

# CENTERLINE

The NCDOT Environmental Newsletter

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## Embracing Change

*By: Derrick Weaver, PE, NCDOT Technical Services Environmental Policy Unit Head*

### View Point



It's hard to believe that it's been almost two years since COVID-19 began impacting our world; all of us are probably tired of wearing masks and are longing

for a sense of normalcy, or at least figuring out our new normal. Over the last two years, change has come quickly and often. We all know change is inevitable, but it's not always something we look forward to, nor do we always embrace it quickly. Fortunately, change is usually more incremental and not as abrupt as the Covid shutdown. Our work lives were clearly affected, but we all learned to work remotely and are now getting comfortable with a hybrid model. There has also been a lot of change in the Department over the last few years - changes in leadership, how we do business, and in the processes that we follow, especially in Technical Services as we work to change our culture through Integrated Project Delivery.

Recently, I read something about how we can't be afraid of change. Change can be scary, but it is usual-

ly for the better. It's easy to feel secure in your niche, but once you gain a larger perspective you can more easily realize how your work affects others. I recall being a Transportation Engineering Associate (TEA) or better known as a "Trainee" and that first week listening to all the Units share about what they did. Many Units at the time shared a chart with their group at the center showing how everything in the Department revolved around that Unit. They focused mainly on what they did, instead of how that Unit supported the Department in program/project delivery. As I reflect on almost 30 years at NCDOT, I have watched this Department change and evolve over time, with staff leading the way to break down silos and finding new ways to integrate all of our processes. I have been fortunate to be a

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## Division 5 Environmental Program - A Thank You to Chris Murray

*By: Heather W. Montague, Division 5 Environmental Officer*

### Division Spotlight

No article pertaining to the Division 5 Environmental Officer position or program would be complete without a focus on Chris Murray. For 18 years Chris built and managed the Division 5 Environmental Program. He was the first DEO for Division 5 and he brought that program to where it is today. Chris joined Division 5 by way of the Project Development and Environmental Analysis (PDEA) Branch where he started his career in January 1995. The time working with PDEA provided a strong foundation through working alongside the NCDOT Central Units, regulatory agencies, and consultants. Chris transitioned to Division 5 DEO in August 2000. He was promoted to Project Engineer for Planning and Environmental Studies in the Division 5 Project Delivery Unit in September 2018. Chris now has over 27 years of service with NCDOT.



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## Stormwater Control Measures, Which One?

By: Brian Lipscomb, P.E., Hydraulics Unit Highway Stormwater Program

You've got a job to do, but how do you know what tools you need?

I enjoy carpentry, woodworking, and building furniture as some of my many, many hobbies. This hobby has come in handy during this now 2-year pandemic. As many have over this time, my family has undertaken a few home improvement type projects, including updating our living room. Part of our living room update project included new furniture, to which I had the pleasure of building our new coffee table. I enjoyed turning a stack of lumber into something that will serve its purpose for years to come. When tackling one of these type projects it's good to know what the end goal is, what tools you'll need, how to use those tools, and ultimately how to put it all together.

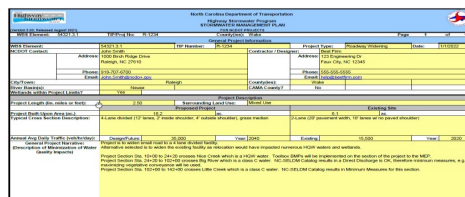


These same concepts apply to our NCDOT projects when striving to meet our environmental stewardship and stormwater treatment goals. Just as I needed to define what piece of furniture to build to meet our goals and vision for our living space, we need to define our stormwater treatment goals for our projects. Then know what tools, e.g., stormwater controls



measures, are needed to reach these goals. The Hydraulics Unit, along with our partners, have been hard at work to provide the Department with new guidance, tools, and training materials to do just that.

Historically, our stormwater treatment goals have been set through a coordination process with our resource agency partners with the ultimate goal of protecting water quality, but without any real direction on how or what is needed to do so. Unfortunately, establishing stormwater treatment goals through this type of process tends to come relatively late in the project delivery process which can add unnecessary risk to the schedule and budget. Because of this, it's been a long-standing goal of the Department to make stormwater treatment planning decisions earlier in the project development process to minimize risks to project delivery. Through the Integrated Project Delivery (IPD) and associated Project Development Network (PDN), we've been able to introduce a preliminary Stormwater Management Plan (pSMP) document in the early hydraulic planning stage of a project. The pSMP documents the stormwater treatment goals for a project. But how do we



know the appropriate goals to be striving for?

