Annual Report

Term IV, Year 5: July 1, 2019 – June 30, 2020

For Submittal to:
NC Department of Environmental Quality
Division of Energy, Mineral, and Land Resources

Submitted by:
NC Department of Transportation
NPDES Permit No. NCS000250

October 31, 2020

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This report is in compliance with NCDOT's National Pollutant Discharge Elimination System (NPDES) stormwater discharge permit (NCS000250) requirement under Part III Section A.1 to submit an assessment of the activities performed under the permit for the period July 1, 2019 – June 30, 2020. The NPDES permit authorizes NCDOT to discharge stormwater runoff from general roadways including weigh stations and tolling facilities, construction activities disturbing greater than one acre, borrow pits/waste piles, industrial facilities, office buildings, rest areas, and NCDOT-owned railways. Activities conducted by the North Carolina Turnpike Authority are also covered under this permit.

NCDOT integrates the environmental protection programs required by the permit with the Department's broader triple bottom line goals of accelerated delivery of the State Transportation Improvement Program (STIP), enhancing the appearance of roadway corridors, and working collaboratively with public and private sector partners to enhance the state's economic competitiveness.

NCDEQ conducted a statewide audit of NCDOT's NPDES Permit Programs throughout this permit year which included inspections of eight NCDOT industrial facilities and eight construction project sites and an in-depth review of all permit program areas. The audit focused primarily on program processes and was designed to serve both NCDEQ and NCDOT in the upcoming permit renewal. On February 6, 2020 NCDEQ issued NCDOT a Notice of Compliance which indicated that the "audit identified no major deficiencies". NCDEQ also provided some minor recommendations for program improvements which will be considered as appropriate for implementation in the next permit year. NCDOT continues to work with NCDEQ on our permit renewal process, which has included the submittal of NCDOT's permit renewal application form on April 3, 2020.

Note: due to the Coronavirus pandemic and associated resulting budgetary restrictions defined by North Carolina law and NCDOT policy, some planned permit program activities were canceled, postponed, or modified to accommodate circumstances. Examples include: in person meetings or training activities being moved to online formats, significant reductions in contractor support staff, postponed retrofit BMP construction, and various other project delays. NCDOT continues to strive forward with collaboration and implementation of our permit program requirements during this unprecedented crisis.

Select Accomplishments for Year 5 of Permit Term IV (July 1, 2019 – June 30, 2020)

A few examples of accomplishments achieved by NCDOT during Year 5 of Permit Term IV to comply with the permit and streamline processes to support project delivery are outlined below:

- Post-Construction Stormwater Program – In this permit year NCDOT made significant progress with its USGS project partners to lay the technical foundation for a future update of its Post-Construction Stormwater Program (PCSP). The updated PCSP is to be sequenced with the Department's Integrated Project Delivery (IPD) initiative. The vision for the updated PCSP is to provide workflows which move stormwater management planning earlier in the project delivery process and provide a system of defining project specific treatment expectations independent of whether the projects is managed centrally or at the Division or local level. These improvements are anticipated to increase the transparency and efficiency of the regulatory review process and minimize conflicts with site constraints. To compliment this initiative NCDOT has also developed a BMP Decision Support Matrix,

which will help designers make informed choices on the usage of various best management practices tailored to their project.

- Stormwater Control Measure (SCM) Inspection and Maintenance Program – NCDOT made significant improvements to its Stormwater Control Management System (SCMS) database application to streamline it and upgrade its reporting and mapping functions. NCDOT also continued to gather and evaluate cost data associated with SCMs damaged during severe storm events to better address cost issues associated with future SCM damages. NCDOT staff, with consultant help, continued to work on improving SCMs that were not functioning as intended.
- Vegetation Management Program – NCDOT conducted two regional Roadside Pesticide Training Sessions in February and March 2020 for 183 Division staff. The sessions provided pesticide recertification training, including discussions of pesticide recertification requirements, applications, methods; aquatic subcategory, pesticide handling, and compliance of NPDES pesticide storage facilities.
- Construction Program – NCDOT continues to operate under its delegated authority granted by the NC Sedimentation Control Committee. NCDOT's Construction Program continues to review and approve erosion & sediment control (ESC) plans, implement and maintain standard specifications and project special provisions, provide guidance on ESC/stormwater issues, perform inspections and monitoring of construction projects, maintain NCDOT's reclamation process, and provide ESC/stormwater training materials to contractors/ consultants. The following inspections were performed by Roadside Environmental Unit Field Operations staff in permit year 2020 (PY2020) for each category of land disturbing activity: 4,477 contract construction projects, 128 maintenance projects, 29 vertical construction projects, 297 bridge maintenance projects, 124 resurfacing projects, and eight NCDEQ statewide audit construction project site visits.
- Industrial Activities Program – NCDOT continues to implement and maintain Stormwater Pollution Prevention Plans (SPPPs) at over 200 industrial facilities. NCDOT staff conducted 17 internal site reviews, provided online and in-person training to Division staff and contractors, and continued to assist Divisions on SPPP implementation. Eight NCDOT industrial facilities were inspected by NCDEQ as part of the statewide audit of NCDOT's NPDES Permit, with a focus on the facilities various SPPP implementation tasks, including pollution prevention BMPs, facility inspection procedures, and recordkeeping.
- Internal Education Program – NCDOT staff provided stormwater related training to NCDOT employees and contractors and continued to develop their knowledge of stormwater management through participation in online technical training. The Coronavirus pandemic impacted some planned training initiatives in PY2020, especially in-person workshops, group training sessions and conferences, many of which were canceled or postponed. NCDOT has been adaptive utilizing online training resources for professional development and conducted numerous online meetings to disseminate training information to Division staff and contractors. Some training activities that were delayed will be addressed in PY2021.

- External Education Program – NCDOT staff worked with the Office of Education Initiatives to conduct an educational workshop session for the WakeEd Summer STEM 2020 Session teachers. NCDOT presented on how the Department manages stormwater runoff on post-construction projects; erosion and sediment control for construction projects; and stormwater pollution prevention at NCDOT facilities.
- Research Program – NCDOT completed two draft reports providing recommendations for optimizing new and existing swales and bioswales within NCDOT rights-of-way. The associated research improved NCDOT's understanding of how trapezoidal shaped swales, forebays and checkdams can reduce pollutant loads in discharges, as well as how length and slope affect performance. NCDOT continued managing multiple on-going stormwater-related research projects. Additionally, NCDOT staff initiated a state-wide outreach effort to UNC system universities to inform faculty about the Department's research grant program and learn more about the faculty's areas of expertise. The objective of this outreach effort is to expand the pool of researcher talent participating in NCDOT's stormwater research program.

Considerations for Permit Year 2021 (PY2021)

NCDOT anticipates continued impacts to its NPDES stormwater programs due to the ongoing Coronavirus pandemic. NCDOT's budgetary situation is expected to improve and stabilize in the coming permit year and thus long-term permanent impacts to stormwater programs are not anticipated. Resource intensive programs such as the BMP Retrofit Program and the Industrial Activities Program for example, will be ramping back up in PY 2021, but may not be at full production level due to lingering budgetary restrictions.

Despite these temporary challenges, in the upcoming permit year NCDOT will continue to advance its goals of accelerating the pace of project delivery and supporting project stormwater management decision making at the Division level. Implementation of the recommendations from the Integrated Project Delivery initiative will continue this permit year which will provide an opportunity to pilot test improvements to the Post-Construction Stormwater Program workflows. Work with our USGS partners on the SELDM project will continue throughout the year in support of the future update to the PCSP. NCDOT will also continue its work on its enterprise GIS system known as Project ATLAS and examine opportunities to integrate PCSP compliance into the ATLAS Workbench project deliverables management system.

In PY2021 the Retrofit Opportunity Site Selection Program will transition from the final testing and training phases to at least partial if not full implementation after delays related to the pandemic in PY2020. Targeting watersheds for retrofit opportunity identification is anticipated to occur in cooperation with partners in NCDEQ and local governments interested in watershed restoration planning.

NCDOT will continue to identify opportunities to expand training to effectively reach staff, contractors, and consultants, and has plans to update several training topics as described in this report. These includes evaluating the provision of additional computer-based learning program content to promote more online training opportunities for NCDOT staff.

NCDOT will work in partnership with NCDEQ to update any permit conditions deemed necessary for the Term V permit. As instructed by NCDEQ, NCDOT will continue to operate under the Term IV existing permit, beyond the September 30, 2020 expiration date, until the renewed permit become effective which is anticipated to be January 1, 2020.

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Program Summaries

Tables

Appendix

AAH	Adopt-A-Highway
AGOL	ArcGIS Online
AMP	Assessment and Monitoring Plan
ATLAS	Advancing Transportation through Linkages Automation and Screening
BMP	Best Management Practice
BUA	Built Upon Area
CADD	Computer-Aided Design and Drafting
CFR	Code of Federal Regulations
EE	External Education
EMC	Environmental Management Commission
ESC	Erosion and Sediment Control
ESM	Environmental Sensitivity Map
FHWA	Federal Highway Administration
FIP	Field Inventory Protocol
GIS	Geospatial Information System
GREEN	Guided Reduction of Excess Environmental Nutrients
HSP	Highway Stormwater Program
HU	Hydraulics Unit
IA	Industrial Activities
I&M	Inspection and Maintenance
IDDEP	Illicit Discharge Detection and Elimination Program
IE	Internal Education
IPD	Integrated Project Delivery
IRMA	Industrial Roadway Maintenance Activities
ITRE	Institute for Transportation Research and Education
IWS	Internal Water Storage
LOS	Level of Service
MEP	Maximum Extent Practical
MPE	Multi-Sensor Precipitation Estimate
NCAC	North Carolina Administration Code
NCDA&CS	North Carolina Department of Agriculture & Customer Services
NCDEMLR	North Carolina Division of Energy, Minerals and Land Resources
NCDENR	North Carolina Department of Environment and Natural Resources (historical name for NCDEQ)
NCDEQ	North Carolina Department of Environmental Quality
NCDIT	North Carolina Department of Information Technology
NCDOT	North Carolina Department of Transportation
NCDOT-JLSLAT	NCDOT Jordan Lake Stormwater Nutrient Loading Accounting Tool
NCLTAP	North Carolina Local Technical Assistance Program
NCSU	North Carolina State University
NCTA	North Carolina Turnpike Authority

NCVMA	North Carolina Vegetation Management Association
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System
OEI	Office of Education Initiatives
PCSP	Post Construction Stormwater Program
PEF	Professional Engineering Firm
PPE	Personal Protection Equipment
REU	Roadside Environmental Unit
RoF	Report of Findings
ROSS	Retrofit Opportunity Site Selection
ROW	Right of Way
RPC	Retrofit Project Cycle
SELDM	Stochastic Empirical Loading and Dilution Model
SECREF	Sediment and Erosion Control Research and Education Facility
SCMS	Stormwater Control Management System
SMP	Stormwater Management Plan
SPCA	Sedimentation Pollution Control Act
SPCC	Spill Prevention Control and Countermeasure
SPPP	Stormwater Pollution Prevention Plan
SSIP	Stormwater System Inventory and Prioritization
STEM	Science, Technology, Engineering, and Math
STORMDATA	Stormwater Research Monitoring Database
TMDL	Total Maximum Daily Load
TS4	Transportation Separate Storm Sewer System
USEPA	United States Environmental Protection Agency
USGS	United States Geological Survey
VM	Vegetation Management
WLA	Waste Load Allocation

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1.0 Introduction

The Highway Stormwater Program (HSP) was established in 1998 to manage the Department's compliance with its statewide Phase I National Pollutant Discharge Elimination System (NPDES) stormwater permit. The NPDES permit authorizes the North Carolina Department of Transportation (NCDOT) to discharge stormwater runoff from the following activities:

- General roadway including weigh stations and tolling facilities
- Construction activities disturbing greater than one acre
- Borrow pits/waste piles (including mines)
- Industrial facilities with the following activities
    - Ferry terminals and maintenance
    - Vehicle and equipment maintenance
    - Pesticide and fertilizer storage
    - Salt and deicing chemical storage
    - Material storage areas
    - Asphalt and concrete plants (NCDOT owned and operated only)
    - Rail maintenance
- Non-roadway non-industrial facilities (i.e., office buildings and rest areas)
- General railway

This permit also covers the following sub-organizations:

- All similar activities of the North Carolina Turnpike Authority (NCTA), for all NCTA projects across the state.
- All similar activities of the I-77 Mobility Partners, for the I-77 corridor.

In order to implement the permit, NCDOT has organized the HSP into thirteen (13) main NPDES program areas. The HSP also manages NCDOT's implementation of the stormwater requirements in the Jordan and Falls Reservoir watersheds in compliance with state nutrient load reduction rules for state and federal entities. Annual reporting requirements for these two watersheds can be found in Section 15 of this report and is allowed by 15A North Carolina Administration Code (NCAC) 02B .0271 (8)(c) and 15A NCAC 02B .0281 (11)(d).

