

Stormwater Management Plan
City of Lowell
NCS000444

3/31/21



Lowell
North Carolina

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	APPROVED	
		April 7, 2021
	Jeanette Powell MS4 Program Coordinator	

Table of Contents

PART 1: INTRODUCTION	1
PART 2: CERTIFICATION	2
PART 3: MS4 INFORMATION.....	3
3.1 Permitted MS4 Area	3
3.2 Existing MS4 Mapping	4
3.3 Receiving Waters	4
3.4 MS4 Interconnection.....	4
3.5 Total Maximum Daily Loads (TMDLs)	5
3.6 Endangered and Threatened Species and Critical Habitat	6
3.7 Industrial Facility Discharges	6
3.8 Non-Stormwater Discharges	6
3.9 Target Pollutants and Sources.....	7
PART 4: STORMWATER MANAGEMENT PROGRAM ADMINISTRATION.....	10
4.1 Organizational Structure	10
4.2 Program Funding and Budget	12
4.3 Shared Responsibility	13
4.4 Co-Permittees.....	14
4.5 Measurable Goals for Program Administration	14
PART 5: PUBLIC EDUCATION AND OUTREACH PROGRAM	16
PART 6: PUBLIC INVOLVEMENT AND PARTICIPATION PROGRAM	22
PART 7: ILLICIT DISCHARGE DETECTION AND ELIMINATION PROGRAM.....	25
PART 8: CONSTRUCTION SITE RUNOFF CONTROL PROGRAM.....	29
PART 9: POST-CONSTRUCTION SITE RUNOFF CONTROL PROGRAM.....	31
PART 10: POLLUTION PREVENTION AND GOOD HOUSEKEEPING PROGRAMS.....	36

List of Tables

- Table 1: Summary of MS4 Mapping
- Table 2: Summary of MS4 Receiving Waters
- Table 3: Summary of Approved TMDLs
- Table 4: Summary of Federally Listed Species/Habitat Impacted by Surface Water Quality
- Table 5: NPDES Stormwater Permitted Industrial Facilities
- Table 6: Non-Stormwater Discharges
- Table 7: Summary of Target Pollutants and Sources
- Table 8: Summary of Responsible Parties
- Table 9: Shared Responsibilities
- Table 10: Co-Permittee Contact Information
- Table 11: Program Administration BMPs
- Table 12: Summary of Target Pollutants & Audiences
- Table 13: Public Education and Outreach BMPs
- Table 14: Public Involvement and Participation BMPs
- Table 15: Illicit Discharge Detection and Elimination BMPs
- Table 16: Qualifying Alternative Program Components for Construction Site Runoff Control Program
- Table 17: Construction Site Runoff Control BMPs
- Table 18: Qualifying Alternative Program(s) for Post-Construction Site Runoff Control Program
- Table 19: Summary of Existing Post-Construction Program Elements
- Table 20: Post Construction Site Runoff Control BMPs
- Table 21: Pollution Prevention and Good Housekeeping BMPs

PART 1: INTRODUCTION

The purpose of this Stormwater Management Plan (SWMP) is to establish and define the means by which the City of Lowell 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 Lowell 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 NCS000444, 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 Lowell and located within the corporate limits of the City of Lowell.

In preparing this SWMP, the City of Lowell 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 the 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.

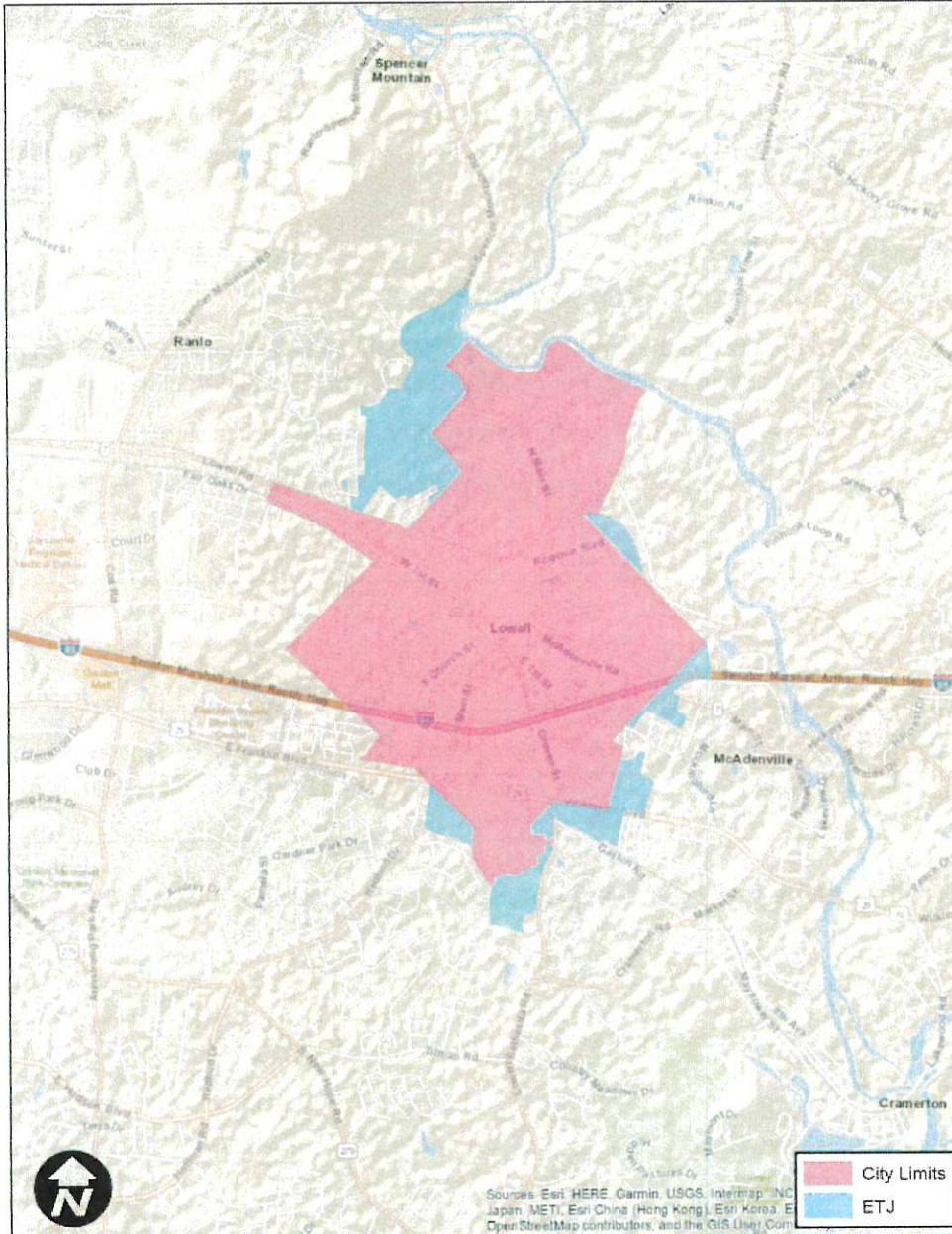
- I am a ranking elected official.
- I am a principal executive officer for the permitted MS4.
- I am a duly authorized representative for the permitted MS4 and have attached the authorization made in writing by a principal executive officer or ranking elected official which specifies me as (*check one*):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

<i>Signature:</i>	ON FILE
<i>Print Name:</i>	Scott Attaway
<i>Title:</i>	City Manager
Signed this 31 st day of March 20 21 .	

PART 3: MS4 INFORMATION

3.1 Permitted MS4 Area

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



*Note that ETJ is expected to be relinquished in Permit Year 1.