To answer this question NCDOT has worked with USGS

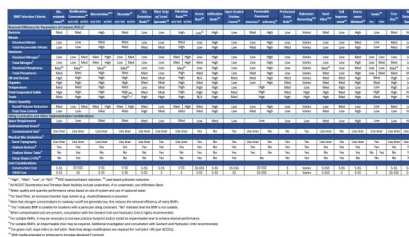
over several years to leverage the Stochastic Empirical Loading and Dilution Model (SELDM) to develop a user-friendly Microsoft Excel application known as the NC-SELDM Catalog. In simple terms, the catalog takes readily available project and receiving waterbody information to reference against data from over 75,000 pre-run project scenarios to define a



stormwater treatment goal. The goal is defined in terms of the need for a NCDOT Toolbox BMP, or other management approach. The result from the catalog becomes the treatment goal for that section of a project. The NC-SELDM Catalog can

be found through the Hydraulics Connect site. A series of four training videos have also been produced on using this tool and are available through the NC Learning Center's Learning Management System (LMS).

If a need for a Toolbox BMP is found, there is another useful tool available, known as the BMP Decision Support Matrix, which can be used to determine an appropriate BMP based off the parameter, or pollutant of concern to be treated, as well as a number of siting, cost, and operation & maintenance constraints. Using these criteria helps to optimize the selection of the appropriate tool to use. Going back to my carpentry analogies, sure using a 4-pound hammer may drive a finishing nail, but it may also bust a hole through your wall. It's always best to take some time and figure out what's best for the situation at hand. "One size fits all" rarely ever actually fits.



In addition to the production of these new tools, the Department is also working to update existing guidance documents. The Post-Construction Stormwater Program (PCSP), which is kind of like an

instruction manual directing the use of the Stormwater BMP Toolbox, is being updated to reflect these new tools and pro-

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cesses. The PCSP is expected to be updated, approved by DEQ, and implemented by the Department by June 2022. The Stormwater BMP Toolbox is also being updated to include numerous new control measures to help 'get the job done'. Release of the updated BMP Toolbox may occur in phases or by chapter throughout the year. All these resources are available through the Hydraulics Unit > Highway Stormwater Programs Connect website.

Following the PCSP and using these other resources and tools will keep our projects compliant with environmental regulations and more importantly maintain NCDOT's environmental stewardship as we strive to provide a functional transportation

network with environmental sensitivity for the benefit of all North Carolinians.



## Coming Soon! Merger Process Updates

*By: Ken Gilland, HNTB and NCDOT Environmental Policy Unit staff*

NCDOT's Environmental Policy (EPU), Environmental Analysis (EAU), and Project Management (PMU) Units are working with the Federal Highway Administration (FHWA), the US Army Corps of Engineers (USACE), and the North Carolina Division of Water Resources (NCDWR) to update the Merger Process Memorandum of Understanding (MOU). The Merger Process is overseen by representatives of these agencies (known as the Merger Management Team [MMT]) to coordinate the requirements of the National Environmental Policy Act (NEPA) and Section 404 of the Clean Water Act (CWA). Merger is a collaborative process that enables NCDOT to consider all relevant environmental factors prior to applying for a permit to impact jurisdictional Waters of the United States. The Merger Process has been in use in North Carolina since May 1997.

The updated agreement simplifies the MOU, provides a framework to allow the MMT to easily update guidance documents as requirements change, and allows for a flexible project-specific approach to Merger.

The updated process begins with an NCDOT **Merger Pre-screening**. This simple form will allow projects to be quickly reviewed using NCDOT's ATLAS datasets to determine if a project has conflicting environmental resources or other issues and would benefit from the Merger Process. For most projects, this pre-screening will finalize Merger documentation and the completed form will be stored on the ATLAS Workbench during Stage 1 of the Project Delivery Network (PDN).

For those projects that may benefit from Merger, **Merger Screening** will be coordinated with FHWA, USACE, and NCDWR representatives, and EPU as part of the Project Scoping Report completed in Stage 1 of the PDN. If it is determined the project would benefit from Merger, this meeting may also be used for Merger Concurrence Point (CP) 1 (Study Area/ Purpose and Need).

