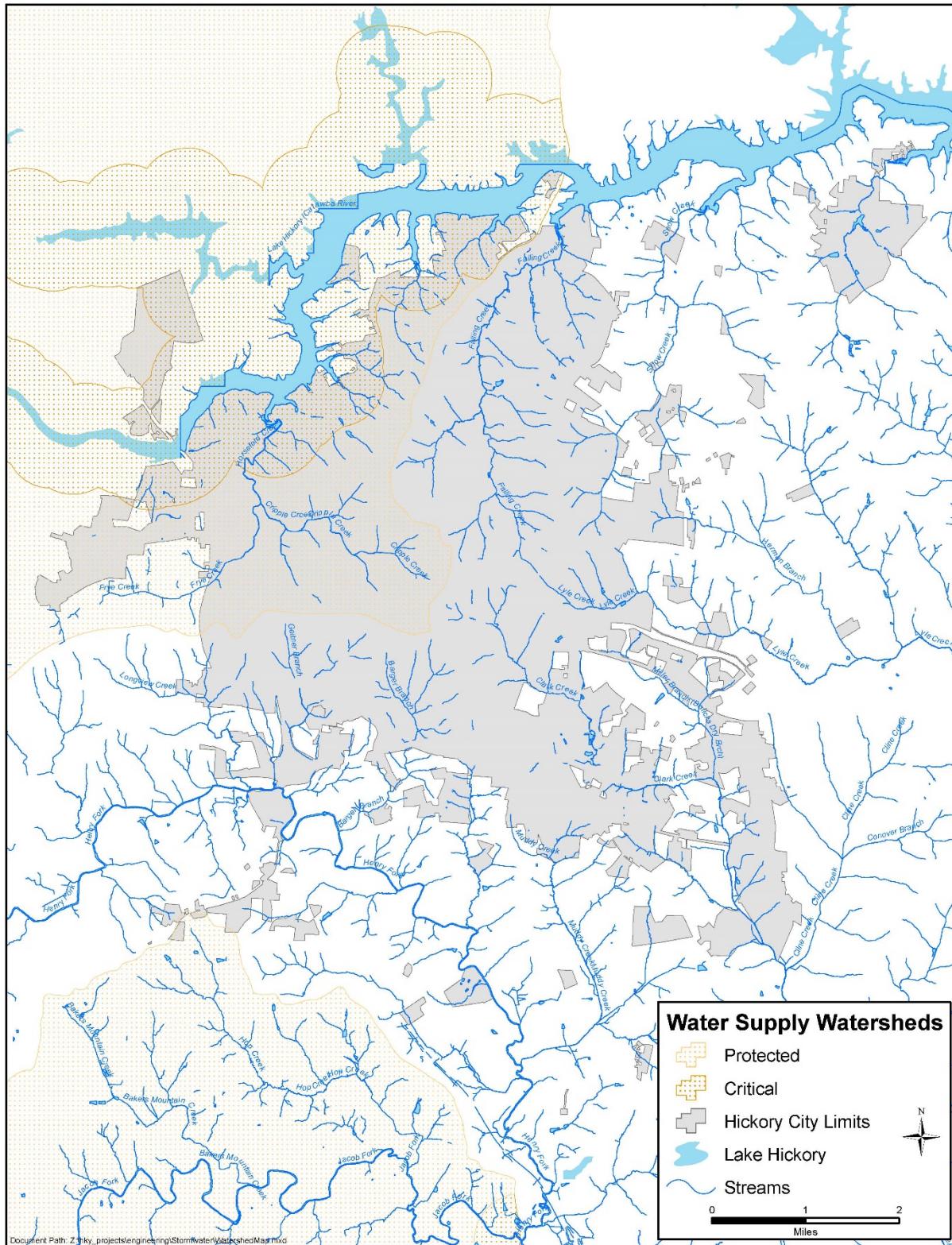
**An outfall is a point where the MS4 discharges from a pipe or other conveyance (e.g. a ditch) directly into surface waters. Major outfalls are required to be mapped to meet permit requirements. A major outfall is a 36-inch diameter pipe or discharge from a drainage area > 50-acres; and for industrial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

**Outfalls have been mapped and we are currently working on identifying all major outfalls.

3.3 Receiving Waters

The City of Hickory MS4 is located within the Catawba 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](#)



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Table 2: Summary of MS4 Receiving Waters

Receiving Water Name	Stream Index / AU Number	Water Quality Classification	303(d) Listed Parameter(s) of Interest
CATAWBA/LAKE HICKORY			
Drowning Creek	11-52-(1) & (2)	WS-IV	
Horseford Creek	11-54-(0.5)	WS-IV	Benthos (Nar,AL,FW)
Frye Creek	11-54-1	WS-IV	
Cripple Creek	11-54-2	WS-IV	
Falling Creek	11-60	C	Benthos (Nar,AL,FW)
Snow Creek	11-61	C	
Long Shoal Creek	11-64	WS-V&B	
HENRY FORK			
Henry Fork	11-129-1-(12.5)	C	
Longview Creek	11-129-1-16	C	
Geitner Branch	11-129-1-18	C	
Barger Branch	11-129-1-19	C	
Muddy Creek	11-129-1-20	C	
Jacobs Fork	11-129-2-(9.5)	WS-III	
SOUTH FORK CATAWBA			
Clarks Creek	11-129-5-(0.3)	C	Water temp. (32 C,AL,LP&CP)
Miller Branch	11-129-5-1	C	
CATAWBA RIVER			
Herman Branch	11-76-1	C	
Lyle Creek	11-76-(0.5)	C	
WATER QUALITY CLASSIFICATION TABLE			
B: Primary Recreation, Fresh Water			
C: Aquatic Life, Secondary Recreation, Fresh Water			
WS-III :Water Supply IV-Moderately Developed watershed			
WS-IV: Water Supply IV- Highly Developed watershed			
WS-V: Water Supply V - Upstream			

3.4 MS4 Interconnection

The City of Hickory MS4 is not interconnected with another regulated MS4 and directly discharges to the receiving waters as listed in Table 2 above.

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)	Stormwater Waste Load Allocation (Y/N)	Water Quality Recovery Program (Y/N)
Clarks Creek	Fecal Coliform, turbidity, copper	N	N
Statewide	Mercury	N	N

3.6 Endangered and Threatened Species and Critical Habitat

Significant populations of threatened or endangered species and/or critical habitat are identified within the regulated MS4 urbanized area, as determined by 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](#). 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: Summary of Federally Listed Species/Habitat Impacted by Surface Water Quality

Scientific Name	Common name	Species Group	Federal Listing Status
Myotis septentrionalis	Northern long-eared bat	Vertebrate	T Probable/Potential
Haliaeetus leucocephalus	Bald Eagle	Vertebrate	BGPA
Tsuga caroliniana	Carolina Hemlock	Vascular Plant	ARS At Risk Species
Hexastylis naniflora	Dwarf-flowered heartleaf	Vascular Plant	T Current
Helianthus schweinitzii	Schweinitz's sunflower	Vascular Plant	E Current

Definitions of Federal Status Codes:

E = endangered. A taxon "in danger of extinction throughout all or a significant portion of its range."

T = threatened. A taxon "likely to become endangered within the foreseeable future throughout all or a significant portion of its range."

BGPA = Bald and Golden Eagle Protection Act. See below.

ARS = [At Risk Species](#). Species that are Petitioned, Candidates or Proposed for Listing under the Endangered Species Act. Consultation under Section 7(a)(2) of the ESA is not required for Candidate or Proposed species; although a Conference, as described under Section 7(a)(4) of the ESA is recommended for actions affecting species proposed for listing.