3.2 Existing MS4 Mapping

The current MS4 mapping currently includes the location of all existing SCMs and those that were under construction during our October 2019 audit. Future mapping efforts plan to include pipes, flow direction, inverts, open ditches, inlets, catch basins, manholes, outfalls, sizes, and conditions. (see 3.4.1) We anticipate this mapping to start in Permit Year 2 FY 22/23.

<https://www.lowellnc.com/DocumentCenter/View/780/MS4-Outfalls--SCMs-1>

Table 1: Summary of Current MS4 Mapping

Percent of MS4 Area Mapped	0	%
No. of Major Outfalls* Mapped	5	total

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

3.3 Receiving Waters

The City of Lowell NCS000444 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](#)

Table 2: Summary of MS4 Receiving Waters

Receiving Water Name	Stream Index / AU Number	Water Quality Classification	303(d) Listed Parameter(s) of Interest
South Fork River	11-129-17	C	

3.4 MS4 Interconnection

The City of Lowell MS4 is interconnected with another regulated MS4 and directly discharges stormwater into the City of Gastonia MS4. The number of interconnections leaving the City of Lowell MS4 to the City of Gastonia is 3, as determined by both city’s stormwater departments. Future mapping efforts will confirm this.

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

3.5 Total Maximum Daily Loads (TMDLs)

The TMDL(s) listed in Table 3 below have been approved within the MS4 area, as determined by the map and list provided on the [NCDEQ Modeling & Assessment Unit web page](#). The table also indicates whether the approved TMDL has a specific stormwater Waste Load Allocation (WLA) for any watershed directly receiving discharges from the permitted MS4, and whether a Water Quality Recovery Program has been implemented to address the WLA.

Table 3: Summary of Approved TMDLs

Water Body Name	TMDL Pollutant(s) of Concern	Stormwater Waste Load Allocation (Y/N)	Water Quality Recovery Program (Y/N)
Lake Wylie TMDL	Nitrogen, Phosphorus	N	N (WQMP)

BMPs are evaluated and designed to enhance water quality recovery.

Public Education and Outreach:

Public Involvement and Participation:

IDDE:

Pre and Post Construction Controls:

Pollution Prevention and Good Housekeeping:

The City of Lowell recognizes that the Lake Wylie TMDL 1995 Catawba River Basinwide Water Quality Management Plan points to a collaborative effort to deal with non point sources of pollution in to the South Fork River. The City of Lowell therefore has targeted certain industries and users with public education and involvement BMPs (BMP#8) to bring awareness and reform to improper practices such as the overuse of fertilizers and herbicides, improper waste disposal at automobile repair shops, and other

APPROVED NCS000444 SWMP

City of Lowell

March 31, 2021

Page 5

household contributors such as home maintenance. As noted above, all BMPs are related to this reduction of pollution and enhancement of water quality recovery.

3.6 Endangered and Threatened Species and Critical Habitat

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

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

Scientific Name	Common name	Species Group	Federal Listing Status
<i>Glyptemys muhlenbergii</i>	Bog Turtle	Vertebrate	T (S/A)
<i>Myotis septentrionalis</i>	Northern Long-eared Bat	Vertebrate	T
<i>Hexastylis naniflora</i>	Dwarf Flowered Heartleaf	Invertebrate Vascular Plant	T
<i>Helianthus schweinitzii</i>	Schweinitz's sunflower	Invertebrate Vascular Plant	E

3.7 Industrial Facility Discharges

The City of Lowell 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
None	NA

3.8 Non-Stormwater Discharges

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

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 Lowell to determine whether they may significantly impact water quality. The City of Lowell has evaluated the locations of where public works vehicles are cleaned as well as where the Lowell Volunteer Fire Department washes their vehicles and with the assistance of NCDEQ staff have determined that the locations are sufficient for protecting water quality purposes. Residential and charity car washes offer possible water quality impacts and the IDDE in Part 7 of this SWMP describes a methodology to investigate further. Public Education and Outreach in Part 5 of this SWMP identifies the ways in which the City of Lowell plans to educate target audiences about stormwater conscious car washing.

Table 6: Non-Stormwater Discharges

Non-Stormwater Discharge	Water Quality Impacts
Water line and fire hydrant flushing	Incidental
Landscape irrigation	Incidental
Diverted stream flows	Incidental
Rising groundwater	Incidental
Uncontaminated groundwater infiltration	Incidental
Uncontaminated pumped groundwater	Incidental
Uncontaminated potable water sources	Incidental
Foundation drains	Incidental
Air conditioning condensate	Incidental
Irrigation waters	Incidental
Springs	Incidental
Water from crawl space pumps	Incidental
Footing drains	Incidental
Lawn watering	Incidental
Residential and charity car washing	Possible
Flows from riparian habitats and wetlands	Incidental
Dechlorinated swimming pool discharges	Incidental
Street wash water	Possible
Flows from firefighting activities	Incidental

3.9 Target Pollutants and Sources

In addition to those target pollutants identified above, the City of Lowell 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 each. In addition, the City of Lowell has evaluated schools, homeowners and businesses as target audiences that are likely to have significant stormwater impacts. Schools were selected as a target audience due to the opportunity to affect positive change through education and involvement opportunities. Homeowners and businesses were identified as target audiences because they are likely sources of non-point pollution through uninformed management practices.

Schools:

With the onset of COVID-19 and the increased cleaning of many businesses and schools, the City of Lowell is becoming aware of increased levels of chemicals associated with cleaning products at our WWTP. Whereas these increased levels have been identified and accounted for with the treatment of the wastewater, staff has begun to communicate to the schools concerning the potentiality of future impacts that this could bring to the City of Lowell as it relates to not just our WWTP, but also stormwater. The City of Lowell will utilize Part 5 of this SWMP as the avenue to address this concern by reaching out to school's staff to identify their practices and evaluate that to the IDDE of this SWMP.

Homeowners:

Homeowners will be targeted with BMP information as it relates to pool cleaning, landscape maintenance, paint practices, and vehicle maintenance. Part 5 of this SWMP describes BMP flyers that have been created regarding these topics so that we may educate citizens to make better decisions when conducting maintenance at their households.

Businesses:

The food industry and auto repair and maintenance businesses will be targeted with BMP information. This outreach is detailed in Part 5 of this SWMP and will include mailed flyers and follow up conversations with businesses regarding best management practices. The construction industry will also be targeted with BMP flyers during the pre-construction permitting (Part 8).

Table 7: Summary of Target Pollutants and Sources

Target Pollutant(s)	Likely Source(s)/Target Audience(s)	SWMP Program Addressing Target Pollutant(s)/Audience(s)
Litter	Residents, Businesses, Schools	Public Education & Outreach, Public Involvement & Participation
Oil and Automotive Fluids	Residents and Businesses	Public Education & Outreach
Cleaning Chemicals	Businesses and Schools	Public Education & Outreach
Paint/Property Maintenance	Residents, Businesses, Schools	Public Education & Outreach
Fertilizers and Herbicides	Residents, Businesses, Schools	Public Education & Outreach, Public Involvement
General non-point source pollution	Residents, Businesses, Schools, Municipal Staff	Public Education & Outreach

Illegal dumping	Residents, Businesses, Municipal Staff	Public Education & Outreach, Pollution Prevention and Good Housekeeping
Sedimentation	Residents, Construction	Public Education & Outreach, Construction Site Runoff Control
Illicit Discharge	Residents, Businesses, Municipal Staff	Public Education & Outreach, Illicit Discharge and Detection

The Stormwater Administrator manages the SWMP and coordinates with the Assistant Stormwater Administrator for investigation of complaints, ensures good housekeeping procedures are being followed, and controls compliance to the MS4 permit. The Assistant Stormwater Administrator/Public Works Director manages their public works staff to assist in implementing the SWMP and the IDDE ordinance. The Administrator and the assistant continuously provide training related to stormwater BMP's issues. The Customer Service Specialists receives calls and manages the website information. Additional duties of the CSS also are to keep records of any stormwater inquiry for the review of the Administrator and to pass out stormwater education material to all new water account holders in the City of Lowell. Per the City of Lowell and Gaston County interlocal agreements, the Gaston County Natural Resources Department manages post construction runoff control and construction site runoff control within the municipal limits of Lowell.

