INDEX
TECHNICAL COORDINATION COMMITTEE MEETING
March 20, 2026

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Opening Remarks and Introductions

The North Carolina Transportation Innovation Council (NC-TIC) Technical Coordination Committee (TCC) convened for its quarterly meeting on March 20, 2026, in person at the NCDOT Transportation Building and on Microsoft Teams. The NC-TIC's mission is to cultivate a culture of collaboration within the North Carolina Department of Transportation (NCDOT), ensuring the swift adoption of significant innovations that contribute to the delivery of a contemporary, high-quality transportation system to the public.

Sarah Searcy, NC-TIC Coordinator, welcomed attendees and introduced the meeting's agenda. The meeting's agenda, attendance, and the presentation slides are provided at the end of these minutes.

FHWA Update

After opening remarks and introductions, **Edward Parker**, the Deputy Division Administrator of the North Carolina FHWA office and NC-TIC liaison, shared updates on agency reorganization, Every Day Counts (EDC), and State Transportation Innovation Councils (STIC) Incentive Program funding.

FHWA and its Center for Accelerating Innovation are reorganizing and adding new team members to support its programs. A national webinar is planned to introduce the new team members and direction. More details will be provided when confirmed.

FHWA announced the six new EDC-8 innovations at a briefing in Washington, D.C. in February 2026. The six innovations are: Advancing Nighttime Work Zone Safety, Beyond Bid-Build: Innovative Project Delivery Methods, Connected Corridors, Integrated Digital Project Delivery, Subsurface Utility Engineering (SUE), and Unmanned Aircraft Systems (UAS) 2.0: Innovative Infrastructure Management. FHWA is planning peer exchanges to educate the states and industry about the merits and uses of the innovations. These peer exchanges will replace the innovation summits that were held in the past. The dates and locations have not been determined yet, but the events are expected to take place in the summer or fall of 2026.

The STIC Incentive Program is funded through the federal Technology and Innovation Deployment Program (TIDP). Funding is currently on temporary pause but is expected to be available sometime before the end of the federal fiscal year. No impact is anticipated on the project solicitation and selection timeline.

NC-TIC Update

After the FHWA updates, **Sarah Searcy** provided updates on the NC-TIC. In the November 2025 meeting, membership updates and rechartering of the council were discussed. Sarah will continue to reach out to committee members to ensure the most current representatives are included across the different organizations that comprise the council. Due to ongoing staffing changes and pending restructuring, NCDOT will reinitiate rechartering once outcomes around staffing and reorganization are known. FHWA is supportive of NCDOT's rechartering effort which will be a collaborative process that aligns with the evolving priorities of the agency and its stakeholders.

Sarah concluded updates by introducing Dawn Vallieres from the Piedmont Triad RPO. Dawn is replacing Sam Boswell from the Cape Fear Council of Governments as a representative of a Rural Planning Organization.

2025 and 2026 Innovation Challenges

Jiana Brown, a project manager with HDR representing NCDOT's Value Management Unit and CLEAR Program, shared updates on the NCDOT Innovation Challenge. She shared implementation efforts for previous winners, the 2025 challenge winners, and details on the submission process and outreach for the 2026 challenge.

Value Management launched the annual Innovation Challenge in 2020 to capture best practices and innovative ideas that enhance NCDOT's efficiency. The challenge is a grassroots effort to highlight and recognize innovation that is happening at NCDOT across the state and to connect people to resources to implement their innovative ideas.

Each year, NCDOT employees and consultants can submit their ideas to the themed competition for review by a panel of judges representing various divisions and units. Submissions are scored based on their alignment with NCDOT's values, feasibility of implementation, value added to NCDOT, and level of innovation. The top two winners or winning teams are celebrated and supported over a year by Value Management's CLEAR team to implement their ideas.

The theme for the 2024 challenge was "New Employee Training." Participants were asked to find a solution to issues with training new employees in daily operations. The 2024 winners are:

- **Tolmy Butler** (NC Division of Motor Vehicles (DMV) Administrative Specialist in Elizabethtown)
    - Tolmy witnessed firsthand the importance of having a centralized, public location for all disaster-related responses and communication while working the DMV call center during Hurricane Helene. She is currently developing a proactive disaster response website in collaboration with NCDOT's

Communications Office to help streamline customer service for quicker recovery and support after disasters.

- **Mikel Kibel** (Division 13 Safety Consultant)
    - Mikel focused on improving safety training and refining the training process to increase awareness and understanding for all new employees and strengthen safety culture. Mikel developed a comprehensive, hands-on safety training program for new hires designed to build safety awareness, empower employees, reduce injury rates, and adapt to various learning styles. His work has been supported and tested in Division 13 toward statewide standardization, incorporating interactive virtual reality technology.

The theme for the 2025 challenge was "Breaking Barriers with Project Delivery." Participants were asked to identify process improvements from concept through maintenance that support efficient project delivery, cost-effective solutions, and value-driven outcomes. The 2025 winners are:

- **Chris Coughlin** (State Relocation Director), **Tracey Jackson** (Carolina Land Acquisitions Contractor), and **Tom Linsenmeyer** (GFT Contractor)
    - The team developed a cost estimate intake tool and approval workflow for Right of Way to streamline the process for preliminary cost estimate requests. The team shared the tool development process and implementation status at a CLEAR Lunch and Learn webinar and the 2026 NCDOT Preconstruction Conference in March 2026.
- **Spencer McDonald** (Division 14 Bridge Maintenance Engineer)
    - Spencer used precast concrete blocks during Hurricane Helene recovery for rapid stabilization and repair. The concrete blocks replace timber and poured concrete, and showcase the use of a successful, cost-effective practice adopted from the private sector by a public sector agency. The blocks are used to safely complete bridges faster, in a tight timeframe, when concrete trucks cannot reach the location or operate safely.

The theme for the 2026 challenge is "Every Dollar Counts." Participants are asked to identify operational savings ideas that could improve efficiency, reduce waste, and leverage existing NCDOT resources. Submissions are due by April 27, 2026.

NCDOT has connected winners from its Innovation Challenge with Kate Davision, NC Local Technical Assistance Program (LTAP) Director, for support to refine and submit their ideas for national recognition through FHWA's Build a Better Mousetrap program. Kate presented on the Build a Better Mousetrap program at the November 2025 meeting.

Innovation Culture Index (ICI) Survey

Sarah Searcy presented a comparative analysis of responses to NCDOT's Innovation Culture Index (ICI) surveys that were conducted in 2022, 2023, 2024, and 2026. The survey was not conducted in 2025 due to Hurricane Helene. The ICI is a tool to help NCDOT better understand how innovation is approached and supported throughout the agency. The first ICI was implemented as a part of the technology transfer that led to the creation of the CLEAR Program. The current survey is open until March 31, 2026. The analysis of the survey responses focused on trends in awareness, engagement, successes, challenges, and considerations for improving participation and recognition. The findings can be used to inform and tailor future innovation initiatives.

The survey design has evolved over time, moving from basic awareness and process questions to a deeper exploration of organizational culture and the barriers and enablers of innovation. Survey participation has declined from 452 respondents in 2022, 290 respondents in 2023, and 312 respondents in 2024 to 31 respondents in 2026. This change may be due to differences in recruitment strategy over the years. NCDOT's Communications Office sent a targeted email to all staff about the survey in prior years while the 2026 survey was sent out through NCDOT's Employee News. The Value Management team expects to extend the deadline for the 2026 survey and do more marketing to improve the response rate.

Across all survey years, common job categories of respondents included: Planning, Programming, and Policy; Pavement, Maintenance, and Materials; Structures, Construction, and Geotechnical; Traffic, Safety, and Roadway Design; Environment and Hydraulics; Technical Services; Highway Operations; Field Support; and Multimodal. The number of respondents by years of work experience with NCDOT showed a bimodal distribution with more early (five years or less) and late (16 or more years) career than mid-career (6-10 years and 11-15 years) respondents for each survey year.

One question that was asked directly in the 2026 survey and was indirectly answered in some respondents' additional comments in previous years was, "How do you define innovation?" Common themes across all survey years included: new ideas and creative thinking, adding value or improving efficiency, practical implementation and problem-solving, challenging the status quo, continuous improvement, and use of technology and modern methods.

Common successes and challenges were identified in the responses across all survey years, including:

Common Successes

- **Leadership Messaging:** Across all years, most respondents felt that executive and division/unit managers supported innovation in principle and communicated its importance.
- **Program Awareness Growth:** Awareness of the CLEAR Program, Innovation Challenge, and Lunch & Learns increased steadily each year, with more respondents able to name and describe these initiatives.
- **Innovation Champions:** The presence and visibility of innovation champions improved over time, with more units identifying champions and some respondents reporting positive experiences with them.
- **Knowledge Sharing (within teams):** Many respondents described strong informal knowledge sharing within their immediate teams, with managers and colleagues encouraging new ideas and improvements.