T(S/A) = threatened due to similarity of appearance. A taxon that is threatened due to similarity of appearance with another listed species and is listed for its protection. Taxa listed as T(S/A) are not biologically endangered or threatened and are not subject to Section 7 consultation. See below.

3.7 Industrial Facility Discharges

The City of Hickory MS4 jurisdictional area includes the following industrial facilities which hold NPDES Industrial Stormwater Permits, as determined from the NCDEQ [Active NPDES Stormwater Permit List](#) and/or [Active Stormwater Permits Map](#).

Table 5: NPDES Stormwater Permitted Industrial Facilities

Permit Number	Facility Name
NCG140410	SOUTHERN CONCRETE MATERIALS
NCGNE1084	NORDSON XALOY
NCGNE0442	LAND O SUN DAIRIES
NCGNE0199	USPS
NCG160070	MAYMEAD MATERIALS
NCGNE0188	THE DAILY RECORD
NCGNE0719	THOMAS & BETTS HI-TECH
NCG020085	HICKORY QUARRY
NCG030246	HICKORY MANUFACTURING
NCG050297	KLINGSPOR ABRASIVES
NCG140104	SOUTHERN CONCRETE MATERIALS
NCG200355	MOUNTAIN RECYCLING
NCG180062	CENTURY PLANT 1
NCG080354	INSTITUTION FOOD HOUSE INC
NCG030688	LEGRAND
NCG030325	HICKORY STEEL
NCG030660	MATLAB INC
NCGNE1213	D.W HUDSON ARC HICKORY 027
NCG200517	COLT RECYCLING SOUTHEAST LLC
NCGNE0852	NC NATIONAL GUARD
NCGNE1334	SONOCO PRODUCTS
NCG050292	SHURTAPE TECH
NCG050037	SHURTAPE TECH
NCG140173	READY MIXED CONCRETE
NCG180177	HICKORY CHAIR LLC
NCG180086	HWS CO INC
NCG050390	SONOCO PRODUCTS
NCG030164	HICKORY SPRINGS METALS COMPLEX
NCG180178	SHERRILL FURNITURE
NCS000538	ROLL TECH LLC
NCGNE0733	TURBO TECH
NCGNE0659	FED EX
NCG180712	HNI CORPORATION
NCGNE1006	AMERICAN CUSTOM FINISHING

3.8 Non-Stormwater Discharges

The water quality impacts of non-stormwater discharges have been evaluated by the City of Hickory as summarized in Table 6 below. The unpermitted non-stormwater flows listed as incidental do not significantly impact water quality. The City of Hickory 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 Hickory.

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 Hickory to determine whether they may significantly impact water quality. The City of Hickory has found residential non-stormwater discharges to be incidental and business to be incidental. The Phase II Stormwater ordinance Section 6.1(B).1 prohibits businesses from allowing wash water from commercial vehicle washing into our stormwater system.

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	Incidental
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 above, the City of Hickory is not aware of other significant water quality issues within the permitted MS4 area.

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. In addition, the City of Hickory has evaluated schools, homeowners and businesses as target audiences that are likely to have significant stormwater impacts.

The City of Hickory has found listed in the table below target pollutants and sources. These pollutants have been concerns within the community, and through public outreach and education, the Stormwater program will continue to monitor and minimize.

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)
Pool Discharge	Residents/Businesses	Public Education & Outreach
Maint. Oil, Antifreeze ,etc.	Residents/Businesses/Municipal/Industrial	Public Education & Outreach
Vehicle washing	Resident/Businesses/Municipal/Industrial	Public Education & Outreach
Grass clippings, Fertilizer	Resident/Businesses/Municipal	Public Education & Outreach
Herbicides, Insecticides	Resident/Businesses/Municipal	Public Education & Outreach
Pet Waste	Residents/Parks Recreation	Public Education & Outreach
Chemicals	Industrial/ Businesses/Residential/Municipal	Public Education & Outreach
Sediment	Industrial/ Businesses/ Residential/Municipal	Public Education & Outreach

PART 4: STORMWATER MANAGEMENT PROGRAM ADMINISTRATION

4.1 Organizational Structure

The City of Hickory operates under a Council/Manager form of government. The City Manager holds the NPDES MS4 permit for the City of Hickory. The Stormwater Administrator, working under the Director of Public Services, is responsible for implementation and coordination of the activities discussed in this SWMP. Responsibility for gathering information and coordinating annual reporting, as well as implementation of key aspects of the SWMP, rests with work units within the Public Services Division. An organizational chart for the stormwater-related functions within the Division are listed in Table 8.

