



Stormwater Management Plan
City of Monroe
NCS000482

8 April 2024
Revised July 1, 2024

Revision Log

Date	Comments	Revisions made by:
7/1/2024	Table 19: Summary of Existing Post-Construction Program Elements updated to correct the permit reference numbers in the first column that were previously incorrect	Deanna Graham

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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 Monroe 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 Monroe 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 NCS000482, 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 Monroe and located within the corporate limits of the City of Monroe.

In preparing this SWMP, the City of Monroe 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. 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.

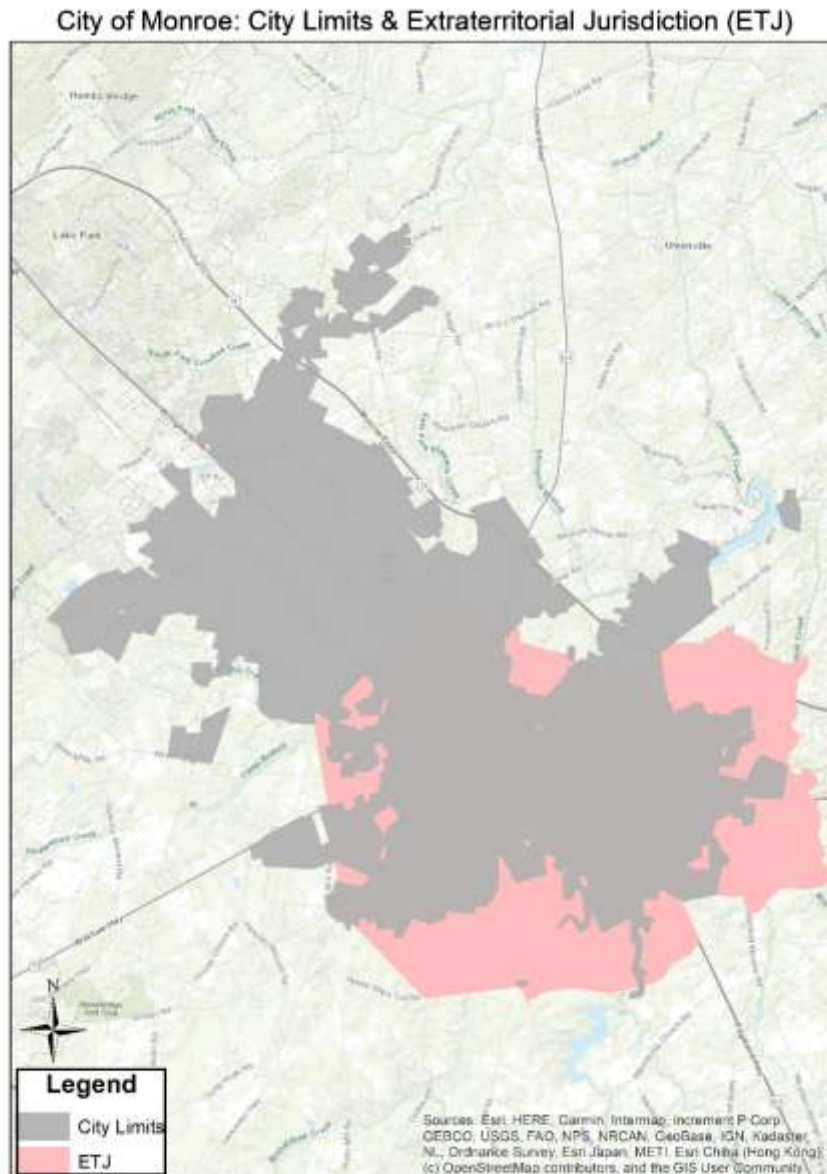
- ☒ I am a ranking elected official.
- ☐ I am a principal executive officer for the permitted MS4.
- ☐ I am a duly authorized representative for the permitted MS4 and have attached the authorization made in writing by a principal executive officer or ranking elected official which specifies me as (*check one*):
- ☐ A specific individual having overall responsibility for stormwater matters.
 - ☐ A specific position having overall responsibility for stormwater matters.

Signature:	
Print Name:	Robert Burns
Title:	Mayor
Signed this 13 day of 2024 ^{August} .	

PART 3: MS4 INFORMATION

3.1 Permitted MS4 Area

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



3.2 Existing MS4 Mapping

The current MS4 mapping includes data on the municipal storm sewer system including stormwater structures, BMPS, conveyances with flow direction, major outfalls and waters of the United States receiving stormwater discharges. Data collection includes size, depth, material, condition, etc., where applicable. Data is updated continuously in the field and synced daily.

Currently, there is no public link to the City's data.

Table 1: Summary of Current MS4 Mapping

Percent of MS4 Area Mapped	95	%
No. of Major Outfalls* Mapped	101	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 \geq 2-acres.*

3.3 Receiving Waters

The City of Monroe MS4 is located within the Yadkin River Basin and the Catawba River Basin. The MS4 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
<i>Yadkin-Pee Dee River Basin</i>			
Richardson Creek (Lake Lee)	13-17-36-(3.5)	WS-IV;CA	Chlorophyll a (40 µg/l, AL, NC) Water Temperature (32°C, AL, LP&CP) Dissolved Oxygen (4 mg/l, AL, FW)
Richardson Creek	13-17-36-(5)a1a	C	Benthos (Nar, AL, FW) Copper Dissolved Chronic (Calculated, AL, FW)
Richardson Creek (Lake Monroe)	13-17-36-4-(2)	WS-IV;CA	Water Temperature (32°C, AL, LP&CP) pH (9.0, AL, FW) Chlorophyll a (40 µg/l, AL, NC)
Richardson Creek (Lake Monroe)*	13-17-36-4-(0.5)	WS-IV	Chlorophyll a (40 µg/l, AL, NC)
South Fork Crooked Creek	13-17-20-2b	C	Benthos (Nar, AL, FW)
Stewarts Creek	13-17-36-9-(1)	WS-III	Benthos (Nar, AL, FW)
Stewarts Creek (Lake Twitty)	13-17-36-9-(4.5)	WS-III;CA	Chlorophyll a (40 µg/l, AL, NC)
Bearskin Creek	13-17-36-6	C	None
Horsepen Branch	13-17-36-6-1	C	None
Camp Branch	13-17-36-6-2	C	None
Dry Fork	13-17-36-6-3	C	None
East Fork Stewarts Creek	13-17-36-9-2	WS-III	None
Lick Branch	13-17-36-9-3	WS-III	None
Stumplick Branch	13-17-36-9-4	WS-III	None
<i>Catawba River Basin</i>			
East Fork – 12 Mile Creek, Tributary 3	11-138-2	C	None
East Fork – 12 Mile Creek, Tributary 5	11-138-2	C	None

* not within City limits

3.4 MS4 Interconnection

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

The MS4 does interconnect with the statewide NCDOT MS4 and includes:

- a. The interconnection is receiving stormwater from the NCDOT MS4. The number of interconnections is unknown. Quantity: N/A
- b. The interconnection is discharging stormwater into the NCDOT MS4. The number of interconnections is unknown. Quantity: N/A
- c. The City of Monroe MS4 mapping does identify interconnections with the NCDOT MS4.
- d. The City of Monroe MS4 mapping does not include NCDOT MS4 outfalls.