Common Challenges

- **Process Clarity:** Many respondents across all years reported not knowing how to submit innovative ideas, what the process is, or what happens after submission.
- **Recognition and Feedback:** Recognition for innovative contributions was consistently cited as rare or informal. Respondents often felt their ideas were ignored, credited to others, or not celebrated. Feedback on submitted ideas was also reported to be lacking, leading to doubt about the value of participation.
- **Time and Workload:** Lack of time was a persistent barrier. Many respondents cited heavy workloads and competing priorities as reasons for not engaging in innovation activities or submitting ideas.
- **Field and New Staff Engagement:** Field staff and new hires consistently reported lower awareness of programs, less engagement, and feeling left out of innovation conversations compared to office-based or long-tenured staff.
- **Skepticism and Cultural Inertia:** Skepticism about whether ideas would be acted upon, and a “we’ve always done it this way” mentality, were common themes, especially in earlier years.

Key insights across all survey years include:

Awareness and Engagement: Upward Trend
- Awareness of innovation programs (CLEAR, Innovation Challenge, Lunch & Learns) has increased each year.
- Engagement is highest among office staff and managers; field staff and new hires remain less engaged.

Process Clarity: Persistent Barrier
- Many employees still do not know how to submit ideas or what happens after submission.
- Calls for step-by-step guides and transparent feedback loops are consistent across all years.

Recognition and Feedback: Critical Gap
- Recognition for innovative contributions remains rare and mostly informal.
- Employees want formal, visible recognition and regular feedback on submitted ideas.

Leadership and Champions: Progress, but Gaps
- Leadership support for innovation is strong in principle and messaging.
- More divisions and units have innovation champions, but many employees are unaware of who they are or what they do.

Knowledge Sharing: Team-Level Strength
- Informal knowledge sharing within teams is a consistent success.
- Cross-unit sharing and use of the CLEAR database are improving but still limited.

The survey results indicate that more guidance and support is needed to convert awareness to participation and ensure successful implementation of innovative ideas. Employees desire visible, consistent recognition for their contributions to innovation. Future considerations could include developing decision trees for idea pathways, hands-on training, onboarding materials and performance plans with defined innovation goals and priorities, a documented agency-level innovation strategy, a stage gate framework for the implementation of innovations, and recognition through higher visibility, leadership-endorsed events.

CLEAR Portal Update

Morgan Morefield, a project manager with Mott MacDonald representing NCDOT's Value Management Unit and CLEAR Program, provided updates on the CLEAR Portal.

Communicate Lessons, Exchange Advice, Record (CLEAR) is an internally developed knowledge management program at NCDOT that promotes cross-unit communication, sharing of best practices, and organizational enhancements through an easy-to-use technical platform. CLEAR launched in 2020 after being developed through research and

technology transfer projects in collaboration with NC State University. The original CLEAR development team included representatives from NCDOT's Value Management Office and the NC Department of Information Technology, NC State University researchers, steering and implementation committees comprised of subject matter experts at NCDOT, and additional NCDOT staff that were interested in the project.

Through updates initiated in 2024 and informed by user feedback, submission through the portal has evolved from three separate forms to a unified form for lessons learned, best practices, and solutions needed; a tab-based web interface; and expanded fields for detailed descriptions and project-related information. Search capabilities have been refined with keyword and filter options; consultant access is being considered; and future plans include AI-driven search, search availability for external users, technical discipline filters, enhanced submission visibility, and user analytics. The CLEAR database includes 577 accepted items submitted through the portal as of December 2025, including submissions from NCDOT's annual Innovation Challenge and lessons learned from Post Construction Assessments (PCAs).

Discussions during the presentation addressed the need for quantifying savings and impact from innovations. The Value Management team plans to investigate existing available models for tracking project implementation, such as the model developed for Utah DOT's Statewide Innovation Program.

Innovation Highlight – Division 14 Bat Bridge

Kenny McCourt, Division 14 Resident Engineer and 2021 Innovation Challenge winner, presented on the Division 14 bat habitat project. He described how NCDOT collaborated with wildlife experts to integrate a bat habitat into the replacement of a bridge along I-40 in the Pigeon River Gorge using boulderscaping. The goal was to replace the lost habitat that was found in the former bridge's deck joints while also creating a long-term solution that requires minimal maintenance. Successful outcomes include increased roosting space and positive environmental impact.

The bridge replacement required mitigation for lost bat habitat. Traditional bat boxes posed maintenance and safety challenges, prompting the search for a permanent, integrated solution. Inspired by natural rock formations and kitchen table conversations with his daughter, Kenny collaborated with boulderscaping experts, the U.S. Fish and Wildlife Service, and contractors to design crevices and overhangs in the soldier pile wall, simulating natural bat roosts. The final wall provides approximately 100–200 cubic feet of roosting space, significantly more than traditional methods, with minimal maintenance.

A nocturnal flower bed will be planted to attract bats. The week after the bridge was completed, an endangered grey bat was observed roosting on the wall. The boulderscaping technique can be applied to other bridge projects in western North Carolina, offering a

faster, more natural, and scalable approach to integrating wildlife habitats into transportation infrastructure. Overall, the project demonstrates how transportation infrastructure can support wildlife habitat while meeting engineering needs.

Innovation Highlight – NC SuRe Infrastructure Center of Excellence

Nastasha Earle-Young, Performance and Operations Manager at NCDOT, and **Dr. Tim Brock**, Senior Research Scholar at the Institute for Transportation Research and Education (ITRE) at NC State University, provided an update on the North Carolina Sustainable and Resilient (SuRe) Infrastructure Center of Excellence, detailing its mission, university partnerships, three major projects, and efforts to leverage research for national and federal funding opportunities.

The Center of Excellence is comprised of NC State University, Fayetteville State University, and East Carolina University and aims to develop cutting edge, practice ready research to address future disruptions in the transportation system stemming from natural hazards, everyday disruptions, and other unexpected large-scale disruptive events within the network. The center's goals and objectives are to:

- Develop cutting edge, practice ready research to address future disruptions in the transportation system stemming from natural hazards, everyday disruptions, and other unexpected large-scale disruptive events within the network.
- Establish new collaborative research partnerships to build a foundation of integrated, multidisciplinary sustainable and resilient transportation research for North Carolina.
- Leverage research expertise and previous funding to further develop emerging and cutting-edge sustainable and resilient applied transportation research.
- Situate North Carolina as a leading candidate for a future United States Department of Transportation (USDOT) and United States Department of Energy (DOE) sustainable and resilient transportation funding.

Three projects are underway, each led by interdisciplinary teams and NCDOT champions. The first project, "Resilience Informed Decision Guide for Asset Rehabilitation and Repair of Infrastructure Assets," will develop a decision support guide that documents and quantifies the resilience impacts from engineering and operational strategies. The project will also create a universal resilient asset scoring system that is compatible with the Statewide Resilience Improvement Plan (RIP). The second project, "Electric Vehicle Resilience: EV Evacuation Modeling," will use mesoscale, agent-based modeling and survey data to simulate how driver behavior and system capacity impact hazard evacuation scenarios with electric vehicles. The third project, "Resilient Cybersecurity for Transportation Management Centers (TMCs)," includes risk assessments and test beds for Dynamic Message Sign (DMS) and camera systems to identify and analyze vulnerabilities in Intelligent Transportation

Systems (ITS) technologies used in TMCs and create tailored cybersecurity measures and recommendations.

The center is leveraging its work for federal funding, including through National Cooperative Highway Research Program (NCHRP), FHWA, National Aeronautics and Space Administration (NASA), and USDOT University Transportation Center (UTC) proposals, and is building partnerships with other universities for future research and workforce development.

2026 STIC Incentive Program Overview and Scoring Review

Clare Fullerton, a project manager with Jacobs representing the Value Management Unit, and **Sarah Searcy** reviewed the 2026 STIC incentive Program by outlining funding details, application and scoring processes, eligibility criteria, and next steps for committee members ahead of the June project selection meeting.

The STIC Incentive Program provides technical assistance and up to $125,000 in total funds per state each fiscal year to offset the costs of standardizing innovative practices. The program funds activities such as conducting internal assessments, initiating capacity building, developing guidance, drafting standards and specifications, organizing peer exchanges, and implementing system process changes. At the local level, the NC-TIC determines which projects/activities to fund.

The application window opened in February and is expected to close on April 17, 2026. According to the STIC Incentive Program guidance, the project or activity for which incentive funding is requested must:

- Have a statewide impact in fostering a culture for innovation or in making an innovation a standard practice.
- Align with Technology and Innovation Deployment Program (TIDP) goals.
- Be eligible for Federal-aid assistance and adhere to applicable federal requirements.
- Be started as soon as practical (preferably within 6 months, but no later than 1 year) after notification of approval for funding and the funds must be expended within 2 years.