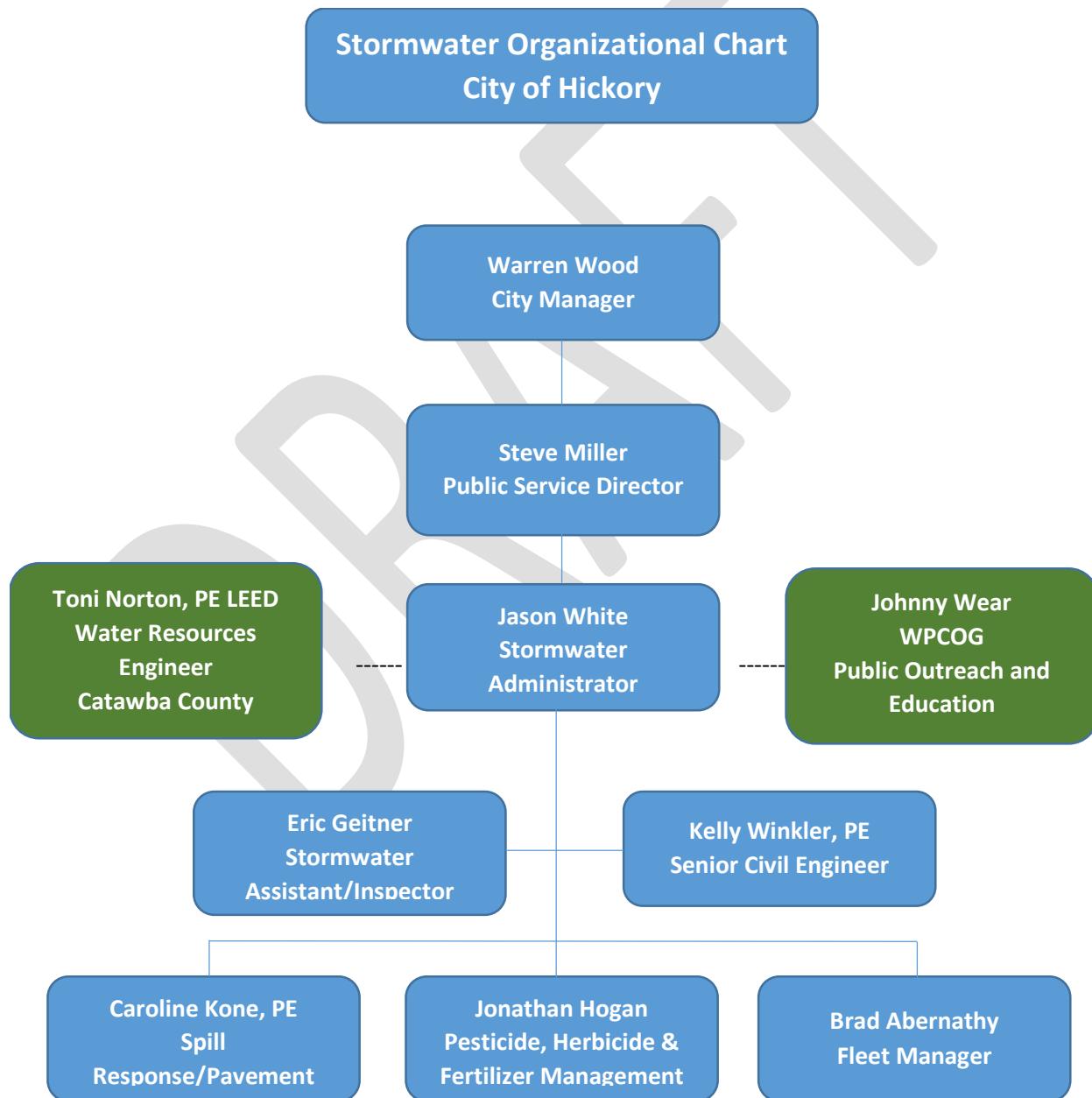


Table 8: Summary of Responsible Parties

SWMP Component	Responsible Position	Staff Name	Department
Stormwater Program Administration	Stormwater Administrator	Jason White	Public Services /Engineering Stormwater Division
SWMP Management	Stormwater Administrator	Jason White	Public Services /Engineering Stormwater Division
Public Education & Outreach	Senior Planner/Natural Resources Administrator	Johnny Wear	WPCOG
Public Involvement & Participation	Senior Planner/Natural Resources Administrator	Johnny Wear	WPCOG
Illicit Discharge Detection & Elimination	Stormwater Administrator	Jason White	Public Services /Engineering Stormwater Division
Construction Site Runoff Control	Stormwater Staff Water Resources Engineer NCDEQ	Jason White Kelly Winkler Eric Geitner Toni Norton	Public Services /Engineering Stormwater Division Catawba County NCDEQ
Post-Construction Stormwater Management	Stormwater Staff	Jason White Kelly Winkler Eric Geitner	Public Services /Engineering Stormwater Division
Pollution Prevention/Good Housekeeping for Municipal Operations	Stormwater Staff	Jason White Kelly Winkler Eric Geitner	Public Services /Engineering Stormwater Division
Municipal Facilities Operation & Maintenance Program	Stormwater Staff	Jason White Kelly Winkler Eric Geitner	Public Services City of Hickory
Spill Response Program	Spill Response Staff	Caroline Kone	Public Services
MS4 Operation & Maintenance Program	Stormwater Staff	Jason White Eric Geitner	Public Services /Engineering Stormwater Division
Municipal SCM Operation & Maintenance Program	Stormwater Staff/ Landscape Services Manager	Jason White Eric Geitner Kelly Winkler Jonathan Hogan	Public Services /Engineering Stormwater Division Public Services Landscape Services

SWMP Component	Responsible Position	Staff Name	Department
Pesticide, Herbicide & Fertilizer Management Program	Landscape Services Manager	Jonathan Hogan	Public Services Landscape Services
Vehicle & Equipment Cleaning Program	Fleet Manager	Brad Abernathy	Public Services
Pavement Management Program	Transportation Manager	Caroline Kone	Public Services
Total Maximum Daily Load (TMDL) Requirements	N/A	N/A	N/A

4.2 Program Funding and Budget

In accordance with the issued permit, the City of Hickory 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 Hickory's Stormwater program operates on a \$250,000 budget, which comes out of the City of Hickory's general funding. This covers 1.5 full-time equivalent (FTE) staff, seasonal leaf collection, and limited storm drain repairs.

4.3 Shared Responsibility

The City of Hickory will share the responsibility to implement the following minimum control measures, which are at least as stringent as the corresponding NPDES MS4 Permit requirement. The City of Hickory remains responsible for compliance if the other entity fails to perform the permit obligation and may be subject to enforcement action if neither the City of Hickory nor the other entity fully performs the permit obligation. Table 9 below summarizes who will be implementing the component, what the component program is called, and the specific SWMP BMP or permit requirement that is being met by the shared responsibility and whether or not a legal agreement to share responsibility is in place. The City of Hickory has a legal contract with the WPCOG that is reviewed and updated yearly.

Table 9: Shared Responsibilities

SWMP BMP or Permit Reference	Implementing Entity & Program Name	Legal Agreement (Y/N)
3.2 Public Education and Outreach Program	WPCOG (Western Piedmont Council of Governments)	Y
3.3.1 Public Involvement and Participation Program	WPCOG	Y
3.3.2 Volunteer Opportunities	WPCOG	Y
3.5 Construction Site Runoff Control Program	Catawba County Delegated SPCA (Sediment Pollution Control Act) Program	Y

4.4 Co-Permittees

There are no other entities applying for co-permittee status under the NPDES MS4 permit number NCS000426 for the City of Hickory. Table 10 summarizes contact information for each co-permittee.

Table 10: Co-Permittee Contact Information

Co-Permittee MS4 Name	Contact Person	Phone & E-Mail	Interlocal Agreement (Y/N)
N/A			

4.5 Measurable Goals for Program Administration

The City of Hickory 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.	2.1.2 and Part 4: Annual Self-Assessment 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. The self-assessment reporting period is the fiscal year (July 1 – June 30).			
	A	B	C	D
BMP No.	Description of BMP	Measurable Goal(s)	Schedule for Implementation	Annual Reporting Metric
1.	Annual Self-Assessment			
	Perform an annual evaluation of SWMP implementation, suitability of SWMP commitments and any proposed changes to the SWMP utilizing the NCDEQ Annual Self-Assessment Template.	1. Prepare, certify and submit the Annual Self-Assessment to NCDEQ prior to August 31 each year.	1. Annually for Permit Years 1 – 4	1. Annual Self-Assessment received by NCDEQ no later than August 31 each year.

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
2.	Permit Renewal Application			
	Audit stormwater program implementation for compliance with the permit and approved SWMP, and utilize the results to prepare and submit a permit renewal application package.	1. Participate in an NPDES MS4 Permit Compliance Audit, as scheduled and performed by EPA or NCDEQ. 2. Self-audit and document any stormwater program components not audited by EPA or NCDEQ utilizing the DEQ Audit Template. 3. Certify and submit the stormwater permit renewal application (NOI, Self-Audit, and Draft SWMP for the next 5-year permit cycle).	1.TBD – Typically Permit Year 4 2.Permit Year 5 3.Permit Year 5	1.N/A 2. Submit Self-Audit to DEMLR (required component of permit renewal application package). 3. Permit renewal application package received by DEQ at least 180 days prior to permit expiration.

PART 5: PUBLIC EDUCATION AND OUTREACH PROGRAM

The City of Hickory 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 Hickory 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	Construction Site Runoff Control
Gray water	Residential
Fats, Oils and Grease	Businesses (Restaurants)
Chemicals	Industrial, Business , Residential and Municipal Employees
Illicit Discharges	General Public, Businesses, Municipal Employees
Illegal Dumping	General Public, Businesses, Municipal Employees
Improper Disposal of Waste	General Public, Businesses, Municipal Employees
Pool Discharge	Residents, Businesses
Maintenance Oil, Antifreeze, etc	Residents, Businesses, Industrial, and Municipal Employees
Vehicle Washing	Residential, Businesses, Industrial, and Municipal Employees
Herbicides, Insecticides	Residents, Businesses, Lawn Care Services, and Municipal Employees
Grass Clippings	Residents, Businesses, Industrial, and Municipal Employees
Pet Waste	Residents, General Public

The Western Piedmont Council of Governments (WPCOG) is under contract to implement and report the following public education and outreach BMPs on behalf of the City of Hickory.