Compliance activities associated with the NPDES permit and the Jordan and Falls Reservoir watersheds are managed by the Hydraulics Unit and the Roadside Environmental Unit and are implemented by business units across NCDOT.

This annual report describes the various achievements and compliance activities by program area for Year 5 of permit Term IV, covering the period of July 1, 2019 through June 30, 2020.

The Department's NPDES permit was reissued in the fall of 2015 (effective October 1, 2015). Since this is the fourth permit, NCDOT refers to it as the Term IV permit. With this reissuance, the reporting period

for the annual report was changed to align with the Department's fiscal year to facilitate planning. Throughout this document, reporting years are referred to as Permit Year 20xx (or PY20xx) to denote the following time frames:

- PY2015: September 1, 2014 – August 31, 2015 (Year 5 of the previous Term III permit)
- PY2016: July 1, 2015 – June 30, 2016 (Year 1 of the Term IV permit)
- PY2017: July 1, 2016 – June 30, 2017 (Year 2 of the Term IV permit)
- PY2018: July 1, 2017 – June 30, 2018 (Year 3 of the Term IV permit)
- PY2019: July 1, 2018 – June 30, 2019 (Year 4 of the Term IV permit)
- PY2020: July 1, 2019 – June 30, 2020 (Year 5 of the Term IV permit)

2.0 Illicit Discharge Detection and Elimination Program

NPDES Permit Part II.A

Objectives and Measurable Goals

The program objectives are to:

i. Implement an Illicit Discharge Detection and Elimination Program (IDDEP) to detect illicit discharges, spills, and illegal dumping into the NCDOT transportation separate storm sewer system (TS4).

ii. NCDOT shall implement appropriate procedures and actions to report illicit spills, discharges and illegal dumping for appropriate enforcement or other action by North Carolina Department of the Environment Quality (NCDEQ).

Management Measures	Measurable Goals
(a) Provide illicit discharge identification training.	NCDOT shall provide annual training for appropriate staff and contractors. Training shall include identification and reporting of illicit discharges and illegal dumping.
(b) Perform illicit discharge inspections.	NCDOT shall perform inspections for illicit discharges to the stormwater drainage system and illegal dumping activities when performing other work on the NCDOT system. Inspections shall be documented when illicit discharges are verified.
(c) Maintain a standard point of contact.	NCDOT shall maintain a standard reporting format and contact for all complaints and reports of illicit discharges.
(d) Report illicit discharges.	NCDOT shall investigate all reports of illicit discharges or illegal dumping. NCDOT shall report verified illicit discharges to the appropriate NCDEQ Regional Office within 30 days of verification.
(e) Maintain a tracking database.	NCDOT shall maintain a tracking database for reports of illicit discharges.

Program Overview

The IDDEP was developed and implemented to detect and eliminate illicit discharges/spills and illegal dumping into the NCDOT TS4. The program provides training of NCDOT staff and contractors on performing inspections, identification of illicit discharges and illegal dumping, and reporting to NCDEQ. NCDOT maintains a tracking database and a standard point of contact for the program.

NCDOT continues to maintain its IDDEP to detect illegal dumping, spills, and discharges along the state's roadway system. NCDOT employees participate in training to help enable identification of potential illegal dumping, spills, and discharges when performing other work on the NCDOT system, as well as instruction on reporting them to the HSP IDDEP Manager, who acts as the primary point of contact for the program.

Accomplishments

Ongoing IDDEP Training – As required by Internal Education (IE) Program Management Measures (a) and (b) and IDDEP Management Measure (a), NCDOT HSP staff continues to provide training to NCDOT employees on how to recognize and report illicit discharges and illegal dumping activities. IDDEP training is provided in conjunction with other training events, including training workshops for NCDOT Divisions and during various Division meetings. In PY2020, NCDOT HSP staff provided IDDEP training to NCDOT employees as part of NCDOT's Stormwater Pollution Prevention Plan and Spill Prevention Control and Countermeasure Plan Training Workshops when appropriate. Due to the Coronavirus crisis, NCDOT postponed spring in-person training workshops and instead conducted several online training sessions for staff in several Divisions. NCDOT continues to post Illegal Dumping educational posters and IDDEP brochures at maintenance facilities. NCDOT's IDDEP Field Report and the "Illegal Discharge: Know What to Do" brochures are also available to NCDOT employees. See External Education (EE) for additional details on other stormwater educational material distributions to the public or Adopt-A-Highway volunteers. These materials are related to litter, illicit discharges, and illegal dumping, and help raise awareness on reporting illicit discharges and illegal dumping found on NCDOT roadways.

Tracking and Reporting Illicit Discharges – NCDOT continues to maintain its IDDEP tracking system for identified illicit connections and illegal dump sites found within the NCDOT transportation separate storm sewer system (TS4). In addition, NCDOT continues to implement IDDEP identification and reporting as part of its Field Inventory Program in the Stormwater System Inventory and Prioritization Program. When an illegal discharge is identified within the NCDOT TS4, an IDDEP Field Report form is used to capture applicable information. HSP staff or the Division staff that identifies the discharge or dump site perform a preliminary investigation following NCDOT safety procedures to verify the material makeup of the illicit discharge or illegally dumped materials. Once the site has been investigated and verified, the Division notifies the IDDEP Manager, who then reports the discharge to the appropriate NCDEQ Regional Office within 30 days of the illicit discharge identification date.

In PY2020, NCDOT identified and followed up on eight new potential illicit discharges and illegal dumps across the state, which resulted in seven verified and reported to NCDEQ.

Considerations for Permit Year 2021

NCDOT will continue to maintain the established IDDEP procedures in PY2021. NCDOT will continue to provide guidance to Divisions on roadside spills, to make improvements on electronic reporting of potential IDDEPs, and to update computer-based training content for Division staff. NCDOT will continue to routinely evaluate the program's internal processes for effectiveness and to help the HSP target certain areas that may need additional IDDEP education or coordination assistance.

3.0 Stormwater System Inventory and Prioritization Program

NPDES Permit Part II.B.1

Objectives and Measurable Goals

The program objectives are to:

i. Maintain the statewide NCDOT stormwater outfall inventory for the purpose of supporting other permit programs.
ii. Maintain a stormwater outfall geospatial information system (GIS) data layer to map and prioritize sensitive water crossings.
iii. Maintain a field inventory procedure to be used for NCDOT/ DEMLR identified priority areas.

Management Measures	Measurable Goals
(a) Maintain a stormwater outfall inventory of existing stormwater outfalls to sensitive waters.	NCDOT will maintain a GIS-based implicit stormwater outfall inventory to include outfalls from primary and secondary roadways.
(b) Include in the inventory implicit outfalls from newly completed construction projects.	The stormwater outfall inventory shall be updated annually to include implicit outfalls from newly completed construction projects.
(c) Include outfalls for NCDOT industrial facilities in the inventory.	The stormwater outfall inventory shall be updated annually to include changes or additions to previously inventoried NCDOT industrial facilities.
(d) Field outfall inventory procedure for priority areas.	NCDOT will maintain the field outfall inventory procedure. The annual report shall document implementation of the procedure, identify future priority areas, and define a schedule for implementing the procedure within the identified priority areas.

Program Overview

NCDOT implemented a Stormwater System Inventory and Prioritization (SSIP) Program to support other permit programs with information regarding NCDOT's TS4 system. SSIP activities include maintaining a stormwater system GIS map which prioritizes sensitive water crossings and developing and implementing a Field Inventory Procedure (FIP) for priority areas identified collaboratively by NCDOT and NCDEQ. During its Term II permit (April 2005-March 2010), NCDOT developed a geospatial processing methodology to estimate the locations of outfalls and establishing a baseline inventory. This inventory of implicit outfalls is updated annually.

Accomplishments

The stormwater outfall inventory is updated using the following three processes:

- Implicit outfalls are updated using geospatial processing to identify locations where roads cross streams.

- Industrial outfalls are updated using changes reported by NCDOT's industrial facilities.
- Field-verified outfalls are captured using the FIP.

Table 1 lists the total number of outfalls inventoried by program cumulatively from its inception through PY2020.

Table 1. Outfalls Inventoried Through PY2020

Outfall Type	Total Outfalls in Inventory
Implicit Outfalls	116,087
Industrial Outfalls	665
Field Verified Outfalls	1,873

Updates to NCDOT Environmental Sensitivity Map (ESM) Layers – In PY2020 the HSP completed updates to the Industrial Outfall and Stormwater Control layers that are incorporated into NCDOT's ESM database. Data was converted from tabular form into spatial layers in a personal geodatabase and then reviewed for error reporting. Processing of the data resulted in 665 Industrial Outfall locations.

Considerations for Permit Year 2021

NCDOT's Field Inventory Program anticipates performing additional data collection efforts during PY2021. NCDOT anticipates working with NCDEQ to identify an appropriate 5r watershed(s) for future inventory. NCDEQ has recently developed an online watershed restoration plan protocol to encourage the development of Category 5r management plans in lieu of near-term total maximum daily load (TMDL) development. Implementing the FIP in a Category 5r watershed could contribute to the development of a watershed restoration plan in subsequent years.

4.0 BMP Retrofits Program

NPDES Permit Part II.B.2

Objectives and Measurable Goals

The program objectives are to:

i. Develop, implement and support the NCDOT program to be consistent with NPDES post-construction control measures and support development of the BMP Toolbox.
ii. Use retrofits to address pollutant loading from existing NCDOT activities.
iii. Retrofits should not be associated with meeting the requirements of any other NCDEMLR or NCDWR program, unless otherwise allowed.

Management Measures	Measurable Goals
(a) Identify appropriate retrofit sites.	Identify a minimum of fourteen (14) potential retrofits per year.
(b) Implement retrofits.	Maintain a program to implement retrofits. Complete a total of seventy (70) retrofits over the 5-year period of this permit. The retrofits will be appropriate for the identified pollutants of concern. Include in the annual report the number of retrofits completed.

Program Overview

NCDOT has implemented a best management practices (BMP) Retrofits Program that is consistent with NPDES post-construction control practices. It incorporates both structural and non-structural stormwater retrofits to address pollutant loading from existing NCDOT activities and to evaluate new stormwater controls. Retrofits implemented under the program are not associated with meeting the requirements of any other NCDEQ program, unless otherwise allowed. Each year, potential sites are evaluated and selected for retrofits under this program. The Retrofits Program collaborates with the Research and BMP Toolbox Programs to design, construct, and assess new and innovative BMP types or components.

Accomplishments

Two BMP retrofits listed in Table 2 were completed during the reporting period from July 1, 2019 to June 30, 2020.

Table 2. BMP Retrofits Completed During the Reporting Period

Identification No.	BMP Type	County	Location
IM-3-65-IS-3405	Infiltration Swale	New Hanover	NC 132 (College Rd)
IM-3-65-IS-3406	Infiltration Swale	New Hanover	NC 132 (College Rd)

The total number of retrofits NCDOT has been required to implement since the beginning of its Term I permit (effective June 8, 1998) until the end of the fifth year of the current Term IV permit is 280. This number of retrofits includes those additional 28 retrofits interpreted by NCDOT to be required during the two-year administrative extension of the Term I permit between April 1, 2003 and April 1, 2005. To date, NCDOT has implemented a total of 282 structural and non-structural retrofits since the beginning of its Term I permit. Table 3 lists BMP retrofits which were under design during the reporting period. The scheduled design completion date for most of these projects was affected by delays associated with the Coronavirus and associated budgetary challenges.

Table 3. BMP Retrofits Currently in the Design Phase

Identification No.	BMP Type	County	Location	# of Retrofits
D02-C016-0007-0019	Bio-Retention Cells	Carteret	Cedar Street	12
D02-C016-0020-0021	Constructed Wetlands	Carteret	NC24 & Anita Fonte & Youpon Dr.	2
D05-C039-0003-0005	Submerged Gravel Wetlands	Granville	I-85 & Gate 1 Road	3
D03-C071-0004	Chambers	Pender	Olde Point Loop Rd.	1

Additionally, HSP staff has identified and evaluated several potential site locations during the permit year for future installation of a BMP retrofit. All potential sites are stored within files on the NCDOT Hydraulics Unit servers. Target areas for new BMP retrofits include the Falls Lake Watershed and various impaired waters located within the three geographic regions of North Carolina. After construction, BMP retrofits are tracked in NCDOT's Stormwater Control Management System (SCMS) along with other BMPs.

Retrofit Opportunity Site Selection (ROSS) Program - In PY2018 NCDOT developed a plan which envisioned a new program designed to identify potential locations for retrofit BMPs. The vision for the program was described in the 2018 Annual Report. In PY2019 NCDOT initiated implementation of the plan to create the information technology components of the ROSS program and provide program documentation and training. During this permit year NCDOT made substantial progress in developing the ESRI Survey 123 and Collector mobile field applications along with the geodatabase schema designed to store the program's data. Testing and training of field crews was delayed due to safety considerations related to the Coronavirus.

