Annual Review of the Erosion and Sedimentation Control Program Delegation to the North Carolina Department of Transportation, Division of Highways

November 21, 2024

Performed By:

North Carolina Department of Environmental Quality
Division of Energy, Mineral and Land Resources
Land Quality Section

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INTRODUCTION

The North Carolina Department of Environmental Quality, Division of Energy, Mineral, and Land Resources, Land Quality Section (DEMLR) conducted a review of the delegated North Carolina Department of Transportation Erosion and Sedimentation Control Program between May 30, 2024, and October 3, 2024. This review and the results reported here are in accordance with requirements of the Sedimentation Control Commission (SCC) delegation to the North Carolina Department of Transportation (NCDOT), §113A-54(d)(2) and §113A-56(b).

> §113A-54. POWERS AND DUTIES OF THE COMMISSION
>
> (d) In implementing the erosion and sedimentation control program, the [Sedimentation Control] Commission shall:… (2) Assist and encourage other State agencies in developing erosion and sedimentation control programs to be administered in their jurisdictions. The Commission shall approve, approve as modified, or disapprove programs submitted pursuant to G.S. 113A-56 and from time to time shall review these programs for compliance with rules adopted by the Commission and for adequate enforcement.

> §113A-56. JURISDICTION OF THE COMMISSION
>
> (b) The [Sedimentation Control] Commission may delegate the jurisdiction conferred by G.S. 113A-56(a), in whole or in part, to any State Agency that has submitted an erosion and sedimentation control program to be administered by it, if the program has been approved by the Commission as being in conformity with the general State program.

GENERAL CONDITIONS OF THE PROGRAM

The NCDOT Division of Highways Erosion and Sedimentation Control Program was originally delegated by the Sedimentation Control Commission in 1974 with an updated delegation agreement being approved in 1991. General conditions of the delegated program include but are not limited to the following statements: The NCDOT's Standard Specifications for Roads and Structures shall provide the basic erosion and sedimentation control requirements to be implemented by the NCDOT. The NCDOT will utilize designs and design criteria for application of its erosion and sediment control program that are consistent with minimum standards promulgated by the Sedimentation Control Commission. The NCDOT shall provide adequate rights of way or easements to accommodate installation and maintenance of appropriate erosion and sediment control measures. The NCDOT will take all reasonable measures to protect all public and private property from siltation damage caused by any Departmental activities. The NCDOT will prepare, or have prepared, erosion and sediment control plans consistent with the

Sedimentation Control Commission standards governing all land disturbing activity it undertakes which uncovers one or more contiguous acres of erodible surface. Erosion and Sediment Control plans prepared by and for the NCDOT shall address the following basic control objectives:

1. Identification of Critical Areas,
2. Limit Time of Exposure,
3. Limit Exposed Areas,
4. Control Surface Water and Control Sedimentation, and
5. Manage Stormwater Runoff.

COMMON ABBREVIATIONS AND TERMS

NCDOT:	North Carolina Department of Transportation
NCDEQ:	North Carolina Department of Environmental Quality
DEMLR:	The NCDEQ Division of Energy Mineral and Land Resources
DWR:	The NC DEQ Division of Water Resources
SPCA:	Sedimentation Pollution Control Act of 1973
NPDES:	National Pollutant Discharge Elimination System
NCG01:	The NCG01 is the NC general permit which allows for construction stormwater discharge under the NPDES.
REU:	Roadside Environmental Unit: The NCDOT division who are responsible for implementing the delegated Erosion and Sediment Control Program.
FOE:	Field Operations Engineer: Field staff in the REU who are responsible for conducting compliance inspections on all projects. Each FOE covers 2 NCDOT divisions and typically has 1-2 assistants or "Staff Engineers"
ESC	Erosion and Sediment Control
Environmentally Sensitive Areas (ESA):	A designation created by the NCDOT and applies to areas which include HQWs and 303(d)s, wetlands, outstanding resource waters, critical areas, regulated riparian buffers, CAMA areas of environmental concern, Threatened and endangered species habitats and trout waters. The ESA is defined as a 50-foot buffer zone on both sides of the stream or water feature.
Trout Water (TW):	A DWR classification intended to protect freshwaters that have conditions that sustain and allow for natural trout propagation and survival and for year-round maintenance of stocked trout.
TIP:	State Transportation Improvement Plan
ICA:	Immediate Corrective Action
PCN:	Permit Consultation Needed
VMP:	Vegetation Management Procedure
State Force Construction:	Type of construction project performed by internal NCDOT forces on secondary and primary roadways. These include bridge maintenance and roadway maintenance projects which are not contacted out.
Contract Construction:	Type of construction project that may contain traditional Bid-Build or Design-Build projects. Projects are let for bidding out of the Central and Division Offices and conducted by external forces.

Bid-Build:	Projects are let and awarded to contractors and completed in accordance with a set of plans developed by a design firm and approved by the NCDOT.
Design-Build:	Projects are let and awarded to a designer and contractor team based on a proposed scope of work. The team then completes the design and after approval, begins work on the project in accordance with said plans.
Let/ Letting/ Let Date	Refers to the awarding of a contact to the winner in the bidding process. Contract Construction projects are posted for bidding by contractors or design/contractor teams respectively. Various bids will be accepted and evaluated before one being awarded. The Let Date refers to the date which the contract is formally awarded to the winning bidder.
Self-Inspection:	The NPDES/SPCA self-monitoring inspections are to be conducted at least weekly and within 24 hours of a rain event of 1 inch or greater. These should be documented and include the daily rainfall data.
Monthly Roadside Environmental Unit Inspections:	These inspections are to be conducted by the Roadside Environmental Unit monthly for all projects. Inspections are given a score of 0-10. Monthly inspections resulting in a score of 0-6 are to be issued an ICA.

PROGRAM OVERVIEW

The NCDOTs Delegated Erosion and Sedimentation control program is implemented and administered by the Roadside Environmental Unit (REU). The REU includes a plan review staff as well as field operations staff. Erosion and Sediment control (ESC) plans, with the exception of design-build projects, are designed and submitted to the NCDOT for review and approval prior to a project being let. The ESC plans for design-build projects are designed by the joint team and then submitted to the NCDOT for review and approval prior to beginning construction. Once construction has begun, the NCDOT is responsible for two types of inspections on each project: weekly NPDES/SPCA self-monitoring inspections (self-inspections) and monthly REU inspections.

Over the past fiscal year from July 2023 through June 2024, the NCDOT reports that the REU has reviewed and approved 343 erosion and sedimentation control plans for Contract Construction, NC Turnpike Authority and Division Construction/Bridge/Maintenance Projects. The NCDOT reports that the REU conducted a total of 3,958 compliance inspections on projects of various types across all 14 NCDOT Highway Divisions and issued 6 ICAs and 2 ICA extensions on 4 different projects, respectively. The NCDOT also has utilized a temporary suspension of work imposed by the Division Engineers 68 times during the fiscal year.

EDUCATIONAL AND RESEARCH EFFORTS

The NCDOT has contracted with N.C. State University to train and certify contractors, engineers and staff in the design, installation, management, and inspection of erosion and sedimentation control practices. There are three levels of certification offered: Level I and Level II certification for installers and supervisors, and Level III certification for designers. All ESC plans must be designed by someone who has a Level III Certification and project contracts require that at least Level I certified installer, and a Level II certified foreman are onsite to facilitate all ESC work. The NCDOT also continually fund research on innovative sedimentation and turbidity control measures. The NCDOT also maintains a list of approved products that can be utilized in the construction of a project. Manufacturers submit materials and products for review and approval by the NCDOT. New products undergo lab testing and review to ensure that the necessary specifications are met. Products and materials may also be field tested on specific projects to ensure they perform as intended before being given a full approval and added to the list.

The NCDOT has also developed a number of guidance materials and manuals. Over the past year, the NCDOT updated their *Standard Specifications for Roads and Structures* and the set of *Roadway Standard Drawings* or construction details. These updates included revisions to a number of erosion and sediment control measures and the addition of other measures which were previously utilized through special provisions added to the project contract. All construction

projects that were let on or after January 1, 2024, will be constructed pursuant to these updated standard details. The NCDOT has also developed an Erosion and Sediment Control Design and Construction Manual to be used by designers developing the ESC plans for all projects.