Table 13: Public Education and Outreach BMPs

Permit Ref.	3.2: Outreach to Targeted Audiences			
	A	B	C	D
BMP No.	Description of BMP	Measurable Goal(s)	Schedule for Implementation	Annual Reporting Metric
3.	Partnership with WPCOG			
	The City will partner with the WPCOG to develop Education and Outreach Initiatives that will be administered by WPCOG. Initiatives will focus on residential, commercial, and school audiences within the MS4 area.	<ol style="list-style-type: none"> 1. Continue to partner with WPCOG and update our legal agreement annually. 2. Review WPCOG activities to ensure partnership commitments are met. 	<ol style="list-style-type: none"> 1. Annually, Permit years 1-5 2. Annually, Permit years 1-5 	<ol style="list-style-type: none"> 1. Maintain a legal agreement with WPCOG annually. Yes/No/Status 2. Yes/no/status

Table 13: Public Education and Outreach BMPs

4.	General Education Stormwater Fliers Stormwater fliers will be distributed to City residences, municipal employees, businesses, and industrial facilities through stormwater events. Five topics will be addressed over the term of the permit; general stormwater awareness, illicit discharges, illegal dumping, chemicals and proper disposal of waste.	1. Develop fliers for City events to create stormwater awareness. 2. Distribute fliers for stormwater awareness. 3. Develop fliers for illicit discharges. 4. Distribute illicit discharge fliers. 5. Develop fliers for illegal dumping. 6. Distribute fliers for illegal dumping. 7. Develop fliers for chemical awareness. 8. Distribute fliers for chemical awareness. 9. Develop fliers for proper waste disposal. 10. Distribute fliers for proper waste disposal.	1. Permit year 1 2. Permit year 1 3. Permit year 2 4. Permit year 2 5. Permit year 3 6. Permit year 3 7. Permit year 4 8. Permit year 4 9. Permit year 5 10. Permit year 5	1-10. Document and report the topic and number of fliers distributed at each event.
5.	Public event outreach Provide educational information on general stormwater awareness to the general public at community events.	1. Staff will have a booth at community events to disperse stormwater outreach materials through the use of interactive educational games and activities. At minimum, one event will be attended per permit year.	1. Annually, Permit years 1-5	1. Document number of events held/attended; number of attendees; quantity and type of materials handed out.

Table 13: Public Education and Outreach BMPs

6.	Student/teacher Outreach			
	Provide educational information on general stormwater awareness to students and teachers through annual classroom, workshop, and hands-on activities in the Hickory area.	1. Staff will provide in class instruction to 7th and/or 8 th grade STEM students.	1. Annually, Permit year 1-5	1. Number of classes provided; Number of students present.
7.	Printed Materials	2. Staff will conduct stormwater related workshops with teachers.	2. Annually, Permit year 1-5	2. Number of workshops provided; Number of teachers attending.
		1. Staff will create printed material for local government distribution addressing stormwater best management practices.	1. Annually, Permit year 1-5	1. Were new outreach materials created? Yes/No/Status
		2. Staff will distribute printed materials at events, school presentations, and have them on display for public acquisition in public-accessible government and public buildings.	2. Continuously, after flier materials are developed.	2. Document and report the topic and number of fliers distributed at each event.
8.	Annual Water Quality Conference	3. City of Hickory will distribute fliers through utility bills and pay stubs.	3. Annually, Permit Year 1-5	3. Document and report the topic and number of fliers distributed.
	Sponsor the Western Piedmont Council of Governments and Lenoir Rhyne University's Annual Water Quality Conference to provide outreach and public participation. Staff will conduct the annual regional conference for continued education to local government officials, staff, educators, and the general public.	1. Provide one presentation covering one of the six NPDES Minimum Control Measures at each annual conference. A different MCM will be presented on each year.	1. Annually, Permit Year 1-5	1. Number of attendees; Stormwater topic's presented referencing the minimum control measures.

Table 13: Public Education and Outreach BMPs

Evaluate Pollutants Sources and Audiences				
9.	Evaluate the target pollutants (litter, sediment, gray water, fats, oils, grease, animal operations, underground storage tanks, super fund sites, chemicals, illicit discharges, illegal dumping, improper disposal of waste), sources, and associated target audiences (residents, businesses, schools, construction activity, commercial, farms, industrial, development community, general public, and municipal employees) likely to have significant stormwater impacts and why they were selected. Using the online GIS map (BMP 19), the target pollutants and audience can be tracked once identified for MS4 concerns.	1. Evaluate following target pollutants: litter, sediment, gray water, fats, oils, grease, animal operations, underground storage tanks, super fund sites, chemicals, illicit discharges, illegal dumping and improper disposal of waste. 2. Evaluate the following target audiences: residents, businesses, schools, construction activity, commercial, farms, industrial, development community, general public and municipal employees.	1. Annually, Permit Years 1-5 2. Annually, Permit Years 1-5	1 – 2. Number of current and new target pollutant sources and audiences identified in the annual report; Does the SWMP need to be updated to address how those targeted pollutants are addressed. Yes/No/Status
Evaluate Public Education and Outreach BMPs.				
10.	Evaluate the successful components of outreach through interest and feedback.	1. Create a survey as referenced in BMP#19.	1. Refer to BMP #19.	1. Refer to BMP #19.

Table 13: Public Education and Outreach BMPs

Permit Ref.	2.1.7 and 3.2.3: Web Site Measures to provide a web site designed to convey the program's message 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			
BMP No.	A	B	C	D
	Description of BMP	Measurable Goal(s)	Schedule for Implementation	Annual Reporting Metric
11.	Education Regarding Illicit Discharges			
	Provide educational information to municipal employees, businesses, citizens, and schools about the hazards associated with illicit discharges, illegal dumping, and improper disposal of waste.	1. Train municipal employees in illicit discharge detection and elimination. 2. Distribute material (Generated from BMP#4) to target audiences (municipal employees, schools, businesses, and citizens). 3. Provide education during enforcement process.	1. Annually, Permit Years 1-5 2. Continuously, after material is created. 3. Continuous, upon violation investigation.	1. Number of trainings held; Number of personnel trained. 2. Number of fliers distributed at each event or facility. 3. Number of citizen interactions.
12.	Informational Website			
	1. Promote and maintain an internet website designed to convey the programs message. Make available on the website stormwater ordinance, administrative manual for ordinance, technical section for engineers/designers, and educational materials for private/public use. Create a link to WPCOG regional stormwater website.	1. Update City of Hickory informational website to provide program information to the public. 2. The City of Hickory and WPCOG staff will maintain their respective websites and update the websites; by posting the MS4 Annual Self-Assessment, verifying all links and contact information are current/active, posting the current year fliers. 3. The WPCOG will set a hit counter to monitor engagement.	1. Continuously, Permit years 1-5 2. Annually, Permit years 2-5 3. Annually, Permit years 2-5	1. Did you update the website? Yes/No/Status 2. Number of times website material is updated per year. 3. Report the number of hits.

Table 13: Public Education and Outreach BMPs

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
13.	Stormwater Hotline			
	This hotline will function as a way for citizens to contact the City to report illicit discharges, stormwater/post construction issues, outreach questions and concerns, and all MS4 related concerns.	1. Establish a hotline number for stormwater complaints and information.	1. Permit year 1	1. Yes/No/Status
		2. Identify specific staff members who will serve as hotline contacts.	2. Permit Year 1	2. Yes or No; Staff name and position.
		3. Record number and type of complaints, concerns and information related to each call.	3. Continuously, record as information is provided.	3. Number of phone calls received and the context of the call; Type of call, information provided during the call, date of call, and location of caller.
		4. Train stormwater hotline staff in general stormwater awareness, complaint call protocols and appropriate contacts for referral or typical stormwater issues.	4. Annually	4. Did Hotline staff receive training? Yes/No/Status
		5. Publicize contact information on the City and WPCOG Stormwater webpages.	5. Annualy, Permit year 1-5	5. Document and report a summary of the number of inquiries received, the general type of inquiry (education, outreach, complaint), and the contact mechanism (phone, email, webpage, walk-in).