Considerations for Permit Year 2021

In PY2021 NCDOT anticipates completing testing of the applications, finalizing the program documentation, conducting further training, and formally integrating the ROSS program into Retrofit Program workflows. The ROSS Program is anticipated to improve the efficiency of delivering the Retrofit Program by removing retrofit site selection from the critical path.

NCDOT in partnership with NCDEQ, the City of Raleigh, the Town of Cary, and interested citizens are developing a watershed action plan for the Walnut Creek watershed. It is anticipated that one of the first areas the ROSS program will be implemented will be in the Walnut Creek watershed in support of the plan's water quality restoration goals. Retrofit opportunities identified by the ROSS program will be shared with the project partners.

NCDOT has agreed in concept to partner with the NC Coastal Federation to develop a watershed restoration plan for the New Port River in Carteret County. The goal of the plan is to reduce the frequency of closures to shellfish harvesting through targeted stormwater retrofits and other management options. Assuming development of the plan moves forward the New Port River watershed will be programed as a target area for implementation of the ROSS program.

5.0 BMP Toolbox for Post-Construction Runoff Program

NPDES Permit Part II.B.3

Objectives and Measurable Goals

The program objectives are to:

i. Maintain and update as necessary a BMP Toolbox to aid in the siting, design, and construction of stormwater quality BMPs with guidance on the suitability of each for NCDOT applications.
ii. Evaluate BMPs for applicability to a linear highway system.

Management Measures	Measurable Goals
(a) Maintain a BMP Toolbox.	Maintain a stormwater BMP Toolbox to provide design guidance for post-construction stormwater control measures. The BMP Toolbox will include appropriate uses/anticipated applications and design criteria. Proprietary BMPs will be evaluated in keeping with NCDEMLR requirements for permitting new stormwater technologies.
(b) Update the toolbox as necessary	As necessary, evaluate new BMP types or design components for potential updates to the BMP Toolbox. If applicable to NCDOT applications, the BMP Toolbox will be updated to include this new information.
(c) Submit proposed BMP Toolbox revisions to NCDEMLR for approval.	New guidance on proposed BMPs will be submitted for NCDEMLR approval prior to implementation.

Program Overview

NCDOT developed the BMP Toolbox to aid in the siting, design, and construction of stormwater quality BMPs with guidance on the suitability of each for NCDOT applications. New guidance developed for inclusion in the BMP Toolbox must be approved by NCDEQ. The original version of the Toolbox was completed in 2008 and updates were published in PY2015. Recent efforts have included developing tools to aid personnel involved in the selection, siting, and design of BMPs to promote successful implementation of Toolbox BMPs. NCDOT continues to evaluate other BMP technologies to assess their practical need in the NCDOT TS4 and inclusion in the BMP Toolbox. The Toolbox Program works collaboratively with the NCDOT's Research and Retrofits Programs to evaluate research on existing and new BMP types for potential manual inclusion. If considered for inclusion, proprietary BMPs will be evaluated in keeping with the current NCDEQ policy on new stormwater treatment technologies.

Accomplishments

Implementation of the BMP Toolbox is an ongoing process. NCDOT continues to make the Toolbox and related materials available to design engineers within NCDOT and for professional engineering firms (PEFs) which provide design services. In addition to the Toolbox itself, NCDOT has completed a BMP Decision Support Matrix. The BMP Decision Support Matrix is a table-style reference intended to provide

designers guidance for selection of BMPs to meet project needs for targeted parameters of concern with consideration for various site constraints. The BMP Decision Support Matrix is available on the Highway Stormwater Program's website.

Considerations for Permit Year 2021

NCDOT will continue its focus on improvement of Toolbox implementation practices by making the Toolbox and other related tools available to designers, contractors, and inspectors involved in BMP design and construction. NCDOT has developed numerous project special provisions for components used in stormwater controls. These provisions will be reviewed and revised into a library to further standardization efforts. Training and implementation of the Toolbox will continue under the Post-Construction Stormwater Program. In addition, the Toolbox program will continue to work in conjunction with the Research Program to evaluate new BMPs technologies for consideration for future inclusion in the Toolbox Manual. In PY2021 NCDOT intends to initiate an update of the BMP Toolbox to incorporate findings from the Retrofit and Research Programs.

6.0 BMP Inspection and Maintenance Program

NPDES Permit Part II.B.4

Objectives and Measurable Goals

The program objectives are to:

i. Maintain a BMP Inspection and Maintenance Program to aid in the inspection, operation, and maintenance of BMPs.
ii. Maintain and update as necessary the BMP Inspection and Maintenance Manual.

Management Measures	Measurable Goals
(a) Evaluate new BMP inspection and maintenance needs.	Evaluate new BMPs included in the BMP Toolbox or otherwise needed for inspection and maintenance needs. The evaluation will include consideration of the BMP type, typical siting conditions, and expected function.
(b) Maintain BMP Inspection and Maintenance Manual.	Maintain written procedures outlining the inspection and maintenance requirements for various types of stormwater BMPs. Written procedures will outline the regular inspection frequency, and include an inspection checklist, "how-to" instructions for regular maintenance, evaluation and reporting procedures for non-routine maintenance, and an inspection and maintenance tracking mechanism. As modifications are needed, update the Manual to address needed changes to inspection and maintenance techniques.
(c) Implement a BMP Inspection and Maintenance Program.	Implement a BMP Inspection and Maintenance Program. The program will include annual training for appropriate NCDOT staff and contractors.
(d) BMP Inspection and Maintenance information.	BMP Inspection and Maintenance Program information will be made available upon request to NCDEMLR.

Program Overview

NCDOT implemented a BMP Inspection and Maintenance (I&M) Program to aid in the inspection, operation, and maintenance of BMPs (also referred to as SCMs). As part of the program, NCDOT maintains and updates a Stormwater Control Inspection and Maintenance Manual as needed. The Manual includes written procedures outlining the inspection and maintenance of stormwater SCMs, including establishing the inspection frequency for each SCM type. It also includes inspection checklists and provides instructions for routine and non-routine maintenance. The program assists NCDOT in better managing their stormwater infrastructure assets. When new SCMs are added to the BMP Toolbox, the I&M Program will evaluate them for inspection and maintenance needs and develop new chapters for the I&M Manual if needed. The program also oversees a comprehensive database system called the Stormwater Control Management System (SCMS), which maintains an inventory of NCDOT's

stormwater SCMs and tracks their inspection and maintenance records. The I&M Program coordinates training for staff and contractors with other program areas, as necessary.

Accomplishments

Inventory Maintained and Annual Inspections Completed

Approximately 80 new SCMs were added to the inventory during the reporting period and several SCMs were removed due to site changes resulting from new construction in PY2020. NCDOT continues to add new SCMs as new projects are built or as part of the Retrofits Program.

Division personnel are responsible for conducting field inspections of those stormwater control measure types requiring inspection and assigning a Level of Service (LOS) for each device. This year the HSP staff, along with their consultant, assisted several Divisions in performing inspections. A total of 610 SCMs were inspected in PY2020 (between July 1, 2019 and June 30, 2020). The Coronavirus crisis impacted some of the planned inspections in this permit year.

During this permit term, NCDOT updated SCMS including adding new status options so users can more readily identify devices that need to be inspected. These status options include: “Active” for SCMs that need to be inspected; “Active-no inspection required” for SCMs that do not need inspections (i.e., PSHs that achieved an LOS rating of C or better, Pet Waste Stations, etc.); “Removed-error” for SCMs removed from the official inventory due to an administrative or technical error; “Removed-physically” for SCMs that were removed from the ground during construction; and “Inactive” for SCMs planned but not yet build or devices temporarily taken out of service temporarily due to construction nearby activity. The SCMs that typically require annual inspections include: Bioembankment, Biofiltration Conveyance, Bioretention Basin, Cistern, Dry Detention Basin, Filtration Basin, Floating Wetland Island, Green Roof, Hazardous Spill Basin, Infiltration Basin, Infiltration Chamber, Level Spreader, Permeable Pavement, Rain Garden, Sand Filter, Stormwater Wetland, Swale (including new categorizations: bioswale, wet, infiltration, grass), Wet Detention Basin, Wet Vault, and Wetland Embankment. Based on the 2020 LOS assessment, NCDOT continues to maintain an overall rating above a C for its SCMs on both primary and secondary roadways.

Post Hurricane Inspections of SCMs

NCDOT has increased its efforts to mitigate the devastating effects caused by hurricanes. REU Central and the Divisions staff have been coordinating closely on addressing additional needs that have arisen due to large storm events.

I&M Training of Division Staff

Annual training on the I&M program was provided to the Division staff responsible for SCM inspections and additional NCDOT staff involved in adding new controls to SCMS. The training covered the program elements, including how to use the I&M Manual, inspection and maintenance protocols, and processes to enter data into SCMS. Additionally, staff were exposed to other available education materials including videos and individual training on how to conduct SCM inspections. REU Central maintains documentation for the training performed by HSP staff to Division Roadside Environmental Engineers,

Field Operations Engineers, and other applicable staff, who then maintain documentation for any additional training of Division employees that they perform.

Expanding the I&M Manual

The SCM inventory includes some SCM types of which NCDOT has very few individual devices in place. These devices include green roofs, floating wetland islands, bio-embankments, rain gardens, infiltration chambers, biofiltration conveyances, and sand filters. In PY2020, NCDOT continued to make updates to its I&M Manual to provide users new inspection and maintenance guidance for these devices.

NCDOT also conducted a swale study of existing swales in SCMS to evaluate the status of swale maintenance and determine appropriate inspection frequencies for various swale types. Information gathered during the study will be incorporated into the I&M Manual.

SCMS Upgrade

NCDOT continues to locate and upload relevant construction drawings, images, and any applicable maintenance agreements for its inventory in the SCMS database, making the information readily available to staff. Being able to review the details of the intended device design is especially beneficial during inspections. NCDOT continued to make progress this permit year in getting these documents scanned and uploaded to SCMS.

REU Central staff also worked with NCDIT to update SCMS to be more user-friendly. Some changes made include providing new status options for each device, updating reporting and mapping features, adding a tab that allows users to populate appropriate maintenance agreement data, combining different swales under a larger umbrella for better organization, in addition to other minor changes to streamline the usability of the database. Other minor changes will continue to happen into PY2021 as users begin using the updated version of SCMS.

Considerations for Permit Year 2021

This coming year, NCDOT plans to finalize the I&M Manual update. Additions to the I&M Manual will be made available to Division staff. NCDOT will continue to evaluate its post hurricane inspection and repair processes to improve overall program efficiencies. Additionally, NCDOT will continue to inspect and maintain stormwater control devices, train appropriate staff on I&M techniques, and upload construction plans and documents to SCMS as they become available. HSP staff will also continue to assist Division staff with SCM maintenance and repairs.

7.0 Post-Construction Stormwater Program

NPDES Permit Part II.B.5

Objectives and Measurable Goals

The program objectives are to:

i. In cooperation with NCDEQ, implement a post-construction stormwater program to regulate stormwater from new NCDOT development and redevelopment for new built upon area (BUA) by requiring structural and non-structural BMPs to protect water quality, reduce pollutant loading, and minimize post-construction impacts to water quality.

Management Measures	Measurable Goals
(a) Implement a Post-Construction Stormwater Program.	Implement a Post-Construction Stormwater Program (PCSP) to control runoff from new NCDOT development and redevelopment. The PCSP shall define implementation of the approved NCDOT BMP Toolbox and post-construction stormwater control measures.
(b) Submit revisions to the Post-Construction Stormwater Program to NCDEMLR for approval.	NCDOT updates and/or revisions shall be submitted to NCDEMLR for approval prior to implementation.

Program Overview

The PCSP is designed to promote improvements to stormwater runoff from new NCDOT development and redevelopment for new BUA. The PCSP requires structural and non-structural best management practices to protect water quality, reduce pollutant loading, and minimize post-construction impacts to water quality. An updated PCSP guidance document was approved by NCDEQ in 2014. The PCSP defines how post-construction controls in the approved BMP Toolbox should be implemented for projects and describes a training program for NCDOT staff and contractors to implement the BMP Toolbox and to incorporate watershed quality strategies.

Accomplishments

NCDOT continues to implement the PCSP through the routine use of PCSP guidance and the BMP Toolbox to promote the appropriate selection, design, and documentation of BMPs. The PCSP is implemented on all roadway and non-roadway projects initiated by the NCDOT that increase BUA. Briefly, steps associated with applying the PCSP include: evaluating the stormwater management needs of a project site; implementing minimum measures, providing drainage design for conveying runoff in a diffuse and non-erosive manner, and if needed, designing additional structural BMPs to treat stormwater pollutants; communication between designers, regulatory agents, and other stakeholders on the intended approach; and documentation of the process through the Stormwater Management Plan (SMP).

