



NPDES Stormwater MS4 Permit Annual Report

October 1, 2020 – September 30, 2021

Permit No. NCS000245

To discharge stormwater under the National Pollutant Discharge Elimination System

Prepared by S. Wayne Miles, PE, Stormwater Program Manager

raleighnc.gov



**Raleigh
Stormwater**



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Introduction

This report describes programs and activities undertaken during the period of October 1, 2020 through September 30, 2021 as required by the City of Raleigh's permit to discharge stormwater under the National Pollutant Discharge Elimination System (NPDES), NPDES Stormwater MS4 Permit no. NCS000245.

S. Wayne Miles, PE
Stormwater Program Manager
City of Raleigh





Section A: Program Implementation

The City of Raleigh implements, manages, and oversees all aspects of its Stormwater Management Plan to control to the maximum extent practical the discharge of pollutants from its municipal storm sewer system associated with stormwater runoff and illicit discharges, including spills and illegal dumping.

A.1 Program Funding

The City's Stormwater Management Division receives capital and operating funds appropriated by the City Council that are dedicated to implementing and managing the provisions of the SWMP and complying with MS4 permit requirements. Program elements are primarily funded by the City stormwater utility fee. Additional sources of funding include plan review and permit application fees, and the City general fund may be utilized for pollution prevention and good housekeeping activities by owning departments. Further fiscal analysis and investigation of funding options (such as a general fund allocation or a change to the stormwater fee) will be conducted annually to maintain adequate funds to meet program needs.

The total budget for the City's Stormwater Program for FY2022 is \$32,775,052, which is funded by the City's stormwater utility fee and includes the Capital Improvement Program. The Capital Improvement Program total expenditures for the City's Stormwater Program for FY2021 was \$15,644,757. The adopted Capital Improvement Program budget for the City's Stormwater Program for FY2022 (fiscal year July 1, 2021 through June 30, 2022) is \$10,493,000. Note that the FY2022 CIP budget is an increase over the FY2021 CIP budget; however, expenditures for FY2021 included backlog funding from previous fiscal years to implement legacy projects. Total Full Time Employees (FTEs) for FY2022 is 132, with 71 with the Stormwater Management Division in the Engineering Services Department and 61 with Stormwater Maintenance in the Raleigh Department of Transportation Field Services group.

Table A.1: FY2022 Stormwater Program Capital Improvement Program Budget

Stormwater Program Category	FY2022 CIP Budget
Neighborhood Drainage System Improvements	\$2,250,000
General Drainage Infrastructure	\$2,073,000
Asset and Watershed	\$2,000,000
Water Quality/GSI Projects	\$1,250,000
Stream Restoration and Water Quality	\$1,220,000
Flood Hazard Mitigation and Flood Early Warning	\$1,100,000
City SCMs and Dams Program	\$600,000
Total	\$10,493,000



Program Element	FY2021	FY2022 – FY 2026	Annual reporting Metric(s)	2020-2021
Part II Section A The program will be subject to a compliance audit or a voluntary assessment process on an annual basis	Complete voluntary assessment process	Complete compliance audit and/or voluntary assessment process	Report type of assessment completed	Voluntary self-audit process completed December 2020; see Section K
Part II Section A.1 The permittee will maintain adequate legal mechanism, such as regulations, ordinances, policies, and procedures to implement all provisions of the SWMP.	Review regulations, ordinances, policies, and procedures and update, if necessary.	Review regulations, ordinances, policies, and procedures and update, if necessary.	Report modifications to the regulations, ordinances, policies, and procedures	The City's Education and Outreach Plan and Water Quality Assessment and Monitoring Plan have been updated and changes have been implemented during this reporting year.
Part II Section A.2 The permittee will implement provisions of the SWMP and evaluate performance and effectiveness of the program components.	Evaluated program effectiveness, as described in Section 13 of the SWMP	Evaluate program effectiveness, as described in Section 13 of the SWMP	N/A, annual reporting of program effectiveness is described in Section 13 of the SWMP	N/A
Part II Section A.3 The permittee is required to keep the SWMP up to date with annual updates if any changes are warranted.	Update the SWMP to incorporate current permit requirements and program components.	Review the SWMP and update, if necessary.	Report modifications to the SWMP and make available to the Division upon request	SWMP was updated during this reporting period, submitted to NDEQ on March 17, 2021 and was deemed approved on June 15, 2021.
Part II Section A.4 The permittee shall 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 six minimum measures.	Maintain written procedures as documented in Sections 4 through 12 of the SWMP.	Maintain written procedures as documented in Sections 4 through 12 of the SWMP.	Written procedures are available to DEQ upon request	N/A



Section B: Public Education and Outreach

B.1 Program Narrative

The City provides an assortment of tools for reaching out to and educating the public including utility bill inserts, newsletters, webpages, articles, social media, presentations at workshops, classroom education, and TV and radio campaigns. In addition to providing videos and website and printed materials, CWEP produces a large multi-media campaign including television public service announcements, radio public service announcements, and a stormwater informational website, www.nc-cleanwater.org. The CWEP annual report for this reporting period is submitted directly to NC DEMLR by the Triangle J Council of Governments on behalf of the City.

B.2 Best Management Practices

Permit Reference/BMP	FY2021	FY2022 – FY 2026	Annual reporting Metric(s)	2020-2021
Part II Section B.2 (a) Describe target pollutants and sources	Develop Public Education and Engagement Plan, documenting the existing outreach and education program implemented by City staff, including process for identifying target pollutants and sources. Implement the public education and outreach program utilizing the Public Education and Engagement Plan and the Communications Plan. Notify the Water Quality Manager of program modifications.	Review and update target pollutants and sources in the Public Education and Engagement Plan. Implement the public education and outreach program utilizing the Public Education and Engagement Plan and the Communications Plan. Notify the Water Quality Manager of program modifications.	Report target pollutants and the associated sources Report reason each target pollutant was chosen	See Table B-1
Part II Section B.2 (b) Describe target audiences	Develop Public Education and Engagement Plan,	Review and update target audiences associated with each	Report target audiences likely to have significant storm water impacts	See Table B-1



Permit Reference/BMP	FY2021	FY2022 – FY 2026	Annual reporting Metric(s)	2020-2021
	<p>documenting the existing outreach and education program implemented by City staff, including process for identifying target audiences for each pollutant and source.</p> <p>Implement the public education and outreach program utilizing the Public Education and Engagement Plan and the Communications Plan.</p> <p>Notified the Water Quality Manager of program modifications.</p>	<p>pollutant and source in the Public Education and Engagement Plan.</p> <p>Implement the public education and outreach program utilizing the Public Education and Engagement Plan and the Communications Plan.</p> <p>Notify the Water Quality Manager of program modifications.</p>	Report reason each target audience was selected	See Table B-1
Part II Section B.2 (c) Informational website	<p>Maintain and update the stormwater program webpage.</p> <p>Notify the Water Quality Manager of program modifications.</p>	<p>Maintain and update the stormwater program webpage.</p> <p>Notify the Water Quality Manager of program modifications.</p>	Report number of hits to stormwater website	44,500 page views for all Stormwater Management webpages; 374 page views for the SWMP webpage. (Data for 10/1/2020 – 8/31/2021 only; totals unavailable for September 2021 at time of reporting)
Part II Section B.2 (d) Distribute public education materials to identified user groups	<p>Distribute public education materials, as described in the Public Education and Engagement Plan.</p> <p>Notify the Water Quality Manager of program modifications.</p>	<p>Distribute public education materials, as described in the Public Education and Engagement Plan.</p> <p>Notify the Water Quality Manager of program modifications.</p>	Report number of educational materials distributed by type	See Table B-2



Permit Reference/BMP	FY2021	FY2022 – FY 2026	Annual reporting Metric(s)	2020-2021
Part II Section B.2 (e) Promote and maintain hotline(s) or helpline(s)	Maintain the stormwater administration helpline to receive public complaints. Notify the Water Quality Manager of program modifications.	Maintain the stormwater administration helpline to receive public complaints. Notify the Water Quality Manager of program modifications.	Report number of calls handled by helpline by type of call	Total calls: 1,214 Drainage: 357 Utility fee: 175 Plan review: 335 Volunteer: 37 Illicit discharge: 99 Active construction: 174 Capital projects: 12 Utility billing: 25 Total emails: 358
Part II Section B.2 (f) Implement a public education and outreach program	Develop Public Education and Engagement Plan, documenting the existing outreach and education program implemented by City staff. Review and update the Communications Plan, if necessary. Implement the public education and outreach program utilizing the Public Education and Engagement Plan and the Communications Plan. Notify the Water Quality Manager of program modifications.	Review and update the Public Education and Engagement Plan and Communications Plan, if necessary. Implement the public education and outreach program utilizing the Public Education and Engagement Plan and the Communications Plan. Notify the Water Quality Manager of program modifications.	Report City events and number of handouts distributed at each event	See Table B-2
			Report City's in-school events and number of participants	See Table B-3



Table B-1 Target pollutants, associated sources, target audiences and justification

Target Pollutant	Target Pollutant Justification	Pollutant Sources	Target Audiences	Target Audiences Justification
Sediment	Increases MS4 maintenance, degrades stream and lake biological abundance and diversity, reduces lake depth and storage volume, aesthetically unattractive	Illicit discharge, construction sites, streambank erosion (resulting from increasing impervious in the watershed)	Construction contractors, developers, municipal government, property owners/residents, general public	Audiences conduct, oversee, regulate, and/or engage in and/or observe activities at pollutant sources
Nutrients (nitrogen and phosphorus)	Promotes growth of algae in lakes and streams which can degrade biological abundance and diversity, toxic to aquatic species and humans, impede recreation, aesthetically unattractive	Illicit discharge, sewage overflows and leaks, clippings and waste from landscape maintenance/lawn care, pet animal waste, application and improper storage of fertilizers, atmospheric fallout	Landscape maintenance/lawn care companies, property owners/residents, municipal government, general public	Audiences store and apply fertilizer, own or maintain sewer plumbing/pipes, engage in and/or observe activities at pollutant sources
Trash	Increases MS4 maintenance, aesthetically unattractive	Illicit discharge, construction sites, litter, dumping, restaurants, food trucks	Construction contractors, property owners/residents, restaurant and food truck owners/operators, general public	Audiences generate and store trash or engage in and/or observe activities at pollutant sources
Metals	Degrades stream and lake biological abundance and diversity	Illicit discharge, vehicle storage and maintenance, construction sites, paints and finishes, material, and chemical storage	Construction contractors, painting contractors, property owners/residents, vehicle repair shops	Audiences engage in activities that store/handle materials and generate wastes that contain metals and/or observe activities at pollutant sources
Bacteria	Public health, pet health	Illicit discharge, sewage overflows and leaks, failing septic systems	Property owners/residents, municipal government, general public	Property owners/residents responsible for septic systems and private sewer plumbing and connections, municipal government responsible for most sanitary sewers, general public