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 Hickory 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.			
	A	B	C	D
BMP No.	Description of BMP	Measurable Goal(s)	Schedule for Implementation	Annual Reporting Metric
14.	Partnership with WPCOG			
	The City is in partnership with the WPCOG to implement public involvement and participation. Initiatives will include focus on public audiences.	1. Continue partnership with WPCOG through renewal of our legal agreement. 2. Review WPCOG activities to ensure partnership commitments are met.	1. Annually, Permit year 1-5 2. Annually, Permit year 1-5	1. Continue partnership with WPCOG under our legal agreement. 2. Yes/no/status
15.	Hotline for Public Input	Provide mechanisms for public input on stormwater issues and the stormwater program.	1. Stormwater hotline (BMP #13) shall include a public input component.	1. Refer to BMP #13 1. Refer to BMP #13
16.	Social Media Outreach – Event Promotion	Create and use a social media page to promote stormwater events, projects, and programs. The outreach tool will provide exposure to a large audience.	1. Establish social presence on Facebook to promote public involvement and participation related to stormwater programs, events, and projects.	1. Permit Years 1 1. Facebook page created; Yes/No/Status

Table 14: Public Involvement and Participation BMPs

		2. Use social media presences to promote stormwater events, projects, and programs to engage public involvement.	2. Continuous, after Facebook page is established in Permit Year 1.	2. Number and type of events, projects and programs promoted on the Facebook page.
17.	Water Resources Committee			
	Provide mechanisms for public input and participation at a regional meeting on stormwater issues and the stormwater program.	1. Hold quarterly water resource meetings, open to the public, for participation in discussion related to water quality issues.	1. Annually, beginning in permit year 1	1. Number of attendees at each meeting, topics discussed.
18.	Web based form reporting			
	1. Provide a link on both websites for public input via email format for stormwater issues and the stormwater program.	1. Create a web based email complaint/reporting form to be housed on the WPCOG regional website and the City of Hickory Website.	1. Permit year 1	1. Yes/No/Status
		2. Use the form to record and track responses, inputs, issues, and concerns for metric reporting.	2. Continuous, following the establishment of the tool form in Permit Year 1.	2. Number of reports received.
19.	Public Survey and Evaluation			
	1. Provide a mechanism for public input by creating a survey to engage the public and gauge public interest in stormwater issues and the stormwater program. The survey will be taking in responses/input on the program as a whole - covering each minimum measure and BMP that refers to this survey.	1. Create and administer an annual survey to be housed on the WPCOG stormwater website once a year, open to feedback for a total of 4 weeks. The survey will also be linked on the City of Hickory website.	1. Permit year 1	1. Number of surveys completed; Responses/results of survey; Completed analysis of the data collected.

Table 14: Public Involvement and Participation BMPs

Permit Ref.	3.3.2: Volunteer Opportunities Measures to provide volunteer opportunities designed to promote ongoing citizen participation.			
BMP No.	A	B	C	D
	Description of BMP	Measurable Goal(s)	Schedule for Implementation	Annual Reporting Metric
20.	Stream Cleanup			
	Provide volunteer opportunities for ongoing citizen participation through stream cleanup activities.	1. Hold stream cleanup efforts by engaging groups to conduct stream cleanup activities in appropriate areas. The events will be promoted by the City and WPCOG, toward civic groups. 2. Provide all materials for stream cleanup activities (i.e. gloves, trash bags, and trash pickers). 3. The City of Hickory and WPCOG will market the event to the public to obtain volunteers for stream cleanup efforts to assist in public awareness and involvement with the event.	1. Annually, Permit year 1-5 2. Annually, Permit year 1-5 3. Annually, Permit year 1-5	1. Document the number of events, participants at each event. Record the quantity of trash bags filled. 2. Document the quantity of materials distributed at each event. 3. Yes/No/Status

PART 7: ILLICIT DISCHARGE DETECTION AND ELIMINATION PROGRAM

The City of Hickory 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.

The City of Hickory has the GIS capability to track illicit discharges. The Stormwater Program is currently working on mechanisms to detect and report illicit discharges in the field. We have reported and mapped illicit discharges in the past, but need to improve the program for follow up and documenting resolutions.

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
21.	Additions to our Stormwater System Inventory			
	Complete inventory mapping capability through GIS analysis of existing data. Major Outfalls will be identified and numbered and flow directions. The addition will also include a layer for identifying illicit discharges.	1. Add a layer identifying major outfalls to the map and number. 2. Add flow direction to the existing map. 3. Add receiving waters to the map. 4. Add layer for illicit discharge location and information.	1. Permit year 1 2. Permit year 2 3. Permit year 3 4. Permit year 1	1. Report number of major outfalls identified. 2. Yes/No/Status 3. Report when map is completed. 4. Report when layer is added.
22.	Continuous Updates to MS4 Map			
	The MS4 map for the City of Hickory will be updated to reflect new additions.	1. Update existing map to include pipe, ditches, and ditch discharge points. Update map as needed with new construction and additional outfalls.	1. Annually, once BMP No. 21 is completed.	1. Document and report any new outfalls were identified and if so, how many identified during the permit year and how many have been identified over the permit term.

Table 15: Illicit Discharge Detection and Elimination BMPs

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	
23.	Maintain Legal Authority Review existing ordinance (City of Hickory Phase II Stormwater Ordinance, Section 6, 6.1) in order to maintain the legal authority to prohibit, detect, and eliminate illicit connections and discharges, illegal dumping and spills into the MS4, including enforcement procedures and actions. Update ordinance as the needs require.	1. Review ordinance and update if revision is required to maintain legal authority.	1. Permit year 1	1. Document and report if a revision is required and if a revision is made.
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	
24.	Develop Illicit discharge detection and elimination Plan 1. Develop 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. This plan will include written procedures for conducting investigations of identified illicit discharges.	1. Develop a written IDDE plan.	1. Permit year 1	1. Yes/No/Status
		2. Submit plan to DEQ for approval.	2. Permit year 1	2. Yes/No/Status
		3. Implement the approved written IDDE plan.	3. Permit year 2	3. Yes/No/Status Date submitted to DEQ.