SELDM Modeling and BMP Selection Matrix – NCDOT implements a wide variety of projects, and each one presents a set of unique parameters for consideration when evaluating implementation of post-construction BMPs. NCDOT is continuing to work with the US Geological Survey (USGS) to use the Stochastic Empirical Loading and Dilution model (SELDM) for this purpose. Under the NCDOT/USGS joint agreement initiated in PY2019, the USGS continues working to complete a three-year project of running approximately 75,000 project scenarios to determine risk to water quality. The results will be used to develop a catalog of project scenarios with BMP implementation recommendations in planning stages to provide better guidance and direction, as well as providing consistency across a more regionalized NCDOT.

In addition to tools related to SELDM, NCDOT developed a BMP decision matrix to enhance BMP selection on projects. The matrix provides designers with BMP selection guidance to meet project-specific needs through the application of sound engineering judgement. By not being overly prescriptive, the decision matrix provides designers the flexibility to meet unique project requirements. In summation, the BMP decision matrix will help to provide consistency and standardization of projects while providing options for the best fit on a project-by-project basis.

NCDOT has been working to improve project delivery through an initiative called Integrated Project Delivery (IPD). This process is a multi-disciplinary effort to examine and improve processes to deliver projects in a more efficient and timely manner. The Hydraulics Unit and the HSP have continued working with the IPD team to move stormwater management decisions earlier in the project development process. Improved stormwater management planning will establish expectations for achieving environmental goals earlier in the process and provide consistency for designers and regulatory agencies alike. Additional benefits include reducing the likelihood of project delays due to permitting conflicts in the latter phases of project development.

Complete 540 Projects (R-2721, R-2828, R-2829) – The NCDOT reached a settlement agreement with a group of plaintiffs represented by the Southern Environmental Law Center in August 2019. As part of the agreement there are a number of obligations related to stormwater research, modeling, and treatment. It is anticipated that the findings and results of these efforts will further enhance potential future updates to the post-construction program guidance, as well as standard design practices, and potential new chapters for the BMP Toolbox.

Refer to the IE Program for more information related to PCSP training activities.

Considerations for Permit Year 2021

The planned focus for the PY2021 will be on continuing to work on initiatives to improve tools for PCSP compliance and ultimately improve project outcomes related to post-construction stormwater. NCDOT will also continue to identify opportunities to raise awareness and provide training. NCDOT has continued work with the Integrated Project Delivery (IPD) effort to improve efficiency and streamline project delivery. As part of that effort, HSP is working diligently with the IPD team to incorporate aspects of the PCSP earlier in the project development process. It is envisioned that key deliverables from this process will be tracked through the ATLAS Workbench project deliverables management system.

Additionally, efforts to update the PCSP to align with evolving project processes and to improve workflows related to post-construction stormwater management will continue.

8.0 Vegetation Management Program

Objectives and Measurable Goals

NPDES Permit Part II.B.6

The program objectives are to:

i. Manage application of pesticides, fertilizers, and other vegetation management materials to minimize pollutant potential of stormwater runoff.
ii. Use only approved vegetation management materials.

Management Measures	Measurable Goals
(a) Implement appropriate pest control methods and practices.	Continue to consult with North Carolina Department of Agriculture and Consumer Services (NCDA&CS) and North Carolina State University (NCSU), as needed, in selecting appropriate pest control methods and implementation practices. NCDOT will maintain and update the NCDOT Roadside Vegetation Management Manual as new technology and procedures are adopted by NCDOT.
(b) Use appropriate vegetation management materials as identified in the measurable goal.	Restrict pesticide and fertilizer usage to those materials approved by the US Environmental Protection Agency (USEPA)/NCDA&CS. Pesticide and fertilizer shall be used in accordance with label restrictions.
(c) Provide training on vegetation management.	Provide annual training for vegetation management personnel and contractors, or require equivalent training for contractors. The training shall consist of appropriate uses and applications of pest control methods used by NCDOT. This training shall be designed to increase awareness of proper mowing techniques, release of biological and chemical agents, appropriate spill response, the correct use and handling of products and the potential for water quality impacts.

Program Overview

Through the Vegetation Management Program, NCDOT manages application of pesticides, fertilizers, and other vegetation management materials to minimize pollutant potential of stormwater runoff. Management measures of the permit include implementing appropriate pest control practices through consultation with the NCDA&CS and NCSU, using appropriate vegetation management materials (only those approved by USEPA or the NCDA&CS), updating NCDOT's Vegetation Management Manual as new technology and procedures are developed, and providing training to staff and contractors regarding the appropriate uses and applications of pest control methods used by NCDOT.

Accomplishments

Vegetation Management Research – Annually, NCDOT sponsors new research to enhance the Department's vegetation management program, including the facilitation of research in vegetation

management practices to improve vegetative cover, incorporating new technologies, and other management techniques. See Section 13, discussing the Research Program, for additional information.

Ongoing Vegetation Management Training and Professional Development – NCDOT conducted two regional Roadside Pesticide Training Sessions in February and March 2020 for 183 Division staff. The sessions provided pesticide recertification training, including discussions of pesticide recertification requirements, applications, methods, aquatic subcategory, pesticide handling, and compliance of NPDES pesticide storage facilities. North Carolina State University Soil and Crop Science staff assisted NCDOT on these training sessions.

NCDOT staff continue to play an active role in the distribution of research information and professional development within the VM industry by participating as Directors and Advisors to the North Carolina Vegetation Management Association (NCVMA). Due to budgetary restrictions, NCDOT REU was unable to hold its annual REU meeting in December 2019. Historically, the REU annual meeting is held in conjunction with the NCVMA Annual Conference. However, four REU employees did attend the NCVMA Annual Conference held on December 11 and 12, 2019 in Cary.

Also, NCDOT's certified pesticide applicators continue to obtain their pesticide recertification credits throughout the year. In response to the audit conducted by NCDEQ during PY2020, NCDOT REU developed and implemented a new procedure to request from NCDA&CS the list of NCDOT employees with active pesticide licenses each year. NCDOT implemented this procedure in November 2019 to verify employee licenses.

Vegetation Management Program Implementation – Due to the Coronavirus crisis and Departmental budgetary constraints, no new vegetation management programs were initiated in 2020. NCDOT REU has reduced the number of mowing cycles from an average of five per year to three per year. Additionally, the purchase of pesticides was severely restricted. Only issue-driven applications to correct sight distance and sign visibility have been addressed.

NCDOT's Wildflower Program has been focused on maintaining perennial and NC native beds. No new annual plantings have been implemented. NCDOT REU staff have contacted Division staff on a one-on-one basis to provide training regarding accessing data within the Survey 123 platform. This platform provides information related to wildflower bed size & location, species present, soil pH, and other variables including recommended weed control. NCDOT REU staff also utilize Survey 123 to perform its semi-annual inspections of NCDOT's pesticide facilities.

Considerations for Permit Year 2021

In the coming permit year, NCDOT will continue to implement its Vegetation Management Program to minimize associated impacts on water quality and provide training to applicable staff. NCDOT will continue to evaluate opportunities to provide training assistance to staff and contractors. This training includes offering additional pesticide recertification credits to NCDOT Roadside Environmental staff.

9.0 Construction Program

NPDES Permit Part II.C.1 (Sediment and Erosion Control Program)
NPDES Permit Part II.C.2 (Borrow Pit/Waste Pile Activities)
Objectives and Measurable Goals

The program objectives are to:

i. Continue to control development activities disturbing one or more acres of land surface including activities by NCDOT contractors.
ii. Require construction site operators to implement appropriate erosion and sediment control practices.
iii. Require site inspection and enforcement of control measures.
iv. Establish requirements for construction site operators to control waste that may cause adverse impacts to water quality such as discarded building materials, concrete truck washout, chemicals, litter, and sanitary waste at the construction site.
v. Continue to implement sediment and erosion control measures and reclamation plans on all borrow pit and waste pile projects, including activities at Ferry Terminals associated with dredging activities and contractor owned or leased borrow pits associated with NCDOT projects in keeping with the sediment and erosion control program delegated by the North Carolina Sediment Control Commission.

Management Measures	Measurable Goals
(a) Maintain the delegation agreement with NCDEQ NCDEMLR Erosion and Sediment Control (ESC) Program on an annual basis.	Implementation of the NCDENR Division of Energy, Mineral and Land Resources Erosion and Sediment Control Program delegated to NCDOT by the Sedimentation Control Commission in February, 1991, and as may be subsequently amended, for NCDOT construction projects and implementation of the applicable requirements of General Permit NCG010000 effectively meets the objectives above 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. This program is authorized under the Sediment Pollution Control Act of 1973 and Chapter 4 of Title 15A of the North Carolina Administrative Code. This program includes procedures for public input, sanctions to ensure compliance, requirements for construction site operators to implement appropriate erosion and sediment control practices, review of site plans which incorporates consideration of potential water quality impacts, and procedures for site inspection and enforcement of control measures. This program has been delegated to and implemented by NCDOT.

Management Measures	Measurable Goals
(a) Maintain compliance with the applicable requirements of the General Permit NCG010000.	NCDOT shall incorporate the applicable requirements of NCG010000, the North Carolina General Permit to Discharge Stormwater under the NPDES associated with construction activities issued August 3, 2011 and as may be subsequently amended, into its delegated Erosion and Sediment Control Program, pursuant to "NCDOT Applicable Requirement from NPDES General Permit No. NCG010000 for Construction Activities and Guidance for Complying with Those Applicable Requirements" in the memorandum dated June 9, 2014 or as updated.
(b) Implement erosion and sediment control measures on all non-commercial borrow pits/waste piles.	NCDOT shall implement erosion and sediment control measures on all non-commercial borrow pit and waste pile projects. The measures utilized shall be in keeping with the erosion and sediment control program established by the North Carolina Sedimentation Control Commission.
(c) Implement approved reclamation plans on all non-commercial borrow pits/waste piles.	NCDOT shall implement the approved reclamation plan on all non-commercial borrow pit/waste pile projects. The reclamation measures utilized shall be in keeping with the reclamation program established by the North Carolina Mining and Energy Commission.
(d) Borrow Pit Discharge Management Program	NCDOT in coordination with NCDEMLR will implement the Borrow Pit Discharge Management Program. This process will consist of the following tasks: • Implement appropriate management measures to treat borrow pit wastewater for given conditions. • Implement an inspection and maintenance program. • Maintain training material and instruct field personnel overseeing borrow pit operations. • Evaluate and implement appropriate new/innovative technologies.

Program Overview

NCDOT implements its Construction Program to control potential impacts to water quality from land disturbance at construction sites and from borrow pit and waste pile activities. The Erosion and Sediment Control (ESC) Program, which was delegated to NCDOT by the Sedimentation Control Commission in February 1991, incorporates the requirements of General Permit NCG010000 and includes implementation of appropriate erosion and sediment controls on construction projects. The delegation agreement allows for the Department to review and approve ESC plans based on compliance with Sedimentation Pollution Control Act (SPCA), water quality regulations, and permit conditions associated with each project. The agreement also authorizes the Department to perform compliance inspections for land disturbing activities associated with highway construction. Although the Commission delegates compliance inspection to the Department, it did not grant enforcement

authority. Since the Department cannot issue a fine to itself, a series of policies and procedures were developed to correct compliance issues with highway and maintenance construction projects. These include procedures for public input, daily and monthly project inspections, and corrective actions. Refer to the Department's 2019 Annual Report for a more detailed description of NCDOT's Construction Program conformance with the NCG010000 permit.

NCDOT operates under its exemption from the Mining Act for borrow pits provided all materials are used "in connection with the construction, repair, and maintenance" of our road system. Therefore, all provisions for ESC and stabilization with ground cover for waste/ borrow sites fall under the conditions of NCDOT's delegated program under the Mining Act and SPCA. Currently, NCDOT requires reclamation plans for all non-commercial waste/borrow sites. These plans address temporary erosion control, staged seeding and mulching, fertilizer topdressing, and permanent stabilization. Final inspections are conducted on all waste/ borrow sites at project completion or prior to project completion if property owners elect to resume/ commence agricultural land disturbing activities on the site(s). Reclamation sites that require dewatering operations will require an evaluation to determine setbacks to minimize the risk of impacts to adjacent jurisdictional areas. Effluent from dewatering operations will be monitored and the appropriate management procedures will be used to make sure NCDOT is following the applicable regulations.

Accomplishments

Continued Implementation of the Program – NCDOT continues to operate under its delegated authority granted by the NC Sedimentation Control Committee for 2019. NCDOT continues to implement its Construction Program, which includes reviewing and approving ESC plans, implementing and maintaining standard specifications and project special provisions, providing guidance on ESC/ stormwater issues, performing inspections and monitoring of construction projects, maintaining NCDOT's reclamation process, and providing ESC/ stormwater training materials to contractors/ consultants. NCDOT continues to identify new technologies to improve the effectiveness of current construction-related stormwater control measures. Additionally, NCDOT continues to invest substantial financial resources into research efforts that will improve existing practices and procedures associated with NCDOT's Construction Program. Two keystones of the program include ongoing training certifications and inspections:

Certifications – The Biological & Agricultural Engineering and Soil Science Departments at NCSU are partnering with NCDOT to offer an ESC/ Stormwater Certification Program. The certification program provides the required personnel training to ensure compliance with erosion and sediment control/stormwater provisions on NCDOT projects. NCDOT requires all contractors and consultants to have a certified supervisor and foreman to oversee operations on NCDOT projects to ensure compliance with SPCA as well as other environmental regulations. Three different levels of certifications are available and each one must be renewed every three years. As of June 30, 2020, active certificates for each level include: 1,180 Level I certified ESC stormwater inspectors/ installers; 4,946 Level II certified ESC stormwater site managers; and 685 Level III certified ESC designers.

