

CENTERLINE

A NCDOT Environmental Newsletter

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Program Delivery With The Geotechnical Unit

By: John Pilipchuk, P.E., NCDOT Geotechnical Unit Head

View Point



The Geotechnical Engineering Unit started as two groups; a Geology Section of Locations and Surveys doing

soil surveys for proposed projects, and a specialized squad designing foundations within the Structure Design Unit. These two groups became the Geotechnical Unit and Soils and Foundations Section of Design Services Unit, respectively. In the mid-1990's, a GeoEnvironmental Section was formed within the Geotechnical Unit to identify geoenvironmental sites of concern within the proposed project rights of way in an effort to avoid or minimize impacts to underground storage tanks and other sources of contamination. Then in 2003, the Geotechnical Unit and Soils and Foundations Section merged to become the Geotechnical Engineering Unit, and is part of Technical Services under the Division of Highways. The Unit is made up of geotechnical engineers, geologists, engineering technicians and administrative staff, and we have offices in Asheville, Harrisburg, Raleigh and Greenville. We also have Limited

Services Contracts with 28 consulting firms to help with workload, provide specialized equipment and expertise.

Our Unit is involved with projects from before scoping through construction, and on-call for maintenance, slope repair, underground storage tank and contaminant removal within the right of way, sub-grade and approach slab issues, etc. Prior to scoping and in the document stage of a project, we will review the study area for prior property use and document issues such as underground storage tanks and other known or potential sources for contaminants. We will also look for soft/unsuitable soils, high groundwater, unstable soil or rock slopes, screen for acid producing rock, etc., and generate reports for planning that will include a map with a table of geoenvironmental sites of concern along with Geographic Information

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The New Environmental Policy Unit

Providing Technical Resources, Training, Process Improvement, and Customer Service

By: John Jamison, Western Manager, NCDOT Environmental Policy Unit

The Environmental Policy Unit (Unit) was recently created out of a need to provide NCDOT with expertise in all matters related to the North Carolina and National Environmental Policy Acts (SEPA & NEPA). The Unit's mission is to provide support to project managers (all modes) and resource agencies to ensure compliance with all applicable federal and state environmental laws, and to increase accountability and environmental sensitivity that enhance the economy and vitality of North Carolina.

The overall goals of the Unit are to help all NCDOT staff develop and deliver the State Transportation Improvement Program by:

- ensuring NEPA/SEPA compliance

- expediting project development
- improving project delivery
- promoting partnering
- ensuring the quality of deliverables

One of the Unit's primary roles is to serve as a NEPA/SEPA technical resource to help all Highway Divisions and modes with project delivery. The Unit's staff will be available to provide NEPA/SEPA advice to help guide projects through project development. This may

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Systems or DGN files. Immediately after a preferred alternate is selected, a Phase I investigation is performed and this information is included in the Hazardous Materials section of the National Environmental Policy Act document.

After 25% plans are developed, we start our subsurface investigation and develop construction recommendations and material quantities for roadways, pavement subgrades, bridges, culverts, retaining walls, and sound barriers. Most of the recommendations will be complete prior to right of way plans, but at the very least, slope recommendations and types of retaining walls are determined because these will affect right of way limits. After right of way authorization, the Geoenvironmental section will complete a Phase II investigation and report, and provide acquisition recommendations to the Right of Way Unit.

Prior to final plan completion and project let, subsurface investigations and construction recommendations will be completed. Pond surveys, dam investigations, and infiltration basin studies will be performed. In areas of a project where vibration is a concern, pre-let planning, building surveys and vibration

monitoring before and during construction will be done. Underground storage tanks, contaminated groundwater and soils, etc., will be removed if possible, prior to let.

We have staff dedicated to projects under construction, and are supported by other staff when needed. They review and approve submittals required by specifications for items such as drilled pier construction plans, crosshole sonic logging reports, Pile Driving Equipment data forms, pile driving analyzer reports, signal and high mount foundation design. They review blasting plans, monitor vibration from blasting and construction activities, investigate vibration damage claims, review post-bid design retaining wall plans and temporary shoring. They also support Construction Unit and Highway Division personnel by providing geotechnical expertise for construction revisions, soft soil and undercut, settlement monitoring and release of waiting periods, underdrain investigations, determine chemical stabilization rates and verify application. The Geoenvironmental Section also provides construction support and a contracting mechanism to address unanticipated tanks, contaminated groundwater and soils found on construc-

tion projects.