Key considerations for proposals include:

- 20% match required.
- Align with NCDOT and/or FHWA goals and initiatives (such as EDC or Mission Statement).
- Scope to be completed within 2 years.
- Certain level of readiness must be demonstrated (if still in early stages, consider a research project followed by a STIC project; research project could be a technical

assistance request, annual research program project, or technology transfer through NCDOT's Research and Development Unit).

The committee is expected to work as a group to review and score applications to the STIC Incentive Program using a defined set of scoring criteria. The six criteria that were used to evaluate last year's applications are:

Criterion No.	Description	Weight
1	On a scale from 1 - 5, with 1 being not at all and 5 being completely, how much does the proposal advance the identification or practice of the identified innovation?	**20%**
2	On a scale from 1 - 5, with 1 being not at all and 5 being completely, how will the proposed project implement the innovation beyond research?	**15%**
3	On a scale from 1 - 5, with 1 being a current idea/technology/process already being used by NCDOT and 5 being a completely new idea to NCDOT, how new is the innovation?	**15%**
4	On a scale from 1 - 5, with 1 being not at all and 5 being completely, how much does the proposal advance the goals and mission of NCDOT?	**30%**
5	On a scale from 1 - 5, with 1 being not at all and 5 being completely, how much does the proposal meet the goals of the STIC Incentive Program?	**20%**
6	Is the proposal eligible for federal-aid funding under Title 23 U.S.C?	**Y/N**

After the STIC Incentive Program application window closes, NCDOT will provide a summary of the applications to the committee. The committee reviewers can provide questions to the applicants, and then those applicants can provide responses back to the reviewers on those questions. In June, NCDOT will hold another TCC meeting where applicants will present, and the committee will vote on the projects. Only full committee members may vote, and alternates can be designated as needed.

Open Discussion

Sarah Searcy invited open discussion from the committee. There were no additional comments from attendees.

Adjournment

Sarah Searcy adjourned the meeting.

Attendance and Voting Members

Name	Organization	Role	Voting Member
Edward Parker	FHWA	Member	X
Curtis Bradley	NCDOT	Member	X
Matthew Carlisle	NCDOT	Member	X
Jed Dixon	NCDOT	Member	X
Jason Myers	NCDOT	Member	X
Amanda Olive	NCDOT	Member	X
Alpesh Patel	NCDOT	Member	X
Sarah Searcy	NCDOT	NC-TIC Lead	
Tunya Smith	NCDOT	Member	X
Alyson Tamer	NCDOT	Member	X
Derrick Weaver	NCDOT	Member	X
Dawn Vallieres	Piedmont Triad RPO	Member	X
Clare Fullerton	Jacobs	Presenter	
Morgan Morefield	Mott MacDonald	Presenter	
Nastasha Earle-Young	NCDOT	Presenter	
Kenny McCourt	NCDOT	Presenter	
Tim Brock	NC State University	Presenter	
David Clayton	NCDOT	Guest	
Christopher Connolly	NCDOT	Guest	
Stephen Davidson	NCDOT	Guest	
Rachael Delaney	NCDOT	Guest	
Hampton Fletcher	NCDOT	Guest	
Logan Gunthrop	NCDOT	Guest	
Liam Hogan	NCDOT	Guest	
Jessica Kuse	NCDOT	Guest	
Michael McKenzie	NCDOT	Guest	
Vang Moua	NCDOT	Guest	
Eric Murray	NCDOT	Guest	
Tamara Njegovan	NCDOT	Guest	
Chris Slachta	NCDOT	Guest	
Alexander Stankovic	NCDOT	Guest	
Jordan Woodard	NCDOT	Guest	
Cheryl Youngblood	NCDOT	Guest	
Jiana Brown	HDR	Support	
Voting Members Not in Attendance			
Victor Barbour	Carolinas AGC	Member	X
Robert Barrier	NCDOT	Member	X
Amna Cameron	NCDOT	Member	X

Name	Organization	Role	Voting Member
Kate Davison	NC LTAP	Member	X
Greg Dean	Carolinas CPA	Member	X
Yolonda Jordan	FHWA	Member	X
Chris Lukasina	NC Association of MPOs	Member	X
Patrick Norman	NCDOT	Member	X
Catherine Peele	NCDOT	Member	X
Ellis Powell	Carolina APA	Member	X
Tara Robbins	ACEC NC	Member	X
Nick Short	NCDOT	Member	X
Julie White	NCDOT	Member	X

Attachment A: Meeting Slides

NORTH CAROLINA
Department of Transportation

North Carolina Transportation Innovation Council (NC-TIC)

Technical Coordination Committee (TCC) Meeting

March 20, 2026

Connecting people, products and places safely and efficiently with customer focus, accountability and environmental sensitivity to enhance the economy and vitality of North Carolina

Meeting Agenda

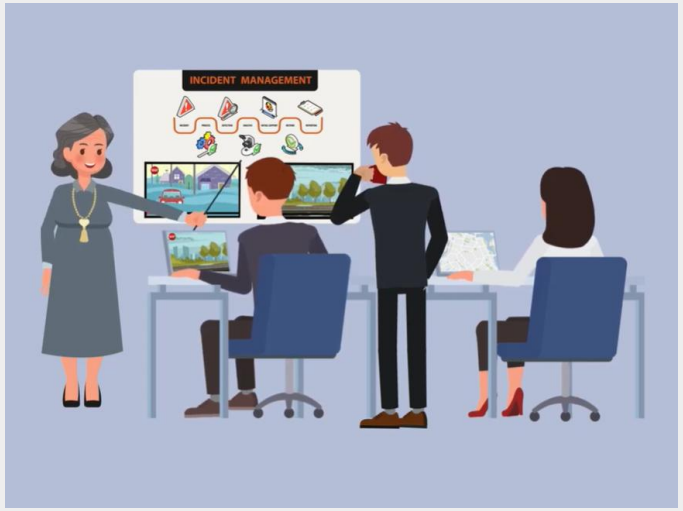
10:00 am	**Opening Remarks – FHWA Update**	Edward Parker
10:05 am	**Opening Remarks – NC-TIC Update**	Sarah Searcy
10:15 am	**2025 and 2026 Innovation Challenges**	Jiana Brown
10:30 am	**Innovation Culture Index (ICI) Survey**	Sarah Searcy
10:40 am	**CLEAR Portal Update**	Morgan Morefield
10:50 am	**Innovation Highlight – Division 14 Bat Bridge**	Kenny McCourt
11:10 am	**Innovation Highlight – NC SuRe Infrastructure Center of Excellence**	Nastasha Earle-Young
11:30 am	**2026 STIC Incentive Program Overview and Scoring Review**	Clare Fullerton
11:45 am	**Open Discussion**	
12:00 pm	**Adjournment**	

FHWA Update

NC-TIC Update

2025 and 2026 Innovation Challenges

Tolmy Butler (2024)



Theme: *New Employee Training*

Mikel Kibel (2024)

Innovation Challenge

NCDOT launches the **annual Innovation Challenge** to encourage all NCDOT employees to submit their ideas and/or best practices that help NCDOT operate more efficiently.

- A new **theme** is created and/or chosen by the CLEAR team every year.
- The period for **submissions** is open for a month.
- A panel of **judges** review all responses based on scoring criteria.
- The top two **winners** are notified and receive a certificate with NCDOT merch.
- A yearly **video** features the winners and allows them to explain their innovative idea.

CLEAR
Communicate Lessons, Exchange Advice, Record

Questions? Reach out to us at **CLEAR@ncdot.gov** for more information.

Tracey Jackson
Tom Linsenmeyer
Chris Coughlin (2025)

Theme: *Breaking Barriers with Project Delivery*

Spencer McDonald (2025)

2025

INNOVATION CHALLENGE

CLEAR

2026 Innovation Challenge

IDEA SHARING

NCDOT 2026 Innovation Challenge

Every Dollar Counts

Whether in the field or the office, help us identify operational savings ideas that could improve efficiency, reduce waste, and leverage existing NCDOT resources!

Submissions: **February 23rd – April 27th**

Winners will be featured in a video and receive a certificate & NCDOT swag!

For more information, visit CLEAR's Innovation Challenge connect page or email CLEAR@ncdot.gov!

Build a Better MOUSETRAP

National Recognition Program for Transportation Innovation

The **Build a Better Mousetrap (BABM)** national recognition program **highlights locally relevant, innovative solutions and provides a platform to share innovations to everyday challenges** that local and tribal transportation professionals encounter on local roads.

BABM is open to any government agency (town, borough, city, township, county, parish, state and Tribal) in the United States. Applicants must apply to their nearest LTAP/TTAP Center to qualify for the national recognition.