3.5 Total Maximum Daily Loads (TMDLs)

No TMDL allocation presently exists for any streams within the City of Monroe (aside from the statewide TMDL for Mercury) as indicated on the NCDEQ Modeling & Assessment Unit web page.

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)
n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a

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. 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
<i>Fusconaia masoni</i>	Atlantic pigtoe	Clam	Threatened
<i>Helianthus schweinitzii</i>	Schweinitz's sunflower	Flowering Plant	Endangered
<i>Lasmigona decorata</i>	Carolina heelsplitter	Clam	Endangered
<i>Rhus michauxii</i>	Michaux's sumac	Flowering Plant	Endangered

3.7 Industrial Facility Discharges

The City of Monroe 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	Facility Name
NCG020070	Martin Marietta-Bakers
NCG030146	Equipment And Supply Inc
NCG030286	Vanguard Supreme-Plt #1
NCG030293	CIRCOR Pumps North America, LLC
NCG030511	Scott Safety
NCG030571	Norton Door Controls (Norton)
NCG030695	ATI Specialty Materials - Bakers Powders Operations
NCG030736	ATI Specialty Materials, LLC - Bakers South 2
NCG050084	Charlotte Pipe & Foundry Co
NCG050303	OMNOVA North America Inc
NCG050349	Berry Global Inc.
NCG050447	Darnel Inc – Monroe
NCG060023	Tyson Foods Inc - Monroe
NCG060095	Goulston Technologies
NCG070055	DUCO-Sci, Inc
NCG070227	Metro Stone & Granite Inc.
NCG080187	United Parcel Service-Monroe
NCG080748	Monroe Bins
NCG081012	Operations Center
NCG081029	Operations Center
NCG081046	Monroe Transfer and Hauling

NCG090025	BonaKemi USA, Inc.
NCG100105	Iron Peddlers Parts Division
NCG110022	Monroe WWTP
NCG110070	Crooked Creek WWTP #2
NCG130082	PolyReps, Inc.
NCG140140	Williams Ready Mix Products In
NCG140194	Stevenson-Weir, Inc. - Monroe Plant
NCG140241	Concrete Supply Co- Monroe
NCG140364	Thomas Concrete
NCG140432	Blue Dot Read-Mix - Monroe CLRS
NCG140461	Carolina Ready Mix
NCG150010	Charlotte-Monroe Executive Airport
NCG180236	Decore-ative Specialties NC, LLC
NCG200439	Metal Recycling Services, LLC - Monroe
NCG200463	Keywell Metals LLC - Top Hill
NCG200516	IMET Alloys
NCG200546	Green Tech Solution Inc.
NCG210458	Monroe Truss and Ready Frame
NCGNE0088	Ludwig Industries
NCGNE0155	Oro Manufacturing Company
NCGNE0398	NC Nat Gd- Monroe
NCGNE0468	HD Supply Plumbing/HVAC (HG 0910)
NCGNE0492	GM Nameplate-NC Division
NCGNE0697	Turbomeca Manufacturing Inc.
NCGNE0767	Prince Minerals LLC
NCGNE0888	Dupont Monroe Site
NCGNE0915	Union County Fleet Services
NCGNE1054	ConMet Secrest
NCGNE1093	Standard Register
NCGNE1180	Spiroflow Systems, Inc.
NCGNE1204	Collins Aerospace Customer Service
NCGNE1412	Duke Foods
NCGNE1483	Consolidated Metco – Airport
NCS000324	Consolidated Metco Incorporated
NCS000329	ATI Specialty Materials-Bakers South & North Plant
NCS000330	ATI Specialty Materials - Monroe Plant
NCS000482	Monroe City-Small MS4

3.8 Non-Stormwater Discharges

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

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 Monroe and determined to possibly impact water quality. The City utilizes Public Education and Outreach as well as Pollution Prevention and Good Housekeeping BMPs to educate residents and municipal staff on the possible effects of detergents entering the surface water.

Street cleaning procedures were reviewed by the City of Monroe and it was determined that street wash water is not applicable to the MS4. Street cleaning is performed with sweeping trucks which is 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 Monroe.

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	N/A
Flows from firefighting activities	Incidental

3.9 Target Pollutants and Sources

In addition to those target pollutants identified above, the City of Monroe is aware of other significant water quality issues within the permitted MS4 area. These include oils, sediments, fertilizers/pesticides, yard waste, pet waste and litter throughout the system.

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 Monroe has evaluated schools, homeowners and businesses as target audiences that are likely to have significant stormwater impacts.

Information gathered from citizens and employees has provided insight into the City of Monroe's target pollutants and likely sources. Litter was found to be an issue for each target audience – schools, homeowners and businesses. Homeowners are also the likely source of fertilizers/pesticides and yard waste into the stormwater system. Businesses were determined to be a likely source of oil and fertilizers/pesticides pollutants.

The City of Monroe's Public Education & Outreach Program addresses the target pollutants with the appropriate target audience. The Construction Site Runoff Control Program addresses sediment related to construction activities. The City's Pollution Prevention & Good Housekeeping Program addresses illicit discharges, illegal dumping and improper disposal of waste with municipal employees.

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)
Oil/grease	Businesses (restaurants, automotive repair shops, etc.)	Public Education & Outreach, IDDE Program
Sediment	Construction activities	Construction Site Runoff Control
Fertilizer/pesticide	Homeowners, Businesses	Public Education & Outreach, IDDE Program
Yard Waste	Homeowners	Public Education & Outreach, IDDE Program
Pet Waste	Pet owners	Public Education & Outreach, IDDE Program
Litter	Schools, Homeowners, Businesses	Public Education & Outreach, IDDE Program
Illicit Discharges	General Public, Businesses, Municipal Employees	Public Education & Outreach, IDDE Program, Pollution Prevention & Good Housekeeping
Illegal Dumping	General Public, Businesses, Municipal Employees	Public Education & Outreach, IDDE Program, Pollution Prevention & Good Housekeeping
Improper Disposal of Waste	General Public, Businesses, Municipal Employees	Public Education & Outreach, IDDE Program, Pollution Prevention & Good Housekeeping

PART 4: STORMWATER MANAGEMENT PROGRAM ADMINISTRATION

4.1 Organizational Structure

The City of Monroe elected officials and city staff are here for the nearly 40,000 residents of Monroe. We are committed to providing first-rate service to each and every resident and business in our city. As a full-service city, we offer everything from police and fire to parks and recreation and planning and development.

Each department has a role to play individually, but only through working together do we achieve great service. The City of Monroe's Engineering Department provides civil infrastructure maintenance and development services to the City of Monroe. The department includes a Stormwater Division which is comprised of six and a half full time positions. The Stormwater Division works with the Streets Division, Solid Waste Division and Land Development and Infrastructure Division to promote compliance across all City owned and maintained stormwater assets.