Inspections – NCDOT is responsible for two types of inspections on each project: NPDES Self-Monitoring and SPCA Self-Inspections. NPDES Self-Monitoring and SPCA Self-Inspections are conducted at least weekly or after 1.0" of rainfall by a project inspector under guidance from the office of the resident engineer for design-build or contract construction, or from the office of the county or district engineer for maintenance projects. If needed, construction activities on-site can be halted to address ESC issues. REU Field Operations staff inspects NCDOT projects monthly and completes an ESC/Stormwater Inspection Report. These weekly inspections by project inspectors and monthly REU inspections are used to ensure proper ESC measure installation, maintenance, and effectiveness as well as ground cover requirements. These reviews ensure the proper ESC measures are in place for the phase of grading, and that necessary field revisions are implemented to minimize the risk of sedimentation damage. Each project is evaluated for overall compliance with the NPDES permit, NCG010000, and SPCA.

Inspections Performed in PY2020 – The following inspections were performed by REU during PY2020 (July 1, 2019 to June 30, 2020) for each category of land disturbing activity:

- Contract Construction Projects 4,477
- Maintenance Projects 128
- Vertical Construction Projects 29
- Bridge Maintenance Projects 297
- Resurfacing Projects 124

Additionally, NCDEQ conducted a statewide audit of NCDOT's NPDES Permit in PY2019 which included inspections of eight NCDOT construction project sites. The construction project site visits focused on the programmatic aspects of NCDOT's Construction Program. On February 6, 2020 NCDEQ issued NCDOT a Notice of Compliance as a result of the audit.

Updates to the "Best Management Practices for Construction and Maintenance Activities" manual and the "Erosion and Sediment Control Design and Construction Manual" – NCDOT continues to work on updating two of its manuals which provide guidance on construction activities. The *Best Management Practices for Construction and Maintenance Activities* manual provides broad guidance on practices to protect water quality during the planning, preconstruction, and construction phases. The *Erosion and Sediment Control Design and Construction Manual* provides more detailed information on designing ESC controls. Updates to these manuals will reflect input from NCDOT's Division and Field Operations staff, as well as updating material specifications due to changes in the construction and ESC industries in the past few years. This is an ongoing effort to improve these manuals.

Ongoing Research in Erosion and Sediment Control – Annually, NCDOT sponsors new research to minimize impacts of construction activities. See Section 13, discussing the Research Program, for additional information.

Considerations for Permit Year 2021

NCDOT anticipates continuing work on updating the *Best Management Practices for Construction and Maintenance Activities* manual in the coming permit year. Although the ESC Design Manual updates are

also underway, NCDOT anticipates releasing the next version in 2021-22 due to the extensive updates that will be incorporated. NCDOT also continues to evaluate opportunities to provide additional training content, including ongoing evaluations of the use of ESC training videos and continued development of the ESC Level III materials.

10.0 Industrial Activities Program

NPDES Permit Part II.D.1 and 2

Objectives and Measurable Goals

The program objectives are to:

i. Maintain and implement a Stormwater Pollution Prevention Plan (SPPP or Plan) for each facility with an industrial activity that is covered by this permit.
ii. Develop and implement a Plan prior to operation of any new industrial facilities.
iii. Evaluate the effectiveness of the industrial Stormwater Pollution Prevention Plans (SPPP) for each industrial facility.
iv. Perform required qualitative monitoring at stormwater discharge points or outfalls identified in the SPPPs or during supplemental inspections for new sources and discharges as required.

Management Measures	Measurable Goals
(a) Maintain and implement an SPPP for each covered industrial activity and related facility.	NCDOT shall maintain and implement a site-specific Stormwater Pollution Prevention Plan (SPPP) for each covered facility with an industrial activity. For new activities or facilities, the SPPP shall be developed and implemented prior to operation. New Activities and facilities shall be identified in the annual report and include a brief description and location information.
(b) Perform visual monitoring at each facility.	Qualitative monitoring shall be performed at each industrial stormwater outfall twice per year, once in the spring (April - June) and once in the fall (September - November). Qualitative monitoring requires an inspection of each stormwater outfall or discharge point for the following parameters: color, odor, clarity, floating solids, suspended solids, foam, oil sheen, and erosion at or immediately below the stormwater discharge point or outfall, and other obvious indicators of stormwater pollution. Qualitative monitoring is for the purpose of evaluating the effectiveness of the SPPP. No analytical tests are required. NCDOT will pursue correction of stormwater quality where qualitative monitoring indicates degradation of quality in comparison to previous monitoring events.

Program Overview

As part of the Industrial Activities (IA) Program, NCDOT maintains and implements an SPPP for each facility with an industrial activity that is covered by the NPDES permit. NCDOT SPPPs describe potential pollution sources at each facility and provide BMPs to minimize potential impacts on stormwater from on-site industrial activities. The Spill Prevention Control and Countermeasure (SPCC) Plan requirements of Title 40 of the Code of Federal Regulations, part 112 (40 CFR 112) have been fully integrated into the SPPPs to emphasize oil spill prevention and response practices at NCDOT industrial facilities. In addition,

NCDOT must conduct qualitative monitoring for each stormwater discharge point or outfall through site inspections at each industrial facility at least twice per year, once in the spring and once in the fall.

Accomplishments

During PY2020, NCDOT continued to implement and refine various program activities including maintaining SPPPs, conducting audits, and providing the on-going education needed to keep employees aware of the requirements. A summary of the key activities completed in the past year is provided below.

SPPP Implementation – NCDOT continues to maintain and implement 204 site-specific SPPPs at its industrial facilities, which include county maintenance yards, equipment shops, ferry terminals and a ferry maintenance facility, roadside environmental shops, traffic services shops, bridge maintenance yards, a rail maintenance facility, and remote salt and material storage locations. NCDOT SPPPs describe potential pollution sources and structural BMPs at each facility and provide non-structural BMPs to minimize potential impacts on stormwater from on-site industrial activities. NCDOT SPCC Plans, which were incorporated into SPPPs, describe spill prevention measures, inspections of SPCC-regulated oil containers, and spill response and notification procedures. Additionally, NCDOT includes qualitative monitoring requirements and documentation of the resulting observations at its industrial stormwater discharge points/outfalls in the SPPPs.

During the permit year, SPPP updates were performed for various NCDOT industrial facilities because of changes to the facilities, such as new buildings, drainage modifications, or other changes in industrial operations or staffing. Additionally, one new SPPP was developed for the Global Transpark and one facility (Granville County Salt Storage Yard) was removed since the facility is no longer actively used by NCDOT.

NCDOT emphasizes employee training to meet part of the SPPP requirements, utilizing many unique approaches to train Division personnel on stormwater pollution prevention, good housekeeping, and spill prevention. NCDOT uses videos for initial or annual refresher training, individual or group training sessions, posters, and handouts for program reminders, and NCDOT's Industrial & Roadway Maintenance Activities (IRMA) BMP Guidance Manual for training briefings at the Division level.

NCDOT continues to utilize its SPPP website to help manage and track SPPP/SPCC implementation at each industrial facility. The SPPP website allows Industrial Activities program managers and Division-level engineers to track the overall program implementation and also allows personnel at each facility to document SPPP/SPCC task completion, including qualitative monitoring of stormwater discharges, facility inspections, employee training, and BMP implementation.

Ongoing Internal Maintenance Yard Review – NCDOT continues to conduct internal reviews of NCDOT maintenance yards throughout the state, including 17 internal reviews performed during this permit year. Internal reviews typically include an evaluation of the facility's SPPP/SPCC Plan, review of documentation of completed tasks, an interview with the SPPP Team Leader and various Team Members and discussions of site-specific changes or needs for the facility, and an in-depth site

inspection of the facility. Verbal BMP recommendations are provided during the internal review followed by written BMP recommendations. HSP staff later perform post site review follow-ups with Division staff to coordinate on the BMP recommendations, especially for any long-term construction-related projects or structural BMPs that require significant funding to implement the BMP. The internal reviews also serve as an opportunity to gather appropriate site data to fully update the SPPP/SPCC Plans when needed.

The primary goals of the internal maintenance yard reviews are to help the Divisions identify potential stormwater pollution concerns, evaluate their SPPP/SPCC Plan implementation, and provide additional BMP recommendations if needed. The internal reviews also aid Division management in prioritizing any major stormwater related expenditures. The internal reviews also serve as additional one-on-one stormwater pollution prevention training for facility staff which supplements other annual training they receive.

Additionally, NCDEQ conducted a statewide audit of NCDOT's NPDES Permit in PY2019 which included inspections of eight NCDOT industrial facilities. The NCDOT industrial facility site visits focused on the programmatic aspects of NCDOT's Industrial Activities Program. On February 6, 2020 NCDEQ issued NCDOT a Notice of Compliance as a result of the audit.

Level I General Awareness Training & Level II Advanced Training - NCDOT HSP staff continues to provide annual SPPP/SPCC training for NCDOT's Division personnel. Baseline BMPs such as good housekeeping, preventative maintenance, and spill prevention practices are reviewed with attendees. Other topics, such as qualitative monitoring, BMP implementation, and lessons learned are also covered during training.

NCDOT HSP staff continues to provide Level II Advanced SPPP/SPCC Training to SPPP Team Leaders for NCDOT industrial facilities and other key team members. The topics vary each year for the advanced training. The instructors also reviewed IRMA BMP Guidance Manual topics, spill prevention and cleanup updates, and IDDEP procedures. The Level I and II training approach adopted by NCDOT HSP has been effective for many years by providing more targeted training where it is needed most.

Note: The Coronavirus crisis impacted some aspects of the Industrial Activity Program in this permit year, including some planned maintenance yard reviews that were postponed; in-person training sessions that were canceled, postponed, or moved to an online format; and the timely completion of various facility-level SPPP implementation tasks such as routine inspections. NCDOT personnel continued to diligently implement their facility SPPPs as best as possible given the unique circumstances.

Considerations for Permit Year 2021

NCDOT will continue to maintain and implement site-specific SPPPs at its industrial facilities in PY2021. NCDOT staff will also continue to assist Division personnel by providing alternative training sessions (more online training), providing guidance on SPPP BMPs at industrial facilities, performing site reviews at selected facilities, and supporting Division staff with other aspects of the Industrial Activities Program as needs arise. NCDOT will continue to evaluate the program to identify new opportunities for

improvement and to help the HSP target certain areas that may need additional assistance. NCDOT also anticipates continuing work on updating its training materials, including the IRMA BMP Guidance Manual, developing additional LMS/Industrial Activity-specific video modules, and other training materials.

11.0 Internal Education Program

NPDES Permit Part II.E.1

Objectives and Measurable Goals

The program objectives are to:

i. Implement a program to train NCDOT staff and contractors about the importance of stormwater quality.
ii. The training should include topics such as spill control, chemical application, illicit discharges and illegal dumping, etc.

Management Measures	Measurable Goals
(a) Provide pollution prevention awareness training for construction workers.	NCDOT shall provide annual stormwater pollution awareness training for appropriate NCDOT personnel and contractors involved in construction and maintenance activities. NCDOT may require contractors to have equivalent training in lieu of NCDOT-provided training. Training shall include general stormwater awareness, NPDES stormwater permit NCG010000 implementation, identification of stormwater pollution potential, appropriate spill response actions and contacts for reporting spills and illicit discharges/illegal dumping.
(b) Provide pollution prevention awareness training for maintenance workers.	NCDOT shall maintain a program of annual stormwater pollution awareness training for appropriate NCDOT maintenance staff. NCDOT shall also maintain an ongoing awareness program for Adopt-A-Highway volunteers and prison inmate laborers. NCDOT may require contractors to have equivalent training in lieu of NCDOT-provided training. Training shall include general stormwater awareness, identification of stormwater pollution potential and appropriate contacts for reporting spills and illicit discharges/illegal dumping.
(c) Provide pollution prevention awareness training for NCDOT staff.	NCDOT shall provide annual Stormwater Pollution Prevention Plan training for appropriate NCDOT staff. Training shall include general stormwater pollution awareness, site-specific Stormwater Pollution Prevention Plan awareness, and reporting/documentation procedures.
(d) BMP Implementation Training	NCDOT shall provide training to appropriate NCDOT personnel on implementation of post-construction BMPs in keeping with the Toolbox, Inspection and Maintenance Manual, and the Post-Construction Stormwater Program. NCDOT may require contractors to have equivalent training in lieu of NCDOT-provided training.
(e) Maintain Internal Education and Involvement Plan.	Maintain the Internal Education and Involvement Plan. The plan shall include the requirements for the measurable goals above.