Another new element of the Merger Process is the **Merger Plan**. In lieu of the former rigid Process I/II/III requirements, NCDOT staff (mainly Project Managers and EPU) will develop a project-specific Merger Plan with FHWA, USACE, and NCDWR representatives providing guidance and support. The plan is designed to be a living document that can flex to the project team's needs. The Merger Plan includes:

- Required Merger Team members,
- Identified studies expected prior to each CP,
- Criteria for Evaluating Alternatives (if needed), and
- Anticipated schedule and meeting format.

The agreement standardizes **Public Involvement Requirements** for projects in Merger. USACE requires public engagement prior to agreement on the Least Environmental Damaging Practicable Alternative (LEDPA) at CP 3. By following the revised guidance for public involvement, which includes disclosing specific information and including standard language, NCDOT and USACE will eliminate the requirement for a Merger Permit Application. NCDOT is working with the MMT to finalize the agreement and is developing virtual training modules. It is anticipated that the initial trainings will be held in the Fall of 2022. The trainings will be uploaded to the NCDOT Connect site after the original trainings are held. Please send any questions or comments to John Jamison ([EPU@ncdot.gov](mailto:EPU@ncdot.gov)).

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part of that change and most of the time embraced it quickly.

A few years ago, when Divisions began managing more of their own workload, the Environmental Policy Unit (EPU) was also created. Over the past four years, I've had the privilege to build and lead EPU. We are a small group that works well together and has a wealth of shared and unique experience that has made us very effective. This role has been the highlight of my career as we've been able to support staff on complex projects and address systemic problems in project delivery. The vision of EPU is to provide expertise in all matters related to the North Carolina and National Environmental Policy Acts (SEPA & NEPA), as well as to assess overall departmental trends and recommendations for changes in policy and process.

Based on that vision, EPU has three primary functions:

- Support Project Managers (all modes) with overall program and project delivery.
- Implement changes to current practices to create project delivery efficiencies.
- Advise on new or revised environmental regulation/legislation and policy.

One of the roles that I enjoy most with EPU is digging into our current processes and procedures. We often update our procedural guidance to align with how processes have evolved and are currently being implemented. In other cases, we are taking the time to look at what we are doing, assess if it needs improvement, document changes, and then provide training as needed. I like to think of this as a change for the better. An

example of this is the 404/NEPA Merger Process (Merger) update that we started because we realized the process had evolved on its own, as a response to our project types as well as our well-established agency relationships. The way we are practicing Merger has a lot of efficiencies that were not a part of the documented process but had become common practice. As we reviewed Merger, we also looked for more efficiencies and are recommending some further refinements. However, because we were making changes to the process it has taken some time to work out, but we are getting close and hope to roll out the updated process soon.

I've been a part of a lot of process improvements over the years and I have seen the benefits. Not every new process or change is received well or rolls out smoothly but embracing them and being positive makes a difference. Change brings opportunity! I recall at the beginning of Covid being a little excited as events were being canceled. I know that sounds crazy, but for me, Spring has always been a season of too much to do, every weekend filled with kids' sports, family birthdays, spring projects, and weekend trips to enjoy the outdoors. All of these are great things that I love, but I also love to work in the yard, and I knew this meant lots of yard time, so I made the most of that time.

Of course, we've all had some Covid fatigue at some point over the last two years just due to things being so different. Hopefully, we are beginning to adjust and getting used to things as they are. I encourage you to, not grow weary, but to embrace change. And remember, we all do eventually adjust to changes and make the best of it. Let's welcome the new opportunities ahead of us!

### Employee Spotlight

Mendall Ireland is a User Support Analyst in Public Involvement's Visualization Team. He has been with NCDOT for 27 years.

Mendall spent the first 8 years of his career as a temporary employee in the Design Services Unit while continuing his education. He went on to earn an associate degree from Wake Tech in 1998. In 2002 Mendall earned BS degrees in Computer Information Systems and Business Administration from NC Wesleyan College. In 2003 he became a Transportation Technician IV with the Visualization team.

In his current role as a User Support Analyst, Mendall is responsible for managing and preparing visualization projects. Visualization projects are used to accurately and realistically depict proposed highway projects to the general public as well as transportation professionals. Mendall is also an FAA certified drone pilot.



Mendall was born and raised in Raleigh where he lives with his wife Rebecca Ireland. Rebecca is also a state employee with the State Crime Lab. They have 2 children: James, 12, and Amelia, 7. Mendall enjoys spending time with his family and running 5k, 10k, and half marathons.