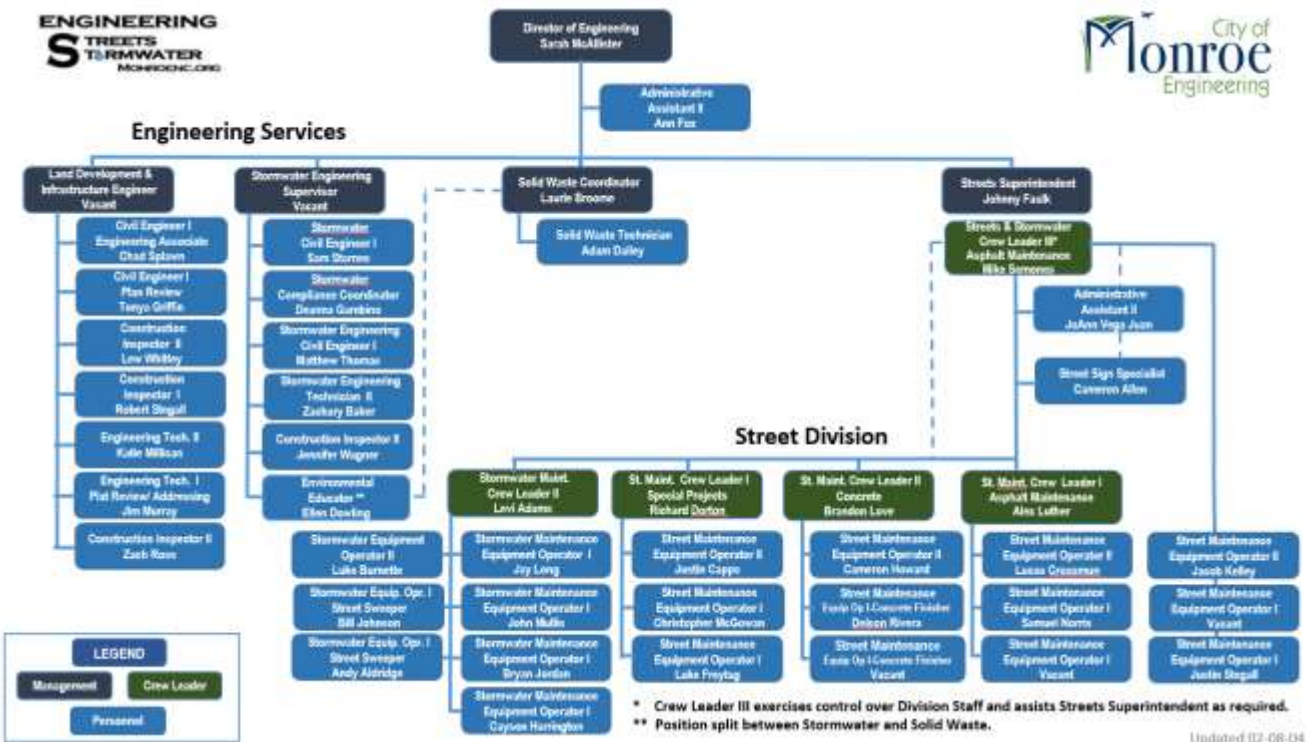


Table 8: Summary of Responsible Parties

SWMP Component	Responsible Position	Department
Stormwater Program Administration	Stormwater Engineering Supervisor	Engineering
SWMP Management	Stormwater Engineering Supervisor	Engineering
Public Education & Outreach	Environmental Educator	Engineering
Public Involvement & Participation	Environmental Educator	Engineering
Illicit Discharge Detection & Elimination	Stormwater Engineering Tech II	Engineering
Construction Site Runoff Control	Erosion Control Inspector	Engineering
Post-Construction Stormwater Management	Stormwater Construction Inspector II	Engineering
Pollution Prevention/Good Housekeeping for Municipal Operations	Stormwater Compliance Coordinator	Engineering
Municipal Facilities Operation & Maintenance Program	Stormwater Compliance Coordinator	Engineering
Spill Response Program	Fire Chief	Fire
MS4 Operation & Maintenance Program	Stormwater Compliance Coordinator	Engineering
Municipal SCM Operation & Maintenance Program	Stormwater Compliance Coordinator	Engineering
Pesticide, Herbicide & Fertilizer Management Program	Stormwater Compliance Coordinator	Engineering
Vehicle & Equipment Cleaning Program	Stormwater Compliance Coordinator	Engineering
Pavement Management Program	Streets Superintendent	Engineering
Total Maximum Daily Load (TMDL) Requirements	Stormwater Compliance Coordinator	Engineering

4.2 Program Funding and Budget

In accordance with the issued permit, the City of Monroe 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 Monroe City Council authorized City staff to move ahead with the implementation the Stormwater Utility in June 2008. An ordinance was adopted in July 2008 authorizing the implementation of the Utility stormwater fees which were added to the City of Monroe utility bill starting in January 2009.

The stormwater utility fee provides a dedicated funding source for the City's stormwater program and is based on the number of equivalent residential units (ERUs) that have been calculated for each individual parcel. The equivalent residential unit, also referred to as equivalent runoff unit, is the average amount of impervious surface area on a single-family residential property in the City of Monroe. One ERU equals 2,618 square feet of impervious surface. The stormwater utility fee is billed monthly on the customer utility bill.

Single-Family Detached Residential Rates

Single-family detached residential properties (including mobile homes) are grouped into a three tier system based on the amount of impervious surface located on the property. Each of the three tier groups is assigned an ERU value and assessed a stormwater utility fee based on this value.

Tier	Area of Impervious Surface (in square feet)	Assigned ERU (not exact)	Fee
1	0 – 2,010	0.7	\$3.68 per month
2	2,011 – 3,287	1.0	\$5.25 per month
3	3,288 and above	1.4	\$7.35 per month

Rates effective January 1, 2021

Multi-Unit Residential Rates

For other residential developed property, including townhouses, apartments, condominiums, and other multi-unit residential development, an ERU value is assigned based on the categorization of the residential unit.

Other Residential Units (by dwelling unit)	Assigned ERU (not exact)	Fee
Townhomes	0.5	\$2.63 per month
Condominiums	0.5	\$2.63 per month
Multifamily (including apartment units)	0.6	\$3.15 per month

Rates effective January 1, 2021

Non-residential rates

For non-residential property, ERU is calculated by dividing the total impervious surface area of the property divided by one ERU or 2,618 square feet, and rounded to the nearest tenth. Each of these ERU values is then multiplied by the established monthly billing unit rate as fixed by City Council. The monthly stormwater utility billing unit rate is \$5.25, effective January 1, 2021.

- Calculating Equivalent Residential Units (ERUs) for Non-Residential Properties
 - Total Impervious surface area (in sq.ft.) ÷ 2,618 sq.ft. (1 ERU) = Total ERUs
- Calculating Monthly Stormwater Utility Fee
 - Total ERUs x \$5.25 = Monthly Fee

The current number of approved full-time stormwater positions is 14.5 with recent annual revenue budgets of \$2.26 million (actual FY 2022), \$2.29 million (2023 budget), and \$3.58 million (FY 2024 proposed).

The City's most recent GAP Analysis, performed in 2022, noted the MS4 Stormwater Program is funded and managed effectively.

4.3 Shared Responsibility

The City of Monroe 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 Monroe 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 Monroe 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, the specific permit requirement that is being met by the shared responsibility, and whether or not a legal agreement to share responsibility is in place.

Table 9: Shared Responsibilities

SWMP BMP or Permit Requirement	Implementing Entity & Program Name	Legal Agreement (Y/N)
3.2.2 and 3.2.4: Outreach to Targeted Audiences	Regional Stormwater Partnership of the Carolinas	N

4.4 Co-Permittees

There are no other entities applying for co-permittee status under the NPDES MS4 permit number NCS000482 for the City of Monroe. Table 10 summarizes contact information for each co-permittee.