As needed, we work with maintenance personnel to provide recommendations for soil and rock slope repairs, retaining wall repairs, investigate pavement cracks and depressions, provide ground subsidence and sink hole repair plans, etc. We work with Pavement Management system to provide full depth pavement reclamation recommendations, and we have staff that work with Division personnel to inject grout to level highway and approach slabs, fill voids under roadways, around pipes and culverts and behind retaining walls.

If we can help you in any way geotechnically or geoenvironmentally or you want to know more about our services, please do not hesitate to contact us. We look forward to meeting with you on any project to discuss your needs and how the Geotechnical Unit can assist.

Employee Spotlight

The Environmental Analysis Unit's Biological Surveys Group (BSG) would like to welcome back Melissa Miller. She is now one of eight biologists working in the group. She has 19 years of experience as a field biologist with a focus on bats for 13 of those years. Melissa co-manages BSG's bat program. She is responsible for maintaining a bat-bridge database. BSG has been collecting data on bridge and structure checks for transportation projects since 2005. The database assists in determining when re-surveys are required as well as in identifying patterns and characteristics of "bat-friendly" NCDOT bridges across the state. Melissa also conducts bat habitat assessments and mist net surveys when required. During netting surveys, bats are identified,



processed, and banded. These activities are required to ensure compliance with Section 7 of the Endangered Species Act (as amended in 1973) which Melissa coordinates with the US Fish & Wildlife Service in order to help facilitate project delivery.

Melissa was born in western Massachusetts. She grew up playing on 29 acres where her love of all creatures great and small began. In the late 1980s, she relocated to North Carolina where she attended North Carolina State University (NCSU) and received a Bachelor of Arts in Sociology. In 1999, she discovered what she wanted to be when she grew up so she went back to NCSU and received a Bachelor of Science in Fisheries and Wildlife Sciences. For six years she worked for Howell Woods Environmental Learning Center as a biologist and environmental educator. She became proficient in bird mist netting

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include helping determine document type early in the screening and scoping process. We will be available to consult throughout project development and, in order to ensure regulatory compliance, will provide quality control reviews as needed on Type III Categorical Exclusions, Environmental Assessments/ Findings of No Significant Impact, Environmental Impact Statements and Records of Decision. This role will help our agency as a whole provide consistent documentation and better identify areas in need of improvement.

Another primary role is to enhance our relationships with our agency partners. NCDOT has many well-established stakeholders in our environmental process, and the Unit's role is intended to support those relationships. We have excellent in-house capabilities and there is much we can teach our partners, and in turn we will be listening to our regulatory agencies and other organizations to incorporate new methodologies. We will build upon our current Memoranda of Agreement's and procedures to create new avenues for project streamlining, thereby enhancing our established best practices. Coordination with other states is also an important aspect of the Unit, with a goal of educating ourselves about our counterparts' lessons learned.

NCDOT's existing environmental pro-

cesses and procedures are well-documented and respected throughout our industry. However, with the current demands on our staff and our consultant partners, keeping everyone up-to-date is a challenge. The Unit will be working to improve the organization and clarity of our procedures, including making updates to the public-facing side of the Connect NCDOT website. We will also be offering training opportunities to help everyone stay abreast of existing and new regulatory requirements and processes. This will likely include Section 404 of the Cleanwater Act/ NEPA Merger Process (Merger) training as well.

In order to maintain consistency and meet agency expectations, the Environmental Policy Unit will serve in a regular role in most Merger meetings. The goal of our Merger involvement will be to meet project delivery needs and keep the process focused and productive. We (like all involved) want to minimize conflicts, remove obstacles, meet regulatory requirements, and manage our environmental risks. With so many different (and new) staff and consultants involved in leading Merger coordination, we are available to help eliminate learning curves and keep Merger projects on track.