Table 15: Illicit Discharge Detection and Elimination BMPs

		4. Maintain a written IDDE plan.	4. Continuously	2. Yes/No/Status
25.	Outfall Inspections			
	Conduct routine dry weather outfall inspections to identify illicit discharges and illicit connections.	1. Train inspection staff to perform dry weather inspections and illicit discharge investigations.	1. Permit Year 1	1. Yes/No/Status
		2. Trained inspectors will conduct routine dry weather outfall inspections –Inspect all major outfalls over the 5 year permit period. 20% of all major outfalls will be inspected each year.	2. Annually, beginning in permit year 2	2. Yes/No/Status
		3. Document any violations using the GIS system as outlined in BMP 21.4.B.	3. Continuously, As violations are reported.	3. Number of outfalls and the type of discharges and pollutants identified.
26.	IDDE Program Evaluation			
	Annual Evaluation of the IDDE program to review components and revise the program if necessary to maximize its efficiency to identify illicit discharges and eliminate their source(s).	1. Evaluation meeting with IDDE program participants: to include at a minimum, the Stormwater Administrator and the Utilities Director.	1. Annually, in conjunction with the MS4 Annual Assessment.	1. Report any proposed and updated changes.
		2. Review IDDE data for chronic violators, issues, and /or “hot-spot “areas.	2. Annually, in conjunction with the MS4 Annual Assessment.	2. Yes/No/Status

Table 15: Illicit Discharge Detection and Elimination BMPs

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
27.	IDDE Tracking Update our GIS mechanism for tracking and documenting the date(s) and illicit discharge, illicit connection or illegal dumping was observed, the results of the investigations was closed, the issuance of enforcement actions, and the ability to identify chronic violators (See BMP 21.4B.).	1. Update GIS database application for tracking. 2. Track Illicit Discharge/connection and Illegal Dumping. 3. Document progress of IDDE's reported. 4. Establish a mechanism to track NOVs (Notice of Violation) and chronic violators. 5. Evaluate and assess the IDDE tracking application and program. Identify where improvements can be made based on statistical data collected and problems encountered. Document improvements and updates.	1. Permit Year 1 2. Continuously, Permit years 2-5 3. Continuously, Permit years 1-5 4. Permit Year 1 5. Annually, Permit year 2-5	1. Yes/No/Status 2. Document the number of issues reported. 3. Number of IDDEs resolved. 4. Yes/No/Status 5Yes/No/Status

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 come into contact with or otherwise observe an illicit discharge, illicit connection or illegal dumping. Training shall include identifying and reporting illicit discharges, illicit connections and illegal dumping. 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
28.	IDDE Employee Training Establish and conduct training for appropriate municipal staff on detecting and reporting illicit connections and discharges. Conduct training for staff who will receive and respond to IDDE's reported.			
	1. Develop a training programming for public works employees.	1. Permit year 2	1. Yes/No/Status	
	2. Identify and train public service employees on Illicit Discharge & Detection responsibilities or the potential to discover an illicit discharge during routine work activities.	2. Permit year 2	2. Report topics, training date, and number of attendees.	
	3. Train new staff that are identified to be part of the IDDE program.	3. Annually, beginning in permit year 4.	3. Report topics, training date, and number of attendees.	
29.	Employee Informational Media Place informational media in employee common areas to serve as a reminder on identifying and reporting illicit discharge.			
	1. Develop illicit discharge media to display.	1. Permit year 3	Yes/No/Status	
	2. Display media in employee common areas.	2. Annually, beginning in permit year 3.	2. Report number and type of media displayed.	

Table 15: Illicit Discharge Detection and Elimination BMPs

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
30.	Stormwater page on City of Hickory Website Develop and maintain a web page that will provide links associated with the City's Stormwater program. The web page will include ordinances and a copy of our SWMP. The webpage will also include educational materials, upcoming events, and a reporting mechanism. The website will also advertise the Stormwater Hotline.			
	1. Develop a user friendly website for businesses, citizens and employees.	1 Permit year 2	1. Yes/No/Status	
	2. Maintain a website with updates as needed.	2. Continuously	2. Yes/No/Status	

PART 8: CONSTRUCTION SITE RUNOFF CONTROL PROGRAM

In accordance with 15A NCAC 02H .0153, the City of Hickory relies upon the North Carolina Sedimentation Pollution Control Act (SPCA) of 1973 and the NCG010000 permit for construction activities as qualifying alternative programs to meet the NPDES MS4 Permit requirements for all construction site runoff control measures to reduce pollutants in stormwater runoff from construction activities that result in land disturbance of greater than or equal to one acre and any construction activity that is part of a larger common plan of development that would disturb one acre or more.

Table 16: Qualifying Alternative Program Components for Construction Site Runoff Control Program

Permit Reference	State or Local Program Name	Legal Authority	Implementing Entity	Meets Whole or Part of Requirement
3.5.1 - 3.5.4	Catawba County Delegated SPCA Program*	15A NCAC Chapter 04	Catawba County	Whole

* The local delegated SPCA Program ordinance(s)/regulatory mechanism(s) can be found at:

Catawba County:

https://library.municode.com/nc/catawba%20county/codes/code%20of%20ordinances?nodeid=COOR%20CH31SO_ERSECO

Catawba County is responsible for all land disturbing activities greater than or equal to one acre and any construction activity of a larger common plan of development that would disturb one acre or more.

The City of Hickory also implements the following BMPs to meet NPDES MS4 Permit requirements within the City MS4 area:

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.			
BMP No.	A	B	C	D
	Description of BMP	Measurable Goal(s)	Schedule for Implementation	Annual Reporting Metric
31.	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	1. Document and report number of staff trained, training date(s) and topics covered.
32.	Public information and reporting			
	Develop and Maintain an internet website designed to convey the program's message and publicize a reporting mechanism for the public to report erosion control issues (Refer to BMP#12).	1. Establish informational website as outlined in BMP#12.	1. Continuously, Permit year 1-5	1. Refer to BMP #12

Table 17: Construction Site Runoff Control BMPs

Permit Ref.	3.5.5: Waste Management Measures to require construction site operators to control waste such as discarded building materials, concrete truck washout, chemicals, litter, and sanitary waste at the construction site that may cause adverse impact to water quality.			
BMP No.	A	B	C	D
	Description of BMP	Measurable Goal(s)	Schedule for Implementation	Annual Reporting Metric
33.	Education requirements for construction site operators			
	1. Partner with Catawba County SPCA to develop a Contractor/Construction site operator educational media to communicate new waste management requirements.	1. Develop educational media to distribute in pre-construction meetings and with grading permit issue. 2. Add media to website. 3. Distribute media to contractors as permits are applied.	1. Permit year 2. 2. Permit year 2 after BMP 33.1.B is developed. 3. Permit year 2 after BMP 33.1.B is developed.	1. Yes/No/Status. 2. Yes/No/Status 3. Number and type of media distributed.

PART 9: POST-CONSTRUCTION SITE RUNOFF CONTROL PROGRAM

This SWMP identifies the minimum elements to develop, implement and enforce a program to address 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 Hickory 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.

In accordance with 15A NCAC 02H .0153 and .1017, the City of Hickory implements the following State post-construction program requirements, which satisfy the NPDES Phase II MS4 post-construction site runoff control requirements as Qualifying Alternative Program(s) (QAPs) in the MS4 area(s) where they are implemented.

Table 18: Qualifying Alternative Program(s) for Post-Construction Site Runoff Control Program

State QAP Name	State Requirements	Local Ordinance / Regulatory Mechanism Reference
None	N/A	N/A

The City of Hickory has existing requirements other than Qualifying Alternative Program(s) for implementation of the NPDES Phase II MS4 post-construction program requirements. These existing requirements are codified in local ordinance(s), and implementation is further defined in guidance, manuals and/or standard operating procedure (SOP) (s) as summarized in Table 19 below.