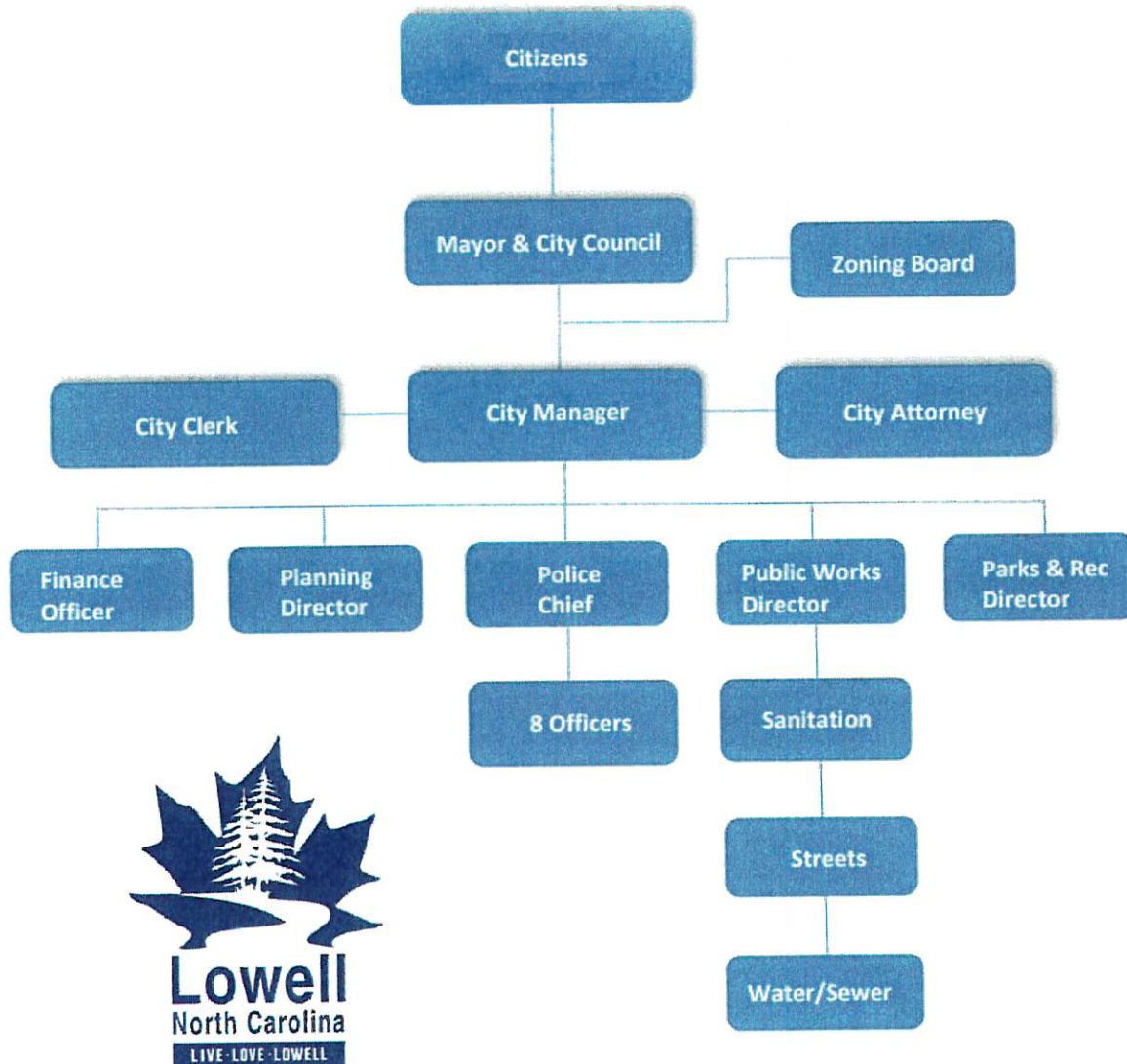
Table 8: Summary of Responsible Parties

SWMP Component	Responsible Position	Staff Name	Department
Stormwater Program Administration	Planning Director	Alex Blackburn	Planning
SWMP Management	Planning Director	Alex Blackburn	Planning
Public Education & Outreach	Planning Director	Alex Blackburn	Planning
Public Involvement & Participation	Planning Director	Alex Blackburn	Planning
Illicit Discharge Detection & Elimination	Planning Director Public Works Director	Alex Blackburn Thomas Shrewsbury	Planning Public Works
Construction Site Runoff Control	Stormwater Administrator	Joseph Alm	Gaston County Natural Resources
Post-Construction Stormwater Management	Stormwater Administrator	Joseph Alm	Gaston County Natural Resources
Pollution Prevention/Good Housekeeping for Municipal Operations	Planning Director Public Works Director	Alex Blackburn Thomas Shrewsbury	Planning Department Public Works Department
Municipal Facilities Operation & Maintenance Program	Planning Director	Alex Blackburn	Planning Public Works

PART 4: STORMWATER MANAGEMENT PROGRAM ADMINISTRATION

4.1 Organizational Structure

**CITY OF LOWELL
ORGANIZATION CHART**



Spill Response Program	Public Works Director	Thomas Shrewsbury	Public Works
MS4 Operation & Maintenance Program	Planning Director	Alex Blackburn	Planning
Municipal SCM Operation & Maintenance Program	Planning Director Stormwater Administrator	Alex Blackburn Joseph Alm	Planning Gaston County Natural Resources
Pesticide, Herbicide & Fertilizer Management Program	Public Works Director	Thomas Shrewsbury	Public Works
Vehicle & Equipment Cleaning Program	Public Works Director	Thomas Shrewsbury	Public Works
Pavement Management Program	Public Works Director	Thomas Shrewsbury	Public Works
Total Maximum Daily Load (TMDL) Requirements		NA	

4.2 Program Funding and Budget

In accordance with the issued permit, the City of Lowell 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 total stormwater department budget is \$109,047 for FY 20/21.

Staff is actively working to research and develop a recommended stormwater fee for the City Council to adopt in order to alleviate the general fund. This program is currently under-funded to conduct all the elements of the permit. Further fiscal analysis and investigation of the fee will be conducted as indicated in BMP No. 3 in order to fund the stormwater program by Permit Year 3.

Stormwater		
FY 2020-2021		
Acct Description	Budget	Explanations/Comments
Salaries	\$ 54,917	Salaries & Wages
FICA	\$ 4,201	Employer FICA (7.65% of wages)
Health Insurance	\$ 16,076	Health and dental insurance
Retirement	\$ 5,574	10.15% of salaries is retirement.
401(K)	\$ 2,746	5% of salaries is 401(K) expense
Professional Services		
Postage	\$ 150	
Travel & Training	\$ 1,000	
Main. & Repairs	\$ 5,000	
Checking Acct Expense		
Automotive Supplies (Fuel)		
Supplies	\$ 1,900	Spill Kits, Educational Materials, Mapping Cost
Contracted Services		
Dues & Subscriptions	\$ 1,350	Permit Fee and Regional SW Partnership Dues
Insurance & Bonds		
Capital Outlay	\$ 16,133	Leaf Vacuum (\$16,133)
Prin. Maturities - Bonds		
Interest on Bonds		
Totals	\$109,047	

4.3 Shared Responsibility

The City of Lowell 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 Lowell 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 Lowell 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 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.