Target Pollutant	Target Pollutant Justification	Pollutant Sources	Target Audiences	Target Audiences Justification
				observes activities at pollutant sources
Oil & grease	Degrades stream and lake biological abundance and diversity	Illicit discharge, vehicle storage and maintenance, restaurants, food trucks	Vehicle repair shops, restaurant and food truck owners/operators, municipal government, general public	Audiences conduct, oversee, and/or engage in and/or observe activities at pollutant sources



Table B-2 Education and Outreach event and material distribution log

Date	Description of Activity	Attendees & Materials Count	Education Materials (# each material same as # attendees)
10/01/20	Stormwater Management Advisory Commission Virtual Meeting	44	
10/10/20	Rain Garden/Rain Barrel Workshop	7	Raleigh Rainwater Rewards flyer, CWEP brochure, volunteer programs flyer, general pollution flyer
10/30/20	Longleaf Hotel Cistern Feature Article - Raleigh Magazine Publication	30,000	Article
11/05/20	Stormwater Management Advisory Commission Virtual Meeting	53	
11/09/20	Storm Drain Marking Springstone Subdivision	19	Storm drain markers Illegal discharge general brochure
11/16/20	Proposed Floodplain Regulations Mailing Directly Impacted Property Owners	312	Informational letter
11/16/20	Proposed Floodplain Regulations Mailing Property Owners in Floodplain	4,016	Informational letter
11/17/20	NCYouth Conservation Corp-Mini Stream Workshop/General Stormwater Presentation	12	
11/24/20	Exploris Middle School Virtual Q & A Presentation-Green Stormwater Infrastructure	8	
12/01/21	Social Media Posts for Raleigh Stream gauges and USGS partnership	35,000 impressions	
12/01/20	Stormwater Fee Notification Mailing	9	Stormwater fee brochure
12/03/20	Stormwater Management Advisory Commission Virtual Meeting	56	
12/05/20	Virtual Stream Monitoring Workshop	17	



Date	Description of Activity	Attendees & Materials Count	Education Materials (# each material same as # attendees)
12/09/20	Illegal Discharge Detection Leaf Education Email Notification	478	Leaf education information
12/17/20	Stormwater Capture it Art Contest Email Campaign	120	Contest flyer promotion
12/22/20	Virtual Floodplain One on One Meeting with Riverbend at Lakeside Homeowners Association Contact	1	
01/07/21	Stormwater Management Advisory Commission Virtual Meeting	49	
01/12/21	Upper Lake at Durant Park/Lake Study Public Meeting #1	25	
01/17/21	Stormwater Capture it Art Contest Social Media and Email Campaign	Not known	
01/23/21	Virtual Floodplain Meeting with City of Raleigh Hispanic & Immigration Board	11	
01/26/21	Upper Lake at Durant Park/Lake Study Public Meeting #2	20	
02/01/21	Stormwater Fee Notification Mailing	21	Stormwater fee brochure
02/04/21	Stormwater Management Advisory Commission Virtual Meeting	39	
02/05/21	Water Pollution Wednesday Social Media Campaign	13,800 impressions	
02/08/21	Winter e-Builder Training Sessions	45	
02/09/21	Winter e-Builder Training Sessions	45	
02/10/21	Winter e-Builder Training Sessions	45	
02/11/21	Winter e-Builder Training Sessions	45	



Date	Description of Activity	Attendees & Materials Count	Education Materials (# each material same as # attendees)
02/12/21	Winter e-Builder Training Sessions	45	
02/18/21	Stormwater Art Contest Facebook Ad Promotion	807 views	Contest promotional ad
02/26/21	Winter Urban Watershed Newsletter	905	Newsletter
03/01/21	Stormwater maintenance behind the scenes	12,700 impressions	Social media
12/20 – 3/21	Stormwater Capture it Art Contest Social Media and Email Campaign	1,748	Social media contest promotion
03/01/21	Stormwater Fee Notification Mailing	7	Stormwater fee brochure
03/04/21	Stormwater Management Advisory Commission Virtual Meeting	40	
04/30/21	Earth Day/Arbor Day Tree Planting Social Media posts and Videos	41	
07/24/21	StoryWalk at Lake Johnson Park All the Way to the Ocean	Not known	
03/11/21	Virtual Stormwater Volunteer Recognition Hidden Rivers Documentary Screening	13	
03/12/21	Sustainable Wildlife & Urban Tree Committee (SWUT) Virtual Meeting	5	
03/13/21	Raleigh Watershed Learning Network-storm drain marking demo	30	
03/20/21	Creek Week/Multi-site Stream Clean Ups Drop-in and Adopt a Stream Groups	133	
03/20/21	Social Media Posts& Direct Email Creek Week- Stream Cleanups two locations	1,657	
03/26/21	Raleigh Rainwater Rewards Social Media Promotions	1,454	



Date	Description of Activity	Attendees & Materials Count	Education Materials (# each material same as # attendees)
03/27/21	Rain Garden/Barrel Workshop-In-Person	11	
03/28/21	Raleigh Watershed Learning Network presentation- GSI/Innovation & Funding	15	
04/01/21	Stormwater Fee Notification Mailing	13	Stormwater Fee Brochure
04/01/21	Stormwater Management Advisory Commission Virtual Meeting	40	
04/08/21	Mailing for Proposed Floodplain Regulations - Public Hearing	3,960	Proposed floodplain regulations letter
04/20/21	Virtual Storytime Reading & Presentation- Al Iman School	28	
04/21/21	Virtual Twitter Announcement of the 2021 Capture it! Art Contest winning entries	Not known	
04/22/21	Urban Watersheds Spring Newsletter	846	Quarterly newsletter
04/24/21	Virtual Stream Monitoring Workshop	9	
04/28/21	Garden Club field tour of Raleigh Union Station green roof	10	
05/01/21	Stormwater Fee Notification Mailing	4	Stormwater fee brochure
05/03/21	Post Card Mailing-Western North Ridge Project Virtual Public Meeting	46	Project update postcard
05/05/21	Stream Cleanup, Cary Academy High School	7	
05/06/21	Stormwater Management Advisory Commission Virtual Meeting	40	
05/12/21	Virtual & In-person Presentation 2021 Carolina Climate Resilience Conference on "Nature-based Stormwater Solutions"	40	
05/22/21	Think Clean Raleigh - Trash Pick-up	18	
05/25/21	Virtual Public meeting- Western North Ridge Stormwater Project	14	



Date	Description of Activity	Attendees & Materials Count	Education Materials (# each material same as # attendees)
06/03/21	Stormwater Management Advisory Commission Virtual Meeting	39	
05/14/21	Water Partnership Education and Outreach-Virtual Presentation	20	
05/26/21	Go Ask Mom - Local News On-line Story Walk at Lake Johnson	11,000	
05/26/21	Hurricane Season Staff Interview with Spectrum News	Not known	
05/30/21	Stormwater Fee Notification Mailing	4	Stormwater fee brochure
05/31/21	National Dam Safety Awareness Day-Website Article/Social Media Video	556	
06/21/21	Environmental Justice Summer Camp EnviroScape, Green Stormwater Infrastructure Presentations	9	CWEP brochure
06/21/21	Your Service Connection /Monthly newsletter Mailing - Pool Water Pollution Article	204,051	Public Utilities customer monthly newsletter
06/24/21	NC Youth Conservation Corps -Water Quality Presentation with Stream Flow Activity	8	
07/01/21	Stormwater Management Advisory Commission Virtual Meeting	37	
07/01/21	Stormwater Fee Notification Mailing	8	Stormwater fee brochure
07/06/21	South Raleigh Drainage Studies Public Input Session Postcard Mailing	1,446	Drainage studies information postcard
07/07/21	Girls in Science - mini stormwater stream monitoring presentation and monitoring activities	10	
07/07/21	Floodplain Safety & Benefits of a Healthy Floodplain Videos - Social Media Posts and Story	800 impressions	



Date	Description of Activity	Attendees & Materials Count	Education Materials (# each material same as # attendees)
07/22/21	NC Conservation Corps Mini Stream Monitoring presentation & monitoring activities	14	
07/01/21	Illegal Discharge Detection Elimination Car Wash Businesses Mailing	208,000	<i>At Your Service</i> utility bill insert
08/05/21	Green Stormwater Infrastructure Virtual Subcommittee Meeting	10	
08/12/21	Rain Garden & Rain Barrel mini-presentation Garden Club	11	Raleigh Rainwater Rewards flyer, CWEP brochure, volunteer programs flyer, general pollution flyer
08/18/21	North Carolina State University Volunteer Fair	50	Stormwater volunteer brochure
08/20/21	Statewide Stakeholders Meeting-Advancing Nature-based Stormwater Strategies to Reduce Flooding and Improve Water Quality in North Carolina	55	
08/31/21	Stormwater Fee Notification Mailing	10	Stormwater fee brochure
09/02/21	Stormwater Management Advisory Commission Virtual Meeting	41	
9/6/2021	Mass Mailing New Stormwater Fee/Tier Notification Letter	1,073	
09/08/21	Exploris Middle School EnviroScape Presentations	70	
09/23/21	2021 Annual e-Builder Elevate Conference	Not known	
9/29/2021	SNAP tool Presentation/Training for Staff	16	
9/30/2021	Presentation on incorporating Urban Agriculture & Stormwater	14	
9/30/2021	Stormwater (Billing Notification Letter) Fee Brochures	11	
9/30/2021	Raleigh Rainwater Rewards Consults (10/1/2020 – 9/30/2021)	202	



Table B-3 Education and Outreach school events

Date	# Students Attended	Event Location/Description	Virtual/In-person
11/24/20	6	Exploris Middle School/interview with students on green infrastructure and stormwater	Virtual
03/05/21	300	Wakefield Middle School/EnviroScape demo	Virtual
04/20/21	28	Al Iman School/StoryTime reading	Virtual
09/08/21	70	Exploris Middle School/EnviroScape demo	In-person

Section C: Public Involvement and Participation

C.1 Program Narrative

The City provides opportunities for public involvement and participation. The City's Stormwater Management Plan is noticed and presented at a public hearing for comment by the public once per permit cycle. As-needed changes to City stormwater regulations also are noticed and presented at public hearings for comment by the public. The annual budget for the Stormwater Management Division is noticed and presented for public comment prior to adoption. As a means of obtaining more regular public input on policy and project related matters, Raleigh City Council established the Stormwater Management Advisory Commission that reviews stormwater management issues and provides guidance and recommendations to City Council. Comments from the public also are received during meetings of this commission.