Here's a few example situations where the Environmental Policy Unit can help you minimize environmental compliance risk on your projects:

- Complex NEPA or agency coordination challenges
- Consultant scoping of unique environmental tasks
- Merger screening discussions
- Federal Energy Regulatory Commission permit impacts
- Federal land ownership issues under (US Army Corps of Engineers, Tennessee Valley Authority, National Park Service, US Forest Service, US Fish & Wildlife Service)
- Tribal coordination
- Environmental constraints requiring unique mitigation and project commitments
- Explaining/interpreting regulations, policies and procedures

We want to help each of you deliver your projects and meet our Department's environmental expectations. Please give any of us a call to discuss your thoughts, suggestions, or project challenges!



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Project ATLAS Update

By: Morgan Weatherford, EAU Mitigation & Modelling Group

Technical Article

As many of you have endured being poked, prodded and mildly interrogated by the Project ATLAS Team, the big question has always been “Where is this all headed?” We now have a much clearer picture of the end-game as Project ATLAS is at a fever pitch to provide project managers and other stakeholders help to deliver more projects while meeting our 3-2-1 goals. Business analyst and software developers are working at a furious pace to create, test and release a series of three web-based Geographic Information System (GIS) tools designed to help project managers keep their projects on track. The first tool to be release in the next few weeks is the Data Search Tool followed closely by the Project Development Screening Tool. The final piece of the puzzle, the Project Management Platform, is set to be released in October.

The Search Tool

Over the last several months, we have met with many business units across NCDOT to find out what data is being used or created by our subject matter experts to develop projects. We also asked what data could be created to help make their job a little easier. This resulted in a list of over 500 GIS layers that will be available in the Data Search Tool. This data gateway will allow you to search for these layers using a variety of criteria. First, users can search by document type. For example, if you need to produce a Natural Resources Technical Report (NRTR) for a project, you will be able to select NRTR and it will provide all the layers necessary to complete that deliverable. Users will also be able to search by keyword. For example, if you are looking for anything related to airports, you can enter “airports” and the tool will return any layers with that word in the description. On a broader scale, you may want to search an entire discipline, such as natural environment. Lastly, users can search by geographic area either with predefined areas in the tool, areas that uploaded

into the tool or areas drawn in the tool. The layers can then be downloaded so the user has a snapshot of the information that can be used in a more in-depth analysis or deliverable. This gateway will provide an authoritative source of data and confidence that it is up-to-date. It will also save time and promote consistency across the Department by preventing different versions of the same layers being saved on desktops in multiple units.

The Screening Tool

The Screening Tool will allow you to identify key features within your project area that could affect scheduling or budgeting and is based on the layers contained in the Data Search Tool. It offers maximum flexibility by allowing the user to customize the screening process and the associated report it automatically generates. It also

allows users to save the criteria so it can be quickly used on multiple projects. It will allow you to screen State Transportation Improvement Program projects that are already loaded into the tool, study areas that can be uploaded by the user or study areas drawn in the tool by the user, all of which can be buffered by a specified distance. The screening tool will help project managers identify potential issues earlier in project development to help prevent costly delays late in the game.

Project Management Platform

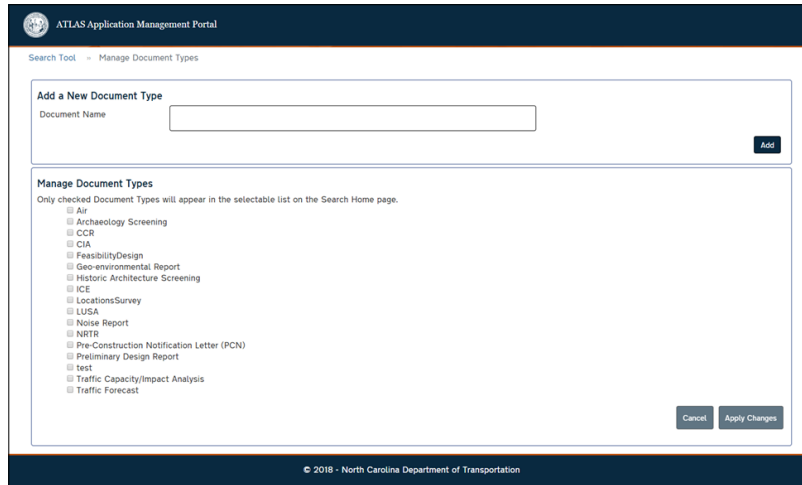
Though this application is still in development and details are still being figured out, the main purpose of the project is to provide project managers with a “one-stop shop” of all project needs. This will be accomplished by linking the many sources of data used throughout the Department and concentrating the data into a concise, user friendly format. Users will be able to see a map of the project as well as schedule and budget information

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from SAP. It will also provide the capabilities to see and manage project deliverables inside the Pre-construction Share Point site. It will also provide an advanced viewer that allows the user to see the project in relation to other projects, supporting a regional approach to project delivery. Users can load any layers from the Search Tool or upload layers while providing some basic geoprocessing tools for an analysis.