DOT INTERNAL INSPECTION PROCESS AND ONSITE DOCUMENTATION MANAGEMENT

The NCDOT is responsible for two types of inspections on each project: NPDES/SPCA Self-Monitoring Inspections (Self-inspections) and monthly REU inspections. Self-inspections for all active projects are conducted at least weekly and within 24 hours of a rain event of 1.0 inch or greater. Self-inspections are conducted by a NCDOT ESC Level II certified inspector from the contractor team and are also to be signed off by the Resident Engineer or their designee who is also Level II certified. Self-inspections are to be conducted by the office of the County or District Engineer for all State Force projects.

The REU inspections are conducted by one of seven REU Field Operation Engineers (FOEs) or their staff. Generally, each FOE has one or two additional Field Operation Staff Engineers who assist with the project inspections. Each FOE and their staff cover two of the fourteen DOT Highway Divisions across the state. All projects are to be inspected monthly by the REU. Inspections are typically conducted in conjunction with the personnel who are conducting the self-inspections. The FOE will give each project a score from 0-10 for the following: installation of measures, maintenance of measures, effectiveness of measures, plan implementation and overall project evaluation. An overall project evaluation score of 0-6 results in the issuance of an "Immediate Corrective Action" report (ICA). An ICA alerts NCDOT Management of an issue that needs immediate attention and corrective actions. The project personnel are then charged with correcting the situation as directed by the Chief Engineer or their designee. Notification and subsequent reports on projects that have received an ICA are distributed to the Chief Engineer, Division Engineer, State Roadside Environmental Engineer, DEMLR Regional Engineer, and the DEMLR State Sediment Engineer. ICAs issued and follow-up reports during each quarter are reported to the Sedimentation Control Commission during the subsequent quarterly meeting.

The NCDOT also has the ability to direct the contractor to suspend certain work and re-dedicate resources to repairing or maintaining erosion control measures or cleanup efforts if necessary. These temporary suspension of work orders can be issued by the Resident or Division Engineer and can be, but are not required to be, issued based on the recommendation from the FOE. The temporary suspension of work orders are not exclusively utilized when erosion and sediment control issues are present. Contractors may also elect to shut down a project voluntarily and rededicate resources to address erosion control issues with guidance from the Resident Engineer and the FOE. In these cases, similar recommendations may have been made by the Resident Engineer or FOE, but typically no formal temporary suspension of work order is issued.

Standard Provisions of a project contract and NCDOT policy dictates that a set of marked up As-Built ESC plans be maintained for all projects with a significant amount of land disturbance. These As-Builts are to include the date that measures are installed and removed along with any "redline" changes or revisions that are made to the plan. In addition to the As-Built erosion and sediment control plans on Design-Build projects the Design-Build team is responsible for developing and maintaining a Vegetation Management Procedure(VMP). The VMP is to include but is not limited to; outlining plans for ground stabilization during and after the clearing and grubbing phase, plans for stabilization during phased work at or near jurisdictional water bodies, plans for winterization, ands details and procedures for fertilizer topdressing, supplemental seeding, mowing and repair seeding. The VMP should be updated on a monthly basis and closely coordinated with the grading and hauling operations. The VMP should also include a set of marked up plans showing when and where permanent, temporary, repair seeding, and fertilizer topdressing have been performed.

COMMUNICATION AND PROJECT PROGRESSION

NCDOT personnel maintain communication throughout the design and construction of a project. Pre-construction meetings between the contractors and NCDOT staff are held prior to construction for all projects. DEMLR and other environmental agency staff are invited to attend these meetings as well. During preconstruction meetings, REU staff discuss critical areas of concern and review the ESC requirements. In addition to pre-construction meetings, monthly meetings are held between NCDOT staff and the contractor's workforce to discuss erosion control and other items that may need attention throughout the life of the project. Thorough discussions between contractors, NCDOT and REU staff, frequent meetings, and coordination beyond the monthly REU inspections are often held. REU staff and the respective Division Environmental Officers also maintain consistent communication with the US Army Corps of Engineers (USACE) and NCDEQ DWR when jurisdictional areas are present on a site.

The NCDOT retains operational control over all projects and REU staff coordinate with the NCDOT Resident and Division Engineers to ensure that any erosion control concerns, and corrective actions are addressed in a timely manner throughout the construction project. On Desing-Build projects, monthly and sometimes more frequent meetings between the design team and the FOE occur to discuss design considerations and plan revisions that may be needed. These frequent and open channels of communication help to take a proactive approach to addressing potential erosion control concerns and facilitate quick responses to corrective actions and repairs that are needed.

PROJECT REVIEWS

Fifteen Contract Construction projects were chosen across the state, at random, with varying stages of construction, size, budget, and significance of the project. Selected projects consist of new roadway construction, various roadway improvements and bridge replacements. Projects reviewed were between approximately 5% and 90% complete. One State Force project was also reviewed as part of this year's review.

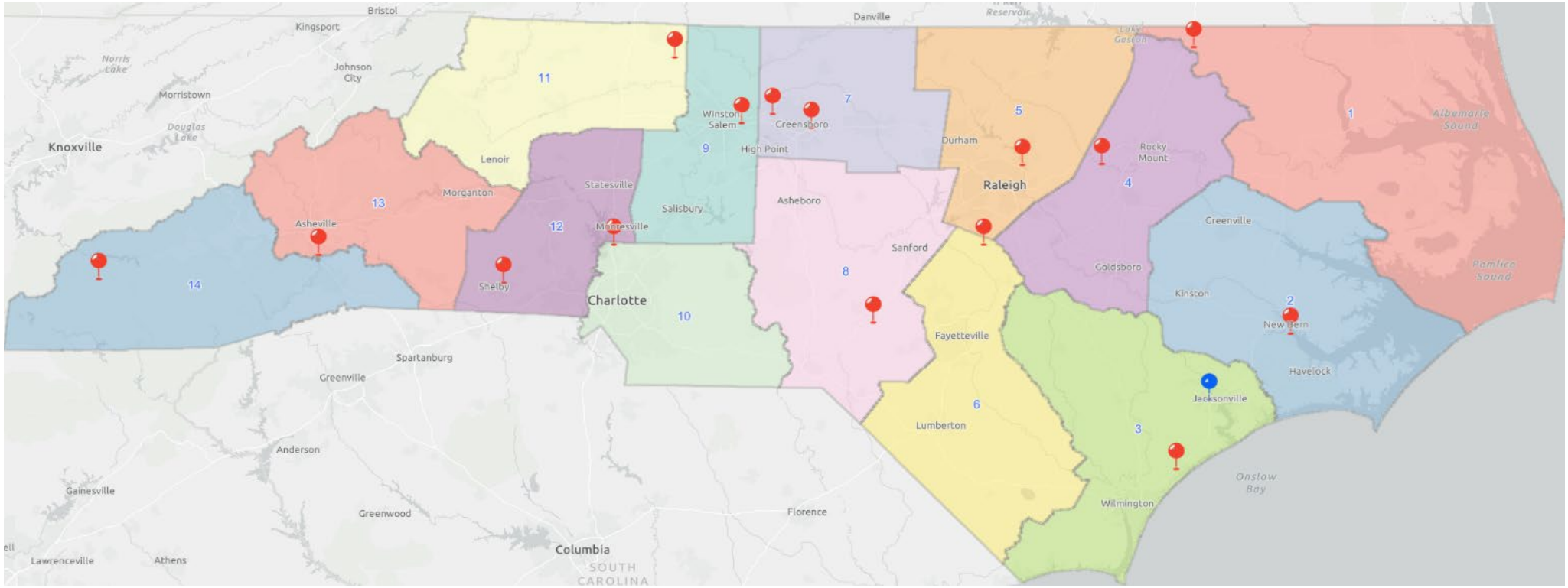
NCDOT personnel from the REU, Division Offices, District Offices, Resident Offices, Contractor representatives and DEQ DWR accompanied DEMLR personnel from the Central and Regional Offices on the projects reviewed. Each project review consisted of reviewing the erosion control plan for adequacy, examining the project files, and an onsite inspection. Field data was collected on erosion and sediment control measure installation, maintenance, and effectiveness. Timely provision of ground cover, phasing of grading, field revisions and sedimentation damage were also evaluated.

A summary of the projects reviewed follows.