Program Overview

The IE Program was implemented to provide planning, oversight and tracking of stormwater quality training for NCDOT staff and contractors. The NPDES permit requires training for construction and maintenance workers along with general pollution prevention training, specifying several education topics for each as noted above. Additionally, selected other programs have specific educational requirements which are supported by the IE Program. The IE Program works closely with other HSP program areas to monitor training activities and to provide support for training development.

Accomplishments

Over the reporting period, HSP team members provided training to NCDOT employees and contractors and continued to develop their knowledge of stormwater management through participation in conferences, webinars, and technical trainings. The table below summarizes the types of training received by NCDOT staff and provided by NCDOT and other entities.

The Coronavirus crisis has impacted some of the Department's planned training initiatives in PY2020, including the postponement or cancellation of numerous training activities either due to limitations on large gatherings or in-person training or due to related budget constraints. Therefore, NCDOT has been gravitating to utilizing more online training resources for professional development and to conduct online meetings to disseminate HSP training to Division staff and contractors. Some of the online training has proven to be very effective; however, some of the delayed training will need to be performed in PY2021.

Table 4. Summary of Internal Education Training Activities

Training / Trainee(s)	Description	Training Provider
NPDES/ Erosion Control/ Stormwater Refresher Training	NCDOT REU staff provided NPDES, Erosion Control, Stormwater Refresher training, including DOT requirements, procedures as well as R-2828 project specific issues/concerns to 20 contractors.	NCDOT REU
Roadside Pesticide Training Sessions (Eastern and Western Regions)	NCDOT REU conducted two regional pesticide recertification training workshops for 183 Division staff held in February and March 2020. The training included discussions of pesticide recertification requirements, applications, methods; herbicide use in aquatic management, pesticide handling, compliance of NPDES pesticide storage facilities.	NCDOT REU
SPPP-SPCC Plan Implementation Training/Division Staff	Conducted 18 training sessions which included online and in-person training in PY2020 to assist with implementing SPPP/SPCC Plans at NCDOT facilities. Training typically included plan reviews, facility inspection procedures, changes to facilities, SPPP Site Plan updates, illicit discharge detection and elimination, and BMP implementation such as good housekeeping, spill prevention, and exposure minimization.	NCDOT REU

Training / Trainee(s)	Description	Training Provider
NCVMA Conference/ REU Employees	North Carolina Vegetation Management Association (NCVMA) Conference on December 11-12, 2019 which focused on latest vegetation management techniques, including pertaining to managing today's roadsides in North Carolina.	Non-NCDOT Professionals
I&M Program SCMS Training	NCDOT HSP contractor provided I&M training to Division 2 Roadside Environmental staff, including SCMS training, inspection training, and assessing SCM maintenance needs and repairs.	NCDOT HSP contractor
I&M Program Webinar/Division Roadside Environmental Engineers and staff	Conducted webinar on June 8, 2020 and provided an update on the following items: NCDEQ audit update of NCDOT's NPDES Stormwater Permit, I&M Program requirements, new SCMS upgrades, Hurricane season update, Maintenance/Repairs of SCMs, and Other SCM I&M Program items.	NCDOT REU
Hydro 101 Training for Division 2 staff	NCDOT Hydraulics Unit staff provided Hydro 101 training to Division 2 staff, including the Post-Construction Stormwater Program, Stormwater Management Plans, drainage calculations, pipe sizing, when to ask for BMP retrofits, etc.	NCDOT HU
River Course 303: Multi-Dimensional Modeling for Stream Restoration	15-hr course on 3D modeling with HecRAS taken by two NCDOT Hydraulics Unit staff.	NCSU
Wetlands Research in NC	NCDOT REU staff attended the Carolina Wetlands Association and NC WRRI Virtual Annual Conference session on wetlands research in NC. The webinar offered updates on ongoing studies, as well as news on how wetlands are gaining further protections so they can continue to provide valuable ecosystems services.	Carolina Wetlands Association and NC WRRI
Clean Waters and SAV: Making the Connection	NCDOT Hydraulics Unit staff attended a technical workshop that discussed developing water quality strategies to protect and restore submerged aquatic vegetation.	Non-NCDOT Professionals
Stormwater Decision Makers Summit	NCDOT HSP staff participated in a collaborative summit to learn from stormwater colleagues and make the case for a coastal statewide collaborative initiative on stormwater-related issues.	UNC-Institute of Marine Sciences, NC Coastal Reserve Office
Miscellaneous webinar training/NCDOT staff and contractors	NCDOT staff and contractors reviewed numerous stormwater related webinars or training opportunities including, but not limited to, the following examples: TRB webinars on Designing Landscapes to Enhance Roadside Water Management, Limitations of the Infiltration Approach	Non-NCDOT Professionals (varies)

Training / Trainee(s)	Description	Training Provider
	to Stormwater Management, and Enhancing Monarch Butterfly Habitats Along Roadway Corridors; CCE Stormwater CoP Webinar: Construction to Maintenance Handoff; Stormwater ONE presentations on Common Stormwater Violations and Ways to Avoid Them, and Addressing Stormwater Compliance on Construction Projects Using The "3 C's of Stormwater"; and Stormwater Solutions Webinar Fest (6 webinars on varied stormwater topics); AASHTO webinar – Construction to Maintenance Handoff.	

In addition to the formal training events, team members continued internal outreach efforts within NCDOT. Additional details on IE and training are described in the Accomplishments sections for IDDEP, Industrial Activities, Vegetation Management, Construction, and Research Programs.

Considerations for Permit Year 2021

In PY2021, NCDOT will continue providing training on the components of the Highway Stormwater Program and the Department's NPDES permit. NCDOT is exploring the development of additional training materials for various HSP program areas, including SPPP, I&M, E&SC, and PCSP. NCDOT anticipates continuing to develop more online training content in PY2021 with the intent to disseminate even more online training to NCDOT staff and contractors in the next few years.

12.0 External Education Program

NPDES Permit Part II.E.2

Objectives and Measurable Goals

The program objectives are to:

i. Implement a program to educate the public about the importance of stormwater quality, and what they could do to support it.
ii. Maintain diverse educational materials to engage and educate the public from different social, economic and age groups.
iii. Encourage public involvement in NCDOT stormwater quality programs.

Management Measures	Measurable Goals
(a) External Education and Involvement Plan.	Maintain the External Education and Involvement Plan. The plan shall include the requirements for the measurable goals below.
(b) Provide pollution prevention awareness educational materials to general public.	Provide stormwater pollution prevention awareness information to the general public.
(c) Maintain a public education website	Maintain a public education website to document NCDOT pollution prevention programs and promote stormwater quality. The website will include information on stormwater quality, stormwater projects and activities, and ways to contact stormwater management program staff.
(d) Develop educational partnerships.	Work with NCDENR and other agencies to promote and distribute public education materials.
(e) Continue public involvement programs.	Continue the Adopt-a-Highway Program. Additional programs may also be developed.

Program Overview

NCDOT implemented the External Education (EE) Program to educate the public about the importance of stormwater quality, including awareness of the impacts of chemical application, illicit discharges and illegal dumping and other activities that may add pollutants to stormwater runoff. The EE Program encourages public involvement in NCDOT stormwater quality programs and maintains diverse educational materials to engage and educate the public from different social, economic and age groups. As part of the EE Program, NCDOT maintains an EE and Involvement Plan, a public education website, and an area on its website, *Connect NCDOT*, to distribute stormwater educational materials. The program actively seeks partnerships with other NCDOT Divisions, other state agencies, and organizations with shared outreach goals.

Accomplishments

The HSP EE activities this year continued to strengthen the Department's educational partnerships while maintaining on-going efforts started in previous years.

Education Partnerships – HSP staff had an eventful year and saw fruitful evidence that their engagement with the schools is making an impact on stormwater awareness. Activities performed in PY2020 which targeted youth education include:

- NCDOT HSP staff worked with the Office of Education Initiatives to conduct an educational workshop session for the WakeEd Summer STEM (Science, Technology, Engineering, and Math) 2020 Session teachers on July 16, 2019. NCDOT presented on how the Department manages stormwater runoff on post-construction projects; erosion and sediment control for construction projects; and stormwater pollution prevention at NCDOT facilities. The sessions also provided an overview of how NCDOT has worked with Wake County schools' stormwater-related curriculum over the years by leading tours of the schools' stormwater drainage systems and presenting on the importance of stormwater quality. NCDOT also highlighted site-specific pollution concerns and storm drainage mapping for attendees' schools. The potential for detrimental impacts to surface waters from litter, wildlife, and people was discussed, along with how students can help prevent stormwater pollution and littering.
- NCDOT conducted several online meetings at various educational institutions to provide updates on NCDOT's HSP and to listen to researchers' areas of expertise and new ideas for stormwater research. During these meetings NCDOT HSP staff presented on how the Department uses its research program to improve permit compliance, better manage stormwater, disseminate stormwater research findings to others, and provide a vision for future research needs. These online meetings included North Carolina Central University on March 3, 2020 (in-person meeting); NCSU on April 2, 2020; NC A&T Water and Environment Research Group on April 16,2020; and East Carolina University on April 16, 2020.
- Supplied Stormwater worksheets, Stormwater Flash Facts, Litter Law fliers, Swat-A-Litterbug Cards, car litterbags with a stormwater litter prevention message and "Do Not litter" bumper stickers through packaged requested by teachers. NCDOT provided 26 teacher kids in 2019.

Website Maintained – NCDOT maintains relevant HSP information for the public on several website pages. General Stormwater Management and Illicit Discharge Detection and Elimination Program information, Anti-Litter information, and sample stormwater lesson plans hosted by NCDOT's Office of Education Initiatives as part of the Summer STEM workshops are all found on NCDOT.gov pages.

More detailed HSP information and content geared for NCDOT business partners is maintained on its *Connect NCDOT* website. Separate pages were created for key products of the program. Products include many documents such as the BMP Toolbox and the Erosion and Sediment Control Design and Construction Manual.

NCDOT's website stormwater related content provides information intended to educate public users about the HSP's various program areas. Links to related websites are also provided. NCDOT periodically updates the content on these websites with new information.

Litter Management – NCDOT's Litter Management continues to build on its successful on-going activities. Through various on-going anti-litter programs, NCDOT distributed the following stormwater-related items:

- Provided gloves, safety vests, and garbage bags to NCDOT Maintenance offices to be distributed to Adopt-A-Highway volunteers and Litter Sweep participants. The garbage bags are reversible with orange and blue sides, so that recyclables can be collected in bags with blue exteriors.
- Coordinated 107,368 man-hours from volunteers in the Adopt-A-Highway (AAH) program in 2019, resulting in 1,020,870 pounds of litter removal. There were 577,035 pounds of litter picked up under the Sponsor-A-Highway Program, a related litter management program. Other volunteers picked up 77,115 pounds of litter in 2019. At the end of 2019, there were 9,622 miles or road adopted by 4,959 AAH groups.
- Posted "Keep NC Clean & Green" litter prevention signs along state roadways and at various Rest Areas and Welcome Centers. In addition to the "Keep NC Clean & Green" signs, there are "Littering Is Illegal" signs posted across the state.
- Continued to issue Swat-A-Litterbug letters to offenders who were spotted littering by the public. The table below summarized the mailings over the past few years.

Table 5. Summary of Swat-A-Litterbug Letters Mailed through Public Involvement Notifications

Year	Number of Swat-A-Litterbug Letters Mailed
2019	8,085
2018	8,610
2017	10,660
2016	9,250
2015	8,416
2014	7,800

Adopt-A-Highway Celebrates 31 Years – The AAH program began its 31st year of operation in 2019. Each year the AAH groups are recognized for their consecutive years of service beginning with 10-years and at years 15, 20, 25 and 30. In 2019, more than 400 AAH groups received awards for their years of volunteer service to the program.

Litter Management and HSP Outreach Materials – In PY2020 NCDOT provided many types of outreach materials to engage children and the public about the Highway Stormwater Program, Swat-a-Litterbug, and several of the other litter programs. Materials were distributed through various local events and mailings, from NCDOT Welcome Centers or Division offices, and from NCDOT's website by teachers requesting packets for their classrooms.

Considerations for Permit Year 2021

The EE Program plans to continue fostering relationships with education partners such as the Office of Education Initiatives to leverage their expertise and resources. The EE program will continue to evaluate options for extending the educational opportunities throughout the state.

13.0 Research Program

NPDES Permit Part II.F

Objectives and Measurable Goals

The program objectives are to:

i. Conduct research with faculty and staff at state universities or other designated institutions that result in independent quantitative assessment of stormwater from NCDOT permitted activities and/or measure structural BMP effectiveness.

ii. Conduct research to enhance or improve existing practices or develop new methods or processes to meet future permit requirements.