*(Division Spotlight continued from page 1)*

Back in the PDEA days, where we met, I wasn't in the same environmental analysis team as Chris. However, I remember him as being smart, hardworking, and someone others went to for advice or help. I still see Chris the same way today. He hasn't stopped learning and improving his skill sets. There seems to never be a slow moment for him. He is always busy as he continually searches for ways to move projects along. One might think Chris is overwhelmed to the point of having no time to deal with the concerns of others, but he'll stop what he's doing if he can help someone else or offer some guidance.

Managing a Division Environmental Office is a balancing act. It involves prioritizing current workload while continually looking ahead to the next task, assignment, or project. The DEO serves as support staff for Central Projects, Division Managed Projects, and Maintenance and Bridge Maintenance Projects. Regulatory expectations are the same for each project, so it is important that all projects are treated equally regarding fulfillment of our roles whether those projects are large or small, spanning several years or only a few weeks. The key components that I feel Chris Murray has modeled for success in Division 5 are: experience, dedication, and relationships. Each of these elements come with time and are something that must first be implemented well, then maintained. It is my intention that our new Division Environmental Specialist, Mitch Wimberley and I, as the new Division Environmental Officer, work to carry on this standard of excellence.

I will always consider Chris Murray as a resource for his wealth of experience and willingness to advise and help others solve specific problems. Experience can't be planned. It comes from doing what needs to be done day in and day out. Experience is gained by dealing with situations, learning from those whether good or bad, and using that to make the next project or task better. You simply don't know how best to respond to each new situation until you face it. Therefore, it's important to stay impartial and be as consistent as possible. Confidence comes with experience and experience shapes confidence. One bit of advice I'd give any new employee would be to be confident in yourself, find your voice,

then work to fulfill your part in whatever task needs accomplishing. This may look different through time, but the faster anyone can get to this point in their career, the better and more rewarding.

Whenever I consider dedication or strive to be more dedicated, Chris Murray will be that example. Dedication is commitment to a task even if you never get a thank you. It's upholding a level of quality even if you get no recognition. Dedication is doing what is right even when you feel opposition or misunderstood. With dedication, there is no cutting corners, no just getting by, or no that's good enough. Whether it involves the smallest of tasks or something ongoing that never seems to be over, dedication is providing the same level of attention with an attitude of if you are going to do something it's worth being done well.

Chris Murray is a friend to all who know him, and I am lucky to be counted among them. Chris is devoted to his family, and he always asks other people how their family is doing. It's this care for others that is also seen in his work within Division 5 where we pride ourselves on developing relationships. Relationships are important on many fronts including those with environmental agency personnel, fellow staff members across the entire Department, consultants, contractors, and the public. Listening and being heard strengthens relationships along with valuing the opinions and the perspectives of others. Relationships with Division 5 Environmental staff built over the past two decades were founded on respect and trust. We will continue to carry on the example Chris has set, being the

kind of people who are friendly and caring to others.

For the Division 5 Environmental Program: experience, dedication, and relationships... it's our identity and for this we have Chris Murray to thank.



## Guano know what's happening in NCDOT's Bat Program?

By: Tyler Stanton, NCDOT EAU Biological Surveys Group

### Technical Article

White-nosed syndrome (WNS), is an emerging infectious disease responsible for unprecedented mortality in some hibernating insectivorous bats of the northeastern United States and poses a considerable threat to several hibernating bat species throughout North America. The Northern long-eared bat (*Myotis septentrionalis*; NLEB), a once common species throughout its range was the first such species to be listed as a result of precipitous population decline due to WNS. According to the United States Fish and Wildlife Service (USFWS), NLEB would likely not be imperiled were it not for this disease.

The proposal to list NLEB as an endangered species was published in the Federal Register in October 2013. On April 2, 2015, the USFWS instead listed the NLEB as threatened, with a 4(d) rule under the Endangered Species Act. Shortly after it was listed, the Center for Biological Diversity filed a lawsuit over the threatened with 4(d) designation citing lack of best available science.

In January 2020, a federal judge agreed with the plaintiffs, but rather than vacate the threatened listing determination, they remanded it back to the Service. The court ruled that the Service failed to consider the cumulative effects of habitat destruction in conjunction with the effects of WNS.

This means the Service needs to provide more or updated best available science to justify its decision of listing the NLEB as threatened with a 4(d) rule or it should be listed as endangered (without a 4(d) rule). At the time of the ruling no deadline or timeline was given. Then in March 2021 the USFWS was ordered to “issue a new proposed rule and final listing determination... within eighteen months of the completion of the SSA”. The SSA (Species Status Assessment) was expected May 2021; however, the internal USFWS draft review did not occur until last June, and the final SSA has not been published to date.