PROJECTS SELECTED

Div.	DEMLR-Region	County	TIP #	Description	Contract Amount	Length (miles)
3	Wilmington	Onslow	**State Force**	Blue Top Road – State Force Maintenance	N/A	0.70
1	Raleigh	Northampton	R-2582A	US-158/NC-46 from I-95/NC-46 in Roanoke Rapids to SR-1312	$81,907,347.49	8.2
2	Washington	Craven	R-5777 A & B, U-5713	US-70 from the Neuse River Bridge to east of Thurman Rd. in James City	$203,300,000.00	5.1
3	Wilmington	Pender	R-3300B	NC-417 (Hampstead Bypass) from South of NC-210 to north of SR-1563	$185,680,442.00	6.9
4	Raleigh	Nash	B-5947	Bridge #630091 over Tar River on NC-581	$6,173,478.77	0.49
5	Raleigh	Wake	U-5748	US-401 at SR-2044/SR-2224 and SR-2006	$45,353,442.00	2.5
6	Fayetteville	Harnett, Wake	R-5705B	NC-55 from NC-210 to SR-4809	$61,497,777.30	4.5
7	Winston-Salem	Guilford	B-5717	Bridges #109 and #121 over South Buffalo Creek on SR-4240	$8,270,442.00	0.32
7	Winston-Salem	Guilford	HE-0005	Access Improvements for Boom Facility along I-73 on the north side of Piedmont Triad International Airport	$8,991,271.36	0.76
8	Fayetteville	Hoke, Moore	R-5709A	NC-211 from US-15/US-501 to SR-1244/SR-1311	$15,325,970.10	15.6
9	Winston-Salem	Forsyth	U-2579AB	Future I-74 (Winston-Salem Northern Beltway) from I-40 to I-40 Bus./US 421	$261,764,022.37	2.7
10	Mooresville	Mecklenburg	U-5873, U-5907	Roundabout at NC-114/Davidson St./Potts St. and at SR-6038/Griffith St./Beaty St. and new location from SR-6037 to SR-6038	$15,497,601.78	0.98
11	Winston-Salem	Surry		Bridge #850180 over Toms Creek on SR 1953	$1,584,156.72	0.10
12	Mooresville	Cleveland	R-2707D, R-2707E	US-74 Shelby Bypass from east of NC-150 to west of SR-1001	$167,407,389.37	6.1
13	Asheville	Buncombe, Henderson	HE-0001, HO-0002A, I-4700	I-26 from NC-280 to I-40	$263,010,000.00	7.5
14	Asheville	Graham	A-0009CB	NC-143 from SR-1223 to 0.5 miles north of Appalachian Trail.	$116,407,729.70	3.9

REVIEWED PROJECT LOCATIONS



- Contract Construction Projects

- State Force Projects

PROJECT REVIEW SUMMARIES

Blue Top Road - State Forces Maintenance

Type of Project: State Force **TIP Number:** N/A

NCDOT Div.: 3 **County:** Onslow **Let Date:** N/A **Length:** 0.70 miles

Completion %: ~ 5500% **ESAs Present:** No **Trout Waters Present:** No

Contract Amount: N/A **Subbasin/ River Basin:** New/ White Oak River

Recent Rainfall Record:

Date:	8/11/2024	8/10/2024	8/9/2024	8/8/2024	8/16/2024
Amount:	0.587”	1.89”	2.34”	2.02”	2.56”

Previous NCDOT REU Monthly Inspection Scores:

Date:	6/13/2024				
Score:	9				

Date of Review: August 14, 2024

Summary:

This project consisted of paving a gravel road and installing 3 cross pipes. This project was being conducted by NCDOT forces. Construction by the Bridge Maintenance group to install the cross pipes began in March of 2024. Once pipes were installed the disturbed areas were stabilized and the site remained idle until the Division Maintenance forces began the remaining work in August. An inspection conducted by the REU FOE in June noted that the site remained idle, and that vegetation was establishing well throughout. Self-inspection records appeared to be adequate. During the review, grading of the ditches was underway. Wattles appeared to have been recently replaced where ditch work was completed or underway. Perimeter silt fence had been installed in some areas and appeared to be well maintained. REU staff gave a reminder to stabilize ditches within the appropriate timeframes once grading is complete.

Perimeter silt fence maintained.

Wattle recently installed or replaced.

US-158/NC-46 FROM I-95/NC-46 IN ROANOKE RAPIDS TO SR-1312

Type of Project: Contract, Central Let **TIP Number:** R-2582A

NCDOT Div.: 1 **County:** Northampton **Let Date:** 7/16/2029 **Length:** 8.2 miles

Completion %: ~ 80% **ESAs Present:** Yes **Trout Waters Present:** No

Contract Amount: $81,907,374.49 **Subbasin/ River Basin:** Lower Roanoke/ Roanoke River

Recent Rainfall Record:

Date:	9/1/2024	8/10/2024	8/9/2024	8/8/2024	8/16/2024
Amount:	0.5”	0.09”	1.0”	1.38”	0.3”

Previous NCDOT REU Monthly Inspection Scores:

Date:	9/9/2024	8/15/2024	7/9/2024	6/7/2024	5/21/2024
Score:	8	8	8	8	8

Date of Review: September 12, 2024

Summary:

Construction on this project began in October 2019. An ICA and PCN was issued to this project in May of 2020. Some inconsistencies were noted in the self-inspection records. Records did not appear to fully capture the corrective actions that may have been needed at times over the past few months. Staff stated that while the repair or maintenance items may not have been noted in the inspection records, items were completed within a timely manner. The clearing and grubbing phase ESC plans had been marked up properly. However, the final grade phase plans had not been marked up with the date measures were installed and any redline changes that had been made. During the review of this project completed slopes throughout had been stabilized. Skimmer basins had been installed and appeared to have been recently maintained. The median area had been graded and was seeded and mulched with straw. One basin had been recently reworked, new baffles installed and the basin side slopes matted. Check dams had been reinstalled in diversion ditches throughout the project. Some drop inlet protection measures needed to be maintained with additional rock or repaired. Wattles had been installed in the median ditch per the approved plan. Ditches had been matted. Some slope drains needed to have riprap dissipators at the outlet of the slope drain installed per the standard construction detail. Inlet protection measures had been installed on slope drains and appeared to be functioning. This project included one active borrow site. The stilling basin used for dewatering the borrow pit was installed and appeared to be maintained. Another borrow site had been completed and the areas disturbed was being stabilized. Some basins had recently been removed along a side road which had been completed. The disturbed areas had been matted.

Ditches matted and check dams and wattles installed.

Area matted where skimmer basin was recently removed.

Slope drain inlet protection measures.

Recently maintained skimmer basin

US 70 FROM NEUSE RIVER BRIDGE TO EAST OF THURMAN RD IN JAMES CITY

Type of Project: Contract, Central Let **TIP Number:** U-5713, R-5777 A&B

NCDOT Div.: 2 **County:** Craven **Let Date:** **Length:** 5.1 miles

Completion %: ~ 46% **ESAs Present:** Yes **Trout Waters Present:** No

Contract Amount: $203,300,000 **Subbasin/ River Basin:** Lower Neuse/ Neuse River

Recent Rainfall Record:

Date:	5/29/2024	5/28/2024	5/20/2024	5/16/2024	5/15/2024
Amount:	0.25”	0.26”	1.1”	0.70”	0.75”

Previous NCDOT REU Monthly Inspection Scores:

Date:	6/11/2024	6/4/2024	5/9/2024	4/2/2024	3/7/2024
Score:	9	**PCN issued** Overall: 9, Culvert #5: 7	9	9	9

Date of Review: June 13, 2024

Summary:

Construction on this project began in Aprill of 2021. This project had received no ICAs prior to our review. A PCN had been issued on 6/4/2024 due to stream channel impacts outside of the permitted area at one of the culvert sites. DWR had been notified and stated that a NOV would be issued due to the stream channel impacts and failure to report the violation within 24 hours. The REU inspection report dated 6/4/2024 noted that an excavator had tipped over at this site the week prior and during the recovery operations material was improperly stockpiled along the stream bank beyond the silt fence and into the stream channel. REU staff conducted a follow up inspection on 6/7/2024 and noted that cleanup of the channel had been completed and the PCN was lifted. This project was let as a Design-Build project. As a Design-Build project, the contract team is to develop and maintain a Vegetative Management Procedure (VMP). As part of the VMP, a set of “As-Built” plans showing where and when permanent, temporary, and repair seeding along with fertilizer topdressing has been performed. An initial plan outlining the provisions for early establishment of grass and other vegetation, fertilizer topdressing, supplemental and repair seeding had been developed. However, a set of As-Built VMP plans had not been maintained throughout the life of the project. A revision to one of the skimmer basins to move the outlet to a different location based on the field conditions had been reviewed and approved by the REU staff. The Self-inspection records and As-Built ESC plans appeared to be adequate and maintained. This project was utilizing a borrow site which had initially been approved as part of another NCDOT project in the area. During our review, a number of the side roads had been completed and grading along the main line was underway. This plan included a number of permanent stormwater control basins to be installed during the clearing and grubbing phase and

used as skimmer basins during construction of the project. Some of these basins had been excavated and the skimmer device installed. However, baffles had not been installed. Recently completed slopes had been matted and vegetation was beginning to establish. Some idle areas which had previously been stabilized were starting to die off and may need to be overseeded if the areas remained idle. Perimeter measures appeared to be installed and maintained throughout the project. Hardware cloth and stone inlet protection measures needed to be repaired or replaced. One culvert extension was underway, and the headwalls were being poured. The perimeter measures surrounding the temporary pipes installed to carry flow while the new culvert is installed appeared to be maintained and functioning. Some skimmer basins had recently been installed. These appeared to have been installed properly with baffles and a riprap pad for the skimmer device to rest on.