Contact

Kate Davison
NC LTAP Director
kbdaviso@ncsu.edu

U.S. Department of Transportation
Federal Highway Administration

CENTER FOR LOCAL AID SUPPORT

NC LTAP Local Technical Assistance Program

Innovation Culture Index (ICI) Survey

Innovation Culture Index (ICI)

- The ICI is a tool to help NCDOT better understand how innovation is approached and supported throughout the agency.
- The survey was also conducted in:
  - Dec. 2021-Feb. **2022**
  - Dec. 2022-Feb. **2023**
  - **2024** (Jan.-Feb.)
- Responses can be used to inform future initiatives.
- **The current survey is open to NCDOT employees until March 31, 2026.**

INNOVATION CULTURE INDEX SURVEY (ICI)

Innovation Culture Index (ICI) – Survey Design

The survey instrument has evolved, moving from basic awareness and process questions to deeper exploration of organizational culture, barriers, and enablers of innovation.

2022

- Comfort in sharing ideas
- Recognition for successful ideas
- Formal processes for idea submission
- Importance of innovation and knowledge sharing to NCDOT
- Leadership support
- Presence of innovation champions

2023

- Awareness of the CLEAR Program
- Identification of Innovation Coordinators
- Use of the CLEAR database
- Barriers to submitting ideas
- Awareness of the STIC and federal funding for ideas
- Participation in Lunch & Learns, PCAs, and Innovation Challenges

2024

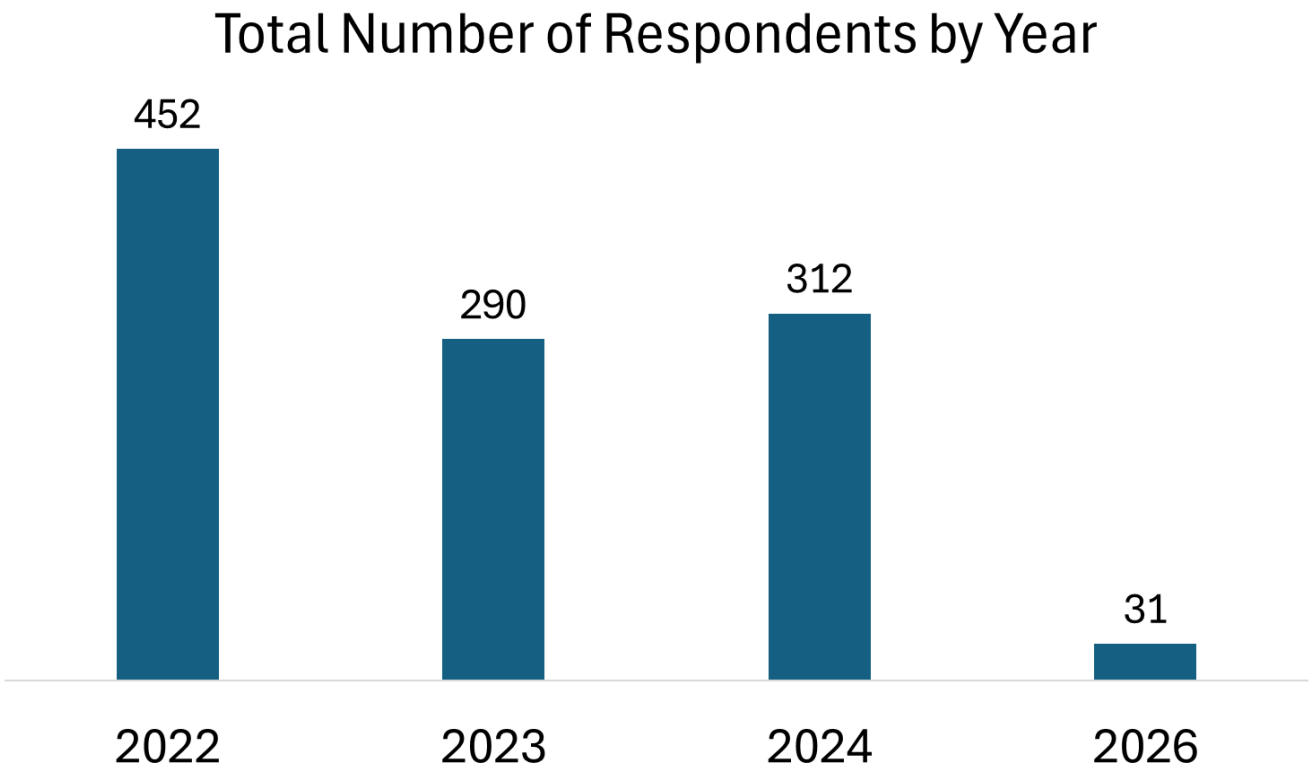
No survey in 2025 due to Hurricane Helene

2026

- Innovation definitions
- Perceptions of responsibility
- Awareness and use of additional programs and opportunities
- Tools and approaches for implementation

INNOVATION CULTURE INDEX SURVEY (ICI)

Innovation Culture Index (ICI) – Survey Participation

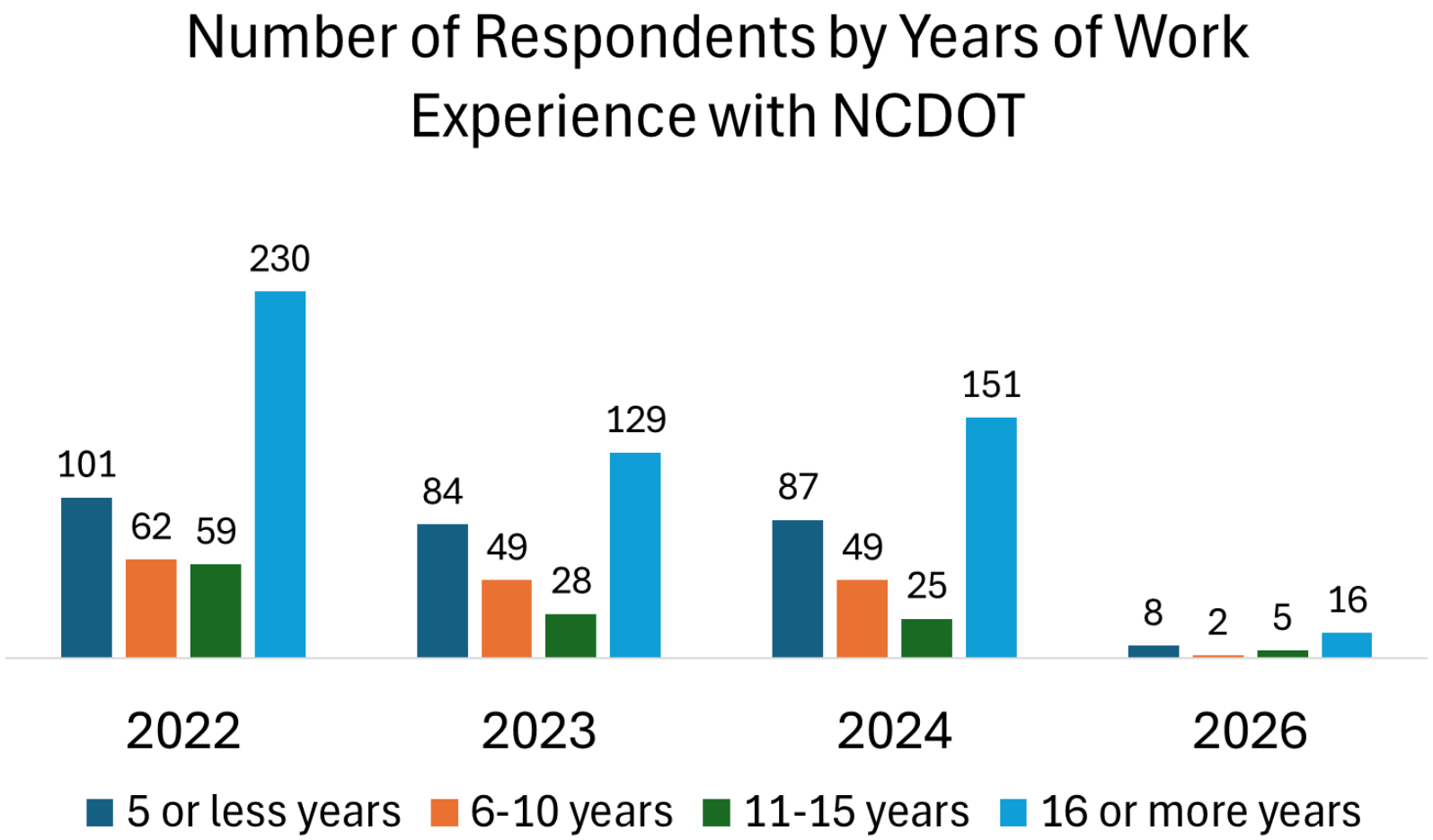


Common Job Categories (All Years)

- Planning, Programming, Policy
- Pavement, Maintenance, Materials
- Structures, Construction, Geotechnical
- Traffic, Safety, Roadway Design
- Environment, Hydraulics
- Technical Services
- Highway Operations
- Field Support
- Multimodal

INNOVATION CULTURE INDEX SURVEY (ICI)

Innovation Culture Index (ICI) – Survey Participation



Experience shows a bimodal distribution—more early and late career than mid-career respondents.