Additionally, the USFWS National Listing Workplan for FY21-FY25 has the NLEB proposed listing planned for FY22. After the listing proposal is published in the Federal Register, a final listing decision will be made and published. NLEB could be federally protected as endangered without a 4(d) rule by 2023.

### Two additional bat species may gain federal protection



The tricolored (*Perimyotis subflavus*) and little brown bat (*Myotis lucifugus*) populations have also seen dramatic population declines across their ranges due to WNS. Like the NLEB, these two species were once more common and found throughout much of the state. The USFWS has deemed both species as “At-risk” and is currently developing a SSA for each species. Both are also listed in the USFWS National Listing Workplan for FY21-FY25 with a proposed listing planned for FY22. If USFWS adheres to this schedule, both could gain federal protection as threatened or endangered in 2023 as well.

The tricolored bat’s “area of concern” is like-

ly to be the most widespread of all listed bat species in the state. It is known to roost in clumps of leaves (mainly in summer), trees, caves, rock crevices, and other dark and sheltered places including bridges and culverts. It’s possible to find them in culverts as small as 24” in diameter.

The little brown bat also likes to roost in structures and trees in the summer, and caves and mines in the winter. It can be found across the state as well, but not as many county records exist as do for the tricolored bat.

### So, what does this mean for NCDOT?

Under Section 4(d) of the ESA, the USFWS can issue regulations considered



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“necessary and advisable to provide for the conservation of threatened species.” More specifically, the USFWS can develop special rules for species listed as threatened (not endangered) that offer flexibility when implementing the ESA.

The 4(d) rule for NLEB is designed to provide protection to the species at its most vulnerable life stages. For NCDOT, this means committing to conservation measures that protect the species during certain times of year when projects are within proximity to maternity roosts and hibernacula.

In Divisions 9-14, NCDOT utilizes the 4(d) rule requirements for federally funded projects. For projects that do not have other listed bat species, this often means that no field surveys are required, and a memo is sent to USFWS indicating the project was screened to ensure that it is not within close proximity to the aforementioned vulnerable areas and is consistent with the 4(d) rule.

In Divisions 1-8, the NCDOT in partnership with the FHWA, USACE, and the USFWS Raleigh Field Office, developed a Programmatic Biological Opinion (PBO) for NLEB. The PBO allows the NCDOT to construct projects without individual consultation as long as certain conservation measures are met. As a result of this formal “blanket” consultation, the 4(d) rule is inconsequential and NCDOT will see little effect from the possible re-listing of NLEB as endangered without a 4(d) rule. This PBO will remain valid until 2031.

For Divisions 9-14, the Biological Surveys Group (BSG) is currently exploring options for next steps if the 4(d) rule is eliminated. This includes preemptively conducting field surveys this spring and summer for projects that had not been previously surveyed and will let within the next few years. BSG is discussing the utilization of the existing FHWA Programmatic Biological Opinion for Transportation Projects in the Range of the Indiana Bat and Northern Long-Eared Bat (FHWA PBO), or potentially developing a “localized” PBO for bats in Divisions 9-14 with the USFWS Asheville Office. The existing FHWA PBO has advantages and disadvantages. For example, one advantage is a 2-week consultation turnaround. The PBO is primarily good for bridge replacement projects if the Department can assume presence and adhere to time-of-year (TOY) tree clearing restrictions and bridge demo. Also, this PBO is good for bridge maintenance activities that include above deck work (that doesn’t involve drilling down to underside) or below deck work away from roosting bats and the noise level is equal to that of traffic noise above when bats are present. On the other hand, a big disadvantage is it’s not useful for bridge replacements that have roosting bats or evidence of bat use that cannot commit to the aforementioned TOY restrictions.

For tricolored and little brown, BSG is reviewing projects that will have affecting actions that will not be completed prior to the potential 2023 listings. In most cases, these actions involve tree clearing and/or bridge demolition or culvert replacement. Alternatively, projects do not require surveys for these bats if the affecting actions have already taken place prior to the listings. For example, if a bridge project lets in April 2023 and the tree clearing and bridge demo occur before the listing date, but bridge construction, grading, and paving will still be underway, no surveys or

commitments will be required. In Divisions 1-8, the USFWS Raleigh Field Office has agreed to *consider* adding these two species to the existing NLEB PBO, likely with specific conservation measures pertaining to their individual needs.