Headwalls of new culvert being installed and active temporary pipe outlet was protected.

Idle and completed areas throughout the project.

Drop inlet protection measures needing to be maintained.

Permanent stormwater basin installed and being utilized as a skimmer basin during construction.

Skimmer basin recently installed, and ditch seeded and mulched with straw.

NC-417 (HAMPSTEAD BYPASS) FROM SOUTH OF NC-210 TO NORTH OF SR-1563

Type of Project: Contract, Central Let **TIP Number:** R-3300B
NCDOT Div.: 3 **County:** Pender **Let Date:** 1/18/2022 **Length:** 6.9 miles
Completion %: ~ 50% **ESAs Present:** Yes **Trout Waters Present:** No
Contract Amount: $185,680,442.00 **Subbasin/ River Basin:** New/ White Oak River and NE Cape Fear/ Cape Fear River

Recent Rainfall Record:

Date:	6/23/2024	6/22/2024	6/16/2024	6/11/2024	6/10/2024
Amount:	0.075”	0.516”	0.004”	0.118”	0.071”

Previous NCDOT REU Monthly Inspection Scores:

Date:	6/11/2024	1/25/2024	11/28/2023	10/16/2023	8/14/2023
Score:	9	9	9	9	9

Date of Review: June 27, 2024

Summary:

Construction on this project began in April 2022. No ICAs had been issued to this project prior to the review. Self-inspection records noted any corrective actions needed to the stormwater discharge outlets and the contractor was creating a weekly list of erosion and sediment control repairs and maintenance items. However, these erosion and sediment control checklist items were not always being copied into the self-inspection record. The ESC As-Built plan set did not appear to be adequately maintained. The removal of the measures and some measures that were not installed or slightly revised were not always noted on the marked-up plans. Active grading throughout this project was underway. Completed slopes had been temporarily stabilized with vegetation, however the vegetation was starting to die out in some areas and would need to be overseeded. Staff stated they would monitor vegetation and wait to overseed using a fall mix if possible. Slope drains were installed throughout the site and appeared to be maintained. Pipe inlet protection devices throughout the site appeared to be maintained. The orifice plate had not been installed or cut to the proper size on a few of the skimmer devices throughout the project. The stream diversion had been installed and appeared to be functioning properly where a culvert was being installed. Perimeter measures in this area appeared to be maintained and functioning properly. Where grading was completed in the ramp areas towards the west end of the project, the permanent ditches had been completed and silt fence and silt fence outlets along the edges of the ditches had been installed. This project included multiple borrow sites and stilling basins for dewatering had been installed. Perimeter measures on these borrow sites appeared to be maintained and functioning.

Completed slopes, permanent ditch and culvert.

Impervious dike and stream diversion for culvert installation.

Recently completed ditch and adjacent areas stabilized

Revised skimmer basin installed to provide additional storage.

Skimmer basin and slope drains maintained.

Permanent ditches completed along new ramp grade.

BRIDGE 630019 OVER TAR RIVER ON NC-581

Type of Project: Contract, Central Let **TIP Number:** B-5947
NCDOT Div.: 4 **County:** Nash **Let Date:** 7/18/2023 **Length:** 0.49 miles
Completion %: ~ 60% **ESAs Present:** Yes **Trout Waters Present:** No
Contract Amount: $16,173,487.77 **Subbasin/ River Basin:** Upper Tar/ Tar-Pamlico River

Recent Rainfall Record:

Date:	7/24/2024	7/23/2024	7/22/2024	7/18/2024	7/12/2024
Amount:	1.5”	2.2”	2.0”	1.3”	0.9”

Previous NCDOT REU Monthly Inspection Scores:

Date:	7/16/2024	6/25/2024	5/30/2024	4/29/2024	3/11/2024
Score:	8	9	8	8	8

Date of Review: July 24, 2024

Summary:

Construction of this project began in February 2024. No ICAs had been issued to this project prior to the review. Self-inspection records and the ESC As-built plan set appeared to be adequate and maintained. Construction of the new bridge was underway while the existing bridge remained active with traffic. The skimmer basin appeared to be functioning and maintained, however the slope adjacent to the basin needed to be stabilized to prevent erosion from occurring and moving directly into the basin. Slope drains had been staked down but rock dissipators at the outlets had not been installed. Wattles in the ditches throughout the project had recently been maintained or replaced and evidence of PAM being recently replenished was noted. This project included a waste site which was actively being utilized. The skimmer basin on the waste site appeared to be functioning and well maintained. Contractor staff stated that they had added an additional diversion berm to route water into the basin and allow for additional impoundment and settling. Slopes on the borrow site were being stabilized and the construction entrance appeared to be maintained areas of losses had been previously noted on the self-inspection records from recent rain events into the wetlands adjacent to the project. At the time of our inspection standing water remained in the wetland areas and . Rills in the ditch would need to be repaired and check dams repaired.

Areas seeded and mulched with straw; wattles recently replaced.

Slope drain recently added needs outlet protection measure and slope repairs.

Slopes adjacent to skimmer basin needing stabilization.

Waste site berm vegetated.

US-401 AT SR-2044/SR-2224 AND SR-2006

Type of Project: Contract, Central Let **TIP Number:** U-5748
NCDOT Div.: 5 **County:** Wake **Let Date:** 7/18/2023 **Length:** 2.5 miles
Completion %: ~ 35 **ESAs Present:** Yes **Trout Waters Present:** No
Contract Amount: $16,173,487.77 **Subbasin/ River Basin:** Upper Neuse/ Neuse River
Recent Rainfall Record:

Date:	9/28/2024	9/27/2024	9/25/2024	9/24/2024	9/22/2024
Amount:	0.484”	0.201”	1.0”	1.08”	0.728”

Previous NCDOT REU Monthly Inspection Scores:

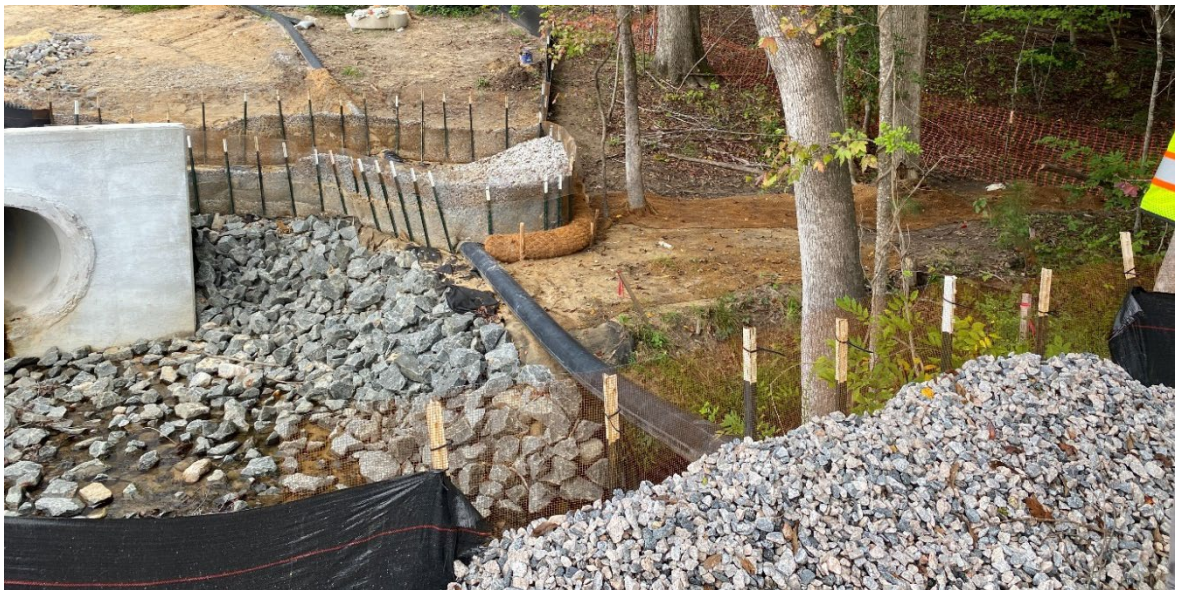
Date:	9/26/2024	8/14/2024	6/24/2024	5/17/2024	2/6/2024
Score:	7	8	8	8	8

Date of Review: October 3, 2024
Note: This review was conducted during the week following Hurricane Helene.