INNOVATION CULTURE INDEX SURVEY (ICI)

Innovation Culture Index (ICI) – What is Innovation? (2022-2026)

Key Themes Across All Years

- New ideas and creative thinking
- Adding value or improving efficiency
- Practical implementation and problem-solving
- Challenging the status quo
- Continuous improvement
- Use of technology and modern methods

Innovation Culture Index (ICI) – Most Common Successes (2022-2026)

1. Leadership Messaging

Across all years, most respondents felt that executive and division/unit managers supported innovation in principle and communicated its importance.

2. Program Awareness Growth

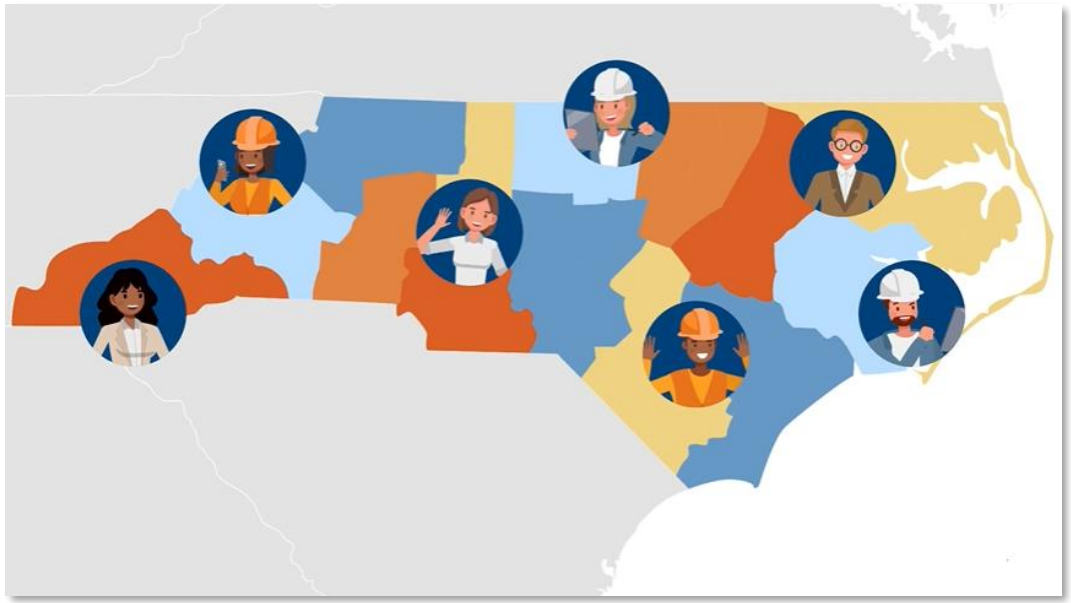
Awareness of the CLEAR Program, Innovation Challenge, and Lunch & Learns increased steadily each year, with more staff able to name and describe these initiatives.

3. Innovation Champions

The presence and visibility of innovation champions improved over time, with more units identifying champions and some staff reporting positive experiences with them.

4. Knowledge Sharing (within teams)

Many respondents described strong informal knowledge sharing within their immediate teams, with managers and colleagues encouraging new ideas and improvements.



INNOVATION CULTURE INDEX SURVEY (ICI)

Innovation Culture Index (ICI) – Most Common Challenges (2022-2026)

1. Process Clarity

Many respondents across all years reported not knowing how to submit innovative ideas, what the process is, or what happens after submission.

2. Recognition & Feedback

Recognition for innovative contributions was consistently cited as rare or informal. Employees often felt their ideas were ignored, credited to others, or not celebrated. Feedback on submitted ideas was also reported to be lacking, leading to doubt about the value of participation.

3. Time & Workload

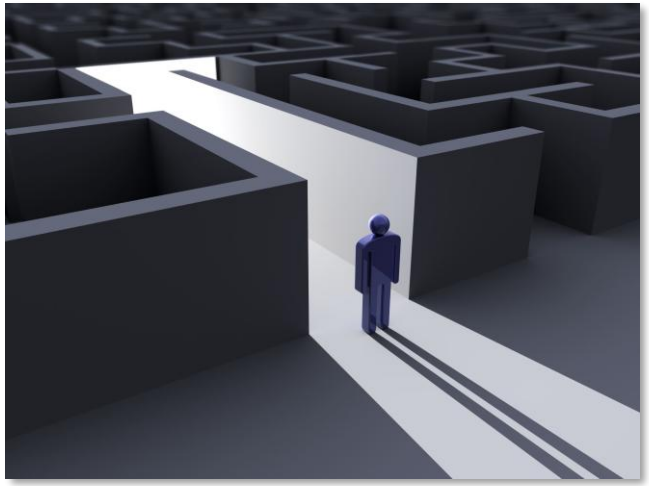
Lack of time was a persistent barrier. Many cited heavy workloads and competing priorities as reasons for not engaging in innovation activities or submitting ideas.

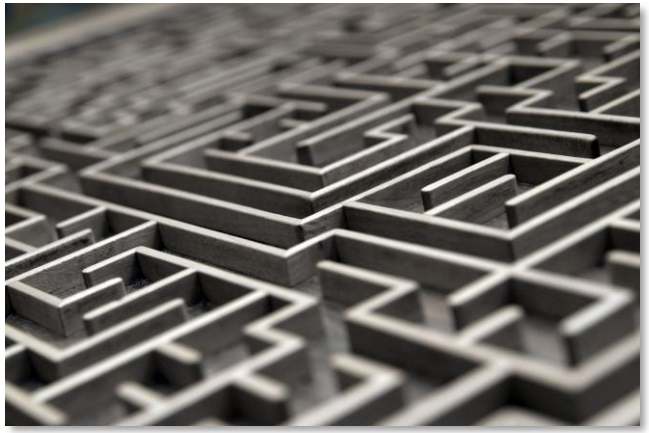
4. Field & New Staff Engagement

Field staff and new hires consistently reported lower awareness of programs, less engagement, and feeling left out of innovation conversations compared to office-based or long-tenured staff.

5. Skepticism & Cultural Inertia

Skepticism about whether ideas would be acted upon, and a “we’ve always done it this way” mentality, were common themes, especially in earlier years.





INNOVATION CULTURE INDEX SURVEY (ICI)

Innovation Culture Index (ICI) – Key Insights (2022-2026)

Awareness & Engagement: Upward Trend

- Awareness of innovation programs (CLEAR, Innovation Challenge, Lunch & Learns) has increased each year.
- Engagement is highest among office staff and managers; field staff and new hires remain less engaged.

Process Clarity: Persistent Barrier

- Many employees still do not know how to submit ideas or what happens after submission.
- Calls for step-by-step guides and transparent feedback loops are consistent across all years.

Recognition & Feedback: Critical Gap

- Recognition for innovative contributions remains rare and mostly informal.
- Employees want formal, visible recognition and regular feedback on submitted ideas.

Leadership & Champions: Progress, but Gaps

- Leadership support for innovation is strong in principle and messaging.
- More divisions and units have innovation champions, but many employees are unaware of who they are or what they do.

Knowledge Sharing: Team-Level Strength

- Informal knowledge sharing within teams is a consistent success.
- Cross-unit sharing and use of the CLEAR database are improving but still limited.

Future Considerations

More guidance and support is needed to convert awareness to participation.

- **Decision tree** showing how to move innovative ideas through appropriate pathways.
- **"Try It" series** of short, hands-on training sessions on key programs and resources.
- **Onboarding materials** and **performance plans** that include innovation goals and priorities.
- **Innovation strategy** to grow and advance capacity.

Implementation is a bottleneck and consistent processes can clear the path.

- **Stage-gate framework**: Ideate → Vet → Pilot → Implement → Scale, with explicit exit criteria and decision owners.
- **Evidence-based assessment** at each gate to evaluate business value, readiness, and alignment with priorities that incorporates **technology readiness levels (TRLs)**.

Visible, consistent recognition tied to outcomes is key.

- **"Quarterly Innovation Spotlight"** that celebrates projects that reach the Pilot or Implement stage and summarizes learned experiences and benefits.
- **Incentives** (e.g., email badges/signatures, leadership shout outs, Lunch & Learn guest slots, awards) potentially tied to stage-gate progression.
- **Higher visibility, leadership-endorsed events**, see MnDOT's and SCDOT's Innovation Awards Showcases through their Offices of Research and Innovation.