C.2 Best Management Practices

Permit Reference/BMP	FY2021	FY2022 – FY 2026	Reporting Metric(s)	2020-2021
Part II Section C.2 (a) Volunteer community involvement program	Maintain the community volunteer opportunities	Maintain the volunteer community opportunities	Report number of participants in each City volunteer opportunity	Adopt a Stream: 393 Storm drain marking: 10 Stream monitoring: 17 Foster a Stream: 195



Permit Reference/BMP	FY2021	FY2022 – FY 2026	Reporting Metric(s)	2020-2021
	Notify the Water Quality Manager of program modifications.	Notify the Water Quality Manager of program modifications.		
Part II Section C.2 (b) Establish a mechanism for public involvement	Conduct meeting(s) with the SMAC Notify the Water Quality Manager of program modifications.	Conduct meeting(s) with the SMAC Notify the Water Quality Manager of program modifications.	Report meeting dates for meetings of the Stormwater Management Advisory Commission and topics of discussion pertaining to MS4 compliance	October 1, 2020 November 5, 2020 December 3, 2020 (<i>MS4 and Linear Asset Management Study</i>) January 7, 2021 February 4, 2021 March 4, 2021 (<i>Stormwater Program Budget Update and Level of Service Options</i>) April 1, 2021 (<i>Capture It! Stormwater Arts Contest Finalists and Voting</i>) May 6, 2021 (<i>Update on Watershed Master Planning and Community Engagement</i>) June 3, 2021 July 1, 2021 September 2, 2021
Part II Section C.2 (c) Establish hotline(s) or helpline(s)	Maintain the stormwater administration helpline to receive public complaints. Notify the Water Quality Manager of program modifications.	Maintained the stormwater administration helpline to receive public complaints. Notified the Water Quality Manager of program modifications.	N/A, see helpline reporting metrics in Part II Section B.2.	N/A
Part II Section C.2 (d) Public review and comment	Create a webpage for the SWMP on the public website. Publicize a comment period for updates to the SWMP.	Maintain the webpage for the most recent edition of the SWMP. Publicize a comment period for updates to the SWMP.	Report webpage link for SWMP Report mechanisms used for public review and comment on the SWMP	https://raleighnc.gov/SupportPages/stormwater-management-plan The City uses the SWMP website with the Water Quality Manager's contact information and the City's Stormwater hotline phone number and email address to provide citizens a mechanism to comment on the SWMP between updates.



Permit Reference/BMP	FY2021	FY2022 – FY 2026	Reporting Metric(s)	2020-2021
	Notify the Water Quality Manager of program modifications.	Notify the Water Quality Manager of program modifications.		
Part II Section C.2 (e) Public notice	Place legal public notice to advertise public review and comment opportunities, as needed. Notify the Water Quality Manager of program modifications.	Place legal public notice to advertise public review and comment opportunities, as needed. Notify the Water Quality Manager of program modifications.	If public notice occurred, report mechanism(s) used to advertise public review and comment and public notice period.	Advertising for public notice of the updated SWMP for public review and comment was completed between January 8 – February 5, 2021. Announcement of the start and end of the SWMP public comment period occurred at the January 7, 2021 and February 4, 2021 Stormwater Management Advisory Commission meetings. Mechanisms used to advertise this public review and comment period: Website: 169 pages views Email: January 12, 2021 to 3,072 subscribers February 4, 2021 to 3,029 subscribers Social media: Twitter, two posts, 5,736 impressions Facebook, two posts, 257 people reached

Section D: Illicit Discharge Detection and Elimination

D.1 Program Narrative

The City's illicit discharge program began in 1995. This program is based on a [City ordinance](#) that defines what constitutes an illicit discharge and an illicit connection and provides enforcement protocols.

Illicit discharges and illicit connections are identified through reports from the public, reports from City staff across all departments, dry weather screening observations, and outfall inspections. A team of three staff is assigned to Illicit Discharge Detection and Elimination (IDDE). IDDE



preventive measures include educating City staff and the public through various means and direct mailings to businesses, such as landscapers and restaurants, that have a history of illicit discharges. Outreach efforts also include regular updates to website content, social media, utility billing and newsletter inserts, and coordination with Wake County and professional associations to distribute illicit discharge prevention information to wide audiences.

D.2 Best Management Practices

Permit Reference/BMP	FY2021	FY2022 – FY 2026	Annual Reporting	2020-2021
Part II Section D.2 (a) Maintain appropriate legal authorities	Maintain and enforce public ordinances. Update, if necessary, to maintain legal authority. Notify the Water Quality Manager of program modifications.	Maintain and enforce public ordinances. Update, if necessary, to maintain legal authority. Notify the Water Quality Manager of program modifications.	N/A, see Part II Section A.1 for reporting of legal authorities	N/A
Part II Section D.2 (b) Maintain a storm sewer system base map of major MS4 outfalls	Evaluate outfall and receiving stream definitions with current program recommendations and revise, if necessary. Notify the Water Quality Manager of program modifications.	Evaluate outfall and receiving stream definitions with current program recommendations and revise, if necessary. Notify the Water Quality Manager of program modifications.	Report number of major outfalls	179
			Provide overview map of receiving streams and major outfalls	See Map D-1 below
Part II Section D.2 (c) Inspection/detection program to detect dry weather flows at MS4 outfalls	Develop IDDE Plan from existing field forms and SOPs. Notify the Water Quality Manager of program modifications.	Develop IDDE Plan from existing field forms and SOPs. Notify the Water Quality Manager of program modifications.	Report number of dry weather inspections completed and results	200 dry weather flow outfall inspections were completed during which no illicit discharges or illicit connections were detected



Permit Reference/BMP	FY2021	FY2022 – FY 2026	Annual Reporting	2020-2021
Part II Section D.2 (d) Employee training	Document the existing employee training program in a Training Plan, including who should receive training, types of training, and frequency. Conduct employee training and document attendance. Notify the Water Quality Manager of program modifications..	Document the existing employee training program in a Training Plan, including who should receive training, types of training, and frequency. Conduct employee training and document attendance. Notify the Water Quality Manager of program modifications.	Report number of staff who completed IDDE training and types of training provided	387 City staff completed the IDDE training module through the City's iLearn platform
Part II Section D.2 (e) Maintain a public reporting mechanism(s)	Maintain reporting helpline and reporting email address (IllegalDischarge@raleighnc.gov). Notify the Water Quality Manager of program modifications.	Maintain reporting helpline and reporting email address (IllegalDischarge@raleighnc.gov). Notify the Water Quality Manager of program modifications.	Report number of calls and emails received	City staff responded to 126 calls of potential illicit discharges; 99 calls were received through the City's Stormwater hotline
Part II Section D.2 (f) Documentation	Maintain IDDE inspection records, notices of violations and compliance and other program records. Notify the Water Quality Manager of program modifications.	Maintain IDDE inspection records, notices of violations and compliance and other program records. Notify the Water Quality Manager of program modifications.	Report dates of investigations, any enforcement action(s) or remediation that occurred	See Table D-1 below