#### Standard Operating Procedures (SOP) NCDOT Preliminary Bat Habitat Assessments (Structures, Caves & Mines)

Finally, the BSG Bat Team is currently working on refining survey protocols to accommodate the possible listing changes. Recent changes include:

- Bridge and culvert surveys will only be accepted if surveyed between May 15 and August 15.
- Clarification on how to conduct a survey and what equipment is needed
- Guidance on minimum thresholds for culvert inspections (New minimum threshold is 60’ long x 5’ tall, subject to change)
- Updated bridge and culvert forms
- Additional pictures at the end of Appendix B

The new SOP can be found under the Policies and Procedures section on the EAU/BSG Connect site (Connect NCDOT > Resources > Environmental > Environmental Analysis > Biological Surveys).

Members of the BSG Bat Team have also met with bat biologists from other state DOTs to learn what methods they use to address listed bats in their programs. This along with regular coordination with our agency partners and the wider bat ecological community helps us stay on top of the ever-changing landscape of protected species. With new and changing bat listings, as well as, increased funding focusing on existing infrastructure, the BSG Bat Team is here and ready to meet the challenge.

The NCDOT BSG Bat Team consists of:

- Chris Manley: Divisions 1-8 (covered by NLEB Programmatic), 9, 10, & 12
- Melissa Miller: Divisions 11, 13, & 14
- Cheryl Knepp: larger merger projects & projects with USFS involvement



### Happy Retirement to “Missy Pair - Noise & Air”

Missy served as the Traffic Noise and Air Quality Group Leader in the Environmental Analysis Unit for the last 4 years. She joined NCDOT



in January 1991 as an Engineering Associate. After her 18-month training program experience, she took a permanent Transportation Engineer I position in the Planning and Environmental Branch. She spent 14 years there, carrying high-way projects through the National Environmental Policy Act compliance process. In 2005, she left her

project planning days to begin her years as a Staff Engineer in various NCDOT offices: Program Development Branch (2005-2008), Project Development and Environmental Analysis Branch (2008-2015), Chief Engineer’s Office (2014-2015), and Planning and Programming Division (2015-2017). Along the way, she served on special assignments, specifically the Transformation Management Team and the Electronic Content Management Team. She graduated from NCSU with a BS in Civil Engineering and is a registered Professional Engineer in NC. She is an active member and past President of the Carolina Triangle Section of ASHE. Some of her favorite parts of her career have been mentoring engineering associates, training young engineers, and helping people find the information they need. Missy was awarded The Order of the Long Leaf Pine as part of her retirement reception. Congratulations Missy!!! We hope your retirement is wonderful!!!



### Scott McLendon Retires from the US Corps of Engineers



Scott McLendon retires on February 25th, 2022 with a full career of service as a key partner with NCDOT. Scott started with the USACE in 1991 and has over 30+ years of service in the Regulatory Branch. He was promoted to Deputy Chief of the Regulatory Division in 2008, then promoted to Chief of the Regulatory Division in 2012. During his time, he has been a key contributor to NCDOT’s mission and consistently set the

tone for all agencies in getting environmental initiatives to the finish line.

Some of his accomplishments and contributions include:

- Participated in the establishment of EEP/DMS
- Participated in the establishment of NEPA/Merger Process and participation in process improvements including serving on the MMT, working on Merger Roles and Responsibilities, involvement in the Merger Conflict/Dispute Resolution Process, Merger Performance Measures, and Facilitation Training
- Transition from NC State Wetland Restoration Program to the Ecosystem Enhancement Program and then the similar rebranding of the current Division of Mitigation Services
- Lidar based GIS wetland modeling

- Lenoir County GIS pilot project
- Participated in the establishment of NCWAM
- Participated in the establishment of NCSAM
- An active participant of the NC IRT and was involved in drafting policies, procedures, monitoring standards, crediting procedures, etc.
- Oversaw the creation of the WRDA Funding Agreement between NCDOT and the USACE
- Oversaw the USACE’s involvement in the NCDOT/FHWA/NCDOT/SHPO/ACHP Section 106 Programmatic Agreement.
- Influential in important transportation projects such as the 2nd bridge to Oak Island, Wilmington Bypass, US 17 improvements, and Bonner Bridge.
- Always sought other agency input and brought forward an overall collaborative spirit.
- Always respectful of other agency authorities and positions.
- Sought to find common ground with agencies on very difficult issues.