CLEAR Portal Update

NORTH CAROLINA
Department of Transportation

CLEAR Portal Updates

Morgan Morefield, PE
Value Management Consultant – Mott MacDonald

March 20, 2026

Connecting people, products and places safely and efficiently with customer focus, accountability and environmental sensitivity to enhance the economy and vitality of North Carolina

Agenda

1. History and Origins of CLEAR
2. Original Form and Database
3. Development of the new CLEAR Portal and Search Function
4. New Capabilities of CLEAR
5. Looking Towards the Future of CLEAR
6. Question and Answer

History and Origins of CLEAR

CLEAR is an internally-developed knowledge management program that gives voice to every NCDOT employee. It promotes cross-unit communication, sharing of best practices, and organizational enhancements through an easy-to-use technical platform.

About CLEAR

- Originally rolled out in 2020
- Developed from NCDOT Research Project with NC State and used a Tech Transfer
- Very strong original roll out
  - Presentations at NCDOT Research Summit
  - Presentations to Experts
  - Presentations at Conferences
  - Communications to Department
- Knowledge Management programs have been a FHWA, USDOT, and NCHRP *priority* since 2018. The NCDOT can be a national leader in this regard.
- Knowledge *gathering* and knowledge *sharing* are widely regarded as essential to the long-term viability of most contemporary organizations.

Original CLEAR Development Team

- Value Management Office
- NCSU Researchers
- Research Committee
- NC DIT - Transportation
- NCDOT Personnel

Original Value Management Team

Alyson Tamer, PE, CPM

Clare Fullerton, PE

Haadi Sadaghiani

Roe Brybag, PE

NC State Research Team

- **Edward J. Jaselskis, Ph.D., P.E., N.A.C.**

E. I. Clancy Distinguished Professor of Civil, Construction, and Environmental Engineering

Department of Civil, Construction, and Environmental Engineering

- **Siddharth Banerjee, S.M.ASCE**

Ph.D. Student, Graduate Research Assistant

- **Abdullah Alsharef**

Ph.D. Student, Graduate Research Assistant

- **Omar Kadour Alainieh, EI**

Pursuing a masters of science (MS) degree in civil engineering.

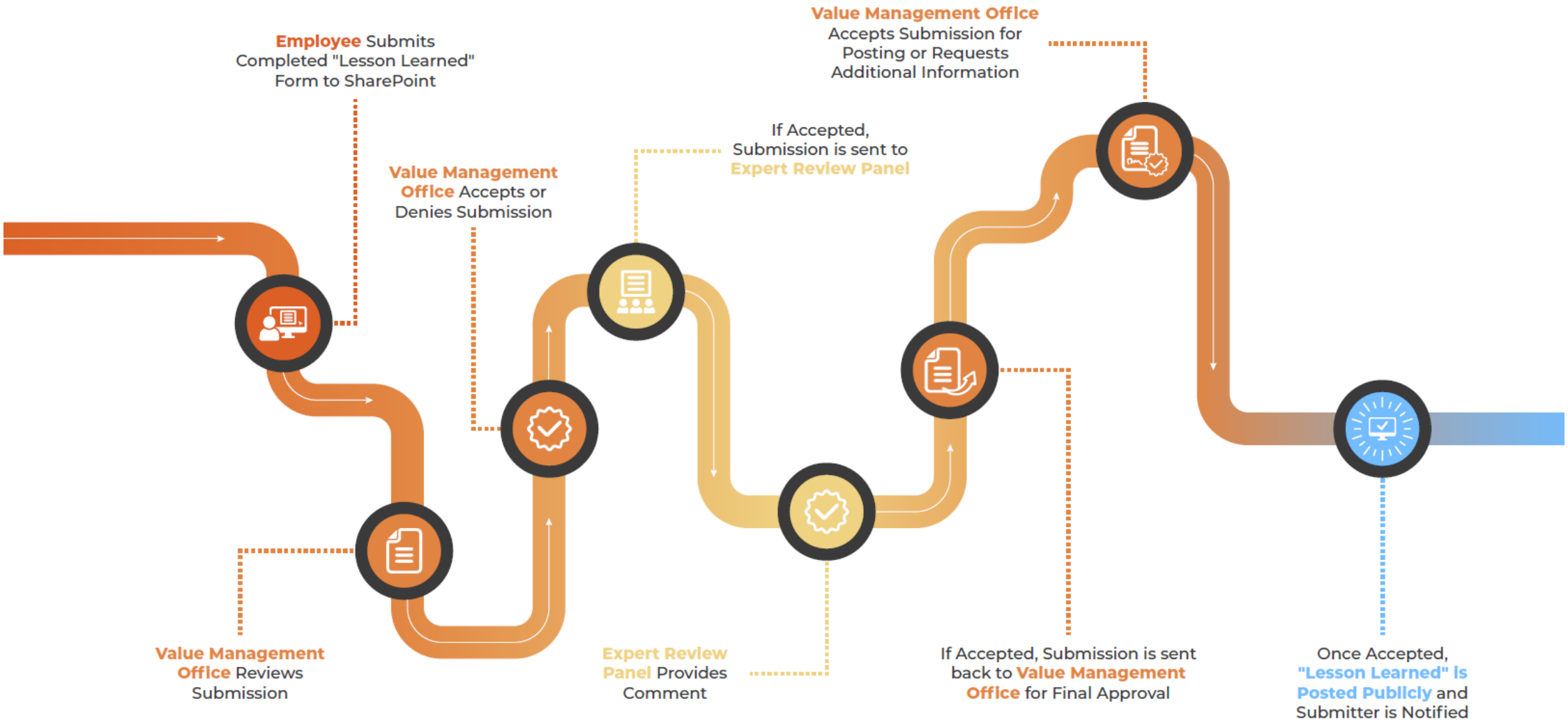
NC STATE UNIVERSITY

NC STATE UNIVERSITY

David Henard, PHD
Professor in the Poole College of Management

Original Form and Database

What Happens When I Submit a “Lesson Learned" to the CLEAR Team?



Original CLEAR Site

Welcome To CLEAR

This is the online submission portal for the CLEAR Program, the Department's Internal Knowledge Management Program. This portal is open to all NCDOT employees with an NCDOT email. If this is your first time here or would like a refresher on how the portal and overall program works, please visit the CLEAR Program Connect Page for overview videos and additional background material: CLEAR Program (ncdot.gov). We aim to have all submission vetted within 30 days. Please contact the CLEAR team at CLEAR@NCDOT.GOV with any questions. *The practices and ideas shared here represent accepted submissions from NCDOT employees, and do not in any case supersede official procedures, best practices or otherwise approved guidance.*

Search Accepted Lessons Learned and Best Practices Here:

Search

Share Lessons Learned

Do you have a Lesson Learned to share? Have you met an obstacle and solved the issue?

Share Lessons Learned

Share Best Practice/Idea

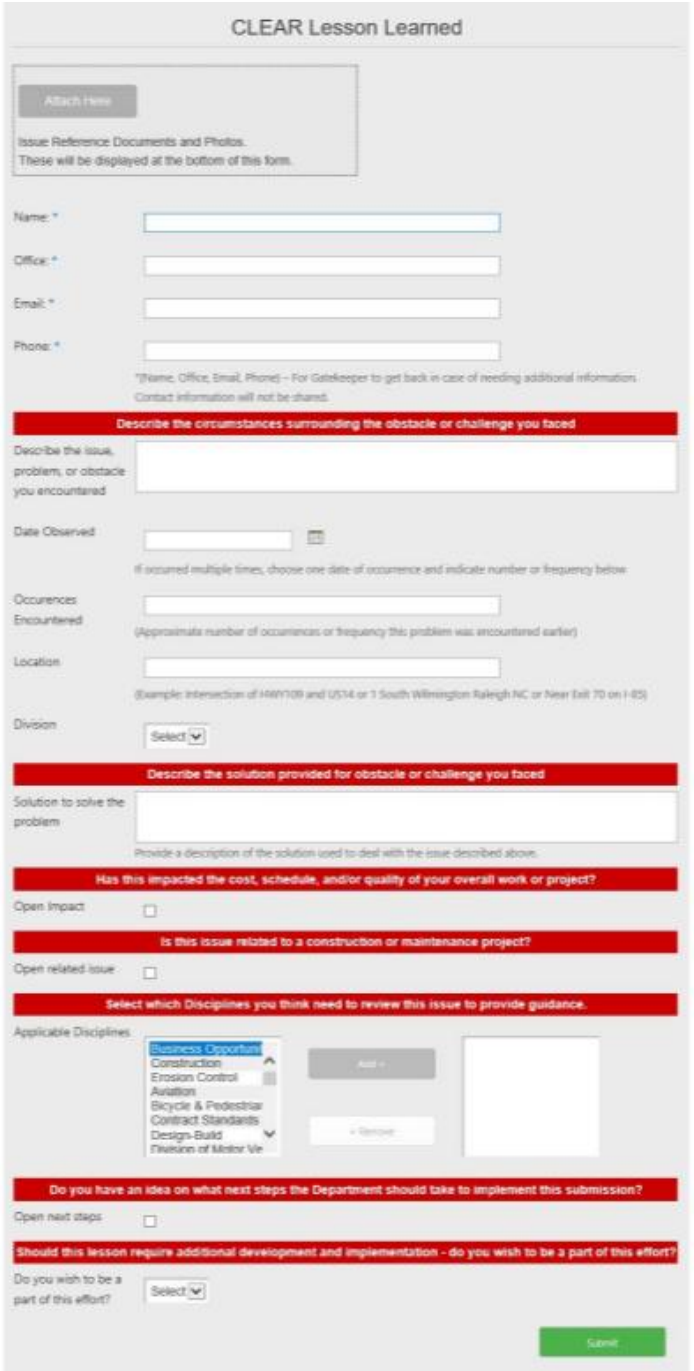
Do you have a best practice to share with the Department? Do you have an idea of something that could be used in the Department?