Table 9: Shared Responsibilities

SWMP BMP or Permit Requirement	Implementing Entity & Program Name	Legal Agreement (Y/N)
Part II Section E	Gaston County Sediment and Erosion Control Program	Y
Part II Section F	Gaston County Post Construction Program	Y
Outreach to Targeted Audiences, Volunteer Opportunities	Regional Stormwater Partnership of the Carolinas (RSPC) -See BMPs No. 4 and 15	N

4.4 Co-Permittees

There are no other entities applying for co-permittee status under the NPDES MS4 permit number NCS000444 for the City of Lowell. 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)
NA			

4.5 Measurable Goals for Program Administration

The City of Lowell 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).			
BMP No.	A Description of BMP	B Measurable Goal(s)	C Schedule for Implementation	D 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.	Annually Permit Years 1 – 4	1. 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 Description of BMP	B Measurable Goal(s)	C Schedule for Implementation	D Annual Reporting Metric
2.	Permit Renewal Application			

Table 11: Program Administration BMPs				
	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.	1. TBD – Typically Permit Year 4	1. Yes/No
		2. Self-audit and document any stormwater program components not audited by EPA or NCDEQ utilizing the DEQ Audit Template. Submit Self-Audit to DEMLR (required component of permit renewal application package).	2. Permit Year 5	2. Yes/No/Partial
		3. Certify and submit the stormwater permit renewal application (Permit renewal application, Self-Audit, and Draft SWMP for the next 5-year permit cycle) and submit to NCDEQ at least 180 days prior to permit expiration.	3. Permit Year 5	3. Date of permit renewal application submittal.

Table 11: Program Administration BMPs				
Permit Ref.	2.1.1: Adequate Funding and Staffing The permittee shall maintain adequate funding and staffing to implement and manage the provisions of the SWMP and meet all requirements of this permit			
BMP No.	A Description of BMP	B Measurable Goal(s)	C Schedule for Implementation	D Annual Reporting Metric
3.	Adequate Funding			
	Perform a fiscal analysis and explore options to obtain adequate program funding to fully fund the stormwater program and meet all requirements of the permit. Select and implement a funding strategy for the Phase II Stormwater Program.	1. Complete a fiscal gap analysis	1. Annually for Permit Years 1 (FY19/20 – FY22/23)	1. Report monetary value of gap
		2. Determine available funding mechanisms and evaluate options	2. Continuous in Permit Year 1	2. Completed? - yes/no/status

Table 11: Program Administration BMPs				
		3. Select a funding mechanism	3. Continuous in Permit Years 1-2 Once	3. Report mechanism selected
		4. Implement funding mechanism	4. Continuous in Permit Years 2-3	4. Implemented? - yes/no/status

PART 5: PUBLIC EDUCATION AND OUTREACH PROGRAM

The City of Lowell 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 Lowell 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 Pollutant(s)	Likely Source(s)/Target Audience(s)
Litter	General Public
Oil and Automotive Fluids	Residents and Businesses
Cleaning Chemicals	Businesses and Schools
Paint/Property Maintenance	Residents, Businesses, Schools
Fertilizers and Herbicides	Residents, Businesses, Schools
General non-point source pollution	Residents, Businesses, Schools, Municipal Staff
Illegal dumping	Residents, Businesses, Municipal Staff
Sedimentation	Residents, Construction
Illicit Discharge	Residents, Businesses, Municipal Staff

Three existing city events, the Lowell Freedom Festival, River Sweep and the Arbor Day Celebration, will be used as a platform for stormwater outreach and education. The City of Lowell will also further develop their stormwater web page and use social media to reach different target ages of citizens. Additionally, the City of Lowell will partner with RSPC to more cost effectively implement education and outreach activities. The City of Lowell 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
4.	Goals and Objectives			
	Defined goals and objectives of the Local Public Education and Outreach Program based on community wide issues.	1. Participate in outreach programs in local schools to bring awareness to specific Lowell issues regarding stormwater.	1. Ongoing by Gaston County Natural Resources for public schools. Permit Year 1 FY21/22 Continuous	1. The number of Holbrook Middle School students that attended stormwater workshops with the Gaston County Natural Resource Environmental Educator.
		2. To reduce the over use of lawn chemicals that result in contamination of stormwater and other non-point pollutants.	2. Permit Year 4 FY23/24 Annually	2. Sample nearby outfalls and measure contaminants. Use the results to drive further goals and objective setting.
		3. Partner with RSPC and develop multiple handouts of BMPs that are specific to the needs of Lowell.	3. Permit Year 1 FY 21/22 Continuous	3. Is handout developed? Yes/no/status
5.	Describe target pollutants and/or stressors			

Table 13: Public Education and Outreach BMPs

	<p>The City of Lowell shall maintain a description of the target pollutants and/or stressors and likely sources.</p>	<p>1. Stormwater fliers that cover the four topics below will be inserted into utility bill statements and distributed to all residents and businesses receiving a utility bill. Four topics covered: general stormwater awareness, illicit discharges, illegal dumping, and proper waste disposal.</p> <p>2. The City's Facebook account will be used to spotlight certain target pollutants that are common in Lowell.</p>	<p>1. Include flyer with all four topics in Permit Year 2, FY 22/23 Mail all four topics in one billing cycle annually</p> <p>2. Permit Years 1-5, Annually</p>	<p>1. Document and report the topic and number of utility bill inserts distributed.</p> <p>2. Document visits and reach through website and social media tracking. Document the topics covered.</p>
6.	Describe target audiences			
	<p>The City of Lowell will maintain a description of the target audiences likely to have significant storm water impacts and why they were selected</p>	<p>1. Maintain a list of past violations and where likely relative violations may exist (i.e. mechanics) and target those citizens/businesses with specific educational materials.</p> <p>2. Identify key neighborhoods that have the most significant impact to major outfalls to the South Fork River and target those citizens with fertilizer awareness program/mailers that reduces migration of fertilizers into the stormwater system.</p>	<p>1. Permit Year 1, FY 21/22 Continuous</p> <p>2. Permit Year 2, FY 22/23 Annually</p>	<p>1. Document violations, measure for reduction in future violations / compliance.</p> <p>2. Document violations during Fall aeration, overseed and fertilizer time and track number of occurrences on an annual/seasonal basis.</p>
7.	Describe Residential and Industrial/Commercial issues			
	<p>The City of Lowell shall describe issues, such as pollutants, likely sources of those pollutants, impacts and physical attributes of stormwater runoff, in their education/outreach program.</p>	<p>1. Use the City's social media account(s) to post examples and information regarding stormwater education relative to pollutants and impacts on runoff among residential and the business community.</p>	<p>1. Permit Year 1, FY 21/22 Annually</p>	<p>1. Document amount of people reached and amount of engagements on social media.</p>