Table 10: Co-Permittee Contact Information

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

4.5 Measurable Goals for Program Administration

The City of Monroe 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.	2.1.1: Program Implementation Maintain adequate funding and staffing to implement and manage the provisions of the SWMP and meet all requirements of this permit.			
BMP No.	A	B	C	D
	Description of BMP	Measurable Goal(s)	Schedule for Implementation	Annual Reporting Metric
1.	Program Implementation			

Table 11: Program Administration BMPs

	Evaluate the funding and staffing necessary to adequately implement program components.	1. Prepare, conduct and document an annual evaluation of program funding and staffing.	1. Annually Permit Years 1 – 5	1. Adequate/Inadequate
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.			
BMP No.	A	B	C	D
	Description of BMP	Measurable Goal(s)	Schedule for Implementation	Annual Reporting Metric
2.	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 Years 1 – 5	1. Yes/No
Permit Ref.	2.2.2: Minimum Control Measures Maintain, and make available to the Division upon request, written procedures for implementing the six minimum control measures. Written procedures shall identify specific action steps, schedules, resources, and responsibilities for implementing the MCMs. Written procedures can be free standing or, where appropriate, integrated into the Stormwater Management Plan.			
BMP No.	A	B	C	D
	Description of BMP	Measurable Goal(s)	Schedule for Implementation	Annual Reporting Metric
3.	Minimum Control Measures			
	Written procedures for implementing each of the six minimum control measures.	1. Create written procedures for implementing each of the six minimum control measures.	1. Permit Year 1	1. Yes/No
		2. Review and update, as needed, written procedures for implementing each of the six minimum control measures.	2. Permit Years 2-5	2. Yes/No
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
4.	Permit Renewal Application			

Table 11: Program Administration BMPs

	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

PART 5: PUBLIC EDUCATION AND OUTREACH PROGRAM

The City of Monroe will implement a Public Education and Outreach Program to distribute educational materials to the community or conduct equivalent outreach activities about the impacts of stormwater discharges on water bodies and steps the public can take to reduce pollutants in stormwater 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 Monroe 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	Likely Source(s)/Target Audience(s)
Oil/grease	Businesses (restaurants, automotive repair shops, etc.)
Fertilizer/pesticide	Homeowners, Businesses
Yard Waste	Homeowners
Pet Waste	Pet owners
Litter	Schools, Homeowners, Businesses
Illicit Discharges	General Public, Businesses, Municipal Employees
Illegal Dumping	General Public, Businesses, Municipal Employees
Improper Disposal of Waste	General Public, Businesses, Municipal Employees

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

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
5.	Target Audiences			
	Identify and update target audiences and why they were selected.	1. Identify target audiences and why they were selected	1. Permit Year 1	1. Yes/No/Partial
		2. Review and update target audiences, if needed	2. Annually Permit Years 2-5	2. Yes/No/Partial, Date Reviewed

Table 13: Public Education and Outreach BMPs

6.	Distribute Educational Materials			
	Distribute educational materials focusing on general stormwater awareness as well as materials geared towards specific target pollutants/sources and target audiences.	1. Distribute educational materials to the general public/homeowners	1. Continuously Permit Years 1-5	1. Number of educational materials distributed
		2. Distribute educational materials to businesses	2. Continuously Permit Years 1-5	2. Number of educational materials distributed
		3. Distribute educational materials to municipal employees	3. Continuously Permit Years 1-5	3. Number of educational materials distributed
		4. Review, update and/or create new educational materials to align with current targets	4. Annually Permit Years 1-5	4. Yes/No/Partial
7.	Educational and Outreach Programs and Events			
	Educate the public about the impacts of stormwater pollution and how to prevent it through a variety of settings including educational presentations, special event displays, and media.	1. Provide at least two educational presentations to classrooms, clubs, civic groups, afterschool programs, HOAs, etc. annually	1. Annually Permit Years 1-5	1. Number of participants reached by educational presentations and number of presentations
		2. Participate in at least two community events and festivals as an informational booth annually	2. Annually Permit Years 1-5	2. Numbers of participants reached at public events and number of events attended
		3. Publicize stormwater messages on utility bills at least twice per year	3. Annually Permit Years 1-5	3. Number of utility messages publicized
		4. Post about stormwater and target pollutants on social media at least four times per year	4. Annually Permit Years 1-5	4. Number of reaches of social media posts and number of posts
8.	Regional Stormwater Partnership of the Carolinas			
	Maintain membership and engage with RSPC to promote stormwater awareness throughout the region. Outreach elements include tv and radio ads that are coordinated and implemented through RSPC as well as any educational materials, curriculum and activity guides that are of interest.	1. Maintain membership in partnership with an MOU in place	1. Annually Permit Years 1-5	1. Yes/No/Partial
		2. Coordinate with the partnership to ensure media campaign aligns with our target pollutants/sources	2. Annually Permit Years 1-5	2. Yes/No/Partial
		3. Utilize RSPC for local tv and radio ad distribution	3. Continuously Permit Years 1-5	3. Number of tv spots (ads) Number of radio spots (ads)

Table 13: Public Education and Outreach BMPs

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 Description of BMP	B Measurable Goal(s)	C Schedule for Implementation	D Annual Reporting Metric
9.	City Informational Website			
	Update, maintain and promote the City's informational website to provide the public with information about our stormwater program. The website will host permit documents including our current NPDES permit, SWMP and Stormwater Management Ordinance as well as educational materials about the City's target pollutants and forms/checklists for developers. The website will also promote the stormwater hotline.	1. Update and maintain the website with current regulatory documents, forms, educational information and contacts, if needed	1. Continuously Permit Years 1-5	1. Yes/No/Partial
		2. Promote the website on educational materials (brochures, handouts, door hangers, etc.)	2. Continuously Permit Years 1-5	2. Yes/No
		3. Promote the website in social media posts, city communications, and utility bill messages	3. Continuously Permit Years 1-5	3. Number of times the stormwater website is published
		4. Revise SOP ENG-3342 Public Outreach Materials and Informational Resources to include tracking of website traffic	4. Permit Year 1	4. Yes/No/Partial
		5. Track website traffic data	5. Annually Permit Years 2-5	5. Number of website views
Permit Ref.	3.2.5: Stormwater Hotline Measures for a stormwater hotline/helpline for the purpose of public education and outreach.			
BMP No.	A Description of BMP	B Measurable Goal(s)	C Schedule for Implementation	D Annual Reporting Metric
10.	Stormwater Hotline			
	Maintain and promote the stormwater hotline for public education and outreach purposes.	1. Maintain stormwater hotline number	1. Continuously Permit Years 1-5	1. Yes/No/Partial
		2. Develop and implement procedure to track hotline calls	2. Permit Year 1	2. Yes/No/Partial
		3. Review procedure for tracking hotline calls and revise if needed	3. Annually Permit Years 2-5	3. Yes/No/Partial

Table 13: Public Education and Outreach BMPs

		4. Promote stormwater hotline by publicizing it on educational materials, websites and promotional items	4. Continuously Permit Years 1-5	4. Number of places the stormwater hotline is publicized
		5. Track distribution of educational items and promotional items advertising the stormwater hotline	5. Annually Permit Years 1-5	5. Number of educational items/promotional items distributed with the stormwater hotline listed