Map D-1 Receiving waters and Major Outfalls

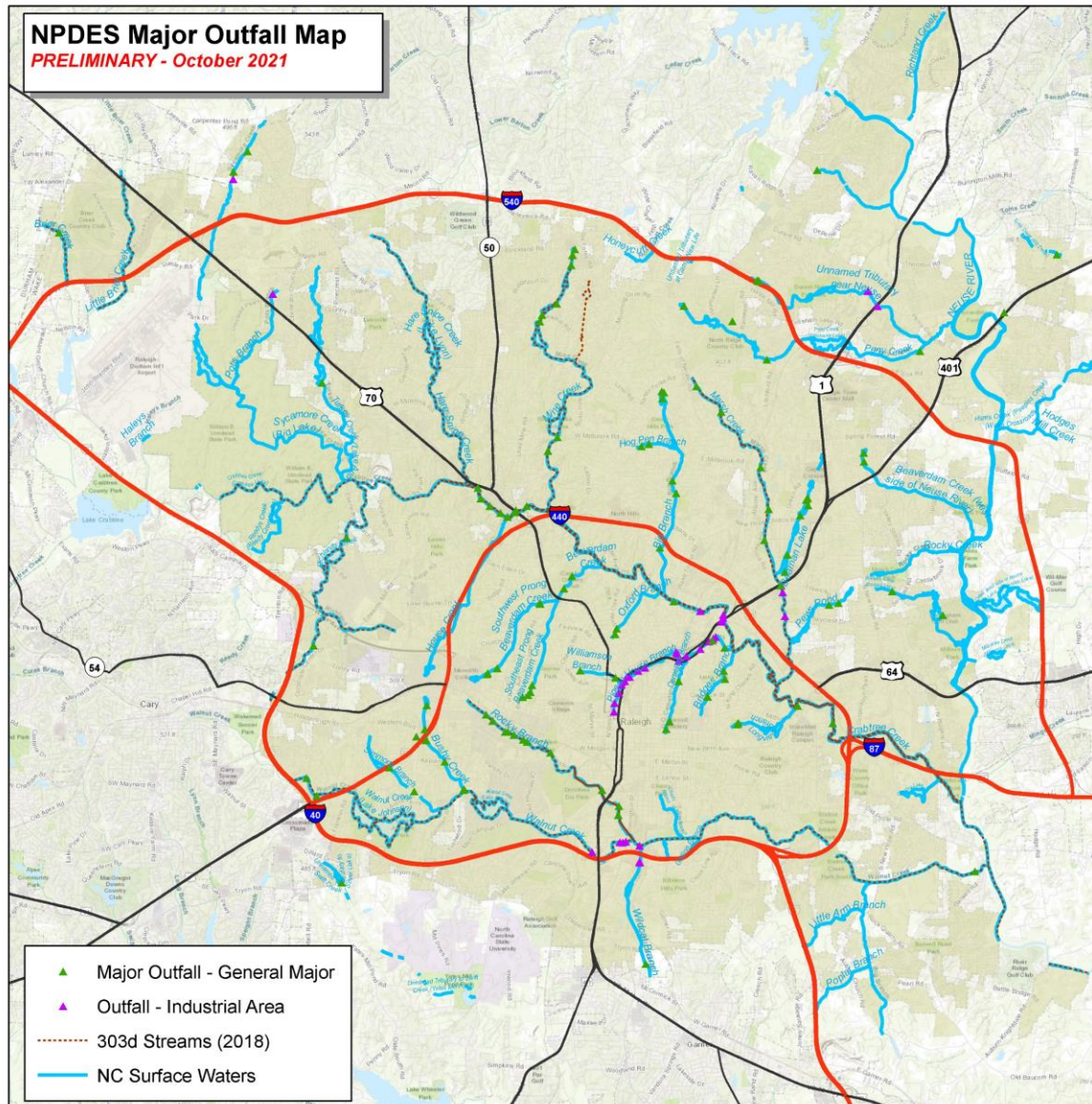




Table D-1 IDDE investigations and actions taken October 1, 2020 – September 30, 2021

Address	Date Received	Date Responded	Description	Action Taken
925 Runnymede Road	10/8/2020	10/8/2020	Complaint of sediment in tributary	Investigated and found not to be a water quality concern; no further action taken
1320 Onslow Road	10/10/2020	10/11/2020	Complaint of blackish sheen in tributary after rain event	Investigated and found not to be a water quality concern; no further action taken
907 Marlowe Road	10/13/2020	10/13/2020	Complaint about flush truck dumping turbid water near Crabtree Creek	Investigated and found not to be a water quality concern; no further action taken
930 Wimbleton Drive	10/13/2020	10/13/2020	Complaint of fish kill	Forwarded to NCDWR
2004 Hornbeck Court	10/15/2020	10/15/2020	Complaint about leaves being blown into catch basin	Investigated and found not to be a water quality concern; no further action taken
2550 Sullivan Drive	10/15/2020	10/15/2020	Possible cross connection	Investigated and found not to be a water quality concern; no further action taken
1400 Beverly Drive	10/22/2020	10/22/2020	Complaint of SS smell behind property	Investigated and found not to be a water quality concern; no further action taken
1700 Nottingham Road	10/26/2020	10/27/2020	Complaint about fuel smell in park	Investigated and found not to be a water quality concern; no further action taken
3708 Swift Drive	10/28/2020	10/28/2020	Complaint of debris being blown into catch basin	Investigated and found not to be a water quality concern; no further action taken
5607 Capital Boulevard	10/1/2020	10/1/2020	Duke Energy transformer leaking mineral oil into catch basin	NOV issued
7440 Six Forks Road	10/10/2020	10/12/2020	Complaint of grease recycle barrel leaking into parking lot	NOV issued
9301 Globe Center Drive	10/15/2020	10/15/2020	Driver spilled solvent into storm system	NOV issued
1041 Wimbleton Drive	10/23/2020	10/23/2020	Complaint of tributary turning white	NOV issued
1317 Wagram Court	10/6/2020	10/6/2020	SSO	PUD reported spill to NCDWR
7404 Boros Place	10/29/2020	10/29/2020	SSO	PUD reported spill to NCDWR
3037 Allenby Drive	10/31/2020	11/2/2020	Possible septic tank failure	Forwarded to Wake County



Address	Date Received	Date Responded	Description	Action Taken
510 W Martin Street	11/16/2020	11/16/2020	City staff noticed fuel in CB, fuel discharge from rain event	Investigated and found not to be a water quality concern; no further action taken
3808 Edwards Mill Road	11/30/2020	11/30/2020	Parks staff noticed two containers full of used oil in COR park parking lot	Investigated and found not to be a water quality concern; no further action taken
6713 Magnolia Court	11/9/2020	11/9/2020	Private SS service discharging in parking lot	NOV issued
4408 Jacqueline Lane	12/9/2020	12/10/2020	Private SS service discharging into street	NOV issued
4620 Kilcullen Drive	11/16/2020	11/16/2020	Private SS service discharging into CB behind property	NOV issued
6012 Viking Drive	11/2/2020	11/2/2020	SSO	PUD reported spill to NCDWR
3316 Alleghany Drive	11/12/2020	11/12/2020	SSO	PUD reported spill to NCDWR
3900 Quail Hollow Drive	11/12/2020	11/12/2020	SSO	PUD reported spill to NCDWR
1500 Banbury Road	11/12/2020	11/12/2020	SSO	PUD reported spill to NCDWR
5839 Capital Boulevard	11/15/2020	11/15/2020	SSO	PUD reported spill to NCDWR
1117 Beacon Lake Drive	11/28/2020	11/28/2020	SSO	PUD reported spill to NCDWR
13401 Falls of Neuse Road	12/18/2020	12/18/2020	Fuel spill (Less than 5 gallons)	Warning letter issued
3314 Turnbridge Drive	12/7/2020	12/7/2020	Paint spill	NOV issued
8200 McGuire Drive	12/15/2020	12/15/2020	Private SS service discharging on ground	NOV issued
9299 Glenwood Avenue	12/9/2020	12/9/2020	SSO	PUD reported spill to NCDWR
3120 Walnut Creek Parkway	12/23/2020	12/23/2020	SSO	PUD reported spill to NCDWR
740 Powell Drive	12/22/2020	12/23/2020	SS smell near pond on park property	Investigated and found not to be a water quality concern; no further action taken
124 W Dawson Street	1/19/2021	1/19/2021	SWS truck had hydraulic spill in street	Investigated and found not to be a water quality concern; no further action taken



Address	Date Received	Date Responded	Description	Action Taken
Reedy Creek Greenway	1/29/2021	1/29/2021	Complaint of fuel smell in greenway	Investigated and found not to be a water quality concern; no further action taken
110 Parks at North Hills Street	1/15/2021	1/15/2021	PUD staff noticed staining behind restaurant	Warning issued
4325 Glenwood Avenue	1/15/2021	1/15/2021	Grease spill	NOV issued
2330 Churchill Road	1/20/2021	1/21/2021	Paint spill	NOV issued
2940 Golden Oaks Court	1/19/2021	1/19/2021	Private SS discharge	NOV issued
5501 Capital Boulevard	2/1/2021	2/1/2021	Staff noticed grease spilled in storm inlet	NOV issued
3801 Rolling Green Court	2/5/2021	2/5/2021	SS discharging behind property	NOV issued
2901 Boardlands Drive	2/8/2021	2/9/2021	Private SS service discharging in street	NOV issued
2501 W Raleigh Boulevard	2/22/2021	2/22/2021	Oil spill	Summary Memorandum issued
5107 Creedmoor Road	2/23/2021	2/23/2021	Grease spill into catch basin behind building	NOV issued
4200 Quail Hollow Drive	2/25/2021	2/25/2021	Complaint of blueish hue in tributary near park property	Summary Memorandum Issued
3208 Birnamwood Road	2/16/2021	2/16/2021	Concrete wash runoff threatening small tributary near property	Warning letter issued
903 Wakestone Court	2/1/2021	2/2/2021	Complaint of greenish color in tributary	Investigated and found not to be a water quality concern; no further action taken
619 Kirby Street	2/3/2021	2/4/2021	Complaint of gas spill in street	Investigated and found not to be a water quality concern; no further action taken
8701 Wadford Drive	2/8/2021	2/8/2021	Complaint of sewer smell behind building	Investigated and found not to be a water quality concern; no further action taken
2601 Oxford Road	2/15/2021	2/16/2021	Complaint of suds in tributary	Investigated and found not to be a water quality concern; no further action taken
1323 Williamson Drive	2/20/2021	2/22/2021	Complaint of blueish hue in tributary	Investigated and found not to be a water quality concern; no further action taken
600 Rawls Drive	2/2/2021	2/2/2021	SSO	PUD reported spill to NCDWR



Address	Date Received	Date Responded	Description	Action Taken
1116 Savannah Drive	3/22/2021	3/23/2021	Complaint of grease being dumped into storm inlet	Warning letter issued
904 Ravenwood Drive	3/22/2021	3/23/2021	Complaint of paint in tributary	Investigated and found not to be a water quality concern; no further action taken
6616 Fleetwood Drive	3/1/2021	3/1/2021	Complaint of sediment being discharged into storm inlet from stone cutting	NOV issued
4012 Scofield Drive	3/3/2021	3/3/2021	Private SS service discharging into street	NOV issued
25 Sunnysbrook Road	3/6/2021	3/6/2021	PUD informed staff of private SS service discharging into storm inlet	NOV issued
211 Six Forks Road	3/8/2021	3/8/2021	Private SS service discharging into street	NOV issued
521 Brent Road	3/19/2021	3/19/2021	Private SS service discharging into street	NOV issued
1605 Park Drive	3/14/2021	3/15/2021	Cross connection between sewer line and storm line	Investigated and found not to be a water quality concern; no further action taken
3600 Capital Boulevard	3/12/2021	3/15/2021	Complaint of wash runoff from car wash going into the storm inlet	NOV issued
3314 Turnbridge Drive	3/16/2021	3/16/2021	Complaint of paint spilling out of dumpster at property	NOV issued
601 W Peace Street	3/23/2021	3/23/2021	Wash runoff from cleaning kitchen mats entering storm inlet	NOV issued
6413 Lakeway Drive	4/5/2021	4/5/2021	Private SS service discharging onto sidewalk	Warning letter issued
3125 Julian Drive	4/12/2021	4/13/2021	Complaint of brownish water behind property	Investigated and found not to be a water quality concern; no further action taken
3711 Jamestown Circle	4/20/2021	4/20/2021	COR staff noticed private sewer service discharging at apartment complex	Investigated and found not to be a water quality concern; no further action taken
4800 Walenda Drive	4/20/2021	4/20/2021	Complaint of trash and debris in and around lake on property	Investigated and found not to be a water quality concern; no further action taken
5217 Poole Road	4/20/2021	4/20/2021	COR staff noticed possible sewer smell in storm inlet	Forwarded to Wake County
7703 Marsh Oak Drive	4/18/2021	4/18/2021	SSO	PUD reported spill to NCDWR
400 Woods of North Bend Drive	4/13/2021	4/13/2021	SSO	PUD reported spill to NCDWR