Table 13: Public Education and Outreach BMPs

8.	<p>Distribute public education materials to identified target audiences and user groups. For example, schools, homeowners, and/or businesses.</p>	<p>The City of Lowell shall distribute stormwater educational material to appropriate target groups. Instead of developing its own materials, the permittee may rely on Public Education and Outreach materials supplied by the state, and/or other entities through a cooperative agreement, as available, when implementing its own program.</p>	<p>1. Provide food industry BMP flyers to local restaurants and waste collectors educating them.</p>	<p>1. Permit Year 1, FY 21/22 Annually</p>	<p>1. Document the amount of flyers mailed and any feedback.</p>
			<p>2. Provide Commercial Property Management related BMP flyers to local apartment companies.</p>	<p>2. Permit Year 3, FY 23/24 Annually</p>	<p>2. Document the amount of flyers mailed and any feedback.</p>
			<p>3. Provide Landscaping Management Industry BMP flyers to citizens, new construction contractors and businesses.</p>	<p>3. Permit Year 1, FY 21/22 Annually</p>	<p>3. Document the amount of flyers mailed and any feedback.</p>
			<p>4. Provide painting Industry BMP flyers to new construction builders to keep on the jobsite.</p>	<p>4. Permit Year 2, FY 22/23 Annually</p>	<p>4. Document the amount of flyers mailed/handed out and any feedback.</p>
			<p>5. Provide painting Industry BMP flyers to new construction builders to keep on the jobsite.</p>	<p>5. Permit Year 5, FY 25/26 Annually</p>	<p>5. Document the amount of flyers mailed/handed out and any feedback.</p>
			<p>6. Provide vehicle maintenance operations BMP flyers to residents and auto repair businesses.</p>	<p>6. Permit Year 1, FY 21/22 Annually</p>	<p>6. Document the amount of flyers mailed and any feedback.</p>
			<p>7. Provide pool cleaning industry BMP flyers to residents known to have pools or pool contractors applying for permits.</p>	<p>7. Permit Year 4, FY 24/25 Annually</p>	<p>7. Document the amount of flyers mailed/handed out and any feedback.</p>
9.	<p>Implement a Public Education and Outreach Program.</p>	<p>The City of Lowell's outreach program, including those elements implemented locally or through a cooperative agreement, shall include a combination of approaches designed to reach the target audiences. For each media, event or activity, including those elements implemented locally or through a cooperative agreement the City of</p>	<p>1. Provide handouts of worksheets, puzzles, coloring pages, word finds, prize giveaways, etc to citizens of all ages at annual festival.</p>	<p>1. Annually, Permit Years 1-5</p>	<p>1. Document amount of those interacted with.</p>
			<p>2. Utilize the Regional Stormwater Partnership (RSPC) for cost sharing of tv/radio advertising</p>	<p>2. Annually, Permit Years 1-5</p>	<p>2. Document the audience reach and location of viewership.</p>

Table 13: Public Education and Outreach BMPs

	Lowell shall estimate and the record the extent exposure.	3. See BMP#5 (above) for industry distributed BMPs.	3. Annually, Permit Years 1-5	2. Document the number of flyers mailed/handed out and any feedback.
10.	Implementation of Litter Management Program			
	The City of Lowell shall address the issue of Litter (i.e., waste, refuse, junk, and/or garbage) in areas of run-off, including city streets and right of ways through the implementation of an amended Bulk Pick-up policy limiting the allowable times for bulk waste to be placed for sanitation removal to quarterly instead of weekly. This measure will also ensure that all weekly waste is contained in city approved bins to prevent the contamination of run-off or spread of debris.	1. Newsletters disclosing the reason for new policy limiting pick-up items. This will also include the established dates for the quarterly pick-up.	1. Quarterly, Permit Years 1-5	1. Document the number of fliers mailed/handed out.
		2. Reduce the amount of waste in run off areas to four (4) twenty-four (24) hour periods spanning the calendar year.	2. Quarterly/Continuously Permit Years 1-5	2. Document the recorded tonnage of waste removed during bulk pick-up events and the requests for additional garbage containers.
		3. Enforcement of existing Litter Ordinance regarding timeframe for refuse to be left at the roadway.	3. Continuous, Permit Years 1-5	3. Document the number of Code Enforcement Action(s) taken regarding litter.
Permit Ref.	2.1.7, 3.2.3 and 3.6.5(c): Web Site Measures to provide a web site designed to convey the program's message(s) and provide online materials including ordinances, or other regulatory mechanisms, or a list identifying the ordinances or other regulatory mechanisms, providing the legal authority necessary to implement and enforce the requirements of the permit and SWMP. The web page shall also provide developers with all relevant post-construction requirements, design standards, checklists and/or other materials.			
BMP No.	A	B	C	D
	Description of BMP	Measurable Goal(s)	Schedule for Implementation	Annual Reporting Metric
11.	Informational Web Site			
	The City of Lowell shall promote and maintain, an internet web site designed to convey the program's message. Other information included: the MS4 permit, SWMP, applicable ordinances, reporting mechanisms, educational materials, opportunities for involvement, and stormwater number.	1. Establish the Stormwater Webpage	1. Permit Year 1 FY21/22 Once	1. Document the date of the creation of the webpage.
		2. Provide the stormwater ordinance and erosion control ordinance on the webpage.	2. Permit Year 1 FY21/22 Once	2. Document the date of the addition of these ordinances.
3. Provide links to EPA, NCDEQ, RSPC and other relative websites for more information.		3. Permit Year 1 FY21/22 Continuous	3. Document the date of the addition of these ordinances.	

Table 13: Public Education and Outreach BMPs

		4. Update the webpage by posting the MS4 Annual Self-Assessment, verifying all links and contact info are current/active.	4. Permit Years 1-5 FY21/22 Continuous	4. Document the date of the addition of these ordinances.
		5. Add industry BMP flyers for target audiences that address pollutants commonly found in Lowell and the 8 ways you can help flyer	5. Permit Year 1 FY21/22 Continuous	5. Document and report the date posted. *a hit counter is being researched for all.
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
12.	Maintain Hotline/Help line			
	The City of Lowell shall promote and maintain a stormwater hotline/helpline for the purpose of public education and outreach.	1. The stormwater hotline/helpline is provided in the city newsletter, stormwater website, all stormwater literature that is provided, and is posted at City Hall.	1. Permit Year 1-5 FY 21/22 Continuous	1. Document when and where this information appears. Is hotline maintained yes/no/status after year 1
		2. Establish appropriate staff contact(s) to field inquiries regarding stormwater education, outreach and complaints (see also BMP# for IDDE Reporting)	2. Permit Year 1 FY 21/22 Continuous	2. Yes/No/Status
		3. Train stormwater education and hotline contact(s) in general stormwater awareness, complaint protocols and appropriate contacts for referral of typical stormwater issues.	3. Permit Year 1 FY 21/22 Continuous	3. Document and report number of staff trained, training date(s) and topics covered.

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 Lowell’s Planning Board will begin to function as the City’s stormwater advisory board (in Permit Year 1) with an additional provision of a stormwater liaison to highlight stormwater issues. The stormwater hotline and a stormwater reporting mechanism on the website will be used to collect public input. The City of Lowell Planning, Public Works, and Parks & Recreation departments will continue to provide volunteer opportunities to prevent litter from entering the stormwater system with the annual river sweep and other events. The City of Lowell 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
13.	Volunteer community involvement program			
	The City of Lowell shall include and promote volunteer opportunities designed to promote ongoing citizen participation.	1. Volunteer opportunity for litter sweep to teach awareness of stormwater pollution.	1. Permit Year 2, FY 22/23 Annually	1. Document amount of volunteers signed up and those that were citizens of Lowell. Document feedback from citizens and what topics discussed.
2. Volunteer opportunity with Annual River Sweep and neighborhood awareness of lawn chemicals with local landscape supplier.		2. Permit Year 1, FY 21/22 Annually	2. Document amount of volunteers signed up and those that were citizens of Lowell. Document feedback from citizens and topics discussed.	
14.	Mechanism for Public involvement			
	The permittee shall provide and promote a mechanism for public involvement that provides for input on stormwater issues and the stormwater program.	1. City staff will begin to bring stormwater issues before the planning board to receive citizen input and factor stormwater into development decisions.	1. Permit Years 1-5, Annually	1. Document dates of meetings and stormwater topics that were discussed.
2. Utilize the stormwater website for submission forms for asking a stormwater question or report a concern.		2. Permit Year 1-5, Continuously	2. Document the total number of submissions.	