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 Monroe 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
11.	Public Enterprise Committee			
	City Staff will bring appropriate stormwater utility issues before the Public Enterprise Committee (PEC) to receive input from Council and community members.	1. Attend at least one PEC meeting to discuss changes to the stormwater utility or SWMP	1. Annually, Permit Years 1-5	1. Date(s) of meeting Name(s) of staff attended on behalf of Stormwater
12.	Stormwater Hotline			
	Maintain and promote the stormwater hotline for public involvement and reporting stormwater issues.	1. Maintain stormwater hotline number	1. Continuously Permit Years 1-5	1. Yes/No/Partial
13.	Public Issue Reporting Form			
	Maintain and promote an online form for reporting stormwater issues on the City of Monroe's Website.	1. Provide online form for the public to report stormwater issues	1. Continuously Permit Years 1-5	1. Number of stormwater public issues reported through the Public Issue Reporting Form
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
14.	Community Clean Up			
	Implement and promote Community Clean Up program for volunteers and school groups to collect litter in and along a stream.	1. Host at least one community clean up by providing coordination and supplies to volunteers and school groups to clean up a stream per year	1. Annually Permit Years 1-5	1. Number of bags of trash removed and number of volunteers

Table 14: Public Involvement and Participation BMPs

		2. Promote community clean-up program	2. Continuously Permit Years 1-5	2. Yes/No/Partial
15.	Storm Drain Marking			
	Implement and promote Storm Drain Marking program for volunteers to add informative markers to storm drains to educate the public about our stormwater system.	1. Review and revise, if needed, procedure for program facilitation and order additional supplies	1. Permit Year 1	1. Yes/No/Partial
		2. Implement storm drain marking program	2. Continuously Permit Years 2-5	2. Number of drain markers installed and number of volunteers
		3. Promote storm drain marking program	3. Continuously Permit Years 2-5	3. Yes/No/Partial
16.	Water Quality Monitoring			
	Promote and support volunteer water quality monitoring to increase awareness of local water quality through testing of water samples.	1. Conduct or facilitate at least one water quality monitoring event with volunteers and school groups per year	1. Annually Permit Years 1-5	1. Number of water samples and volunteers
		2. Promote water quality monitoring program	2. Continuously Permit Years 1-5	2. Yes/No/Partial

PART 7: ILLICIT DISCHARGE DETECTION AND ELIMINATION PROGRAM

The City of Monroe 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
17.	MS4 Mapping Update and maintain an MS4 map that includes stormwater conveyances, flow direction, major outfalls and waters of the United States receiving stormwater discharges.	1. Review, revise (if needed) and publish Draft SOP ENG-3313 Stormwater Infrastructure Inventory for updating and maintaining the City's stormwater inventory database	1. Permit Year 1	1. Yes/No/Partial
		2. Update MS4 Map with new assets and any revised assets	2. Annually Permit Years 1 – 5	2. Yes/No/Partial Number of new assets added in last year
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
18.	Illicit Discharge Ordinance Maintain and update, as needed, § 159.701 ILLICIT DISCHARGES AND CONNECTIONS which provides legal authority to prohibit, detect, and eliminate illicit connections and discharges, illegal dumping and spills into the MS4 and/or surface waters, including enforcement procedures and actions.	1. Review the ordinance and update if needed	1. Permit Year 1	1. Yes/No/Partial
		2. Identify staff that should be trained on the ordinance and enforcement of the ordinance	2. Annually Permit Years 1-5	2. Number of employees identified needing training
		3. Conduct employee training when new Stormwater employees are hired or if the ordinance has been updated	3. Annually Permit Years 1 – 5	3. Yes/No/Partial or /N/A Date(s) of training Number of attendees

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: <ul style="list-style-type: none"> 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 Description of BMP	B Measurable Goal(s)	C Schedule for Implementation	D Annual Reporting Metric
19.	City of Monroe Illicit Discharge Detection and Elimination SOP			
	Create, implement and update an SOP for the IDDE Program that defines identification, investigation and remediation of illicit discharges and connections.			
		1. Review IDDE SOP and update if needed	1. Annually Permit Years 1 – 5	1. Yes/No/Partial Date of Review
		2. Review Illicit Discharge Incident Form and the Re-Inspection/Incident Update Form, update forms as needed	2. Annually Permit Year 5	2. Yes/No/Partial Date of Review
20.	Dry Weather Outfall Inspections			
	Establish SOP and schedule for dry weather outfall inspections.	1. Publish SOP ENG-3362 Dry Weather Screening	1. Permit Year 1	1. Yes/No/Partial
		2. Implement schedule for dry weather screening at MS4 outfalls that includes 20% of outfalls inspected per year	2. Annually Permit Years 1 – 5	2. Yes/No/Partial Percent of outfalls inspected
21.	IDDE Program Assessment			
	Conduct an assessment of the IDDE program and update as needed.	1. Create an evaluation form for the IDDE Program	1. Permit Year 1	1. Yes/No
		2. Complete evaluation form annually and update program as needed	2. Permit Years 2-5	2. Yes/No
22.	Locate Priority Areas			
	Identify and update priority areas likely to have illicit discharges	1. List priority areas on IDDE tracking sheet	1. Permit Year 1	1. Yes/No

Table 15: Illicit Discharge Detection and Elimination BMPs

		2. Review list of priority areas and update as needed	2. Annually Permit Years 2-5	2. Yes/No
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
23.	IDDE Tracking Procedures			
	Publish IDDE SOP that includes procedures for tracking all activities related to an illicit discharge, illicit connection or illegal dumping.	1. Proper documentation on file for each illicit discharge	1. Continuously Permit Years 1 – 5	1. Yes/No/Partial
		2. Maintain a tracking sheet of all illicit discharges, illicit connections or illegal dumping's that the City is aware of that includes number of IDDE investigations, number of NOV's issued, number of NOV's closed, and number of enforcement actions taken	2. Continuously Permit Years 1 – 5	2. Yes/No/Partial
		3. Input data into GIS	3. Continuously Permit Years 1 – 5	3. Yes/No/Partial Number of illicit discharge events mapped in reporting cycle
		4. Review data to identify reoccurring violators	4. Continuously Permit Years 1 – 5	4. Yes/No/Partial Number of chronic violators identified in reporting cycle
		5. Track number of illicit discharge events	5. Continuously Permit Years 1 – 5	5. Number of illicit discharge events in reporting cycle
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
24.	City Employee Training – Observers			

Table 15: Illicit Discharge Detection and Elimination BMPs

	Provide training for City employees that may observe an illicit discharge, illicit connection, illegal dumping or spill.	1. Develop, implement and maintain a training program for appropriate City staff	1. Continuously Permit Years 1 -5	1. Yes/No/Partial
		2. Identify staff that needs training	2. Annually Permit Years 1-5	2. Number of employees identified needing training
		3. Conduct employee training	3. Annually Permit Years 1 – 5	3. Yes/No/Partial Date(s) of training Number of attendees
25.	City Employee Training - Investigators			
	Provide training for City Stormwater employees that may investigate and respond to an illicit discharge, illicit connection, illegal dumping or spill.	1. Develop, implement and maintain a training program for appropriate City staff	1. Continuously Permit Years 1 -5	1. Yes/No/Partial
		2. Conduct employee training for new employees and when procedures change	2. Annually Permit Years 1 – 5	2. Number of staff identified that need training Date(s) of training Number of staff trained
26.	City Contractor Resources			
	Provide the protocols for notifying appropriate City Staff to City contractors who may observe an illicit discharge, illicit connection, illegal dumping or spill	1. Develop City Stormwater Contact Sheet that includes contact information for appropriate City Staff if an illicit discharge is observed	1. Permit Year 1	1. Yes/No/Partial
		2. Distribute City Stormwater Contact Sheet to contractors performing work for the City when applicable	2. Annually Permit Years 2 – 5	2. Number of contractors provided City Stormwater Contact Sheet
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
27.	Stormwater Pollution Public Information			
	Provide information so the public can confidently identify illicit discharges, illegal dumping and spills.	1. Review and update City's website page on Illicit Discharge	1. Annually Permit Years 1 – 5	1. Yes/No/Partial Date(s) of review
		2. Maintain resources and learning material on the Illicit Discharge website	2. Continuously Permit Years 1 – 5	2. Yes/No/Partial Number of resources