Management Measures	Measurable Goals
(a) Research Plan	Maintain a Research Plan. The Plan shall be in keeping with the guidelines established by the Federal Highway Administration (FHWA) Evaluation and Management of Highway Runoff Water Quality Manual (FHWA-PD-96-032) and FHWA's National Highway Runoff and Data methodology Synthesis (FHWA-EP-03-054), or any updates. The Research Program will include: 1) A description of the Research Program and process for requesting funding. *2)* A process that identifies research needs that will evaluate program improvement areas.
(b) Submit the Research Plan to NCDEMLR.	Modifications to the NCDOT Research Program shall be submitted to NCDEMLR.
(c) Implement the Research Plan	NCDOT shall continue to perform and sponsor research to fulfill the Research Plan.

Program Overview

The Research Program's primary mission is to support all aspects of the HSP through development of practical solutions to stormwater management. NCDOT conducts research with faculty and staff at state universities or other designated institutions that result in independent quantitative assessment of stormwater from NCDOT's permitted activities and/or measure structural BMP effectiveness. NCDOT also conducts research to enhance or improve existing practices, and to develop new methods or processes to meet future permit requirements. As part of the program, NCDOT maintains a Research Plan that describes the processes to request funding, to evaluate effectiveness of structural BMPs and to identify research needs. Additionally, NCDOT has continued to add data to its Stormwater Research Monitoring Database (STORMDATA).

Accomplishments

NCDOT has continued to identify and implement research projects in collaboration with various universities as required by the permit. Several elements of the HSP have been guided by research data, such as the development of NCDOT-specific stormwater load accounting tools for the Jordan Lake and Falls Lake watersheds. NCDOT continues to evaluate data gaps in its program and identify research projects to close these gaps both through the Department's annual research cycle, through out-of-cycle funding and using technical assistance agreements, as detailed in the NCDOT Research Plan.

Ongoing Research – Each year, NCDOT identifies potential research gaps, solicits calls for proposals and awards research grants, which typically span 2-4 years. The table below provides a list of research projects that were active during the permit year. A complete list of current and ongoing research projects can be found on the website for NCDOT's Research and Development unit.

Note: all research projects that were slated to begin in 2020 have been delayed due to the Coronavirus crisis and current revenue picture in the Department. Most ongoing research projects experienced delays in the third and fourth quarters of PY2020 due to Coronavirus-related university policies to protect the health of students, staff, and faculty.

Table 6. Research Projects Active in PY 2020

Research Project Number and Name	Project Objective
NCDOT 2016-18 *Swale Design Optimization for Enhanced Application and Pollutant Removal*	This project involves pilot testing of multiple swale and bioswale design parameters/configurations in controlled plots and field sites to optimize swale and bioswale design for implementation in the linear environment.
NCDOT 2017-08 *The Effects of Contaminated Soil and Groundwater on Subsurface Utilities, Surface Water and Drainage*	This project evaluates the risk to stormwater drainage infrastructure from contaminated soils and methods to mitigate that risk by using appropriate pipe treatments applied to concrete culverts.
NCDOT 2017-27 *Storm Water Infiltration and Pollinator Habitat Zones Along Highway*	This project evaluates the differences in infiltration rates in tilled areas planted with grass versus a pollinator-friendly plant mixture, and evaluates the effects of plantings on pollinator populations, species richness, and how long infiltration improvements from tillage lasts.
NCDOT 2018-02 *Selection, Installation and Evaluation of Zoysiagrass*	This project evaluates breeding lines from the NCSU breeding program with promising commercially available zoysiagrass cultivars and evaluates potential establishment methods that require lower water during sodding than traditional methods.

NCDOT 2018-03 *Dry Retention Optimization for Enhanced Application and Pollutant Removal*	This project involves field testing and controlled plots at NCSU's Sediment and Erosion Control Research and Education Facility (SECREF) for evaluating the performance of dry detention basins and determining appropriate effluent concentrations. The study will also test the effectiveness of various enhancements to the design.
NCDOT 2018-04 *Identifying High-Risk Areas During Precipitation Events in Support of NCDOT Stormwater Quality Monitoring*	This project enhances the capabilities of NCDOT's Multi-sensor Precipitation Estimate (MPE) tool, developed previously with the State Climate Office of NC to identify high-risk areas during or shortly after the occurrence of heavy precipitation events as specified by NCDOT engineers. For example, engineers can request notification if a selected location received rainfall greater than a selected recurrence interval, such as 25 years. These additional features will help NCDOT better prioritize and deploy resources for flood and runoff mitigation.
NCDOT 2018-34 *Updates and Maintenance of the Precipitation Alert and Visualization Tool in Support of NCDOT Stormwater Quality Monitoring*	This project implemented enhancements to the MPE tool, including incorporating precipitation frequency estimates from the National Oceanic and Atmospheric Administration (NOAA) Atlas 14 to facilitate alerts when an n-year storm is reached at a project site. The enhancements also allow NCDOT to evaluate historical rainfall data on a map to identify that a given storm exceeded an n-year storm at that location.
NCDOT 2019-01 *Enhancing Integrated Roadside Vegetation Management Along North Carolina Roadsides through Characterizing Herbicide Fate*	This project targets vegetation management along NC roadsides encompassing comprehensive management programs. Synthetic pesticides are an integral component of roadside vegetation management but must be utilized without adversely affecting adjacent plants or vegetation including agricultural crops as well as environmental and human health. The research includes an assessment of existing practices as well as evaluation of new instrumentation and technology. Specifically, the research will assess current vegetation management programs and practices and their effect on air and water quality, identify best management practices to minimize potential off-target movement, and devise training material for NCDOT field personnel to understand how to prevent and identify off-target movement.

NCDOT 2019-02 *Protocol for Outlet Analysis at Highway Sites*	This project involves an assessment of NCDOT-managed outlets to identify which characteristics affect downslope stability. Researchers will inspect 40-50 sites in the Piedmont and 20 sites in the Mountain ecoregion to assess downstream conditions from NCDOT-managed outlets and identify what factors influence downstream impacts. Impacts will be quantified by visual observation and for a subset of sites, water quality and hydrology monitoring. Based on field assessments, investigators will develop an outlet analysis protocol, create design standards for outlets that minimize erosion and cost and produce a Microsoft Excel-based tool that synthesizes the project results.
NCDOT 2019-05 *Improved Approaches to Environmental Compliance During Highway Construction*	This project covers several veins of research on current construction stormwater inspection techniques and materials. The first is the for the feasibility and applicability of unmanned aerial vehicles (UAV) for inspection and evaluation of installed construction stormwater devices either manually controlled or pre-programmed to fly to inspection points and collect either high-resolution images or video of the existing conditions, both of which provide a record and documentation of the inspection. The second phase also involves the use of UAVs to evaluate the hydrological performance of sediment basins relative to the watershed conditions and develop information on the appropriate factors to use for predicting runoff on construction sites. The third is evaluation of a wide variety of dust control products, widely used in more arid areas, for their performance, cost effectiveness and any environmental safety. The last portion involves conducting testing on silt fence post materials to determine material and strength design requirements to determine whether a post specification is suitable based on expected forces exerted by either water or soil backed up behind the silt fence and optimization of the post design.
NCDOT 2019-06 *Optimization Compost Application Rates for Vegetation Health, Maximal Stormwater Infiltration, and Runoff Quality*	The purpose of this research is to determine optimum compost amendment rates for stormwater treatment and cost reduction. NCSU will first conduct a laboratory screening assessment using five soil textures representative of NC soils, a range of compost rates and two sources to determine hydraulic conductivity and water retention of the mixtures. Based on the results of this screening, NCSU will perform column tests of compost-amended media to study breakthrough curves for select nutrients and metals. In parallel, greenhouse plots of the same mixtures will be used to determine vegetation establishment over a period of 6-8 weeks. This will then be used to optimize design of field plots in SECREF to investigate impacts of compost amendment.

NCDOT 2019-07 *Evaluation and optimization of engineered media amendments for contaminant removal in stormwater runoff filtration systems*	The objective of this research is to evaluate a variety of affordable media materials that can remove multiple contaminants simultaneously and maintain high performance in runoff filtration measures under various natural conditions. Up to 25 amendments will be screened using a batch test. These will then be winnowed down through a series of different laboratory experiments to three promising amendments which will be studied in laboratory columns. The column experiments will look at a variety of factors such as the impacts of media aging, antecedent dry conditions, and variable concentrations/loads on amended media performance.

Recently Completed Studies

The following research projects had draft or final reports submitted in the current permit year.

- NCDOT reviewed and forwarded comments on the second draft report on project NCDOT 2016-18. Field sampling continued through the Fall of 2019. Results from these sampling efforts will be included in the final report. Due to unforeseen circumstances and lab shutdowns caused by the Coronavirus outbreak, the Final Draft Report deadline was extended to July 31, 2020.
- NCDOT completed an update of STORMDATA, by uploading the remainder of research data compiled since Term I of NCDOT's NPDES Permit. These updates will allow STORMDATA to aid research partners by providing a comprehensive database to draw comparison research data from.
- As a way to expand NCDOT's pool of research partners, a series of meetings were conducted with researchers from NCCU, ECU, and NC State.

Considerations for Permit Year 2021

In the next permit year, NCDOT will continue its Research Program. Several new projects are being initiated, with results expected in 2-4 years, including:

- Project 2020-01, *Reducing the Environmental Impact of Road Construction*, will evaluate practices used to improve turbidity reduction in stormwater runoff associated with construction activities by tracking turbid discharges on active construction sites and determine the sources and potential remedies to the problem. The project goal is to evaluate current practices in the field and test modifications and additions which can provide better turbidity reduction. The project will also evaluate mixtures of different pollinator-friendly wildflower species and potential nurse crops for plant establishment and flowering. Factors in establishment such as soil amendments, seeding method, and mulches

will be tested to help determine the best approaches to establishing wildflowers on low-maintenance areas.

- Project NCDOT 2020-05 (a continuation of 2017-08) will assess the effectiveness of hardening infrastructure on reducing contaminant migration from the existing contaminated soils into subsurface pipes, and the stormwater the pipes convey. Specifically, the project will measure contaminant migration through Neoprene, Buna-N, and Viton gaskets at locations where such gaskets are installed, and measure contaminant migration through PVC and HDPE membranes which are used as a hardening method for wrapping concrete materials.

14.0 Total Maximum Daily Load Program

NPDES Permit Part III.C

Objectives and Measurable Goals

The program objectives are:

i. Address impaired waters identified in Total Maximum Daily Loads (TMDLs) in which NCDOT is named as a significant contributor of the pollutant and given an assigned Waste Load Allocation.

Permit Requirements	
1)	At any time during the effective dates of this permit, NCDOT will develop and implement a program ("Program") to address impaired waters identified in TMDLs in which NCDOT is named as a significant contributor of the pollutant addressed by the TMDL and that assigns NCDOT a wasteload allocation (WLA) separate from other point sources.
2)	NCDOT's Program shall summarize the locations of NCDOT outfalls that are identified in its implicit Stormwater Outfall Inventory that have the potential to discharge the TMDL pollutant of concern into the impaired segments, to their tributaries, and to segments and tributaries within the watershed contributing to the impaired segments.
3)	NCDOT's Program shall implement an Assessment & Monitoring Plan ("Plan"). The Plan shall include an evaluation of the need for additional data collection related to the NCDOT's discharge of the TMDL pollutant of concern. Additional data collection to be evaluated may include (but does not require) a supplemental inventory of NCDOT outfalls, monitoring, an assessment of the effectiveness of existing BMPs, and an assessment of non-NCDOT discharges entering NCDOT's conveyance system and negatively impacting the quality of NCDOT stormwater discharge. If the Plan proposes analytical monitoring, then it shall include a description of the sample types, frequency, and seasonal considerations, if applicable. Where appropriate, NCDOT may reduce its monitoring burden by monitoring outfalls that NCDEMLR considers substantially similar to other outfalls. The Plan may be adjusted as additional outfalls are identified.
4)	The Plan shall include a schedule for implementing the proposed assessment and monitoring activities. The Plan shall be submitted to NCDEMLR for comments no later than 12 months after notification by NCDENR that NCDOT has been assigned a WLA NCDEMLR shall complete its review of the Plan within 6 months of receiving the plan from NCDOT.
5)	NCDOT shall initiate implementation of the Plan within 6 months of receiving Plan approval from NCDEMLR. In accordance with the Plan implementation schedule, NCDOT shall provide a summary of the assessment and monitoring activities performed within a reporting period in subsequent annual reports.

Permit Requirements	
6)	Within 6 months of completing the assessment and monitoring activities outlined in the Plan, NCDOT shall submit a report of its findings to NCDEMLR. The report shall include an assessment of whether additional structural and/or non-structural BMPs are necessary to meet NCDOT's WLA. If necessary, the report will also document why BMPs are infeasible to meet the WLA and discuss BMPs to reduce the load to the maximum extent practicable. The report shall include a schedule for implementing such BMPs. Upon approval by NCDEMLR, NCDOT shall implement any approved BMPs in accordance with the schedule. Subsequent annual reports will provide updates on the implementation of the Plan.