Table 14: Public Involvement and Participation BMPs

15.	Hotline/Help Line			
	The permittee shall promote and maintain a hotline/helpline for the purpose of public involvement and participation	1. See BMP No. 12	1. See BMP No. 12 Continuous	1. See BMP No. 12
Permit Ref.	3.3.2: Volunteer Opportunities Measures to provide volunteer opportunities designed to promote ongoing citizen participation.			
BMP No.	A Description of BMP	B Measurable Goal(s)	C Schedule for Implementation	D Annual Reporting Metric
16.	Volunteer Litter Sweep			
	Provide opportunity for litter cleanup at city parks and recreation locations that have impacts on stormwater (BMP No. 13.1)	1. Identify areas that could be cleaned up by volunteers. 2. Coordinate clean-up of public areas	1. Permit Year 1 FY 21/22 Once 2. Annually, beginning in Permit Year 2 FY 22/23	1. Areas identified -- yes/no/status 2. Report the number of citizens that participated and the tonnage/weight of trash removed.
17.	River Sweep			
	Provide opportunity for litter cleanup at major outfalls to remove litter from becoming passed into the South Fork River. (BMP No. 13.2)	1. Opportunity for volunteer to clean up areas next to the South Fork River.	1. Permit Year 1 FY 21/22 Annually	1. Report number of Lowell citizens participating
18.	Partnership with RSPC			
	The RSPC educated and brings awareness to the public, local businesses and education centers of our region about stormwater issues and their impacts on water quality and our environment.	1. Conduct a workshop for HOA's to better understand their maintenance agreements they have on SCMs. 2. Host an annual Elected Officials workshop to discuss stormwater issues with our regional elected officials. 3. Participate in the public event RiverFest (Catawba River Keeper) in Belmont to discuss stormwater with our local citizens.	1. Permit Year 1 FY 21/22 Once 2. Annually, currently ongoing 3. Permit Year 2 FY 22/23 Once, Annually if offered	1. Completed? Y/N/Partial Report Number of attendees 2. Completed? Y/N/Partial 3. Completed? Y/N/Partial What topics were discussed?

PART 7: ILLICIT DISCHARGE DETECTION AND ELIMINATION PROGRAM

The City of Lowell will develop, manage, implement, document, report and enforce an Illicit Discharge Detection and Elimination Program (IDDE) which shall, at a minimum, include the following illicit discharge detection and elimination BMPs. The existing IDDE Program that is loosely held together with internal policies will be formally put together and adopted by the City Council and reside within the City of Lowell Code of Ordinances.

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
19.	Maintain a Storm Sewer System Map of Major Outfalls			
	The MS4 map creation will begin with the review of proposals to identify and select a consultant. The scope will be to map outfalls, known pipes, structures, and flow directions.	1. Consultant selected to perform initial map creation and mapping.	1. Begin in Permit Year 1 FY 21/22 Conclude initial mapping in Permit Year 2 FY 22/22	1. Consultant selected? Y/N/Partial Initial mapping completed? Y/N/Partial
		2. Map creation with receiving waters added.	2. Permit Year 3 FY 23/24 Once	2. Report when map is created
		3. Map creation with flow directions.	3. Permit Year 3 FY 23/24 Once	3. Report when map is created
		4. Map creation with SCMs and other structures added.	4. Permit Year 3 FY 23/24 Continuous	4. Report when map is created
20.	Continually update MS4 Map			
	Add new construction infrastructure to the map continuously	1. Maintain the outfall map with all new infrastructure of conveyances and outfalls added yearly to the map.	1. Annually, once BMP No. 19 is completed	1. Report whether or not new outfalls were identified. How many were identified during the permit year and how many during permit term.
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
21.	Maintain adequate legal authorities			

Table 15: Illicit Discharge Detection and Elimination BMPs

	The City of Lowell shall maintain an IDDE ordinance or other regulatory mechanisms that provides the legal authority to prohibit illicit connections and discharges within the Lowell Code of Ordinances, perhaps Article V, that	1. Review City Code of Ordinances to add an IDDE ordinance and update to maintain legal authority.	1. Permit Year 1 FY 21/22 Once	1. Adopt the ordinance by City Council. Y/N/Partial
Permit Ref.	<p>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:</p> <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
22.	Investigate sources of identified illicit discharges			
	The City of Lowell shall maintain written procedures for conducting investigations of identified illicit discharges.	1. Develop a written IDDE Plan.	1. Permit Year 1 Once	1. Report Yes/No/Status
		2. Submit plan to DEQ for review and approval.	2. Permit Year 1 Once	2. Report Date Submitted
		3. Implement the approved plan	3. Permit Years 2-5 Continuously	3. Completed? Yes/No/Status
		4. Develop a SOP for 3.4.3 a-e	4. Permit Year 2-5 Continuously	4. Completed? Y/N/Status
23.	Enforcement of the IDDE ordinance			
		1. Train staff to implement the IDDE ordinance.	1. Annually after BMP No. 21 completed.	1. Report number trained
24.	Conduct IDDE Inspections			
	Conduct IDDE inspections in accordance with the approved IDDE Plan	1. Conduct inspections	1. Permit Years 2-5 Continuously	1. Report number of inspections report number of confirmed illicit discharges, number of illicit discharges remedied, and number of illicit discharge enforcement actions.

Table 15: Illicit Discharge Detection and Elimination BMPs

		2. Staff should routinely perform inspections of the different quadrants of the MS4 Outfall Map by performing regular dry weather (no rain in previous 72 hours) outfall inspections to proactively identify illicit discharges and illicit connections.	2. See BMP No. 23 Annual inspections of all quadrants.	2. See BMP No. 23
25.	Maintain an Illicit Discharge Detection and Elimination Program			
	Maintain a written Illicit Discharge Detection and Elimination Program, including provisions for program assessment and evaluation and integrating program.	1. See BMP No. 21	1. Permit Year 1 FY 21/22 Continuous	1. See BMP No. 20
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 Description of BMP	B Measurable Goal(s)	C Schedule for Implementation	D Annual Reporting Metric
26.	Track and document investigations of illicit discharges			
	For each case the City of Lowell shall track and document 1) the date(s) the illicit discharge was observed; 2) the results of the investigation; 3) any follow-up of the investigation; and 4) the date the investigation was closed.	1. Keep a spreadsheet of stormwater ID calls, online submissions, and emails. 2. Identify hotspot areas (see BMP No. 6)	1. Continuously in Permit Year 1 FY 21/22 2. Continuously in Permit Year 1 FY 21/22	1. Document total # of submissions, resolutions, and the length in between. Y/N/Status 2. Y/N/Status
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 Description of BMP	B Measurable Goal(s)	C Schedule for Implementation	D Annual Reporting Metric
27.	Provide Employee Training			

Table 15: Illicit Discharge Detection and Elimination BMPs

	The permittee shall implement and document a training program for appropriate municipal staff, who as part of their normal job responsibilities, may come into contact with or otherwise observe an illicit discharge or illicit connection. (See the SOP BMP No. 23)	1. Begin a quarterly training program for Public Works staff to identify and report illicit discharge/SOP.	1. Begin in Permit Year 2 FY 22/23 Quarterly	1. Report number of staff trained
28.	Fact Sheets			
	Hang fact sheet posters in employee common areas to serve as a reminder of the basics on identifying and reporting illicit discharges, connections, and dumping.	1. Create fact sheets for illicit discharges.	1. Begin in Permit Year 2 FY 22/23 Once	1. Y/N/Status
2. Display posters in common areas.		2. Begin in Permit Year 2 FY 22/23 Once	2. Number of posters hung	
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 Description of BMP	B Measurable Goal(s)	C Schedule for Implementation	D Annual Reporting Metric
29.	Stormwater Hotline			
	The City of Lowell shall promote and maintain a stormwater hotline/helpline for the purpose of the public asking stormwater questions and reporting issues.	1. See BMP No. 12	1. See BMP No. 12	1. See BMP No. 12
30.	Stormwater Website			
	The City of Lowell shall promote and maintain, an internet web site designed to convey the program's message. Other information included: the MS4 permit, SWMP, applicable ordinances, reporting mechanisms, educational materials, opportunities for involvement, and stormwater number.	1. See BMP No. 11	1. See BMP No. 11	1. See BMP No. 11