Table 19: Summary of Existing Post-Construction Program Elements

Permit Requirements for Plan Review and Approval	Municipal Ordinance/Code Reference(s) and/or Document Title(s)	Date Adopted
3.6.2(a) Authority	Phase II Stormwater ordinance (1.2)	05/2007
3.6.3(a) & 15A NCAC 02H.0153(c) Federal, State & Local Projects	Phase II Stormwater ordinance Section 1.5	05/2007
3.6.3(b) Plan Review	Phase II Stormwater ordinance (2.1)	05/2007
3.6.3(c) O&M Agreement	Phase II Stormwater ordinance (4.2) (4.5(A))	05/2007
3.6.3(d) O&M Plan	TBD	TBD
3.6.3(e) Deed Restrictions/Covenants	Phase II Stormwater ordinance 3.3(A)	05/2007
3.6.3(f) Access Easements	Phase II Stormwater ordinance 4.5	05/2007
Permit Requirements for Inspections and Enforcement	Municipal Ordinance/Code Reference(s) and/or Document Title(s)	Date Adopted
3.6.2(b) Documentation	Phase II Stormwater ordinance (2.1)	05/2007
3.6.2(c) Right of Entry	Phase II Stormwater ordinance (4.5)	05/2007
3.6.4(a) Pre-CO Inspections	Phase II Stormwater ordinance (2.3)	05/2007
3.6.4(b) Compliance with Plans	Phase II Stormwater ordinance (2.3)	05/2007
3.6.4(c) Annual SCM Inspections	Phase II Stormwater ordinance 4.1 (B)	05/2007
3.6.4(d) Low Density Inspections	TBD	TBD
3.6.4(e) Qualified Professional	Phase II Stormwater ordinance 4.1 (B)	05/2007
Permit Requirements for Fecal Coliform Reduction	Municipal Ordinance/Code Reference(s) and/or Document Title(s)	Date Adopted
3.6.6(a) Pet Waste	City of Hickory Code of Ordinance Chapter 4-Sec.4-22(3)	02/2006
3.6.6(b) On-Site Domestic Wastewater treatment	Phase II Stormwater ordinance (3.6)	05/2007

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.	4.1.3: Minimum Post-Construction Reporting Requirements			
	A	B	C	D
BMP No.	Description of BMP	Measurable Goal(s)	Schedule for Implementation	Annual Reporting Metric
34.	Standard Reporting			
	Improve existing 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	1. Number of plan reviews performed for low density and high density.
		2. Track number of Phase II plans approved.	2. Continuously	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 acreage, locations and last inspection date.	3. Continuously, after establishment of inventory no later than Permit Year 2.	3. Summary of number and type of SCMs added to the inventory and in total; and number and acreage of low-density projects constructed and in total.
		4. Track number of SCM inspections performed.	4. Continuously, beginning in permit year	4. Number of SCM inspections.
		5. Track number of low-density inspections performed.	5. Continuously, beginning in permit year 3.	5. Number of low density inspections.
		6. Track number and type of enforcement actions taken.	6. Continuously	6. Number and type of enforcement actions taken.

Table 20: Post Construction Site Runoff Control BMPs

Permit Ref.	2.3 and 3.6: Qualifying Alternative Program(s) Measures to develop, implement and enforce additional BMPs in order to comply with the QAP state program requirements.			
BMP No.	A	B	C	D
	Description of BMP	Measurable Goal(s)	Schedule for Implementation	Annual Reporting Metric
	Qualifying Alternative Program(QAP)			
	N/A			
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
	Legal Authority			
	This requirement is fully met by the existing post-construction program, see references provided in Table 19.			

Table 20: Post Construction Site Runoff Control BMPs

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
35.	Update Ordinances			
	Update ordinances to require compliance with Federal, State, and Local government projects and revise reference to stormwater design manual to reference NCDEQ's Stormwater Design manual.	1. Update code to require Federal, State, and local government projects to comply with post construction requirements unless subject to its own NPDES permit or qualifying alternative program (QAP). 2. Update code to reference NCDEQ Stormwater Design Manual as the reference stormwater design manual.	1. Permit Year 2 2. Permit year 2	1. Notify NCDEQ with reference and date adopted. 2. Notify NCDEQ with updated reference and date adopted.
36.	O&M Plan Requirement			
	Adopt an ordinance to the City code requiring each stormwater control measure to have an Operation and Maintenance Plan that complies with 15A NCAC 02H .1050(13).	1. Establish legal authority through adoption of code. 2. Require approval of O&M Plan by Stormwater Administrator or designated authority per code.	1. Permit year 2 2. Continuously, after ordinance is adopted.	1. Notify NCDEQ with reference and date adopted. 2. Document number of O&M plans approved.

Table 20: Post Construction Site Runoff Control BMPs

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.			
	A	B	C	D
	Description of BMP	Measurable Goal(s)	Schedule for Implementation	Annual Reporting Metric
37.	Inspection and Enforcement for low-density projects Establish the legal authority for inspection of low-density projects at least once during the permit term; and carry out the inspections.			
		1. Establish legal authority through code revisions.	1. Permit year 2	1. Report to DEQ code reference and date adopted.
		2. Conduct inspection on 20% of low-density projects each year(See BMP 34.B.5).	2. See BMP #34.B.5	2. See BMP #34.B.5
Permit Ref.	3.6.5: Documentation Measures to maintain adequate documentation and standardized inspection and tracking mechanisms to: (a) Maintain an inventory of post-construction SCMs and low density projects, (b) Document, track and maintain records of inspections and enforcement actions. Tracking shall include the ability to identify chronic violators, and (c) Make available to developers all relevant ordinances, 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
38.	Inventory of post-construction SCMs and low-density projects Continue to maintain current inventory post-construction SCMs and low-density projects to be utilized for inspection and tracking.			
		1. Update inventory as projects are completed.	1. Continuously	1. Number of SCMs and low-density projects inventoried.
		2. Add SCMs and low-density projects to inventory list when all paperwork is recorded.	2. Continuously	2. Document number of projects.

Table 20: Post Construction Site Runoff Control BMPs

39.	Tracking Inspections			
	Track SCM and low-density inspections to identify repeat violators	1. Establish tracking mechanism to identify violators. 2. Update tracking mechanism as violations are reported during inspections.	1. Permit year 3 2. Continuously, beginning after tracking mechanism established.	1. Yes/No/Status 2. Report number of violations.
40.	Developer Resources			
	Establish a stormwater resource section on the city website for developers.	1. Upload links to the City of Hickory's ordinances and Phase II requirements. 2. Update website to promote current resources and ordinances.	1. Permit year 2, in conjunction with stormwater website development BMP#30. 2. Continuously, after website is developed.	1. Yes/No/Status 2. Report date of updates and changes made.
Permit Ref.	<p>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.</p>			
BMP No.	A	B	C	D
	Description of BMP	Measurable Goal(s)	Schedule for Implementation	Annual Reporting Metric
	<p>Pet Waste This requirement is fully met by the existing post-construction program, see references provided in Table 19. Continue to implement the existing ordinance as referred in Table 19.</p>			
	<p>On-site Waste Management This requirement is fully met by the existing post-construction program, see references provided in Table 19. Continue to implement the existing ordinance as referenced in Table 19.</p>			

PART 10: POLLUTION PREVENTION AND GOOD HOUSEKEEPING PROGRAMS

This SWMP provides a comprehensive pollution prevention and good housekeeping strategy for the City of Hickory municipal facilities and operations. Pollution prevention and good housekeeping are 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 park 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 Cleaning Program
7. Pavement Management Program

Currently, spill response procedures are handled by the Fire Department and all other components of the pollution prevention and good housekeeping measures are implemented by the Public Works Department. The City already provides street sweeping and leaf collection services to residents. Initially, an inventory of municipal facilities will be completed to serve as a basis for developing the program and creating documentation for inspections. The City of Hickory 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
41.	Inventory of Municipal Facilities			
	Develop and implement an accurate inventory of municipal facilities that have a potential for stormwater pollution.	1. Establish NPDES Industrial Permit tracking mechanism to document list of municipally owned facilities with permit, permit expiration dates, and inspections.	1. Permit year 1	1. Number of facilities inventoried; date list is completed. Yes/No/Status
		2. Perform initial inspection of facilities to determine if they have potential to generate polluted runoff and/or require spill response procedures. Classify facilities as having high or low potential for stormwater pollution.	2. Permit year 2	2. Number of inspections performed and classify facilities as high or low potential.
		3. Develop SPCC plans for facilities as identified in the inspection process.	3. Permit year 2	3. Document the # of SPCC/SWPPP plans completed.
		4. Update inventory as needed when facilities are added or closed.	4. As required.	4. Document # of facilities added or closed.