Address	Date Received	Date Responded	Description	Action Taken
2712 Discovery Drive	4/1/2021	4/1/2021	SSO	PUD reported spill to NCDWR
510 Cleveland Street	5/5/2021	5/5/2021	Complaint of possible hydraulic fluid spill in street	Investigated and found not to be a water quality concern; no further action taken
1101 Milburnie Road	5/3/2021	5/3/2021	Sodium hydroxide leaked out of container onto City park property	Warning letter issued
6708 Spencer Court	5/6/2021	5/6/2021	Private sewer service discharging into tributary	NOV issued
9531 Waterwood Court	5/20/2021	5/20/2021	Private sewer service discharging into ditch	NOV issued
707 S State Street	5/17/2021	5/17/2021	SSO	PUD reported spill to NCDWR
5536 Neuse View Drive	5/19/2021	5/19/2021	SSO	PUD reported spill to NCDWR
3800 Hillsborough Street	5/24/2021	5/24/2021	SSO	PUD reported spill to NCDWR
5000 Windy Hill Drive	5/24/2021	5/24/2021	SSO	PUD reported spill to NCDWR
11310 Involute Place	6/22/2021	6/22/2021	Complaint of paint spill near storm inlet	Investigated and found not to be a water quality concern; no further action taken
4023 Gregory Lane	6/16/2021	6/16/2021	Complaint of sewer discharge on property	Investigated and found not to be a water quality concern; no further action taken
2108 E Millbrook Road	6/7/2021	6/7/2021	Complaint of wash runoff from car wash	Investigated and found not to be a water quality concern; no further action taken
Glenwood Ave @ Harvey Street	6/3/2021	6/3/2021	Fuel spill from vehicle accident during rain event	Investigated and found not to be a water quality concern; no further action taken
2708 South Saunders Street	6/23/2021	6/28/2021	Complaint of runoff from car wash entering storm inlet	Warning letter issued
4325 Glenwood Avenue	6/7/2021	6/8/2021	Grease trap overflowing into storm inlet	NOV issued
8816 Gulf Court	6/14/2021	6/14/2021	Complaint of beer waste leaking into storm inlet	NOV issued
5301 Old Poole Road	6/22/2021	6/23/2021	Complaint of stone cutting dust carried by runoff into storm inlet	NOV issued
6601 Times Drive	6/29/2021	6/29/2021	SSO	PUD reported spill to NCDWR



Address	Date Received	Date Responded	Description	Action Taken
10210 Sablewood Drive	7/5/2021	7/6/2021	White substance in parking lot	Warning letter issued
10536 Swerling Way	7/19/2021	7/19/2021	Trash in storm drain	Referred to TFS
521 Brent Road	7/19/2021	7/19/2021	Overflowing cleanouts maintained by Public Utilities	Forwarded to PUD
5041 Six Forks Road	7/29/2021	7/29/2021	Broken glass in storm drain	Referred to TFS
9211 Calabria Drive, #110	7/29/2021	7/29/2021	Trash in storm drain	Refereed to TFS
2001 Poole Road	7/14/2021	7/15/2021	Evidence of past wastewater and washing near storm drain	Warning letter issued
2540 Westinghouse Boulevard	7/7/2021	7/7/2021	Fuel spill into catch basins and constructed wetland	Summary Memorandum Issued
3316 Alleghany Drive	7/8/2021	7/8/2021	SSO	PUD reported spill to NCDWR
2739 Rothgeb Drive	7/8/2021	7/8/2021	SSO	PUD reported spill to NCDWR
2220 Grantland Avenue	7/8/2021	7/8/2021	SSO	PUD reported spill to NCDWR
5532 Neuse View Drive	7/8/2021	7/8/2021	SSO	PUD reported spill to NCDWR
556 Dacian Road	7/8/2021	7/8/2021	SSO	PUD reported spill to NCDWR
1020 Sage Green Court	8/9/2021	8/9/2021	Grass clippings in catch basin	Referred to TFS
Lewis Farm Road & Banbury Road	8/9/2021	8/9/2021	Natural channel erosion	Investigated and found not to be a water quality concern; no further action taken
Martin Street & Salisbury Street	8/17/2021	8/17/2021	Gel tablets and marbles in catch basin	Investigated and found not to be a water quality concern; no further action taken
3500 Rock Creek Drive	8/30/2021	8/30/2021	SS tap not connected to main SS line	Forwarded to PUD
1301 Mordecai Drive	8/10/2021	8/10/2021	Styrofoam waste from construction in curb line	Warning letter issued
3700 New Bern Avenue	8/17/2021	8/17/2021	Possible fuel spill	Warning letter issued



Address	Date Received	Date Responded	Description	Action Taken
300 Acorn Street	8/30/2021	8/30/2021	Hydraulic spill residue in curb line	Warning letter issued
10532 Swerling Way	8/30/2021	8/30/2021	Trash in catch basin	Warning letter issued
5101 Glenwood Avenue	8/4/2021	8/4/2021	SSO	PUD reported spill to NCDWR
720 Pershing Road	8/10/2021	8/10/2021	Concrete slurry entering adjacent property and stormwater pipe	NOV issued
5621 Louisburg Road	8/12/2021	8/12/2021	Grease and SS overflow into parking lot	NOV issued
2518 Clark Avenue	8/16/2021	8/17/2021	Paint residue in curb line	NOV issued
8471 Garvey Drive	8/20/2021	8/20/2021	Grease trap overflow into ditch	NOV issued
14307 Foxcroft Road	8/24/2021	8/24/2021	Private SS tap overflow into curb line	NOV issued
7900 Audubon Drive	8/25/2021	8/25/2021	Hydraulic fluid spill on neighborhood streets	Summary Memorandum issued
105 Idlewild Avenue	8/30/2021	8/30/2021	Septic tank overflowing into yard	NOV issued
1510 Graduate Lane	9/16/2021	9/16/2021	SSO	PUD reported spill to NCDWR
741 Bishops Park Drive	9/7/2021	9/8/2021	Report of pressure washer water and paint being discharged into storm drain	Warning letter issued
917 Willow Run South Drive	9/23/2021	9/23/2021	SSO	PUD reported spill to NCDWR
2113 Ridge Road	9/27/2021	9/27/2021	Possible de-watering of chlorinated pool water	Investigated and found not to be a water quality concern; no further action taken
6615 Falls of Neuse Road	9/14/2021	9/14/2021	Overflowing grease trap into parking lot	Warning letter issued
411 W Morgan Street	9/20/2021	9/20/2021	Grease trap spill onto parking lot	Warning letter issued
1113 Temple Street	9/28/2021	9/28/2021	Turbidity in creek	Investigated and found not to be a water quality concern; no further action taken
4200 Glenwood Avenue	9/29/2021	9/29/2021	Possible <5 gallons of oil had left NCDOT ROW but did not have potential to impact surface waters	Investigated and found not to be a water quality concern; no further action taken



Address	Date Received	Date Responded	Description	Action Taken
15267 Tryon Road	9/30/2021	9/30/2021	Possible wash water from the golf carts washing draining to road	Investigated and found not to be a water quality concern; no further action taken

NCDWR = North Carolina Division of Water Resources

PUD = Public Utilities Department

SSO = Sanitary Sewer Overflow

RFD = Raleigh Fire Department

RPD = Raleigh Police Department

ROW = Right-Of-Way

NOV = Notice of Violation

SWS = Solid Waste Services

UST = Underground Storage Tank

TFS = Transportation Field Services

NCDOT = NC Dept. of Transportation

SS = Sanitary Sewer

Section E: Construction Site Runoff Controls

E.1 Program Narrative

The City has had active construction site runoff control efforts (sedimentation and erosion control) since the 1970s. This program is delegated and overseen by the North Carolina Department of Environmental Quality (NCDEQ). This program includes ordinances, plan review, permitting, inspection, education, and enforcement activities. The City receives and responds to calls and concerns from citizens on a regular basis. All related ordinance changes are noticed and subject to public hearing prior to adoption.

For all projects that disturb greater than one acre, a permit condition is applied which states that a NPDES construction permit is required, and that application should be made to NCDEQ for coverage. In addition, all publicly funded projects that disturb greater than one acre are required to obtain Erosion and Sediment Control plan approval through NCDEQ.