PART 8: CONSTRUCTION SITE RUNOFF CONTROL PROGRAM

In accordance with 15A NCAC 02H .0153, the City of Lowell relies upon the North Carolina Sedimentation Pollution Control Act (SPCA) of 1973 as a qualifying program to meet a portion of 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 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 the 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	Meets Whole or Part of Requirement
3.5.1 - 3.5.4	Gaston County Delegated SPCA Program*	15A NCAC Chapter 04	Gaston County	Whole

* The local delegated SPCA Program ordinance(s)/regulatory mechanism(s) can be found at: <https://www.lowellnc.com/DocumentCenter/View/751/Sedimentation-and-Soil-Erosion-Control-Ordinance>

In addition to the delegated SPCA Program, opportunities for public input through the stormwater hotline and additional waste management requirements for construction site operators complete the construction site run off control program. The City of Lowell 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
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 Permit Years 1-5	1. Number of staff trained
32.	Stormwater Hotline			
	A hotline will be maintained for citizens to ask questions and report stormwater concerns.	1. See BMP No. 12	1. See BMP No. 12	1. See BMP No. 12

Table 17: Construction Site Runoff Control BMPs

BMP No.	A	B	C	D
	Description of BMP	Measurable Goal(s)	Schedule for Implementation	Annual Reporting Metric
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.			
33.	Establish and Maintain Legal Authority			
	Develop and implement an ordinance to require construction site operators to control waste.	1. Adopt ordinance	1. Permit Year 2 Once	1. Y/N/Status
		2. Maintain legal authority	2. Continuously, after ordinance is adopted.	2. Y/N/Status
34.	Contractor Education			
	Communicate new waste management requirements to contractors/construction site operators.	1. Create fact sheets to share during pre-construction meetings	1. Permit Year 2 After ordinance is adopted Once	1. Y/N/Status
		2. Add fact sheet to website	2. Permit Year 2 After ordinance is adopted Once	2. Y/N/Status
		3. Distribute fact sheet at pre-construction meetings	3. Permit Year 2 After ordinance is adopted Continuous	3. Number of fact sheets 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 Lowell 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 Lowell 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
NA		

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

The City of Lowell has no existing requirements other than Qualifying Alternative Program(s) for implementation of the NPDES Phase II MS4 post-construction program requirements.

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	Gaston County Stormwater Ordinance Chapter 5.5-33	09/06/2007
3.6.3(a) & 15A NCAC 02H.0153(c) Federal, State & Local Projects	Gaston County Stormwater Ordinance Chapter 5.5-33	09/06/2007
3.6.3(b) Plan Review	Gaston County Stormwater Ordinance Chapter 5.5-37	09/06/2007
3.6.3(c) O&M Agreement	Gaston County Stormwater Ordinance Chapter 5.5-48	09/06/2007
3.6.3(d) O&M Plan	Gaston County Stormwater Ordinance Chapter 5.5-40	09/06/2007
3.6.3(e) Deed Restrictions/Covenants	Gaston County Stormwater Ordinance Chapter 5.5-48	09/06/2007
3.6.3(f) Access Easements	Gaston County Stormwater Ordinance Chapter 5.5-48	09/06/2007
Permit Requirements for Inspections and Enforcement	Municipal Ordinance/Code Reference(s) and/or Document Title(s)	Date Adopted
3.6.2(b) Documentation	Gaston County Stormwater Ordinance Chapter 5.5-39	09/06/2007
3.6.2(c) Right of Entry	Gaston County Stormwater Ordinance Chapter 5.5-45	09/06/2007
3.6.4(a) Pre-CO Inspections	Gaston County Stormwater Ordinance Chapter 5.5-45	09/06/2007
3.6.4(b) Compliance with Plans	Gaston County Stormwater Ordinance Chapter 5.5-45	09/06/2007
3.6.4(c) Annual SCM Inspections	Gaston County Stormwater Ordinance Chapter 5.5-48	09/06/2007
3.6.4(d) Low Density Inspections	Gaston County Stormwater Ordinance Chapter 5.5-37	09/06/2007
3.6.4(e) Qualified Professional	Gaston County Stormwater Ordinance Chapter 5.5-39,48	09/06/2007
Permit Requirements for Fecal Coliform Reduction	Municipal Ordinance/Code Reference(s) and/or Document Title(s)	Date Adopted
3.6.6(a) Pet Waste	See BMP No. 39	
3.6.6(b) On-Site Domestic Wastewater Treatment	City of Lowell Sewer Use Ordinance – Section 6.7 (a-g) Private Sewage Disposal	

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.	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. Track number of SCM inspections performed.	4. Continuously Permit Years 1-5	4. Number of SCM inspections.
		5. Track number of low density inspections performed.	5. Continuously Permit Years 1-5	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
36.	NA			

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
37.	This permit requirement is fully met by the existing post-construction program, see references provided in Table 19.			
38.	Amend Interlocal Agreement			
	Amend the interlocal agreement between City of Lowell and Gaston County for allowing the City of Lowell to provide City-Specific numbers for MS4 Permit requirements.	Amend the interlocal agreement and then implement BMP No. 36.	Permit Year 1	Yes/No Status?
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
39.	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
40.	This permit requirement is fully met by the existing post-construction program, see references provided in Table 19			
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
41.	Pet Waste Litter Program			
	Revise the City of Lowell Code of Ordinances Chapter 94 (Litter) to include pet waste disposal criteria.	1. Develop text amendments for pet waste disposal requirements.	1. Permit Year 1 Once	1. Completed? Y/N/Partial
2. Include information in city newsletter for reference of change.		2. Permit Year 2 Once	2. Completed? Y/N/Partial	

PART 10: POLLUTION PREVENTION AND GOOD HOUSEKEEPING PROGRAMS

This SWMP provides a comprehensive pollution prevention and good housekeeping strategy for the City of Lowell 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 spill response program resides with the Public Works Department, but we will look to collaborate with the Lowell Volunteer Fire Department. The rest of the pollution prevention and good housekeeping also resides within the Public Works Department. The City provides leaf collection between October 16-February 15 and will continue to track the volume of debris collected. Initially an inventory of all municipal facilities will be completed to serve as a basis for developing the program and creating documentation for inspections. The City of Lowell 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
42.	Inventory of municipally owned or operated facilities.			
	Maintain a current inventory of City facilities that have the potential of	1. Create a list of existing facilities	1. Permit Year 1 Continuous	1. Number of facilities inventoried; date list is completed

Table 21: Pollution Prevention and Good Housekeeping BMPs

	generating polluted stormwater runoff.	2. Perform facility inspections and determine the potential to generate polluted runoff or requiring spill response procedures. Further classify facilities as having high, medium, or low potential for stormwater runoff.	2. Permit Year 2 Annually	2. Number of inspections completed and the number of facilities classified as high, medium, and low potential.
		3. Identify and permit subject facilities no later than July 31, 2021	3. As required continuous	3. Number of facilities identified as required to have NPDES Permit.
		4. Determine which facilities require a SPCC Plan.	4. Permit Year 2 Once	4. Number of SPCC Plans required.
		5. Update inventory as needed when facilities are added or closed.	5. As required Continuous	5. Number of facilities added/changes made
43.	Inspection of City Facilities			
	Inspect City facilities to ensure good housekeeping practices are being followed.	1. Create a SOP for inspection of City facilities, including inspection forms, frequencies, and report documentation.	1. Permit Year 2 Once	1. Y/N/Status
		2. Implement annual inspections for high stormwater pollution potential, once every two years inspections for medium stormwater pollution potential, and once every permit term for low stormwater pollution potential facilities.	2. Annually conduct inspections, beginning in Permit Year 3	2. Number of inspections of high, medium, and low potential facilities performed.
44.	Staff Training			
		1. Develop and perform a staff training program for general stormwater pollution prevention and provide to public works employees.	1. Permit Year 2 Continuous	1. Report number trained
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.			