Program Overview

As part of the TMDL Program, NCDOT has developed and implemented a program to address impaired waters identified in TMDLs in which NCDOT is named as a significant contributor of the pollutant of concern and is assigned a WLA. The program includes preparation of assessment and monitoring plans, schedules for plan execution and submittal of findings reports to NCDEQ. The TMDL Program relies heavily on data that is collected under the Research Program to inform pollutant loading and water quality and watershed modeling decisions. TMDL compliance is supported through the Retrofits Program and its efforts to identify suitable locations for stormwater retrofits and successfully implement controls that achieve NCDOT's WLAs.

Accomplishments

Key PY2020 accomplishments included continued collaboration with NCDWR's Modeling and Assessment Branch, developing partnerships in the Walnut Creek watershed, and involvement in nutrient and watershed modeling studies throughout the state.

NC TMDLs Approved in 2020 – No TMDLs were approved by USEPA in PY2020 which triggered Part III Section C of the permit.

NCDWR Modeling and Assessment Collaboration – NCDOT communicates frequently with NCDWR's Modeling and Assessment Branch to ensure that NCDOT information and involvement, in support of TMDL development, is provided to NCDWR. As was done in the previous permit year, in PY2020 this communication involved coordination meetings to cover several ongoing initiatives, including: DWR's priority list of waterbodies and approach to addressing impairments through a TMDL or TMDL alternatives (such as Category 4b and 5r approaches), a Category 5r website, and NCDWR's plan for addressing metals impairments. This collaboration advances the Department's initiatives for complying with TMDLs and supporting TMDL alternatives that address water quality impairments throughout the state.

Walnut Creek TMDL Alternative – NCDOT continued its participation in the development of a watershed restoration plan for Walnut Creek (Neuse River Basin) in partnership with the City of Raleigh, Town of Cary, and North Carolina State University. The restoration plan is anticipated to qualify as a Category 4b or 5r Plan and address USEPA's nine key elements that have been identified as critical for achieving water quality improvements. The project partners plan to document restoration activities, including

stormwater control retrofits and other measures taken to address impairment in Walnut Creek, through a NCDWR website dedicated to documenting progress in Category 4b and 5r watersheds. Portions of Walnut Creek are identified as impaired due to elevated copper, PCB (fish tissue advisory), and "fair" or "poor" fish community. Budgetary limitations associated with the Coronavirus pandemic delayed planned implementation of outfall inventories and retrofit site selection in the watershed this reporting period. These activities are expected to initiate in PY2021.

Falls Lake Watershed Modeling Support – In 2010, the Environmental Management Commission passed the Falls Lake Nutrient Management Strategy, requiring two stages of nutrient reductions for Falls Lake. The Falls Lake rules, as promulgated, involve significant implementation costs. Since 2011, the Upper Neuse River Basin Association (UNRBA) has been planning to reexamine the model used to develop the rules. This reporting period NCDOT continued its coordination with UNRBA, its contractors, and DWR in support of lake and watershed modeling efforts.

Southeast White Oak TMDL Compliance Update – In 2009, NCDEQ prepared a TMDL report to address fecal coliform impairments in Boathouse Creek (ID# 20-31), Hills Bay embayment (ID# 20-(18)c4) and Dublin Creek (ID# 20-30) in the White Oak River Basin. Two of these TMDLs, Boathouse Creek and Hills Bay embayment, identified NCDOT as a contributor to impairment and assigned NCDOT a unique WLA. As required under Part III, Section C of NCDOT's NPDES permit, NCDOT prepared an Assessment and Monitoring Plan (AMP) in 2011 which described NCDOT's strategy for field assessing assets and identifying load reduction opportunities in the Boathouse Creek and Hills Bay watersheds, followed by a Report of Findings (RoF) in 2013, which describes the results of NCDOT's AMP implementation activities, including field exercises and SCM retrofit feasibility studies.

Due to budgetary limitations associated with the Coronavirus pandemic, limited additional implementation work was performed in the watershed this reporting period. During the reporting period NCDOT did initiate planning efforts and secured grant funding for a large living shoreline project in the Southeast White Oak River along the NC-24 causeway. Upon implementation the new living shoreline will increase the ecological function of the shoreline along NC-24 and improve water quality.

Considerations for Permit Year 2021

NCDOT will continue to support DWR in the development of TMDLs statewide and assessments of NCDOT loading as part of those TMDLs. NCDOT will continue to support the development of a Category 5r or 4b Plan for Walnut Creek and data needs in the Middle Cape Fear River Basin (such as NCDOT land cover). NCDOT will also support NCDWR as a stakeholder in supporting their Priority List of Waterbodies and 5r program.

15.0 Falls and Jordan Lake GREEN Programs

Jordan Lake Rules:
15A North Carolina Administration Code
02B .0262-.0273, .0311, and
NC Session Laws 2009-216, 2009-484

Falls Lake Rules:
15A NCAC 02B .0275—.0282

Requirements

Watershed	Rule Requirements
Jordan Lake	Identify NCDOT stormwater outfalls from Interstate, US, and NC primary routes.
	Identify and eliminate illegal discharges into the NCDOT's stormwater conveyance system.
	Implement a Nutrient Management Education Program for NCDOT staff and contractors engaged in the application of fertilizers on highway rights of way.
	Meet riparian buffer and diffuse flow requirements on new and widening road projects.
	Achieve sub-watershed specific nutrient reduction targets on new non-road development projects using NCDOT-JLSLAT or through another calculation method that is acceptable to NCDWR.
	Provide an estimate of, and plans for offsetting, nutrient load increases from lands developed subsequent to the baseline period but prior to implementation of the new development program (currently stayed, see below).
Falls Lake	Identify NCDOT stormwater outfalls from Interstate, US, and NC primary routes.
	Identify and eliminate illegal discharges into the NCDOT's stormwater conveyance system.
	Implement a Nutrient Management Education Program for NCDOT staff and contractors engaged in the application of fertilizers on highway rights of way.
	Meet riparian buffer and diffuse flow requirements on new and widening road projects.
	Achieve nutrient reduction targets on new non-road development projects using NCDOT-JLSLAT or through another calculation method that is acceptable to NCDWR.
	Provide an estimate of, and plans for offsetting, nutrient load increases from lands developed subsequent to the baseline period but prior to implementation of the new development program.

Watershed	Rule Requirements
	Implement six stormwater retrofit BMPs per year in the Falls Lake watershed to reduce nutrient loads until NCDOT's existing development load reduction requirements are achieved or the lake's designated uses are restored.

Program Overview

The NC Environmental Management Commission (EMC) adopted permanent nutrient management rules for Jordan Lake and Falls Lake which became effective in 2009 and 2011, respectively. In response, NCDOT initiated the GREEN Program to integrate and enhance NCDOT's stormwater and nutrient management practices and to support NCDOT's compliance with the Jordan and Falls Lake Rules.

The Jordan Lake GREEN outlines the Department's approach to managing nutrients from new development, including new and widened roads and new non-road developments. The EMC approved the Jordan Lake GREEN Program on November 8, 2012. The Rules also include retrofit requirements to reduce nutrient loads from existing NCDOT development; however, various Session Laws have delayed this requirement.

The Falls Lake GREEN addresses the Department's approach to managing nutrients from new and existing developments consisting of new and widened roads, new non-road development, and existing road and non-road development. The EMC approved the Falls Lake GREEN Program on January 9, 2014. Among other things, these regulations require NCDOT to implement new training for staff and contractors, calculate nutrient loads resulting from projects and devise controls to reduce the increased loads. Both GREEN programs are currently in effect. A notable requirement of the Falls Lake rules is the mandate for the Department to construct six retrofits per year in the watershed or implement equivalent nutrient load reduction measures.

Accomplishments

Due to budgetary limitations associated with the Coronavirus pandemic, construction of planned retrofits in the Falls Lake watershed have been postponed until calendar year 2022. NCDOT identified 29 retrofit opportunities in the Falls Lake watershed and from this list initiated designs on submerged gravel wetlands. 30% design plans were completed during the reporting period for these three wetlands prior to budgetary limitations temporarily postponing final design. It is anticipated that final design plans will be completed in PY2021 with construction targeted for 2022.

GREEN Training – NCDOT continues to offer online training videos, first introduced in PY2016, to support staff and contractors when using the NCDOT nutrient accounting tool, NCDOT Jordan Lake Stormwater Nutrient Loading Accounting Tool (NCDOT-JLSLAT), on new non-road development projects. These videos are available on the NCDOT YouTube channel.

New Non-Road Development Projects in PY2020 – Over the past year NCDOT did not complete any new projects in the Jordan Lake or Falls Lake watersheds that would be subject to the non-road development rules. In the future, should new non-road development be constructed subject to the rules, the annual

report at that time will include a list of projects, descriptions of the projects and stormwater control measures, project-specific copies of the NCDOT-JLSLAT and other supporting calculations, and a summary of changes in nutrient loads associated with these activities.

Litter Removal Support – In addition to its state-wide litter abatement programs discussed in the External Education section of this report, NCDOT continues to provide material support to the Clean Jordan Lake organization for their annual litter sweep on Jordan Lake.

Rehabilitation of Existing Stormwater Controls – NCDOT's SCMS database is used to track inspection and maintenance of structural BMPs statewide, including those located within the Jordan Lake and Falls Lake watersheds. NCDOT Division REU Engineers maintain BMPs in the Jordan and Falls Lake watersheds. In PY2020, no significant rehabilitation needs were identified or reported. As such, no nutrient load reduction/performance changes associated with significant BMP maintenance or rehabilitation are known to have occurred during this reporting year.

Considerations for Permit Year 2021

NCDOT will continue to implement the Department's GREEN Program and achieve requirements set forth for new and existing (Falls GREEN, only) road and non-road development in the Jordan Lake and Falls Lake watersheds. NCDOT will continue to partner with NCDWR on nutrient reduction strategies and to engage staff and contractors on nutrient-related requirements and watershed goals through educational tools and training opportunities.

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Appendix A

I-77 Mobility Partners Stormwater Management Program Report

Stormwater System Report

Date of Report:	Scope of Report:	Area(s) Reported:
September 21, 2020	I-77 Mobility Partners Stormwater Management Program	I-77 Mobility Partners Facility Stormwater System & I-77 Corridor

I	Report
	1 Section – Overview/Summary In accordance with I-77 Mobility Partners Stormwater Management Program and in compliance with the Comprehensive Agreement. I-77 Mobility Partners herein provides its annual report under NCDOT's NPDES permit. This report is for a 26-mile portion of the I-77 corridor and an approximately one-third mile portion of I-277 in the City of Charlotte, and in Mecklenburg and Iredell Counties, North Carolina. From approximately MM 11 to MM 37 on I-77 both northbound and southbound. In addition, this report includes Administration & Maintenance building (Facility) which became operational on November 1, 2018 located at: 8015 W. WT Harris Blvd. Charlotte, NC 28216 **2 Section – Illicit Discharge Detection and Elimination Plan (IDDEP)** No illicit charges were detected, and no dumping occurred during the report period July 1, 2019 to June 31, 2020. **3 Section – Post-Construction Controls** I-77 MP's stormwater controls continued to be constructed during this permit year and we anticipate them being completed and handed over in the next permit year. Then they will be routinely inspected, as per the approved Stormwater Management Program (SMP) in accordance with NCDOT's NPDES permit. Moreover, they will have the necessary maintenance performed on them to be certain that they continually function as designed. **4 Section – Program for Encroachment** Encroachment is no longer a required section based on the new NPDES permit. If required, encroachments are responsibilities of NCDOT's, all encroachments are managed by NCDOT's Division Office. **5 Section – Construction Program** Some sections of the project are currently under construction until Final acceptance and all temporary erosion control measures have been implemented per the approved ESPC plans. **6 Section – Industrial Facilities** I-77 Mobility Partners has developed the Stormwater Pollution Prevention Plan (SPPP) in accordance with NCDOT's NPDES permit for the Administration and Maintenance building (Facility). I-77 Mobility Partners maintenance staff successfully completed the SPPP training on April 2019, and this year's planned training was delayed due to the pandemic situation. It is anticipated that training will take place in the upcoming months. In addition, the SPPP best management practices are currently being implemented.

II	Conclusion
	Overall the I-77 Mobility Partners Stormwater Management Program is in the implementation phase until Final Acceptance is achieved. In addition, a part of I-77 corridor stormwater controls are still under construction.

III	**Point of contact person**
	Updated Environmental point of contact person from I-77 Mobility Partners: Náyade de la Rasilla Sainz O&M Manager nrasilla@i77partners.com

Environmental Designee: Náyade de la Rasilla	Signature:	Date: 09/21/2020
Approver Manager: David Hannon	Signature:	Date: 09/21/2020