Summary:

Construction on this project began in October 2023. No ICAs had been issued to the project prior to the review. Self-inspection records and the ESC As-built plan set appeared to be adequate and maintained. The contractor had imposed a voluntary shutdown off all work except ESC repairs, installation and maintenance. This shutdown was first imposed 2 weeks prior to the review and remained in place as repairs were being completed. The two sections of channel changes had been completed. Sediment losses into the two riprap channels was noted in both the self-inspection and monthly REU report. It had been noted that the sediment seen in the rip rap sections of the channels did not extend beyond the limits of disturbance nor into the live streams. One section had been repaired, with sediment removed from the riprap and the disturbed areas adjacent had been matted with coir fiber matting. Staff stated that additional seeding would be conducted on these areas within the coming days. Repairs on the second channel section were underway during the day of the review. The stream was being pumped through the culvert and approximately 2/3 of the way down the rocked channel during repair operations. This pump around was discharging turbid water into the stream and it was recommended that the pump hose be extended beyond the stained sections of the channel to prevent turbid water discharging from the channel. Silt fence and silt fence outlets along this channel section were being repaired while onsite. The silt fence and outlets along the stockpiles at the adjacent laydown area needed to be maintained. The current grade along the section of new road alignment was directing a large drainage area to a section of silt fence in two areas. REU staff had recommended that the plan be revised to add a skimmer basin in this area. This revision had been received and approved by the FOE. The contractor stated that once the repairs from the recent rain events had been

completed focus would shift to installing the additional skimmer basins. Measures along the Neuse River were under water from the swollen river and would need to be inspected and repaired once the water receded. Silt fence outlets and silt fence surrounding a completed culvert extension appeared to be maintained and functioning. A previous sediment loss had occurred in this location and an additional row of silt fence and silt fence outlets had been installed. The sediment lost had been retrieved and the areas disturbed by the cleanup operation had been seeded and matted with coir fiber matting. Idle or completed areas throughout the project had been seeded and mulched with straw.



Additional measures installed and signs of previous loss cleanup.

Inlet protection measures.

Stream relocation area repairs and sediment loss cleanup

Repairs made and sediment loss retrieved at channel stabilization area.

Skimmer basins maintained.

NC-55 FROM NC-210 TO SR-4809

Type of Project: Contract, Central Let **TIP Number:** R-5705B
NCDOT Div.: 6 **County:** Harnett/Wake **Let Date:** 10/18/2022 **Length:** 4.5 miles
Completion %: ~ 25% **ESAs Present:** No **Trout Waters Present:** No
Contract Amount: $16,173,487.77 **Subbasin/ River Basin:** Upper Cape Fear and Black/ Cape Fear River

Recent Rainfall Record:

Date:	5/24/2024	5/20/2024	5/16/2024	5/15/2024	5/9/2024
Amount:	0.3”	0.4”	0.05”	1.8”	0.3”

Previous NCDOT REU Monthly Inspection Scores:

Date:	5/7/2024	4/25/2024	1/23/2024	12/19/2023	10/25/2023
Score:	7	7	8	8	8

Date of Review: May 30, 2024

Summary:

Construction on this project began in March 2023. No ICAs had been issued to the project prior to the review. However, NCDOT staff did note that the contractor voluntarily shutdown all work except work on ESC repairs and sediment loss cleanup for a short period in February. The ESC As-Built plan set appeared to be adequate and maintained. Self-inspection records appeared to fully capture the corrective actions needed and were consistent with the monthly REU reports around the same time. Some required corrective actions were not being completed or the date of completion was not recorded within the appropriate timeframes based on the priority timeframes. It was recommended to note why corrective actions were unable to be completed within the appropriate timeframe. The culvert installation was complete and fill over the culvert was ongoing. Some sections of the project were actively grading while others were transitioning into roadbed preparation. Basins where grading had been completed had been removed and the disturbed areas were being stabilized. Ditches and slopes at final graded throughout the project had been matted. Perimeter silt fence and silt fence outlets had been installed and overall appeared to be maintained. Slope drains were properly staked down, and rock pipe inlet protection measures appeared to be maintained. Completed and idle slopes throughout the project had been stabilized and vegetation was establishing. This project contained an active borrow site nearing completion. The skimmer basin on the site had been installed and appeared to be maintained and functioning. The diversion ditches on the borrow site had been seeded but vegetation was sparse. REU staff gave a reminder that Inactive areas of the borrow site should be stabilized within the required timeframes. Water trucks were actively running along the haul road and borrow site to address the need for dust control.

Water truck running to provide dust control.

Culvert installed and area being stabilized.

Skimmer basins maintained.

Basin removed and disturbed areas being stabilized.

Slope recently graded and matted.

ACCESS IMPROVEMENTS FOR BOOM FACILITY ALONG I-73 ON THE NORTH SIDE OF PIEDMONT TRIAD INTERNATIONAL AIRPORT

Type of Project: Contract, Central Let **TIP Number:** HE-0005

NCDOT Div.: 7 **County:** Guilford **Let Date:** 9/12/2022 **Length:** 0.76 miles

Completion %: ~ 85% **ESAs Present:** Yes **Trout Waters Present:** No

Contract Amount: $8,991,271.36 **Subbasin/ River Basin:** Haw/ Cape Fear River

Recent Rainfall Record:

Date:	5/27/2024	5/24/2024	5/19/2024	5/18/2024	5/16/2024
Amount:	0.642”	0.177”	1.291”	1.177”	0.161”

Previous NCDOT REU Monthly Inspection Scores:

Date:	5/1/2024	3/25/2024	2/29/2024	1/18/2024	12/19/2023
Score:	8	8	7	8	8

Date of Review: June 4, 2024

Summary:

Construction on this project began in October 2022. No ICAs had been issued to this project. REU staff did recommend a temporary stop work order be issued following their inspection in February 2024. The Resident Engineer issued the stop work order for all work other than work towards ESC corrective actions. The ESC As-built plan set had been marked up adequately and appeared to be maintained as work progressed. Inconsistencies were noted between the self-inspection records and monthly REU reports. Self-inspection reports should fully capture the conditions on site and note all corrective actions needed during each inspection. At the time of the review, paving was underway, and measures were starting to be removed. One of the large basins remaining appeared to be receiving little drainage area anymore. This basin would remain in placed until the adjacent slopes were finalized and stabilized. Slopes had been stage seeded as grade was brought up and slopes were graded. The check dams in the diversion ditch needed to be installed or maintained and the slopes had been seeded but may require overseeding in some areas. Completed sections along the right alignment had been stabilized and vegetation was establishing. The minor disturbance in the median had been completed and the disturbed areas had been matted with wattles installed.

Vegetation established in completed areas.

Disturbed areas in the media matted and wattles installed.

Skimmer basin and diversion ditch.

Skimmer basin appeared to be maintained.

Slope completed and being stabilized.

BRIDGES 109 AND 121 OVER S. BUFFALO CREEK ON SR-4240

Type of Project: Contract, Central Let **TIP Number:** B-5717

NCDOT Div.: 7 **County:** Guilford **Let Date:** 6/21/2022 **Length:** 0.32 miles

Completion %: ~ 65% **ESAs Present:** Yes **Trout Waters Present:** No

Contract Amount: $8,270,442.00 **Subbasin/ River Basin:** Haw/ Cape Fear River

Recent Rainfall Record:

Date:	6/3/2024	5/27/2024	5/24/2024	5/19/2024	5/18/2024
Amount:	0.114”	0.728”	0.193”	0.736”	0.720”

Previous NCDOT REU Monthly Inspection Scores:

Date:	5/20/2024	4/15/2024	3/13/2024	2/13/2024	1/16/2024
Score:	8	8	8	8	8

Date of Review: June 4, 2024

Summary:

Construction on this project began in January 2023. This project had received no ICAs prior to our review. Self-inspection records appeared to have some inconsistencies and not fully capture the corrective actions reflected in the monthly REU reports. The ESC As-built plan set was not fully maintained. revisions to measures or additional measures had been shown as red line markups. However, the installation and removal of measures had not been marked up. Additional silt fence and check dams had been installed and some basins had been adjusted or shifted due to the onsite conditions. On the day of the review, the west bound bridge had been completed and the disturbed areas had been stabilized. the east bound bridge deck construction was underway and the ditches along the east bound side of the project had been matted and the surrounding areas seeded and mulched with straw. Wattles below the bridge deck had been installed. Perimeter silt fence had been installed and appeared to be maintained and functioning throughout the project.