Table 21: Pollution Prevention and Good Housekeeping BMPs

BMP No.	A	B	C	D
	Description of BMP	Measurable Goal(s)	Schedule for Implementation	Annual Reporting Metric
45.	Spill Response Procedures for municipally owned or operated facilities.			
	Maintain written spill response procedures and locations for municipal facilities that store materials that would be classified as a hazard to the stormwater system if spilled.	1. See BMP No. 28	1. See BMP No. 28	1. See BMP No. 28 Keep manual of procedures at all facilities for inspection.
		2. Train municipal staff on the spill response.	2. Annually	2. Report number trained.
		3. Update as facilities and operations are revised.	3. Continuously, As required	3. Number of additions or revisions made
4. Train Lowell VFD on spill response.		4. Annually	4. Report number of VFD staff trained	
46.	Staff Training			
	Train staff at every municipal facility of where potential spills need to be isolated (location), what protocols to follow after spills, and preventative maintenance to avoid pollution.	1. See BMP No. 27	1. See BMP No. 27	1. See BMP No. 27
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
47.	Staff Training			
	Develop and identify a staff training program for general stormwater pollution prevention and provide to public works employees	1. Develop appropriate training program	1. Permit Year 2 Once	1. Y/N/Status
		2. Provide initial training for all employees	2. Permit Year Annually	2. Number of staff members trained and topics.
		3. Provide training for new hires	3. Permit Year Annually, as necessitated by new hires	3. Number of new hires and topics trained.
48.	Operation and Maintenance (O&M) for municipally owned or operated facilities.			
	Maintain and implement an Operation and Maintenance (O&M) program for municipal facilities that specifies the frequency of inspections	1. Develop appropriate training program for conducting collection inspections and maintenance	1. Permit Year 2	1. Y/N/Status

Table 21: Pollution Prevention and Good Housekeeping BMPs

	and maintenance requirements of all municipally owned facilities.	2. Create a collection system inspection document	2. Permit Year 2 Annually	2. Yes/No/Status?
		3. Perform regular inspections of the collection systems	3. Permit Year 2 Annually	3. Report number of inspection documents submitted.
Permit Ref.	3.7.4: Municipal SCM Operation and Maintenance Program Measures to manage municipally-owned, operated, and/or maintained structural stormwater control measures (SCMs) that are installed for compliance with the permittee's post-construction program. The permittee shall maintain a current inventory of SCMs, perform SCM inspections and maintenance, and shall establish specific frequencies, schedules, and documentation.			
BMP No.	A	B	C	D
	Description of BMP	Measurable Goal(s)	Schedule for Implementation	Annual Reporting Metric
49.	Identify and map for municipally owned or maintained structural stormwater controls			
	Maintain a current inventory of municipally owned or operated structural stormwater controls installed for compliance with the permittee's post-construction ordinance.	1. Document and map all municipal SCMs (year built, type, date of last inspection, and maintenance actions).	1. Permit Year 3 Continuous	1. Number of municipal SCMs.
		2. Update MS4 map to reflect municipal SCMs.	2. Permit Year 3 Continuous	2. Completed? Y/N/Partial
		3. Compile and develop O&M Plans for all City-owned SCMs.	3. Permit Year 4 Once	3. Completed? Y/N/Partial
		4. Update as needed by new City SCMs developed.	4. As required Continuous	4. Number of updates
50.	Operation and Maintenance for municipally owned or maintained catch basins and conveyance systems.			
	Implement and O&M Program for stormwater system catch basins and conveyance systems that it owns and maintains.	1. Inventory all municipal SCMs (year built, type, date of last inspection, and maintenance actions).	1. Permit Year 3 Once; After mapping completed.	1. Report date inventory completed and number of structures inventoried
		2. Obtain NC SCM Inspections and Maintenance Certification for personnel	2. Permit Year 4 Continuous	2. Number of staff members with active certification
		3. Develop SCM inspection form	3. Permit Year 4 Once	3. Completed Y/N/Status
		4. Inspect basins and systems annually to determine condition and recommend any relevant maintenance.	4. Permit Year 5 Annually	4. Number of SCMs maintained

Table 21: Pollution Prevention and Good Housekeeping BMPs

		5. Perform Maintenance tasks identified in inspections	5. As required; Continuous	5. Number of SCMs maintained
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
51.	Pesticide, Herbicide and Fertilizer Application Management and Training			
	Ensure all municipal employees and contractors are properly trained and all permits, certifications, and other measures for applicators are followed.	1. Maintain core, right-of-way, and ornamental pest control applicator certifications	1. Continuously	1. Document training by any staff that applies fertilizers or pesticides, continuing education and keep up to date the applicator license from NC.
		2. Develop or identify pollution prevention and chemical use, storage and handling training program	2. Permit Year 2 Once	2. Y/N/Partial
		3. Provide staff training in pollution prevention and chemical use, storage and handling training	3. Permit Year 3 Annually	3. Number of staff trained and topics covered
		4. Require City contractors to provide NC Pesticide License for inspection.	4. Continuously	4. Y/N/Partial Number of contractors that provided license
		5. Implement training program.	5. Permit Year 3	5. Report number of certified personnel
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
52.	NPDES Industrial Permit Compliance			

Table 21: Pollution Prevention and Good Housekeeping BMPs

	Ensure NPDES industrial permit compliance occurs at all applicable municipally owned sites.	1. Review municipal facilities inventory to determine which facilities require a NPDES permit and ensure they have before July 31, 2021	Permit Year 1 Once	Number of facilities required to have NPDES Permit
		2. Permitting of municipally owned facilities before July 31, 2021.	Permit Year 1 After review of facilities, and continuously thereafter	Report number of new/active/existing permits
		3. Develop a municipal industrial facility inspections form	Permit Year 1 Once	Y/N/Status
		4. Perform facility inspections for NPDES Permit	Permit Year 2 Annually	Number of inspections performed
		5. Create NPDES Permit tracking mechanism to document list of facilities owned with permit, expiration dates, and inspections	Permit Year 2 Once	5. Y/N/Status
53.	Vehicle and Equipment Cleaning Maintenance Facility Inspection			
	Routine inspections to ensure that the 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 1 Once	1. Y/N/Status
		2. Perform inspections using checklist and notify public works of any corrective actions	2. Permit Year 2 Annually	2. Number of inspections
		3. Reinspect any corrective action situations	3. As required	3. How many corrective actions, number of resolutions
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 Description of BMP	B Measurable Goal(s)	C Schedule for Implementation	D Annual Reporting Metric
54.	Streets, roads, and public parking lots maintenance/sweeping/leaf collection			
	Lowell shall evaluate existing and new BMPs annually that reduce polluted stormwater runoff from municipally-owned streets, roads, and public parking lots within their corporate limits. The permittee must	1. Develop a SOP with a schedule of leaf collection, gutter blowing, and street cleaning with a plan to document	1. Permit Year 1 Once	1. Y/N/Partial

Table 21: Pollution Prevention and Good Housekeeping BMPs

	evaluate the effectiveness of these BMPs based on cost and the estimated quantity of pollutants removed.	2. Implement SOP and documentation	2. Permit Year 2 Once and then Continuously after implementation	2. Report volume of leaves collected and roads
55.	Vehicle/Equipment Spill Cleanup			
	An organized vehicle and equipment spill cleanup response to prevent pollutants from vehicular accidents or equipment failures from entering the stormwater system.	1. See BMP No. 44	1. See BMP No. 44	1. See BMP No. 44
		2. Provide 8 ways you can help flyers to new utility customers (BMP No. 8)	2. See BMP No. 8	2. See BMP No. 8