E.2 Best Management Practices

Permit Reference/BMP	FY2021	FY2022-2026	Reporting Metric(s)	2020-2021
Part II Section E.2 (a) The permittee has a delegated or authorized Sediment and Erosion Control Program. As such, to the extent authorized by law, the permittee is responsible for compliance with the Sediment Pollution Control Act of 1973 and Chapter 4 of Title 15A of the North Carolina Administrative Code. The delegated or authorized Sediment and Erosion Control Program effectively meets the MEP standard for Construction Site Runoff Controls by permitting and controlling development activities disturbing one or more acres of land surface and those activities less than one acre that are part of a larger common plan of development as authorized under the Sediment Pollution Control Act of 1973 and Chapter 4 of Title 15A of the North Carolina Administrative Code.	<p>Create a standard construction site inspection guidance and inspection form that documents existing procedures for use in the construction inspection process.</p> <p>Perform plan review and construction site inspections and appropriate enforcement activities.</p> <p>Notify the Water Quality Manager of program modifications.</p>	<p>Implement standard construction site inspection procedures.</p> <p>Perform plan review and construction site inspections and appropriate enforcement activities.</p> <p>Notify the Water Quality Manager of program modifications.</p>	Report number of inspections and enforcement activities conducted	Inspections: 17,868 NOVs: 18 Civil Penalties: 2



Permit Reference/BMP	FY2021	FY2022-2026	Reporting Metric(s)	2020-2021
<p>Part II Section E.2 (b) The NCG010000 permit establishes requirements for 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 impacts to water quality.</p> <p>Part II Section E.2 (c) The permittee shall provide and promote a means for the public to notify the appropriate authorities of observed erosion and sedimentation problems. The permittee may implement a plan promoting the existence of the DEQ "Stop Mud" hotline (1-866-STOPMUD) to meet the requirements of this paragraph.</p>	<p>Perform construction site inspections for the erosion and sediment control program and appropriate enforcement activities that meet requirements of Part II Section E.2.a.</p> <p>Perform illicit discharge investigations when reported by City staff or residents.</p> <p>Notify the Water Quality Manager of program modifications.</p>	<p>Perform construction site inspections for the erosion and sediment control program and appropriate enforcement activities that meet requirements of Part II Section E.2.a.</p> <p>Perform illicit discharge investigations when reported by City staff or residents.</p> <p>Notify the Water Quality Manager of program modifications.</p> <p>Maintain public helpline.</p> <p>Notify the Water Quality Manager of program modifications.</p>	N/A, see reporting metrics in Part II Section E.2.a and Part II Section D	N/A
<p>Part II Section E.2 (c) The permittee shall provide and promote a means for the public to notify the appropriate authorities of observed erosion and sedimentation problems. The permittee may implement a plan promoting the existence of the DEQ "Stop Mud" hotline (1-866-STOPMUD) to meet the requirements of this paragraph.</p>	<p>Maintain public helpline.</p> <p>Notify the Water Quality Manager of program modifications.</p>	<p>Maintain public helpline.</p> <p>Notify the Water Quality Manager of program modifications.</p>	N/A, see reporting metrics in Part II Section B	N/A



Permit Reference/BMP	FY2021	FY2022-2026	Reporting Metric(s)	2020-2021
Part II Section E.2.d. For new development and redevelopment projects to be built within the permittee's planning jurisdiction by entities with eminent domain authority, the permittee shall, to the maximum extent practicable, coordinate the approval of the construction site runoff control with the DEMLR.	City to coordinate with DEQ, if necessary. Notify the Water Quality Manager of program modifications.	City to coordinate with DEQ, if necessary. Notify the Water Quality Manager of program modifications.	Report number of inspections and enforcement activities conducted	The City issued 105 land disturbance permits that required NPDES construction permit coverage through NCDEQ/DEMLR

Section F: Post-construction Site Runoff Controls

F.1 Program Narrative

The City's post-construction site runoff controls remain in compliance with the City's MS4 permit through the Neuse Nutrient Sensitive Waters Management Strategy and Water Supply Watershed programs.

The City implements the Neuse Nutrient Sensitive Waters Management Strategy (15A NCAC 2B .0251) throughout the planning jurisdiction of Raleigh. Water Supply Watershed IV (WS-IV) Programs (15A NCAC 2H .0216) are implemented within the Falls Lake watershed, Swift Creek watershed, and Richland Creek watershed.

The City's post-construction site runoff controls are deemed compliant with the implementation of the above-mentioned program measures.

The City has set up a private maintenance policy for owners of private properties with post-construction stormwater control measures (SCMs). Every year, the private property owner must have a licensed professional engineer or landscape architect certify that the SCM is functioning properly and must send that certification to the City. If these inspections and certifications are not made, then notification and enforcement actions, including issuance of civil penalties, are taken.



F.2 Best Management Practices

Permit Reference/BMP	FY2021	FY2022-2026	Reporting Metric(s)	2020-2021
Part II Section F.2 (a) Post-construction stormwater management program	Review UDO and Stormwater Design Manual and make documents available for developers and construction site operators. Notify the Water Quality Manager of program modifications.	Review UDO and Stormwater Design Manual and make documents available for developers and construction site operators. Notify the Water Quality Manager of program modifications.	N/A, see reporting metrics documented in Part II Section A	N/A
Part II Section F.2 (b) Strategies which include SCMs appropriate for the MS4	Maintain UDO and Stormwater Design Manual and make documents available for developers and construction site operators. Develop an SCM Plan, documenting the SCM inspection and maintenance program, including annual reporting, tracking and enforcement. Implement SCM inspection and maintenance program. Notify the Water Quality Manager of program modifications.	Maintain UDO and Stormwater Design Manual and make documents available for developers and construction site operators. Review the SCM Plan and update, if necessary. Implement SCM inspection and maintenance program. Notify the Water Quality Manager of program modifications.	Report number of sites with SCMs	1,155
			Report number of sites where SCM inspections have been received	1,029
			Report SCM enforcement activities	38 NOVs issued; \$10,000 in civil penalties



Permit Reference/BMP	FY2021	FY2022-2026	Reporting Metric(s)	2020-2021
Part II Section F.2 (c) Deed restriction and protective covenants	Maintain recording mechanisms for deed restrictions and protective covenants. Notify the Water Quality Manager of program modifications.	Maintain recording mechanisms for deed restrictions and protective covenants. Notify the Water Quality Manager of program modifications.	Verify that mechanisms such as recorded deed restrictions, plats, and/or protective covenants are provided so that development activities maintain the project consistent with approved plans	Plat maps and maintenance easements are mechanisms utilized to ensure SCMs are maintained and consistent with the approved plans
Part II Section F.2 (d) Operation and maintenance plan	Require submittal of operation and maintenance plan(s) prior to certificate of occupancy and maintain records of each plan. Notify the Water Quality Manager of program modifications.	Require submittal of operation and maintenance plan(s) prior to certificate of occupancy and maintain records of each plan. Notify the Water Quality Manager of program modifications.	Report number of sites with newly approved operation and maintenance plans	76
Part II Section F.2 (e) Educational materials and training for developers	Develop targeted training and outreach materials for developers. Conduct training for developers.	Review and update training and outreach materials if necessary. Conduct training for developers.	Report types of fact sheets/educational brochures developed and/or maintained	Web-based; Annual Inspection requirements, As-Built requirements, Outreach centered around Stormwater Design Manual Update



Permit Reference/BMP	FY2021	FY2022-2026	Reporting Metric(s)	2020-2021
	Notify the Water Quality Manager of program modifications.	Notify the Water Quality Manager of program modifications.	Report training events held for developers and number of participants	Quarterly Development Stakeholder Meetings held. At these meetings, updates and stormwater training given for all in attendance. These were held virtually this past year and averaged about 12 developer representatives attending.

Section G: Pollution Prevention and Good Housekeeping for Municipal Operations

G.1 Program Narrative

During this reporting period, the City's Stormwater Management Division contracted with a consultant to assist with the further development of the pollution prevention and good housekeeping program. Currently the Stormwater Management Division has developed and implemented a facility inventory, inspection program, Site Pollution Prevention Plans (SPPPs) and Stormwater Pollution Prevention Plans (SWPPPs), spill response guidance, and staff training.



G.2 Best Management Practices

Permit Reference/BMP	FY2021	FY2022-2026	Reporting Metric(s)	2020-2021
Part II Section G.2 (a) Inventory of municipal facilities and operations	Document the assessment of the facility inventory and establish processes for evaluation and update of inventory for new or modified facilities.	Review and update inventory based on changes in municipal facilities and operations.	Report inventory of facilities determined to have significant potential for generating polluted stormwater runoff	38 facilities; see Table G-1 below
	Maintain and update inventory of municipally owned SCMs. Notify the Water Quality Manager of program modifications.	Maintain and update inventory of municipally owned SCMs. Notify the Water Quality Manager of program modifications.	Report number of municipal SCMs by type	94 Total: Wet Pond: 8 UG Detention: 6 Swale: 1 Sand Filter: 3 Cistern: 10 Permeable Pavement: 3 Level Spreader w/ Filter Strip: 3 Green Roof: 3 Filterra: 14 Dry Pond: 10 Wetland: 8 Bioretention: 25
Part II Section G.2 (b) Inspection and maintenance	Document the existing inspection and maintenance program for	Review the inspection and maintenance program guidance.	Report number of facilities inspected	62 facilities were inspected



Permit Reference/BMP	FY2021	FY2022-2026	Reporting Metric(s)	2020-2021
program for municipal facilities and operations	<p>municipal facilities and operations that are determined to be potential sources of polluted runoff.</p> <p>Inspect and document municipal facility inspections, including any corrective actions.</p> <p>Notify the Water Quality Manager of program modifications.</p>	<p>Inspect and document municipal facility inspections, including any corrective actions.</p> <p>Notify the Water Quality Manager of program modifications.</p>	Report corrective actions taken at municipal facilities or operations	SPPPs and SWPPPs have been developed for 17 facilities during this reporting year and are in final draft form
Part II Section G.2 (c) SPPPs for municipal facilities	<p>Develop SPPPs for newly identified facilities.</p> <p>Maintain SWPPPs for all City-owned facilities with individual NPDES Industrial permits</p> <p>Notify the Water Quality Manager of program modifications.</p>	<p>Review facility SPPPs/SWPPPs with owning departments and update, if necessary.</p> <p>Develop SPPPs/SWPPPs for newly identified facilities.</p> <p>Notify the Water Quality Manager of program modifications.</p>	Report number of facilities with SPPPs/SWPPPs.	38 facilities have SWPPPs/SPPPs in either complete or draft form



Permit Reference/BMP	FY2021	FY2022-2026	Reporting Metric(s)	2020-2021
Part II Section G.2 (d) Spill response procedures for municipal facilities and operations	<p>Develop department-specific for identified municipal facilities and operations.</p> <p>Review and modify City-wide spill response procedures as needed.</p> <p>Notify the Water Quality Manager of program modifications.</p>	<p>Review facility, operation, and City-wide spill response procedures and update, if necessary.</p> <p>Notify the Water Quality Manager of program modifications.</p>	Report number of spill response procedures developed/maintained	A city-wide spill response document is in final draft stage with a consultant
Part II Section G.2 (e) Prevent or minimize contamination of stormwater runoff from all areas used for vehicle and equipment cleaning	<p>Incorporate vehicle and equipment washing activities into SPPP development, where appropriate.</p> <p>Notify the Water Quality Manager of program modifications.</p>	<p>Review procedures for vehicle and equipment cleaning operations and update, if necessary.</p> <p>Notify the Water Quality Manager of program modifications.</p>	Report number of facilities performing vehicle and equipment cleaning operations	10
			Report actions taken to prevent or minimize stormwater runoff from vehicle and equipment cleaning	Stormwater staff have inspected all facilities where vehicle and equipment cleaning occur. Several facilities have and maintain oil/water separators, and SPPPs or SWPPPs have been completed or are in final draft form for these facilities.