Table 21: Pollution Prevention and Good Housekeeping BMPs

42.	Facility Inspections			
	Inspect city facilities to confirm good housekeeping practices are followed, including material storage and vehicle and equipment cleaning. Inspect facilities with Industrial Stormwater Permits and verify compliance.	1. Establish an SOP for city facility inspections, including an inspection schedule, inspection report documentation, and tracking system.	1. Permit year 2	1. Report number of inspections performed.
		2. Implement SOPs designed for city facilities.	2. Permit years 3-5	2. Yes/No/Status
43.	Facility Employee Training			
	Develop and conduct training for appropriate municipal facility staff on operations and maintenance.	1. Refer to BMP #46.	1. Refer to BMP #46.	1. Refer to BMP #46.
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
44.	Spill Response Procedures			
	Maintain procedures for spill response and continue training appropriate staff.	1. Review general spill response procedures.	1. Permit year 1	1. Are procedures updated to newest responses? Yes/No/Status
		2. Review response procedures for City facilities and operations with potential for hazardous spills.	2. Permit year 1	2. Are procedures updated to newest responses? Yes/No/Status
		3. Update procedures as facilities and operations are revised.	3. As required.	3. Number of additions or revisions made.
		4. Train new staff in spill procedure response in facilities with potential for hazardous spills.	4. As required	4. Number of new staff trained.

Table 21: Pollution Prevention and Good Housekeeping BMPs

45.	Inventory facilities with spill potential Create a list of municipal facilities where stored or used materials have a potential for stormwater pollution.			
	1. Create a list of municipal facilities. 2. Update list of municipal facilities when changes to spill potential change.	1. Permit year 1 2. As required	1. Yes/No/Status 2. Number of facilities added.	
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	
46.	MS4 Staff Training Develop and identify an MS4 training program for staff on general stormwater awareness on pollution and prevention.			
	1. Develop or identify appropriate training program. 2. Provide initial training for all employees. 3. Provide training for new hires.	1. Permit year 2 2. Annually, beginning in permit year 3. 3. Annually, beginning in permit year 3, as necessitated by staffing changes.	1. Yes/No/Status 2. Number of staff members trained and topics from training. 3. Number of new hires trained and topics from training.	
47.	MS4 Inspection and Maintenance Develop a plan for MS4 system maintenance, requiring inspections and maintenance to ensure the MS4 collection system is operational			
	1. Develop an inspection and maintenance plan requiring regular inspections of high priority areas and field observations to determine future needs.	1. Permit year 2	1. Yes/No/Status	

Table 21: Pollution Prevention and Good Housekeeping BMPs

		2. Perform regular inspections in accordance with the inspection and maintenance plan.	2. Follow Schedule per adopted Inspection and Maintenance plan.	2. Number of inspections documented.
		3. Verify, document, and prioritize maintenance activities identified by inspections or citizen reports.	3. Continuously, as potential maintenance activities are identified.	3. Number of maintenance activities performed.
Permit Ref.	3.7.4: Municipal SCM Operation and Maintenance Program Measures to manage municipally-owned, operated, and/or maintained structural 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
48.	Inventory municipally-owned structural SCM's.			
	Develop and maintain a current inventory for municipally-owned SCM's.	1. Create an inventory of existing City-owned SCMs. 2. Develop as needed an Operation and Maintenance Plan(s) for all City-owned SCMs. 3. Update inventory as needed with any new City SCMs.	1. Permit year 1 2. Permit year 2 3. As Required.	1. Number of municipal structural SCMs. 2. Yes/No/Status 3. Number of updates.
49.	SCM Inspection and Maintenance			
	Documenting the regular inspection and maintenance of municipally owned structural SCMs. Addition of municipally owned SCMs to MS4 map.	1. Locate City-owned SCMs and add them to the MS4 Map with type of SCM indicated. 2. Update the map when new City-owned SCMs are constructed.	1. Permit year 1 2. Annually	1. Document and report the number and type of municipally-owned SCM's. 2. Report any updates in the SCM inventory.

Table 21: Pollution Prevention and Good Housekeeping BMPs

		3. Develop SCM inspection form.	3. Permit year 2	3. Yes/No/Status
		4. Inspect each device using SCM inspection form.	4. Annually, beginning in permit year 3.	4. Number of SCMs inspected and status of Pass/Fail.
		5. Perform maintenance task identified in inspections.	5. As required.	5. Document SCMs and maintenance task performed.
		6. Develop a tracking document for City owned SCMs.	6. Permit year 3	6. Yes/No/Status
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
50.	Pesticide, Herbicide and Fertilizer Applicator Training			
	Train City Staff who apply chemicals in order to minimize water quality impacts from pesticides, herbicides, and fertilizers.	1. Maintain and verify appropriate applicator certifications for tasked personnel by downloading the certification list each year and keeping it on file.	1. Continuously	1. Yes/No/Status
		2. Develop or identify pollution prevention and chemical use, storage and handling training program.	2. Permit year 2	2. Yes/No/Status
		3. Provide staff training in pollution prevention and chemical use, storage and handling training.	3. Annually, beginning in permit year 3.	3. Number of staff trained and topics covered.

Table 21: Pollution Prevention and Good Housekeeping BMPs

Permit Ref.	3.7.6: Vehicle and Equipment Cleaning 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
51.	Vehicle and Equipment Cleaning and Maintenance Facility Inspection Routine inspections as part of general facility inspections to ensure that vehicle and equipment facilities are following proper procedures to minimize water quality impacts from vehicle and equipment cleaning and maintenance.			
	1. Develop an inspection checklist.	1. Permit year 2	1. Yes/no/status	
	2. Perform inspections using inspection checklist and notify facility manager of any corrective actions required.	2. Bi- annually, beginning in permit year 3.	2. Number of inspections.	
	3. Perform re-inspections of any facility that required corrective action.	3. As required by corrective actions issued.	3. Number of facilities requiring corrective action, number of resolutions.	
52.	Staff Training and Education Provide general stormwater awareness training and pollution prevention training to employees working in vehicle maintenance and cleaning areas (Refer to BMP #46).			
	1. Refer to BMP #46.	1. Refer to BMP #46.	1. Refer to BMP #46.	

Table 21: Pollution Prevention and Good Housekeeping BMPs

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
53.	Streets, roads, and parking lots. An organized vehicle spill cleanup response to prevent pollutants from vehicular accidents from entering the storm drain system.			
		1. Maintain spill response procedures for city staff.	1. Refer to BMP#44	1. Refer to BMP #44.
54.	Street and Parking Lot Sweeping Measures to reduce pollutants in stormwater runoff from municipally-owned streets, roads, and parking lots within the permittee's corporate limits.			
		1. Maintain street/curb and gutter sweeping as a routine operational task. All City Streets are included. The City has a map that identifies streets that are swept.	1. Continuous, All permit years	1. Miles swept annually.
55.	Leaf Collection Seasonal Collection of leaves to reduce pollutants and restrictions to our stormwater drainage system.			
		1. Maintain our seasonal leaf collection from November-January Each street receives 2 collections per season.	1. Continuous, All permit years	1. Volume of leaves collected (tons).