The ATLAS team has



met with hundreds of folks both inside and outside of NCDOT to determine the challenges that exist in meeting the transportation needs of our state. These tools will not be perfect and will evolve over time. So we encourage everyone to use these tools and provide feedback on what meets *your* needs and what doesn't. Our users are our customers and we want to help you spend less time chasing data and spend more time managing your project.

(Employee Spotlight continued from page 2)



and banding as well as developed many environmental education programs catered towards various types of community groups. She was also a licensed wildlife rehabilitator working specifically with opossums. In 2005, she joined BSG at NCDOT. She obtained her state bat permit in 2006 allowing her to mist net endangered bats across the state. After leaving NCDOT in 2011, she joined Three Oaks Engineering in 2014 and returned to NCDOT as an embedded consultant working once again with bats. In May 2018, she officially came back to NCDOT.

Melissa and her husband Craig have been married for 26 years and have a

13 year old son, Arlo. They live in Garner with their three cats and five chickens. In her spare time, Melissa loves to be outside looking for bugs, reptiles, amphibians, birds and any other critter she can find to photograph and study. Her favorite animals are cats, opossums, bats and aye-ayes. She enjoys traveling with her family to far off places making sure to check Atlas *Obscura* for all of the unusual things about a given area. Her favorite holiday is Halloween and each year she and her family have the "scariest house in the neighborhood." She is very happy to be back at NCDOT continuing to work with one of her favorite groups of animals and an awesome group of people.



July 26, 2018: Between public meetings for the I-485 widening project, Traffic Noise and Air Quality staff made good use of the time by visiting the I-77 high occupancy toll lane construction project in Mecklenburg County to see noise walls being installed. Pictured counter-clockwise from top: Lucious McEachin, Nidhi Sheth, Missy Pair, and Tracy Roberts.

R-2530B, B-4974, and R-2527 in Stanly and Montgomery Counties

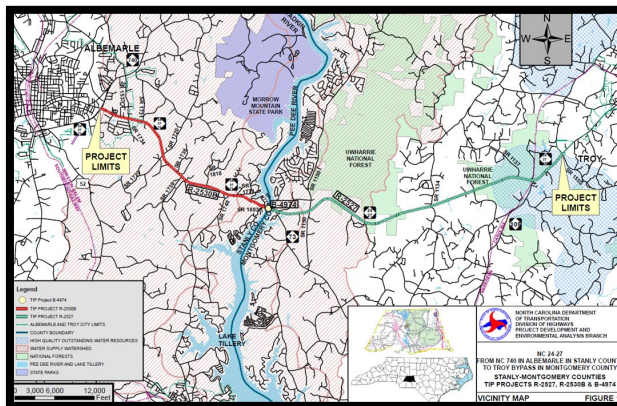
By: Colin Mellor, Eastern Manager, NCDOT Environmental Policy Unit

Project Spotlight

The widening of NC 24-27 from Albemarle in Stanly County to the Proposed Troy Bypass (R-0623), west of Troy in Montgomery County, is an approximately 14.5 mile widening project scheduled to let starting this November. The project has been broken into three Transportation Improvement Program (TIP) projects: The first project, R-2530B, involves widening existing NC 24-27 from west of NC 740 to the Pee Dee River in Stanly County from a two to three-lane facility to a four-lane divided facility. The second TIP project, R-2527, involves widening existing NC 24-27 from a two-lane facility to a four-lane divided facility with a 46-foot depressed median from the Pee Dee River to the proposed Troy Bypass, west of Troy in Montgomery County. The third TIP project, B-4974, involves deck restoration work for existing Bridge No. 50 and rehabilitating existing Bridge No. 51 over the Pee Dee River on the Stanly / Montgomery County line. A Finding of No Significant Impact for the project's Environmental Assessment was signed in April 2017 following an extensive planning effort. The project encounters US Forest Service property, impacts threatened and endangered plants, crosses a Federal Energy Regulatory Commission (FERC) facility, and affects multiple archeological sites. But perhaps the most striking resource on the project is the historic James B. Garrison/Swift Island Ferry Bridge.