Permit Reference/BMP	FY2021	FY2022-2026	Reporting Metric(s)	2020-2021
Part II Section G.2 (f) Streets, roads, and public parking lots maintenance	<p>Document streets, roads, and public parking lot BMPs in the inspection and maintenance program guidance.</p> <p>Implement BMPs to reduce polluted stormwater runoff from municipally owned streets, roads, and public parking lots.</p> <p>Notify the Water Quality Manager of program modifications.</p>	<p>Review inspection and maintenance program guidance and revise, if necessary.</p> <p>Implement BMPs to reduce polluted stormwater runoff from municipally owned streets, roads, and public parking lots.</p> <p>Notify the Water Quality Manager of program modifications.</p>	Report schedule of maintenance activities	All streets are scheduled to be swept twice per year. Adherence to this schedule is contingent on weather.
Part II Section G.2 (g) Inspection and Maintenance (I&M) for municipally-owned or maintained stormwater control measures (SCMs) and the storm sewer system.	Develop an MS4 Plan, documenting the conveyance system inspection and maintenance program, including annual reporting,	<p>Review the MS4 Plan and SCM Plan, and revise, if necessary.</p> <p>Implement inspection and maintenance</p>	Report number of municipal SCMs inspected	94; all City-owned regulatory compliance SCMs installed prior to this reporting period have been inspected and certified reports have been submitted.



Permit Reference/BMP	FY2021	FY2022-2026	Reporting Metric(s)	2020-2021
	<p>and tracking of inspection and maintenance performed.</p> <p>Develop an SCM Plan, in conjunction with Part II Section F.2 (b) in Table 9, documenting the SCM inspection and maintenance program, including annual reporting, tracking and enforcement.</p> <p>Implement inspection and maintenance programs documented in the MS4 Plan and the SCM Plan.</p> <p>Notify the Water Quality Manager of program modifications.</p>	<p>programs documented in the MS4 Plan and the SCM Plan.</p> <p>Notify the Water Quality Manager of program modifications.</p>	<p>Report length or number of storm sewer conveyance system components inspected</p>	<p>Number of bridges inspected: 0</p> <p>Number of crossline conveyances (culverts) inspected: 1,374</p> <p>Linear footage of drainage system that has had CCTV inspection: 105,365 lf</p> <p>Linear footage of drainage system that has had pole camera inspection: 112,366 lf</p> <p>Number of catch basins inspected: 1,652</p> <p>Number of junctions inspected: 40</p>



Permit Reference/BMP	FY2021	FY2022-2026	Reporting Metric(s)	2020-2021
			Report maintenance and repair actions	Number of storm assets flushed and/or vacuumed: 771 Linear feet of stormwater pipe flushed and/or vacuumed: 22,326 lf Number of crossline conveyances (culverts) maintained: 930 Number of inlet/junction tops reset: 496 Number of inlets/junctions maintained: 1,296 Number of pipes repaired/replaced: 96 Linear feet or channels redefined: 10,705 lf Number of bridges repaired: 2 Number of culverts repaired: 4 Number of catch basins repaired: 542 Number of junctions repaired: 16 Replacement: 27 pipes, 24 inlets, 3 junctions



Permit Reference/BMP	FY2021	FY2022-2026	Reporting Metric(s)	2020-2021
			Report schedule of maintenance activities	<p>Inlets and accessible junctions are inspected on a 3-year rotation.</p> <p>Pole camera and CCTV inspection are performed based on need and as required to support the asset management and paving programs.</p> <p>Repairs and other maintenance are made on an as-needed basis</p>
Part II Section G.2 (h) Staff training	<p>Develop a Training plan, in conjunction with Part II Section D.2 (d) in Table 7, to document the existing employee training program, including who should receive training, types of training, and frequency.</p> <p>Conduct employee training and document attendance.</p> <p>Notify the Water Quality Manager of program modifications.</p>	<p>Review the employee Training Plan and update as needed</p> <p>Conduct employee training and document attendance.</p> <p>Notify the Water Quality Manager of program modifications.</p>	Report types of training provided and number of staff who completed PPGH training	686 City staff completed the PPGH training module via the City's iLearn portal



Table G-1: PPGH inventory of facilities that have high potential to generate polluted stormwater runoff

Facility Name	City Department
Lake Woodard (PUD)	Public Utilities
Northeast Remote Operations (Burwell St)	VFS/Parks
COR Paratransit Operations Facility	Transportation
Downtown Remote Operations	Engineering Services/Transportation
Raleigh Transit Operations Facility	Go Raleigh
New Bern Avenue Maintenance Facility	Raleigh Fire Department/Engineering Services
Solid Waste-Wilders Grove Service Center	Solid Waste Services
Yard Waste Facility	Solid Waste, Yard Waste Facility
Smith Creek WWTP	Public Utilities
Little Creek WWTP	Public Utilities
Buffaloe Road Athletic Park	Parks, Recreation and Cultural Resources
Walnut Creek Park North	Parks, Recreation and Cultural Resources
Ridge Road Pool	Parks, Recreation and Cultural Resources
Raleigh Fire Department Facility #1	Raleigh Fire Department
Mt. Herman Rd Operation Facility	Transportation
Biltmore Hills Park	Parks, Recreation and Cultural Resources
Millbrook-Exchange Park	Parks, Recreation and Cultural Resources
Pullen Park	Parks, Recreation and Cultural Resources
Optimist Park	Parks, Recreation and Cultural Resources
Longview Pool	Parks, Recreation and Cultural Resources
Neuse River Resource Recovery Facility	Public Utilities
Dempsey E. Benton Water Treatment Plant	Public Utilities
E. M. Johnson Water Treatment Plant	Public Utilities
Raleigh Union Station	Transportation
Bain Odor Control Station	Public Utilities
Lake Johnson	Parks, Recreation and Cultural Resources
Dorothea Dix Park	Parks, Recreation and Cultural Resources
Keeter Training Center	Raleigh Fire Department



Facility Name	City Department
Marsh Creek Facility	Parks, Recreation and Cultural Resources
North Raleigh Operations Facility	Public Utilities
South Raleigh Operations Facility	Public Utilities
East Raleigh Operations Facility	Public Utilities
E.M. Johnson Water Raw Water Intake	Public Utilities
Walnut Creek Odor Control and Pump Station	Public Utilities
Crabtree Creek Odor Control & Pump Station	Public Utilities
Marsh Creek Odor Control Station	Public Utilities
Buffaloe Road Odor Control Station	Public Utilities
Hwy 50 Odor Control Station	Public Utilities

Section H: Program to Monitor and Evaluate Stormwater Discharges to Municipal Systems

H.1 Program Narrative

The City maintains an inventory of permitted hazardous waste treatment, disposal, and recovery facilities, industrial facilities that are subject to Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA), and industrial facilities identified with an industrial activity permitted to discharge stormwater to the permittee's MS4. The City's program prioritizes and inspects City-owned facilities with Stormwater NPDES Industrial Permits annually and privately-owned facilities with Stormwater NPDES Industrial Permits at least once every three years. Non-exposure sites permitted through the NCDEQ are inspected once every permit cycle.

H.2 Best Management Practices

Permit Reference/BMP	FY2021	FY2022-2026	Reporting Metric(s)	2020-2021
Part II Section H.2 (a) Maintain an inventory of industrial facilities	Update the industrial facility inventory to incorporate the current permitted hazardous waste facilities and facilities that are subject	Maintain and update the industrial facility inventory as needed.	Report number of industrial facilities identified within the City's corporate limits	75



	to Section 313 of SARA Title III (EPA 2020).	Notify the Water Quality Manager of program modifications.		
Part II Section H.2 (b) Inspection program	Review inspection procedures and update inspection guidance and checklists, if necessary.	Review inspection procedures and update inspection guidance and checklists, if necessary.	Report number of facility inspections conducted	31
	Review inspections results and identify program priorities. Notify the Water Quality Manager of program modifications.	Review inspections results and revise program priorities, if necessary. Notify the Water Quality Manager of program modifications.	Identify program priorities	City-owned facilities - inspected annually Privately-owned facilities – inspected once every three years Non-exposure sites – inspected once every permit cycle
Part II Section H.2 (c) Evaluate industrial facilities discharging stormwater to the City's MS4	Conduct inspection activities based on established procedures documented in City guidance and checklists.	Conduct inspection activities based on established procedures documented in City guidance and checklists.	Report number of deficiencies identified and forwarded to enforcement authority (NCDEQ)	2; NCG240012 and NCG200335
	Notify the Water Quality Manager of program modifications.	Notify the Water Quality Manager of program modifications.		

Section I: Water Quality Assessment and Monitoring

I.1 Program Narrative

The City has developed and implemented a Water Quality Assessment and Monitoring Program that identifies monitoring locations, a monitoring schedule, monitoring parameters, sample data analysis, and data evaluation and assessment.