Wattles and check dams maintained in ditches and completed areas stabilized.

Wattles installed along top of riprap bank stabilization below new bridge.

Eastbound ditch matted and areas seeded and mulched with straw.

NC-211 From US-15/US-501 to SR-1244/SR-1311

Type of Project: Contract, Central Let **TIP Number:** R-5709A
NCDOT Div.: 8 **County:** Moore, Hoke **Let Date:** 9/21/2021 **Length:** 15.6 miles
Completion %: ~ 80% **ESAs Present:** No **Trout Waters Present:** No
Contract Amount: $15,325,970.10 **Subbasin/ River Basin:** Lumber/ Lumber River

Recent Rainfall Record:

Date:	8/13/2024	8/12/2024	8/11/2024	8/9/2024	8/8/2024
Amount:	0.60	1.78	0.20	0.30	0.86

Previous NCDOT REU Monthly Inspection Scores:

Date:	7/22/2024	6/28/2024	5/7/2024	4/2/2024	3/5/2024
Score:	8	8	8	7	8

Date of Review: August 20, 2024

Summary:

Construction on this project began in Aprill of 2023. This project had received no ICAs prior to our review. This project included the Clearing and Grubbing Phase only. This project included the clearing, grubbing, demolition of some structures, installation of initial erosion control measures and stabilization of the disturbed areas. The remaining phases of the overall roadway project will be let at a later date. The disturbed areas will have to be stabilized before this contract is complete and the site will remain idle until the subsequent contact has been awarded and started. NCDOT maintenance staff will be mobilized should repairs or maintenance be required in between contracts. Self-inspection records and the ESC As-built plan set appeared to be adequate and maintained. At the time of the review, clearing and erosion control measure installation was ongoing. A silt fence wattle break appeared to have been overtopped and minor sediment loss was noted. In this same area, there was a small hole that had undermined the silt fence. Sediment lost needed to be retrieved, perimeter measures repaired, and any areas disturbed stabilized. Previous losses had been noted at an overwhelmed skimmer basin and into an existing ditch. This sediment extended beyond the limits of disturbance. The skimmer basin had been repaired and the skimmer device outlet had been extended to discharge directly to the inlet protection measure of the adjacent culvert rather than treated water flowing over additional bare areas. The disturbed areas had also been seeded and mulched with straw. The skimmer device had been reinstalled in the basin, but the orifice plate had not been installed per the approved plan. The effected ditch had been reworked and matted. Idle and completed areas throughout the project had been stabilized and vegetation was establishing.

Recently installed skimmer basin

Silt fence needing repair and sediment loss beyond wattle break clean up needed.

Recently repaired skimmer basin and extended skimmer device outlet.

Repaired ditch where previous sediment loss occurred.

FUTURE I-74 (WINSTON-SALEM NORTHERN BELTWAY) FROM I-40 TO I-40 BU/US-421

Type of Project: Contract, Central Let **TIP Number:** U-2579AB
NCDOT Div.: 9 **County:** Forsyth **Let Date:** 12/21/2021 **Length:** 2.7 miles
Completion %: ~ 60% **ESAs Present:** No **Trout Waters Present:** No
Contract Amount: $261,764,022.37 **Subbasin/ River Basin:** Upper Yadkin/ Yadkin-Pee Dee River

Recent Rainfall Record:

Date:	8/19/2024	8/17/2024	8/14/2024	8/10/2024	8/9/2024
Amount:	0.100	0.740	0.193	0.378	4.488

Previous NCDOT REU Monthly Inspection Scores:

Date:	8/12/2024	7/16/2024	6/18/2024	5/21/2024	5/6/2024
Score:	7	8	8	8	7

Date of Review: August 21, 2024

Summary:

Construction on this project began in April 2022. No ICAs had been issued to this project prior to the review. Self-inspection records and the As-built ESC plan set appeared to be adequate and maintained. A recent sediment loss was noted in the self-inspection and most recent monthly REU report. On the day of the review the ditch and adjacent slopes to the culvert and stream where this sediment loss occurred had been repaired and matted. The ditch had been lined with a geotextile fabric and additional rock check dams had been installed. the stream banks had been repaired and armored with rip rap in accordance with the approved plan. coir fiber matting had also been installed where the top of the bank had been disturbed. Sediment that had overtopped a section of silt fence still needed to be retrieved and the areas disturbed restabilized. Check dams within the median ditch line throughout the project had been repaired or replaced. One of the skimmer basins had recently been reworked and the adjacent completed slopes had been matted. Slope drains throughout the project had been installed but were not staked down properly. Skimmer basins throughout the project appeared to be functioning; however, the side slopes on a number of basins had not been stabilized properly. A portable toilet had also blown over into one basin. A reminder was given by REU staff to remove the portable toilet, clean up any spills in accordance with DWR guidance and to store these items at least 50 feet away from basins, ditches, inlets and other water features moving forward. These would need to be stabilized to prevent the basin slopes from eroding into the basin itself. Completed slopes throughout the project had been stabilized or recently matted. Inlet protection measures throughout the site appeared to have been repaired or replaced throughout the project.

This project include 2 borrow sites, both were nearing completion and were being stabilized. The skimmer basins on the borrow sites remained in place and appeared to be functioning.

Repairs completed to area where sediment loss recently occurred, remaining sediment loss retrieval needed.

Skimmer basin and adjacent slopes matted.

Check dams repaired in median ditch.

Completed slopes being stabilized.

Inlet protection measures.

Vegetation establishing on borrow site.

ROUNDABOUTS AT NC-115/DAVIDSON ST./POTTS ST. AND SR-6038/GRIFFITH ST./BEATY ST. AND NEW LOCATION FROM SR-6037 TO SR-6038

Type of Project: Contract, Central Let **TIP Number:** U-5873, U-5907
NCDOT Div.: 10 **County:** Mecklenburg **Let Date:** 12/19/2023 **Length:** 0.98 miles
Completion %: ~ 5% **ESAs Present:** No **Trout Waters Present:** No
Contract Amount: $15,497,601.78 **Subbasin/ River Basin:** Upper Catawba/Catawba and Rocky/Yadkin Pee Dee

Recent Rainfall Record:

Date:	8/19/2024	8/17/2024	8/14/2024	8/10/2024	8/9/2024
Amount:	0.100	0.740	0.193	0.378	4.488

Previous NCDOT REU Monthly Inspection Scores:

Date:	8/1/2024	7/10/2024	6/26/2024	5/28/2024	4/24/2024
Score:	8	8	8	8	8

Date of Review: September 5, 2024

Summary:

Construction on this project began in June 2024. No ICAs had been issued prior to the review. The self-inspection records appeared to include required corrective actions noted. However, the date these corrective actions were completed was not noted. This project had recently started, and grading was underway and perimeter measures had been installed. The contractor had installed some additional measures to protect storm drain inlets while grading of the surrounding areas was being conducted. The skimmer basin had been installed, although, the skimmer device did not have the orifice plate installed and cut out to the proper width per the approved plan. Disturbed areas which were recently graded had been seeded and mulched with straw. Completed ditches had vegetation establishing and check dams had been installed. The construction entrance had been installed and appeared to be functioning.

Construction entrance.

Skimmer basin recently installed.

Areas seeded and mulched with straw

Ditch being vegetated and check dams installed.