Table 15: Illicit Discharge Detection and Elimination BMPs

28.	Stormwater Pollution Hotline			
	Maintain a hotline that allows illicit discharges to be reported to the City's stormwater staff.	1. Working phone line to report illicit discharges	1. Continuously Permit Years 1 – 5	1. Yes/No/Partial Number of phoned reports
		2. Phone number posted publicly	2. Continuously Permit Years 1 – 5	2. Yes/No/Partial
		3. Test hotline annually.	3. Annually Permit Years 1-5	3. Yes/No
29.	Stormwater Pollution Email			
	Maintain an online method that allows residents and municipal staff to report illicit discharges to the City's stormwater staff.	1. Maintain online form to report illicit discharges	1. Continuously Permit Years 1 – 5	1. Yes/No/Partial Number of emailed reports
		2. Website posted publicly	2. Continuously Permit Years 1 – 5	2. Yes/No/Partial

PART 8: CONSTRUCTION SITE RUNOFF CONTROL PROGRAM

In accordance with 15A NCAC 02H .0153, the City of Monroe 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 state SPCA Program is either delegated to a city/town, delegated to a county, or implemented by NCDEQ in non-delegated areas.

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

Permit Reference	State or Local Program Name	Legal Authority	Implementing Entity
3.5.1 - 3.5.4	City of Monroe Delegated SPCA Program*	15A NCAC Chapter 04, NCDEQ Approved Delegation	City of Monroe

* The local delegated SPCA Program ordinance(s)/regulatory mechanism(s) can be found at: <https://www.monroenc.org/Departments/Engineering/Erosion-Control>.

The City of Monroe also implements the following BMPs to meet NPDES MS4 Permit requirements.

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
30.	City of Monroe Erosion Control website			
	Maintain a page dedicated to the City's Erosion Control Program on the City of Monroe's Official Website. Website should include a means for the public to notify the appropriate authorities of observed erosion and sedimentation problems.	1. Maintain an active and up-to-date Erosion Control page on the City's website	1. Continuously Permit Years 1 – 5	1. Yes/No/Partial
		2. Contact information on the website is relevant, updated, and accurate	2. Continuously Permit Years 1 – 5	2. Yes/No/Partial
		3. References / attachments provided on the website are relevant, updated, and accurate	3. Continuously Permit Years 1 – 5	3. Yes/No/Partial
		4. Finalize Draft SOP ENG-3331 Stormwater Management Post-Construction Program	4. Permit Year 1	4. Yes/No/Partial

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
31.	Maintain Legal Authority – Erosion and Sedimentation Control Ordinance			
	Maintain and enforce Chapter 158, Erosion and Sedimentation Control of the City of Monroe Code of Ordinances to prevent water quality impacts due to sediment leaving active construction sites.	1. Maintain legal authority	1. Continuously Permit Years 1 – 5	1. Yes/No
32.	Maintain Legal Authority – Stormwater Management Ordinance			
	Maintain and enforce § 159.701 Illicit Discharges and Connections of the City of Monroe Code of Ordinances.	1. Maintain legal authority	1. Continuously Permit Years 1 – 5	1. Yes/No
		2. Train Erosion Control Inspectors to recognize potential water quality impacts when hired and/or when there are changes to the IDDE Program.	2. Annually Permit Years 1-5	1. Number of erosion control inspectors trained
33.	Erosion Control Inspection program			
	Maintain a program to review and inspect all construction sites greater than 12,000 square feet of land disturbing activities (except for exemptions under § 158.04 Exclusions).	1. Track number of plan approvals.	1. Continuously Permit Years 1-5	1. Number of plan approvals
		2. Track number of Erosion Control Inspectors	2. Continuously Permit Years 1-5	2. Number of Erosion Control Inspectors
		3. Track number of erosion control inspections.	3. Continuously Permit Years 1-5	3. Number of erosion control inspections
		4. Track number of Notice of Violations (NOVs) issued.	4. Continuously Permit Years 1-5	4. Number of NOVs issued
34.	Contractor Education and Outreach			
	Educate contractors working on new development on proper waste disposal to prevent adverse impacts to water quality when applicable.	1. Conduct pre-construction meetings to review requirements before, during and after construction in order to be issued a Certificate of Occupancy	1. Continuously, Permit Years 1-5	1. Number of Pre-Construction Meetings in previous Permit Year

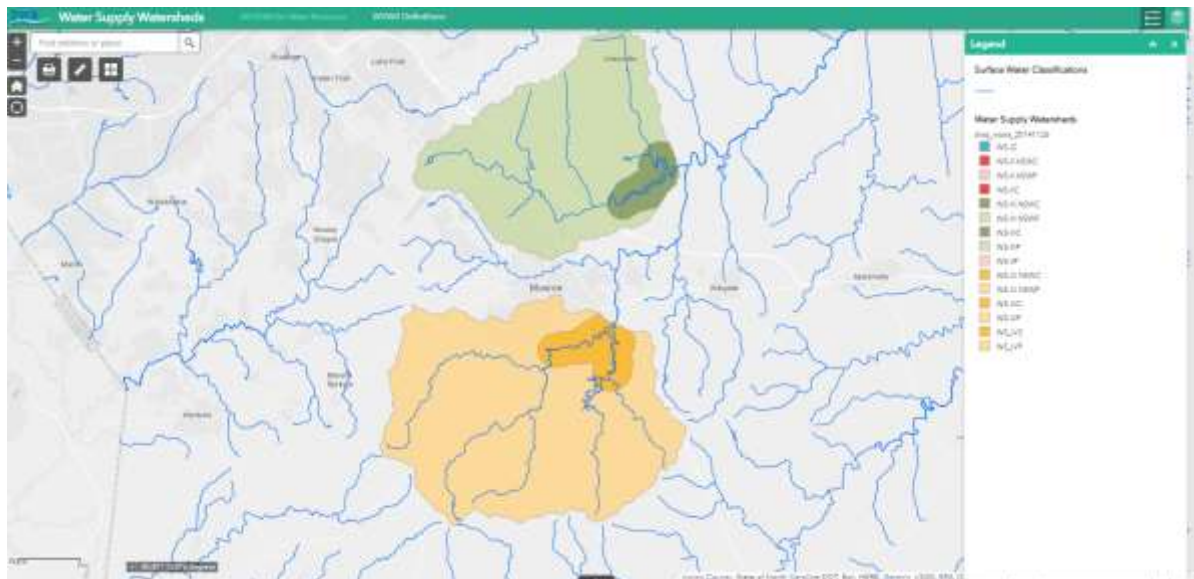
PART 9: POST-CONSTRUCTION SITE RUNOFF CONTROL PROGRAM

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 Monroe 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 Monroe implements the following State post-construction program requirements, which satisfy the NPDES Phase II MS4 post-construction site runoff control requirements as Qualifying Alternative Programs (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
Water Supply Watershed (WS-III)	15A NCAC 2B .0620 - .0624	Stormwater Management Ordinance Section 159-302(C)
Water Supply Watershed (WS-IV)	15A NCAC 2B .0620 - .0624	Stormwater Management Ordinance Section 159-302(C)