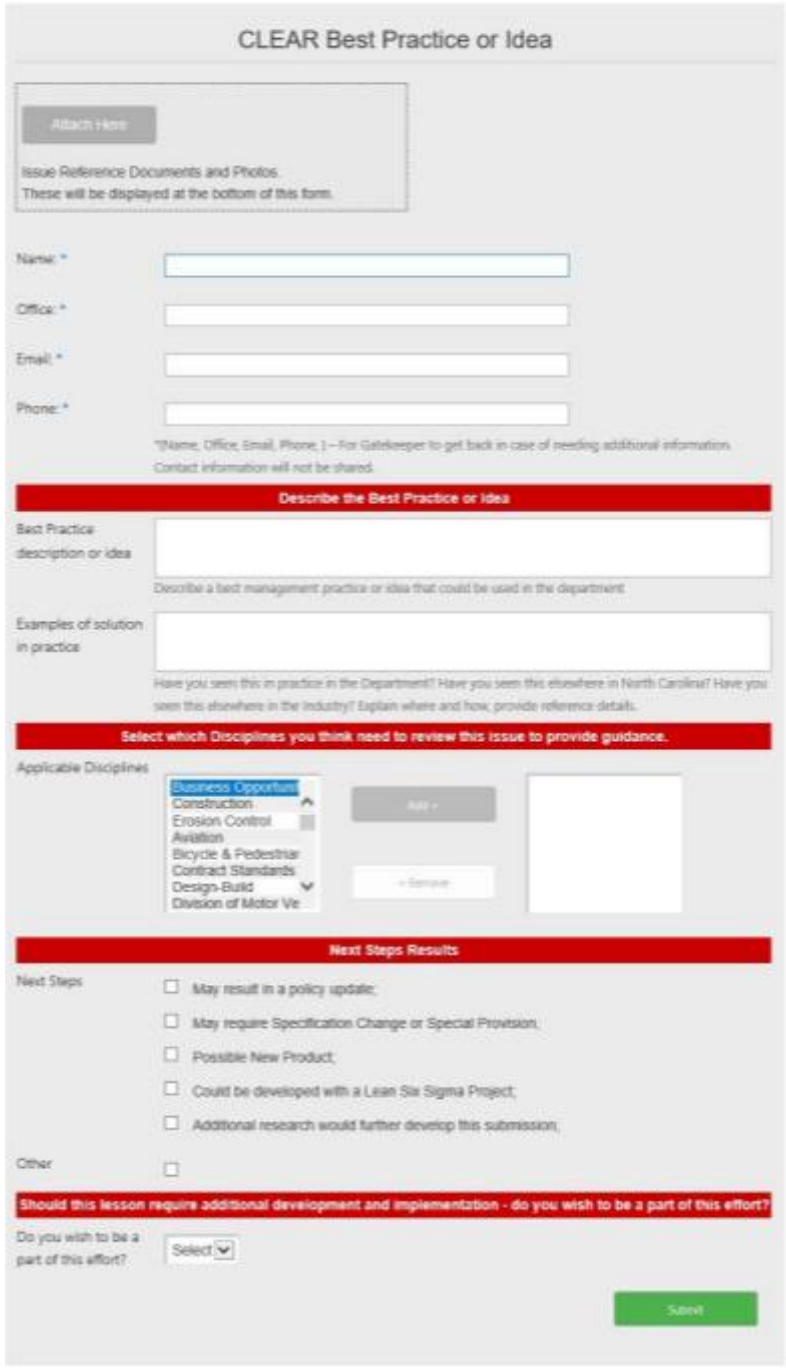
Share Best Practice/Idea

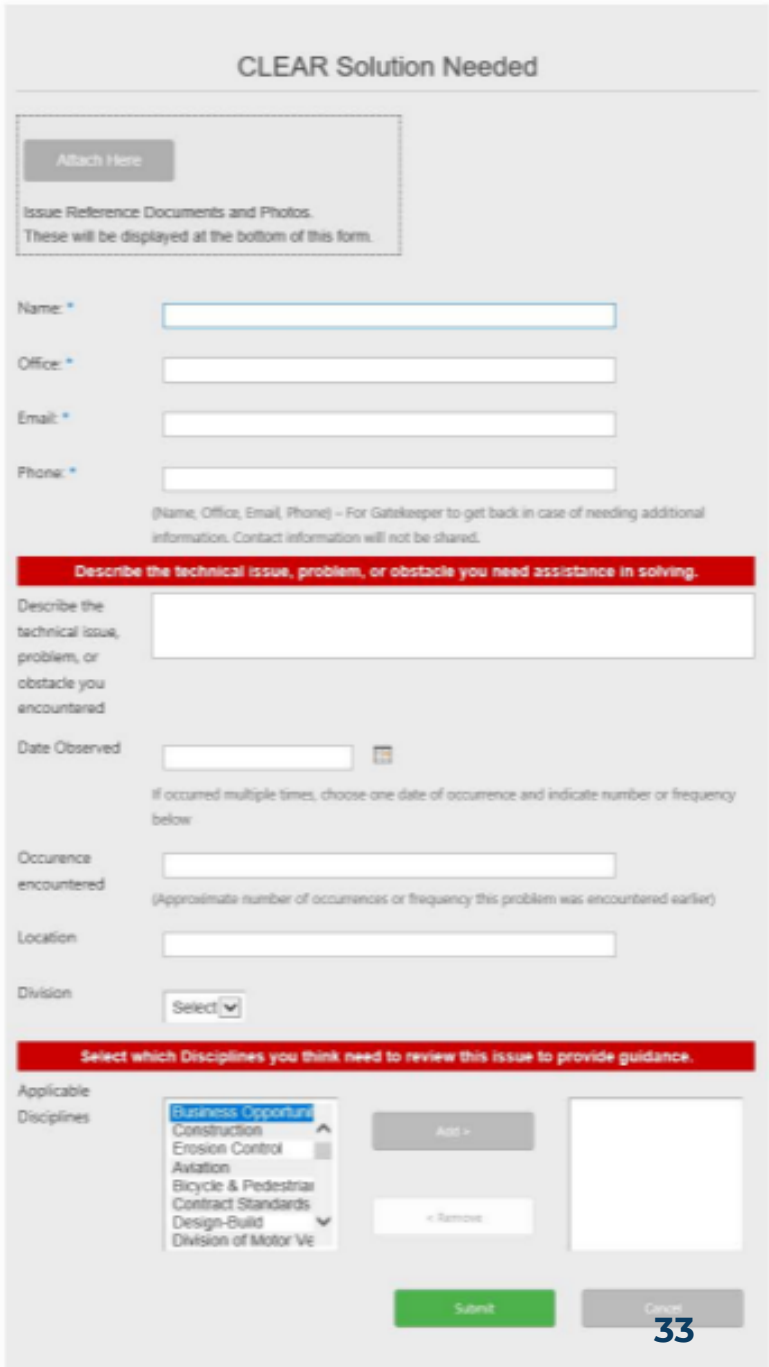
Request Assistance with an Obstacle

This review will be completed within 2 weeks. Do you have an issue, problem, or obstacle that you need assistance in solving?