BRIDGE #850180 OVER TOMS CREEK ON SR 1953

Type of Project: Contract, Division Let **TIP Number:**

NCDOT Div.: 11 **County:** Surry **Let Date:** 3/21/2024 **Length:** 0.10 miles

Completion %: ~ 70% **ESAs Present:** No **Trout Waters Present:** No

Contract Amount: $1,584,156.72 **Subbasin/ River Basin:** Upper Yadkin/ Yadkin-Pee Dee

Recent Rainfall Record:

Date:	9/2/2024	9/1/2024	8/20/2024	8/19/2024	8/18/2024
Amount:	1.413	0.012	0.272	0.150	0.430

Previous NCDOT REU Monthly Inspection Scores:

Date:	8/7/2024	7/10/2024	6/4/2024	5/27/204	
Score:	9	9	8	8	

Date of Review: September 5, 2024

Summary:

This project began construction in May of 2024. No ICAs had been issued to this project prior to the review. The ESC as-built plan set, and self-inspection records appeared to be adequate and were being properly maintained. At the time of the review, construction of the bridge deck was underway. Portable concrete washouts were being utilized onsite and appeared to be maintained. perimeter measures had been installed and the completed areas below the bridge and along the stream banks had been seeded and mulched with straw. Slope drains had been installed properly and completed slopes and ditches throughout the project had been stabilized. It was recommended to monitor vegetation and overseed as the seasons change and temporary vegetation starts to die out.

Permanent ditch completed and perimeter measures installed.

Vegetation starting to die out along stabilized slopes.


Perimeter silt fence appeared to be maintained.

US-74 SHELBY BYPASS FROM EAST OF NC-150 TO WEST OF SR-1001

Type of Project: Contract, Central Let **TIP Number:** R-2707D, R-2707E
NCDOT Div.: 12 **County:** Cleveland **Let Date:** 7/18/2023 **Length:** 6.1 miles
Completion %: ~ **ESAs Present:** Yes **Trout Waters Present:** No
Contract Amount: $167,407,389.37 **Subbasin/ River Basin:** Upper Broad/ Broad River
Recent Rainfall Record:

Date:	9/26/2024-9/30/2024	9/24/2024	9/18/2024	9/17/2024	9/2/2024
Amount:	9”	1”	0.15”	2.4”	0.1”

Previous NCDOT REU Monthly Inspection Scores:

Date:	9/24/2024	8/22/2024	7/24/2024	6/13/2024	5/16/2024
Score:	8	8	7	9	8

Date of Review: October 2, 2024

Note: This review was conducted in the week following Hurricane Helene.

Summary:

Construction on this project began in December 2023. No ICAs had been issued on this project prior to the review. The contractor initiated a voluntary shutdown of all work other than ESC related work following instances of sediment loss in mid July 2024. Staff stated that this shutdown was in effect for approximately 7 weeks. The self-inspection records and ESC As-built plan set appeared to be adequate and maintained. On the day of our review, repairs and maintenance were underway following recent rain events. Sediment loss was previously noted into a wetland areas adjacent a large fill slope and the slope had been matted and wattle breaks installed. During the recent rain event from Hurricane Helene, sediment from the previously noted losses appeared to have migrated and concentrated in some of the low areas just beyond the perimeter measures. Some minor rills had formed on the slope and accumulated sediment along the silt fence and outlets needed to be removed. DWR staff were onsite and stated that they would provide additional guidance on how to address the accumulated sediment losses into the wetland area. NCDOT staff stated that they following the initial losses in July, DWR staff have been consulted regarding the cleanup of sediment loss in the area. This project included a few permanent stormwater control basins that were to be installed and utilized as skimmer basins during construction. One of these basins had been excavated but the baffles and skimmer device had not yet been installed. The contractor was currently dewatering the basin by pumping from the forebay using a silt bag placed in the riser structure. However, the silt bag had a large hole and needed to be replaced. One culvert installation was underway. The pump around operation was being put in place, the downstream impervious dike had been installed and the pump for dewatering the work area was installed. The upstream impervious dike was being installed while we were onsite. The remaining sections of the project that were not actively being graded had

been cleared and stabilized with temporary vegetation. Tiered skimmer basins installed appeared to be functioning and maintained. Some slope drains had been extended through the silt fence to outlet along a stabilized riprap channel bank. These slope drain extensions needed to be removed so that the outlets remained upgrade of the perimeter measures. This was noted on the most recent REU monthly inspection report.

Clean water diversion and diversion ditch installed and being maintained.

Site where sediment loss has occurred into wetland area.

Completed slopes and permanent ditch.

Tiered skimmer basin appears to be maintained.

Idle areas being stabilized, and perimeter measures maintained.

Slope drains extended beyond perimeter measures along stream bank.

Pump around operation being installed for culvert installation.

I-26 FROM NC-280 TO I-40

Type of Project: Contract, Central Let **TIP Number:** I-4700

NCDOT Div.: 13 **County:** Buncombe/ Henderson **Let Date:** 7/16/2019 **Length:** 7.5 miles

Completion %: 75% **ESAs Present:** Yes **Trout Waters Present:** No

Contract Amount: $263,010,000.00 **Subbasin/ River Basin:** Upper French Broad/ French Broad River

Recent Rainfall Record:

Date:	9/15	9/413	9/2	8/20	8/19
Amount:	0.01	0.25	0.18	0.01	0.02

Previous NCDOT REU Monthly Inspection Scores:

Date:	9/5/2024	8/8/2024	8/2/2024	8/1/2024	7/24/2024
Score:	7	8	7	ICA Ex: 6	ICA: 6

Date of Review: September 19, 2024

Summary:

Construction on this project began in October 2019. This project was currently in various phases of construction throughout the project. The project was recently issued an ICA on 7/24/2024 noting that multiple sediment losses had occurred. The Resident Engineer also issued a formal temporary suspension of work letter along with the ICA stopping all work expect for off-site sediment cleanup and repair or maintenance of erosion and sediment control items. The REU issued an ICA Extension on 8/1/2024 stating that while some areas of sediment loss cleanup had been completed, DWR staff had identified additional areas needing where sediment needed to be cleaned up and cleanup efforts were still underway at the other loss location. The ICA and suspension of work was lifted on 8/8/2024. On the day of our review, work was continuing on the new interchange section and the parkway bridge. Silt fence and silt fence outlet measures needed to be maintained. Much of the slope below the retaining wall had been matted or stabilized with riprap armoring. It was recommended to stabilize the remaining disturbed areas below and along the ends of the retaining wall. The large slope on the east side adjacent to the new parkway bridge, which was under construction had been repaired, matted and coir fiber slope breaks had been installed. additional check dams had been installed along the diversion ditches in this area. The skimmer basin appeared to be maintained and functioning. Signs of the previous sediment cleanup in this area was noted and additional coir fiber wattles that had been installed per DWR guidance to reduce movement of sedimentation remnants in flow paths outside of the limits of disturbance and appeared to be maintained. the large slope west of the new Blue Ridge Parkway bridge had multiple rills which had formed and would be repaired, compost applied and then seeded and matted in the coming days. Check dams along the

diversions and additional slope drains had been installed along the perimeter following the recent losses in this area. Measures appeared to be maintained.

Areas below the retaining wall.

Additional check dams installed in diversion ditches.

Slopes adjacent to the new Blue Ridge Parkway Bridge.

Areas of previous sediment loss, measures repaired, and sediment retrieval completed.

NC-143 FROM SR-1223 TO 0.5 MILES NORTH OF APPALACHIAN TRAIL

Type of Project: Contract, Central Let **TIP Number:** A-0009CB
NCDOT Div.: 14 **County:** Graham **Let Date:** 9/20/2022 **Length:** 3.9 miles
Completion %: ~ 40% **ESAs Present:** Yes **Trout Waters Present:** Yes
Contract Amount: $116,407,729.70 **Subbasin/ River Basin:** Lower Little Tennessee/ Little Tennessee

Recent Rainfall Record:

Date:	9/17/2024	9/16/2024	9/12/2024	9/1/2024	8/31/2024
Amount:	0.2”	0.25”	0.02”	0.6”	0.06”

Previous NCDOT REU Monthly Inspection Scores:

Date:	9/10/2024	8/29/2024	7/10/2024	6/26/2024	5/29/2024
Score:	8	8	8	**PCN Issued:** Urgent Items: 7 Remainder of Project: 8	Urgent Items: 7 Remainder of Project: 8

Date of Review: September 18, 2024

Summary:

Construction on this project began in November 2022. This project was underway and actively grading during our review. A Permit Consultation Needed (PCN) was issued on 6/26/2024 and the resident engineerissued a temporary suspension of work on 7/1/2024 for all work except for ESC related work. The PCN serves to notify the contactor and NCDOT personnel of specific permit requirements which may not be being met. In this case, the self-inspection records were found to be inadequate and repeating corrective actions needed were noted. The perimeter silt fence and silt fence outlets along the stream adjacent to the road needed to be maintained in some areas but appeared to be functioning. A culvert was being installed with impervious dikes and a pump around. The piles being driven into the ground were causing some overspray onto the upstream dike and into the pump inlet area. DOT staff recommended that the impervious dike be moved further upstream to avoid sediment from entering the stream. This project included a waste site with a steep access road. Revisions to the approved reclamation plan had been made to address the runoff from the site coming down the access road. Self-inspection records had noted some previous losses along the access road. Skimmer basins and additional check dams throughout the ditch had been installed. No signs of additional sediment loss were noted. The slopes of the waste site bad been matted as material was added and graded. Some repairs to the slope were needed and one slope drain had become detached and would need to be repaired. Completed slopes throughout the project had been stabilized. headwall installation for one

culvert was underway and the area was being dewatered using a pump and silt bag per the approved plan.