The City of Monroe 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(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
3.6.1(a) Authority	Title XV: Land Usage § 159.102 Authority	October 1, 2007
3.6.2(a) & 15A NCAC 02H.0153(c) Federal, State & Local Projects	Title XV: Land Usage § 159.105 Applicability and Jurisdiction	October 1, 2007
3.6.2(b) Plan Review	Title XV: Land Usage § 159.2 Administration and Procedures	October 1, 2007
3.6.2(c) O&M Agreement	Title XV: Land Usage § 159.402 Operation and Maintenance Agreement	October 1, 2007
3.6.2(d) O&M Plan	Title XV: Land Usage § 159.401 General Standards for Maintenance	October 1, 2007
3.6.2(e) Deed Restrictions/Covenants	Title XV: Land Usage § 159.303 Structural Stormwater Control Requirements	October 1, 2007
3.6.2(f) Access Easements	City of Monroe Standard Specifications and Detail Manual § 04.00 Storm Drainage Collection Facilities	August 21, 2001
Permit Requirements for Inspections and Enforcement	Municipal Ordinance/Code Reference(s) and/or Document Title(s)	Date Adopted
3.6.4(b) Documentation	Title XV: Land Usage § 159.503 Enforcement and Violations Procedures	October 1, 2007
3.6.1(c) Right of Entry	Title XV: Land Usage § 159.402 Operation and Maintenance Agreement	October 1, 2007
3.6.3(a) Pre-CO Inspections	Title XV: Land Usage § 159.502 REMEDIES AND PENALTIES	October 1, 2007
3.6.3(b) Compliance with Plans	Title XV: Land Usage § 159.203C As-Built Plans and Final Approval	October 1, 2007
3.6.3(c) Annual SCM Inspections	Title XV: Land Usage § 159.401 General Standards for Maintenance § 159.403 Inspection Program § 159.503 Enforcement and Violations Procedures	October 1, 2007
3.6.3(d) Low Density Inspections	SEE BMP 29	SEE BMP 29
3.6.3(e) Qualified Professional	Title XV: Land Usage § 159.401 General Standards for Maintenance	October 1, 2007
Permit Requirements for Fecal Coliform Reduction	Municipal Ordinance/Code Reference(s) and/or Document Title(s)	Date Adopted
3.6.5(a) Pet Waste	Title IX: General Regulations § 93.03 Declaration of a public health nuisance	October 18, 2016
3.6.5(b) On-Site Domestic Wastewater Treatment	Union County Environmental Health (N/A)	

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
35.	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 Years 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 Years 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 acreage, location and last inspection date	3. Continuously Permit Years 1-5	3. Summary of number and type of SCMs added to the inventory; and number and acreage of low density projects constructed
		4. Perform SCM inspections annually	4. Continuously Permit Years 1-5	4. Number of SCM inspections
		5. Perform low density inspections once per MS4 Permit Cycle	5. Permit Year 5	5. Number of low density projects inspected
		6. Track number and type of enforcement actions taken	6. Continuously Permit Years 1-5	6. Number of enforcement actions issued
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
The QAP requirements are fully met by the existing QAP for post-construction, see references provided in Table 18				

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
This permit requirement is fully met by the existing post-construction program, see references provided in Table 19.				
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
This permit 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.	3.6.4: 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	B	C	D
	Description of BMP	Measurable Goal(s)	Schedule for Implementation	Annual Reporting Metric
36.	3.6.4(d) Low Density Inspections Require inspection of low density projects at least once during the permit term in City's Stormwater Management Ordinance.			
	Require inspection of low density projects at least once during the permit term in City's Stormwater Management Ordinance.	1. Revise existing Stormwater Management Ordinance to require inspection of low density projects at least once during the permit term	1. Permit Year 2	1. Code Reference Date Adopted
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
This permit requirement is fully met by the existing post-construction program, see references provided in Table 19.				

PART 10: POLLUTION PREVENTION AND GOOD HOUSEKEEPING PROGRAMS

This SWMP provides a comprehensive pollution prevention and good housekeeping strategy for the City of Monroe 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 Monroe 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 Implementation for	Annual Reporting Metric
37.	Accurate inventory of municipally owned or operated facilities			
	Maintain a current inventory of facilities owned and operated by the City of Monroe with the potential for generating polluted stormwater runoff.	1. Review inventory	1. Permit Year 1	1. Number of major facilities Number of minor facilities
		2. Update inventory	2. Continuously Permit Years 1 – 5	2. Number of major facilities Number of minor facilities

Table 21: Pollution Prevention and Good Housekeeping BMPs

38.	Routine maintenance and inspection of municipally owned or operated facilities			
	Maintain written SOPs and a program that includes inspection and maintenance of City owned Facilities.	1. Review, update, and implement new SWPPPs as needed.	1. Annually Permit Years 1 – 5	1. Yes/No/Partial
		2. Review, revise (if needed) and publish Draft SOP ENG-3372, Inspections and Evaluations of Municipal Sites	2. Permit Year 1	2. Yes/No/Partial
		3. Review SOP ENG-3372, Inspections and Evaluations of Municipal Sites and revise if needed	3. Annually Permit Years 2 – 5	3. Yes/No/Partial
		4. Inspect all Major City Facilities annually	4. Annually Permit Years 1-5	4. Number of Major City Facilities, Number of Major City Facilities Inspected
		5. Inspect all Minor City Facilities at least once per permit cycle	5. Permit Year 5	5. Number of Minor City Facilities, Number of Major City Facilities Inspected
		6. Maintain inspection and maintenance certifications for appropriate personnel	6. Continuously Permit Years 1-5	6. Yes/No/Partial
39.	Pollution Prevention and Good Housekeeping Training			
	Properly train staff on general stormwater awareness and implementing pollution prevention and good housekeeping practices.	1. Identify staff that needs training	1. Annually Permit Years 1-5	1. Number of employees identified needing training
		2. Conduct employee training	2. Annually Permit Years 1 – 5	2. Yes/No/Partial Date(s) of training Number of attendees
		3. Review the implemented practices and update as needed	3. Annually Permit Years 1 – 5	3. Yes/No/Partial