The James B. Garrison/Swift Island Ferry Bridge (current westbound bridge) opened in 1927, replacing the first Swift Island Ferry Bridge. Built entirely in reinforced concrete; the bridge consists of four 210.0-foot

toward the banks of the lake, the major historical structural elements will be kept and superstructure stylistic elements such as plinths and recessed panels will be repaired or replaced "in kind." In order to attract the specialized construction companies preferred to complete this kind of work, the B-4974 project will be advertised under a separate express design build contract. While deck restoration on the newer, eastbound Bridge No. 50 is to begin soon after the November 2018 let, the more complex rehabilitation work on the historic arch bridge will need to wait until environmental permits and FERC authorizations have been obtained for the larger R-2530B project.



(64.0 m) arches, at 1,060.1 feet (323.1 m) long and 24.0 feet (7.3 m) wide. It was built to replace a bridge that was flooded due to the construction of the Tillery Reservoir on the Pee Dee River. The bridge originally served NC 74 until 1934, when it was replaced by NC 27/ NC 73. In 1963-1964, NC 24 was added to the bridge. In 1979, after the completion of a second parallel eastbound bridge, the Swift Island Ferry Bridge was renamed, with the new bridge, as the James B. Garrison Bridge, serving two-lanes of westbound NC 24/NC 27/ NC 73.

After close coordination with the State Historic Preservation Office, the decision was made to rehabilitate the historic bridge to accommodate the new, wider roadway cross section of two travel lanes with 6-foot shoulders on either side. While some minor foundation changes will be required

R-2530B will be let under a phased Individual Permit (IP) issued by the Army Corps of Engineers (Corps) through Section 404 of the Clean Water Act. Final designs are almost complete for application submittal on the R-2530B and B-4974 sections of the project. Final FERC approval is also being coordinated. Phased modifications for the subsequent construction of the R-2527 section of the project will be applied for at a later date, but the Corps still requires a proposed preliminary footprint (slope stake limits plus 25 feet) in order to issue the initial IP. The project let is currently scheduled for Spring 2019.





The Environmental Analysis Unit (EAU) had a large presence recently at the inaugural NCDOT Preconstruction Conference held at the North Raleigh Hilton on May 8-9, 2018. The conference was attended by several private consultant firms as well as both division and central NCDOT staff. It was a great informational sharing opportunity and individual units across the Department were able to interact and tell their story while providing critical process and contact information. Also present were representatives from other adjacent state DOTs. We look forward next year to this annual event!!!



Welcome to Nidhi Sheth as the newest employee to the Traffic Noise & Air Quality Team. Nidhi is a recent graduate from NC A&T and after an extended visit on the NCDOT Training Program, has decided to make the EAU her new home. We are excited and are looking forward to her much needed help!!



Welcome back Melissa!! As identified in our Employee Spotlight section, Melissa has rejoined NCDOT with the Biological Surveys Group where she is a key contributor with bat surveys and data management. Please take an opportunity to welcome and congratulate all these folks!!



Congratulations to Erin Cheely for her recent promotion in to the Environmental Program Consultant position within the Environmental Coordination and Permitting (ECAP) Group!! Erin has been with ECAP for 12 years and continues to be a lead contributor with project delivery in the west. She is also very active with ETRACS maintenance and upgrades.



The EAU is moving and part of the process is to relocate years and years worth of old project files. Michelle Carroll and Kara Weidner have been key in this endeavor. The first big push is to scan all the old project planning documents. A second step is to archive any old project files—and there are a lot of them. This information has to be boxed up and labeled before the Office of State Records will assume possession of them. The next steps include purging and eliminating duplicate copies in the existing EAU files located in Century Center Building B. Once this has occurred, these files will be boxed up in sequential order such that the movers can

relocate the boxed files to Century Center Building A. There the files will be unboxed and inserted in to the new filing system. The ultimate goal is for EAU to go paperless including scanning most of the old files.