Recently maintained Skimmer basin.

Cut slope being stabilzed and clean water diversion along top of slope.

Skimmer basin and slope of waste site.

Repairs to existing measures and additional measures installed along the waste site access road.

Recommended moving impervious dike and pump around operation at active culvert installation.

RECOMMENDATIONS

The NCDOT has developed a number of internal policies and procedures meant to ensure construction is conducted in accordance with the requirements of the SPCA, NPDES program and other environmental permits. Policies and procedures appeared to be inconsistently implemented in some instances. As-Built ESC Plans were not always maintained adequately. In one case, the clearing and grubbing phase plans had been marked up, but the final grade plans had not been marked up once the project transitioned into this phase. A few other projects were not noting when measures were removed or when measures had not been installed. On the Design-Build project reviewed, an initial VMP had been developed but did not appear to be updated or discussed during monthly meetings and there was no marked up plan set showing where and when seeding and fertilizer topdressing had taken place. Self-inspection records in some instances were inconsistent with the monthly REU reports conducted on or around the same day. Some records appeared to be incomplete or appeared to not fully capture the corrective actions needed at the time. Required corrective actions were noted on the monthly REU reports but not always reflected in the self-inspection records. A few records were missing the date the corrective actions had been completed or the date it was completed was not within the appropriate timeframe based on the assigned priority status of the corrective action and did not include a justification for the delay. These timeframes may not always be met due to the extent of work that may be required and continued work towards completing the corrective action should be noted in the record.

It is recommended that the NCDOT continue to closely monitor the implementation of their policies and procedures that have been developed. REU staff have noted many of the inconsistencies within self-inspection records and in most cases these inconsistencies have been addressed in subsequent records. However, inconsistencies on some projects persist. Similarly, the As-built ESC plans reviewed were generally adequate while others were missing items or were not being maintained as the project moved into the next phase of the ESC plans. Staff should continue to convey expectations regarding these plans to new contractor staff when there is turnover and continue to provide guidance and require adjustments when the marked-up plans are found to be inadequate. Staff should also ensure that a VMP is developed and fully maintained throughout the life of all design-build projects.

Overall, projects appeared to be progressing in accordance with the approved ESC plan and revisions to these plans were being made when necessary. NCDOT staff appeared to be taking the necessary actions to repair measures and clean up sediment lost beyond perimeter measures. NCDOT staff appear to be utilizing the tools available to them when necessary to ensure that instances of sediment loss were cleaned up and the areas impacted remediated as necessary. It is stated on the NCDOT self-inspection form that corrective actions given an

"Urgent" priority should be completed within 24 hours and ones given a "Routine" priority should be completed within 5 days. Repairs appeared to be completed in most cases, however some routine maintenance items appeared to not always be completed within the 5-day timeframe in accordance with NCDOT policy.

It is recommended that NCDOT staff continue to utilize the tools at their disposal to ensure that corrective actions are taken in a timely manner. It is also recommended that staff continue to emphasize the importance of routine maintenance and thorough inspections. Implementing a shift from reactive repairs to a focus on proactive maintenance of measures will aid to reduce the potential for offsite sedimentation to occur.

The NCDOT has completed the updates to their standard construction details and specifications. The *2024 Standard Specification for Roads and Structures* and *Roadway Standard Details* have been completed and published. The updates contained in the 2024 details and specifications included adding some measures which were previously utilized as special provisions added to the contract, along with updates to existing standards. All projects let on or after January 1, 2024, will be constructed pursuant to the 2024 specifications and details.

It is recommended to update any and all policies, procedures and guidance documents as necessary to reflect the changes made in these recent updates made to the specifications and details, any changes made in the NC Administrative Code or State Legislature over the last several years. The *NCDOT Erosion and Sediment Control Design and Construction Manual* provides guidance to designers working on developing erosion and sediment control plans. The NCDOT has also developed a pocket-sized *Erosion and Sediment Control Field Guide* that includes various common erosion control measures, their purpose and use, a brief description of how to construct the measure and a photo of each measure, as well as various other internal guidance, standard operating procedures and policies related to erosion and sediment control have been developed. NCDOT staff have stated that the review and update process has begun on various documents and will be ongoing.

CONCLUSION

The NCDOT has developed a robust erosion and sediment control program with numerous internal policies and procedures designed to ensure projects area designed, constructed and stabilized in a manner that protects adjacent properties and waters. The NCDOT funds ongoing research and development of new and innovative erosion control measures and allows for a wide range of both onsite and controlled testing. All ESC plans are required to be designed by personnel who have received the NCDOT ESC Level III certification. Plans are reviewed and approved by the REU to ensure that plans have been designed in accordance with the NCDOT

Erosion and Sediment Control Design Manual, the SPCA, the NCG01 general permit and the minimum standards set by the Sedimentation Control Commission. REU field staff conduct monthly inspections on all projects and continue to coordinate closely with onsite personnel and other relevant departments such as DEMLR and DWR throughout the construction of a project.

As part of the 2023 Annual Review Report, DEMLR staff recommended to include the concrete washout construction detail directly in the ESC plan rather than having to access a link embedded into the contract. It was also recommended to include the type of matting that is to be used within the Soil Stabilization Summary Table to provide clarification to the contractors on which type of matting should be used at the locations listed in this table. Through a cursory review of a few projects let in 2024, these recommendations appear to have been implemented but may still be missed on a handful of projects. Plan Review staff should continue to work to ensure that these items are included in each plan statewide.

Some inconsistencies were noted in the completion of the self-inspection records and marked up as-built ESC plan set maintained by the contractor. These appeared to be specific to certain projects and were not prevalent on all projects across the state. On other projects, REU staff had noted some inconsistencies or improperly filled out self-inspection records in previous monthly reports. In these cases, the recent records appeared to be adequate, and the issues had been resolved. Staff should continue to monitor these items and ensure that when contractor staff turnover occurs the records are maintained properly.

Overall, it appeared that sites were in good condition and measures were routinely being maintained and repaired. From the monthly REU and self-inspection records, it appeared that when instances of sediment losses had occurred corrective actions and cleanup operations were instigated in a timely manner. In instances where corrective actions were not completed or had been persisting from week to week, an informal or voluntary temporary suspension of work was implemented. While there were instances of sediment loss and maintenance or repair issued onsite, NCDOT staff appear to be able to facilitate a quick response to corrective actions that need to be completed. Whether this be through the issuance of a lower scoring inspection report, an ICA, or the issuance or even the recommendation of a temporary suspension of work. REU staff appeared to be conducting thorough and complete inspections as evidenced by the monthly inspection reports reviewed and the items noted by staff during the field inspection conducted as part of the review.

The NCDOT has taken into consideration the items discussed onsite and in the formal review reports over previous years. They have begun to implement the recommendations made during last year’s review and continue to work to update internal guidance documents. REU Staff appear to be knowledgeable of both the erosion control standards and common practices as well as the

projects which were reviewed. Staff appear to be conducting regular inspections and taking necessary actions in instances where corrective actions are not being conducted in the appropriate timeframes. The NCDOT maintain open lines of communication between the contractor, REU staff and various environmental agency staff throughout the life of a project. Overall, the NCDOT has demonstrated their ability to implement the delegated authority to administer an erosion and sediment control program.

DEMLR staff recommend continuing delegation of the Erosion and Sedimentation Control Program to the NCDOT Division of Highways, pursuant to §113A-56. This report will be presented to the Sedimentation Control Commission on November 21, 2024.

This report is based on the 2024 Annual Review of the Erosion and Sedimentation Control Program Delegation to the North Carolina Department of Transportation, Division of Highways conducted between May 30 and October 3, 2024.