I.2 Best Management Practices

Permit Reference/BMP	FY2021	FY2022-2026	Reporting Metric(s)	2020-2021
Part II Section I.2 (a) Water Quality Assessment and Monitoring Plan	Complete update of the water quality assessment and monitoring plan.	Review the water quality assessment and monitoring plan and update as needed. Notify the Water Quality Manager of program modifications.	Report updates and revisions to the monitoring plan	Updated sampling map for NPDES sites, laboratory methods for sample constituents, and SOP information
Part II Section I.2 (b) Water quality monitoring	Conduct water quality monitoring and data evaluation, as documented in the Water Quality Assessment and Monitoring Plan.	Conduct water quality monitoring and data evaluation, as documented in the Water Quality Assessment and Monitoring Plan. Provide current Water Quality Assessment and Monitoring Plan to DEQ, if revised. Notify the Water Quality Manager of program modifications	Report number of stream sites monitored	18
			Report number of samples collected	1,080
			Report parameters analyzed	Total suspended solids, ammonia, total Kjeldahl nitrogen, nitrate/nitrite, total nitrogen (sum of TKN and NO ₃ /NO ₂ , not collected in the field), calcium, copper, magnesium, total phosphorus, zinc, total hardness, turbidity, E. coli
			Report trends in data from stream sites monitored	For the resulting dataset, several constituents reported high rates of non-detect values: zinc (91%, reporting limit .010 mg/L), ammonia (97%, reporting limit 0.10 mg/L), and copper (96%, reporting limit 0.0020 mg/L). Notably total phosphorus also reported non-detect values at a high rate (63%, reporting limit 0.050 mg/L).



Section J: Total Maximum Daily Loads

J.1 Program Narrative

The following TMDLs within Raleigh's MS4 (corporate limits of the City of Raleigh) are noted in Section 2.5 and Table 2 of the SWMP:

- Falls Lake
- Neuse River Estuary
- Pigeon House Branch
- Perry Creek

The Falls Lake and Neuse River Estuary TMDLs are regional TMDLs. The City is addressing the Falls Lake TMDL through its participation in the ongoing 4B Nutrient Management Strategy in collaboration with other municipalities through the Upper Neuse River Basin Association. The City is addressing the Neuse River Estuary TMDL through its implementation of the Nutrient Sensitive Waters Management Strategy and City ordinances adopted as required by State of North Carolina Neuse Nutrient Strategy Rules.

The Pigeon House Branch and Perry Creek TMDLs are local TMDLs. A portion of the Perry Creek watershed is within Raleigh's MS4, and all of the Pigeon House Branch watershed is within Raleigh's MS4. Because NCDEQ has not established numerical Waste Load Allocations (WLAs) for these TMDLs between the City of Raleigh and other entities identified in the TMDL documents, the City has not developed TMDL plans for these watersheds. In late 2021 the City will contract for consulting services to begin TMDL planning for these watersheds in accordance with Part II.J.4 of the City's MS4 permit, which calls for the City to evaluate strategies and implement best management practices to address pollutants of concern in these watersheds within Raleigh's MS4.

J.2 Best Management Practices

Permit Reference/BMP	FY2021	FY2022-2026	Reporting Metric(s)	2020-2021
Part II Section J.3 (a) Identify, describe, and map watershed, outfalls, and streams	Continue to monitor TMDL development. If a TMDL is developed that assigns an individual numeric WLA to the City, evaluate strategies and tailor SWMP BMPs to address the pollutants of concern and associated TMDLs and develop a TMDL Plan.	Continue to monitor TMDL development. If a TMDL is developed that assigns an individual numeric WLA to the City, evaluate strategies and tailor SWMP BMPs to address the pollutants of concern and associated TMDLs and develop a TMDL Plan.	Report TMDLs with WLAs within the MS4	N/A
			Report changes in outfall inventory that may be contributing to impairment of identified streams	N/A based on current data.



Permit Reference/BMP	FY2021	FY2022-2026	Reporting Metric(s)	2020-2021
Part II Section J.3 (b) Evaluate existing measures	Continue to monitor TMDL development. If a TMDL is developed that assigns an individual numeric WLA to the City, establish measures for identifying and reducing pollutants of concern to the MEP.	Continue to monitor TMDL development. If a TMDL is developed that assigns an individual numeric WLA to the City, establish measures for identifying and reducing pollutants of concern to the MEP.	N/A, Report pollutants of concern and measures taken for reduction	N/A
Part II Section J.3 (c) Assessment of available monitoring data	Continue to monitor TMDL development. If a TMDL is developed that assigns an individual numeric WLA to the City, review and assess monitoring data.	Continue to monitor TMDL development. If a TMDL is developed that assigns an individual numeric WLA to the City, review and assess monitoring data.	N/A, Report monitoring data summary and data trends	N/A
Part II Section J.3 (d) Monitoring Plan	Continue to monitor TMDL development. If a TMDL is developed that assigns an individual numeric WLA to the City, develop TMDL monitoring plan for applicable assigned NPDES regulated WLA.	Continue to monitor TMDL development. If a TMDL is developed that assigns an individual numeric WLA to the City, develop TMDL monitoring plan for applicable assigned NPDES regulated WLA.	N/A, Report updates to monitoring plan	N/A
Part II Section J.3 (e) Additional Measures	Continue to monitor TMDL development. If a TMDL is developed that assigns an individual numeric WLA to the City, establish programs and measures to be implemented within the City's MS4 permit program that are designed to achieve the assigned MS4 NPDES regulated WLA and to reduce the TMDL pollutant of concern to the MEP within the watershed to which the TMDL applies.	Continue to monitor TMDL development. If a TMDL is developed that assigns an individual numeric WLA to the City, establish programs and measures to be implemented within the City's MS4 permit program that are designed to achieve the assigned MS4 NPDES regulated WLA and to reduce the TMDL pollutant of concern to the MEP within the watershed to which the TMDL applies.	N/A, Report additional measures taken	N/A



Permit Reference/BMP	FY2021	FY2022-2026	Reporting Metric(s)	2020-2021
Part II Section J.3 (f) Implementation Plan	Continue to monitor TMDL development. If a TMDL is developed that assigns an individual numeric WLA to the City, establish a schedule to address the NPDES WLA pollutant of concerns	Continue to monitor TMDL development. If a TMDL is developed that assigns an individual numeric WLA to the City, establish a schedule to address the NPDES WLA pollutant of concerns	N/A, Report achievement of schedule milestones	N/A
Part II Section J.3 (g) Incremental Success	Continue to monitor TMDL development. If a TMDL is developed that assigns an individual numeric WLA to the City, track successes per the plan. Review and update as needed	Continue to monitor TMDL development. If a TMDL is developed that assigns an individual numeric WLA to the City, track successes per the plan. Review and update as needed	N/A, Report successes	N/A
Part II Section J.3 (h) Reporting	Continue to monitor TMDL development. If a TMDL is developed that assigns an individual numeric WLA to the City, prepare an assessment of activities and data analysis for the TMDL watershed plan	Continue to monitor TMDL development. If a TMDL is developed that assigns an individual numeric WLA to the City, prepare an assessment of activities and data analysis for the TMDL watershed plan	N/A Report annual assessment outcomes	N/A
Part II Section J.4. If no MS4 NPDES regulated waste load allocation (WLA) is specified in the TMDL	Develop TMDL Plan for Pigeon House Branch and Perry Creek that includes strategies and tailors BMPs to address the POC in the watersheds.	Review the TMDL Plan to incorporate any new TMDLs or program modifications, if necessary.	Report the development/maintenance of the TMDL Plan and modifications, if necessary	N/A; Pending
	Implement the TMDL Plan. Notify the Water Quality Manager of program modifications.	Implement the TMDL Plan. Notify the Water Quality Manager of program modifications.	Report BMPs implemented	N/A; Pending

Section K: Annual Assessment and Annual Summary

This reporting year has been one of internal review, expansion, and strategic improvement which has allowed our Stormwater Program to increase the level of service that we provide to the residents of Raleigh.



K.1 Assessment

During the 2020-2021 reporting period, City staff contracted with a private consultant to assist in the completion of a voluntary NPDES MS4 Self-Audit and summary report to assist in identifying compliance gaps and opportunities for program improvement across a wide range of programs and work groups. This assessment and final report was completed and provided to City staff in December 2020. Staff workgroups were then established based on responsibilities and duties to further discuss, address, and improve their respective programs and program components.

K.2 Program Improvements

Several important initiatives stemmed from this report, with the revamping and updating of our Stormwater Management Plan (SWMP) being the most immediate and impactful. The SWMP was provided to the Stormwater Management Advisory Commission for review and comment and put out for public comment during this permit cycle. Upon completion of the comment period, the final version was submitted to NCDEQ in March 2021 for NCDEQ review. Upon approval, a wide range of other program improvements were implemented, and the tracking of revised performance metrics commenced. The annual report template was then overhauled to align with the recently approved SWMP and to coincide with NCDEQ guidance of using a tabular approach for reporting metrics as opposed to the traditional narrative reporting. Several projects were initiated to address compliance gaps. Projects during this reporting period included, but are not limited to, the identification and improvement of our "Major Outfall" inventory, drafting of a City-Wide Spill Response Guidance Document, and further development of our Pollution Prevention and Good Housekeeping (PPGH) Program. We are also developing an SCM Inspection and Maintenance Plan, and a comprehensive MS4 O&M Plan, both of which are ongoing. Smaller enhancements were wide-ranging and are continually occurring. Representative examples include the expansion and refining our Industrial permit inventory, updating of the Illicit Discharge Detection and Elimination SOP, and further updates to our Dry Weather Flow Outfall inspection practices.

This year has also seen the City of Raleigh further invest in its Stormwater Program through the creation of several new positions, including, but not limited to, two new SCM Inspection and Maintenance staff, five additional staff for MS4 Asset Management and field condition assessment, and the reclassification of an existing position to include more NPDES MS4 permit and program responsibilities.

K.3 Program Initiatives

Moving into the next reporting period, the City of Raleigh has several ongoing initiatives which include continued development of Service Level Agreements (SLAs) to better manage City-owned SCMs across multiple city departments, completion of approximately sixteen (16) pollution prevention plans for sites identified as high priority sites by our PPGH program, and the completion of multiple program plans for our Education and Outreach, PPGH, IDDE, Industrial Facility Inspections Programs. This next reporting cycle will see the consultant-assisted completion of our MS4 O&M Plan and SCM Inspection and Maintenance Plan and the start of multiple watershed studies throughout the City. Stormwater Staff have begun working with a consultant to develop strategies to best address the Pigeon House Branch and Perry Creek TMDL watershed requirements and have resources and funding allocated for FY23 to begin implementation of these TMDL plans that will be under development during the upcoming reporting period.

Upon completion of the NCDEQ NPDES MS4 Audit proposed for FY22, City staff have budgeted funds and contracted with a consultant to further revise the SWMP based on City staff feedback and in response to pending NCDEQ guidance and feedback.