Table 21: Pollution Prevention and Good Housekeeping BMPs

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
40.	Identification of sites with contamination potential			
	Maintain a list of facilities and operations that store and/or use materials that have the potential to contaminate stormwater runoff if spilled.	1. Review current inventory of sites with contamination potential	1. Permit Year 1	1. Yes/No/Partial
		2. Identify target pollutant for each location	2. Annually Permit Years 1 – 5	2. Yes/No/Partial
		3. Review and update inventory as sites are added or removed	3. Annually Permit Years 1 – 5	3. Yes/No/Partial
41.	Spill Response Procedures			
	Maintain written spill response procedures.	1. Up-to-date copy of the spill response procedures available at each facility	1. Continuously Permit Years 1-5	1. Yes/No/Partial
		2. Review and update spill response procedures as needed	2. Annually Permit Years 1 – 5	2. Yes/No/Partial
42.	Spill Response Training			
	Train appropriate staff on spill response procedures.	1. Identify staff that needs training	1. Annually Permit Years 1-5	1. Number of employees identified needing training
		2. Conduct employee training	2. Annually Permit Years 1 – 5	2. Yes/No/Partial Date(s) of training Number of attendees
		3. Review the implemented practices and update as needed	3. Annually Permit Years 1 – 5	3. Yes/No/Partial
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
43.	Routine MS4 Inspections			
	Implement SOP ENG-2310 Catch Basin Inspection Route Procedures	1. Review and update SOP, if needed	1. Annually Permit Years 1 – 5	1. Yes/No/Partial

Table 21: Pollution Prevention and Good Housekeeping BMPs

	that includes frequencies, schedules and standard documentation.	2. Perform routine maintenance and inspection of 100% of City owned and maintained catch basins per the SOP. Maintenance logs will be kept as an internal document available to DEQ upon request.	2. Annually Permit Years 1 – 5	2. Yes/No/Partial
44.	MS4 Operation and Maintenance Training			
	Provide operation and maintenance training on stormwater awareness and pollution prevention to appropriate City staff.	1. Identify staff that needs training	1. Annually Permit Years 1-5	1. Number of employees identified needing training
		2. Conduct employee training and keep training logs	2. Annually Permit Years 1 – 5	2. Yes/No/Partial Number of employees trained
		3. Review the implemented practices and update as needed	3. Annually Permit Years 1 – 5	3. Yes/No/Partial
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 Description of BMP	B Measurable Goal(s)	C Schedule for Implementation	D Annual Reporting Metric
45.	Inventory all municipally-owned, operated, and/or maintained SCMs			
	Update and maintain a current inventory of municipally-owned, operated, and/or maintained SCMs on the MS4 map	1. Track number of City owned, operated and/or maintained SCMs	1. Annually Permit Years 1-5	1. Number of City owned, operated and/or maintained SCMs
46.	SCM inspections and maintenance			
	Perform SCM inspections and maintenance with established frequencies, schedules, and documentation.	1. Inspect City owned, operated and/or maintained SCMs annually	1. Annually Permit Years 1-5	1. Number of City owned, operated and/or maintained SCMs inspected
47.	Municipal SCM Operation and Maintenance Program Training			
	Train appropriate staff on inspections and maintenance of municipally-owned, operated and/or maintained structural stormwater control measures.	1. Identify staff that needs training	1. Annually Permit Years 1-5	1. Number of employees identified needing training
		2. Conduct employee training and keep training logs	2. Annually Permit Years 1 – 5	2. Yes/No/Partial Number of employees trained

Table 21: Pollution Prevention and Good Housekeeping BMPs

		3. Review the implemented practices and update as needed	3. Annually Permit Years 1 – 5	3. Yes/No/Partial
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
48.	Pesticide, Herbicide and Fertilizer Management Program Training			
	Ensure training for staff who handle pesticides, herbicides, and/or fertilizers.	1. Compile and maintain a list of City owned or maintained facilities that use and/or store pesticides, herbicides or fertilizers	1. Annually Permit Years 1 – 5	1. Number of facilities that store pesticides, herbicides, or fertilizers.
		2. Inspect facilities that store pesticides, herbicides or fertilizers	2. Annually Permit Years 1 – 5	2. Yes/No/Partial
		3. Ensure facilities have accurate SOPs for application and storage of pesticides, herbicides or fertilizers	3. Annually Permit Years 1 – 5	3. Yes/No/Partial
		4. Compile and maintain list of certified and licensed staff	4. Annually Permit Years 1 – 5	4. Number of certified/licensed staff
		5. Review SOP ENG-2732 Herbicide Application for Streetscape Aesthetics and Watershed Protection and update, if needed	5. Annually Permit Years 2-5	5. Yes/No/Partial
		6. Review SOP ENG-2731 Storage and Disposal of Fertilizers, Pesticides and Herbicides and update, if needed	6. Annually Permit Years 2-5	6. Yes/No/Partial
		7.	7.	7.
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
49.	Vehicle and Equipment Maintenance Program			

Table 21: Pollution Prevention and Good Housekeeping BMPs

	Implement measures to prevent and minimize contamination of stormwater runoff from areas used for municipal vehicle and equipment maintenance and/ or cleaning.	1. Identify municipal facilities with vehicle/equipment washing or maintenance activities	1. Annually Permit Years 1 – 5	1. Number of facilities
		2. Inspect facilities with vehicle/equipment washing or maintenance activities	2. Annually Permit Years 1 – 5	2. Number of facilities inspected
		3. Review and update facility's SOP for vehicle and equipment cleaning during Annual Inspection if needed.	3. Annually Permit Years 1 – 5	3. Number of SOPs (department specific)
		4. Apply for NCG080000 permits where required	4. Permit Year 1-2	4. Number of municipal facilities with NCG080000 permitting
		5. Publish Draft SOP ENG-3376 Vehicle and Equipment Washing Procedures	5. Permit Year 1	5. Yes/No/Partial
		6. Review and update SOP ENG-3376 Vehicle and Equipment Washing Procedures if needed	6. Annually Permit Years 2 – 5	6. Yes/No/Partial
50.	NPDES Industrial Stormwater Permit Compliance			
	Maintain compliance at all City owned/maintained facilities with NPDES Industrial Stormwater permits.	1. Identify municipal facilities with NPDES permits and those which may require a permit	1. Permit Year 1	1. Yes/No/Partial Number of facilities with NPDES permits
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
51.	Street Sweeping Program			
	Maintain a street sweeping program that minimizes the accumulation of unsightly debris and helps to reduce the amounts of pollutants entering our storm drains.	1. Maintain SOP ENG – 2320 Street Sweeping Procedures which includes current number of street sweeping trucks	1. Annually Permit Years 1 – 5	1. Number of trucks

Table 21: Pollution Prevention and Good Housekeeping BMPs

		2. Street sweep City owned and maintained streets with curb and gutter at least 4x per year and ribbon streets (no curb and gutter) at least 2x per year. Maintenance logs will be kept as an internal document available to DEQ upon request.	2. Annually Permit Years 1 – 5	2. Number of miles swept
		3. Review SOP and revise as needed	3. Annually Permit Years 2 – 5	3. Yes/No/Partial Date(s) of review
52.	Litter Management Program			
	Implement measures to control litter to help reduce the amounts of pollutants entering our storm drains.	1. Maintain a Litter Management Program that addresses litter in the City of Monroe	1. Annually Permit Years 1 – 5	1. Yes/No/Partial
		2. Track amount of litter removed	2. Annually Permit Years 1-5	2. Sum of bags
		3. Track amount of bulk items removed	3. Annually Permit Years 1-5	3. Number of bulk items
53.	Brush and Leaf Collection			
	Implement measures to control leaf and brush litter to help reduce the amounts of pollutants entering our storm drains.	1. Maintain a program that includes yard waste collection for City-approved residences	1. Annually Permit Years 1 – 5	1. Number of tons removed
		2. Maintain a program that includes leaf collection for City-approved residences	2. Annually Permit Years 1 – 5	2. Number of cubic yards removed