Request Assistance with an Obstacle







Success of CLEAR

- Since the original roll out of CLEAR, several new CLEAR programs have grown from it
  - Annual Innovation Challenge
    - Submissions get submitted into CLEAR
  - Post Construction Assessments (PCAs)
    - Lessons learned from PCAs are submitted into CLEAR
  - Lunch and Learns
    - PDH credits offered
    - NC PE Ethics Course offered twice per year
  - Technical Advisory Groups (TAGs)
    - Hydraulics, Geotechnical, Structures, Construction, Roadway
    - Resurfacing Contracts Troubleshooting
    - Project Delivery
    - Technical Engineering Concepts Training Program
    - Roadway Hydraulics ORD Workflow
    - Geotechnical Roadway
- As of December 2025, 577 items have been accepted in the CLEAR portal

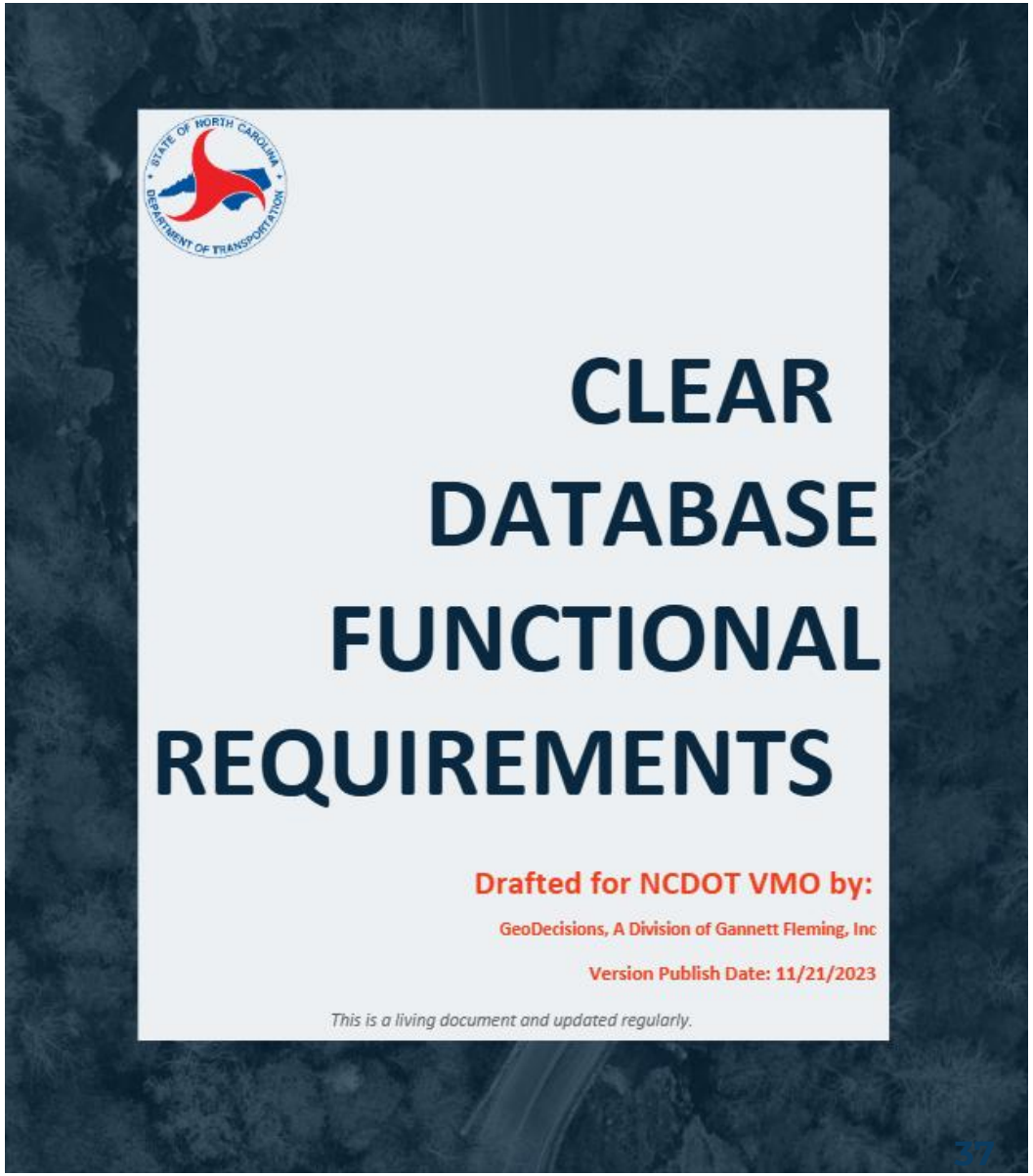
Development of the New CLEAR Portal and Search Function

Areas for Improvement Based on User Feedback

- Improved search capabilities
  - More search filters
  - Refined search algorithm
- One form for all submission types
  - Lessons Learned
  - Best Practices
  - Solution Needed
- Open CLEAR for consultants to search the database
- Continue advertising CLEAR and making sure people within the NCDOT (and beyond) know about it

Timeline

- This re-work started in 2023/2024 with a report outlining the functional requirements.
- Delays to the completion of the new forms happened due to personnel and organizational changes
- Started pilot testing new system in summer 2025
- New system rollout in February 2026
  - Ongoing
- Spring 2026, planning future enhancements



Project Team

- NCDOT
  - Alyson Tamer, Value Management
  - Liamcy Hogan-Rivera, CLEAR Program Manager
  - Patrick Doran, IT
  - Jean Merritt, IT
  - Caitlyn Mabry, Office of Strategic Advancement
- NCDOT partners
  - Lawrence Flowers, GFT
  - Upender Attapuram, SpaceX Technology Systems
  - Jessica Kuse, HNTB
  - Morgan Morefield, Mott MacDonald
  - Jiana Brown, HDR
  - Karen Hammond-Smith, GFT

Technical Disciplines

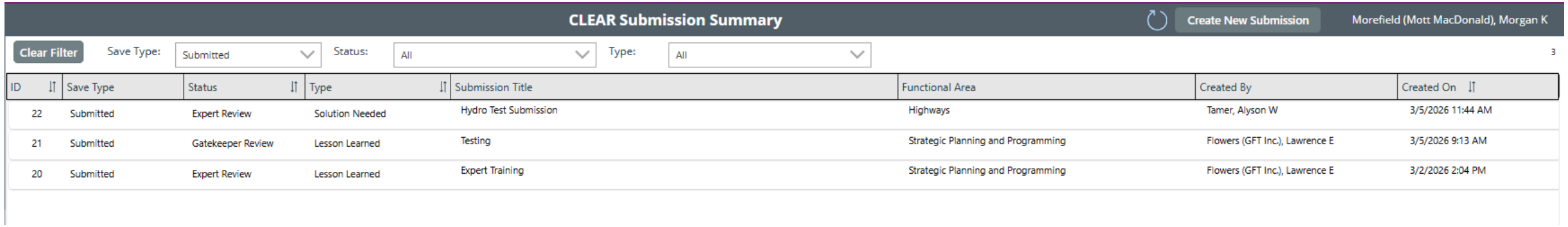
Technical Disciplines				
Aviation	Environmental Analysis	Photogrammetry	Information Technology (IT)	Transportation Planning
Office of Civil Rights	Environmental Policy	Professional Services Management	Innovation Challenge	Value Engineering
Facilities Management	Equipment Management	Project Management	STIC Incentive Program	Congestion Management
Procurement	Erosion Control	Right of Way	Other Innovative Idea	ITS and Signals
Public Involvement/ Communications	Geotechnical	Roadside Environmental	Bicycle and Pedestrian	Transportation Mobility and Safety
DMV	Hydraulics	Roadway Design	Public Transportation	Work Zone Traffic Control
Ferry	Location and Surveys	Signing and Delineation	Rail	Turnpike Authority
Construction	Maintenance	Structures Management	Research	Utilities Coordination
Contract Standards and Development	Materials and Tests (Lab)	Human Resources (HR)	Local Projects	Utilities Encroachment
Alternative Delivery	Materials and Tests (Field)	Technical Services – IT Requests	Resiliency	Utilities Projects
Disaster Recovery	Pavement Design and Collection	Knowledge Transfer	Risk	

New Capabilities of CLEAR

New Capabilities of CLEAR

Legacy Form	New Form
3 separate forms for submission	1 form for submission
Name/Office/ Email are manual fields	Name/Office/Email fields are auto-generated based on the submitter
Field named “Date Observed”	No longer applicable
“Location”	No longer applicable
“Solution to solve the problem”	No longer applicable
Is there a cost impact?/ Is there a schedule impact?	Consolidated as a multi-selection field
Project size	No longer applicable
Project schedule	No longer applicable
Project Number Available - List of Project Numbers	Project Number is manually entered in the field
Applicable Disciplines	Functional Area and Sub-groups
Examples of solution in practice	No longer applicable
Occurrence encountered	No longer applicable
No tabs	Tabs •Share your knowledge •Project related information •Status/History •Expert Comments
No short descriptions	Short Description •Available for Gatekeeper only •Used for search

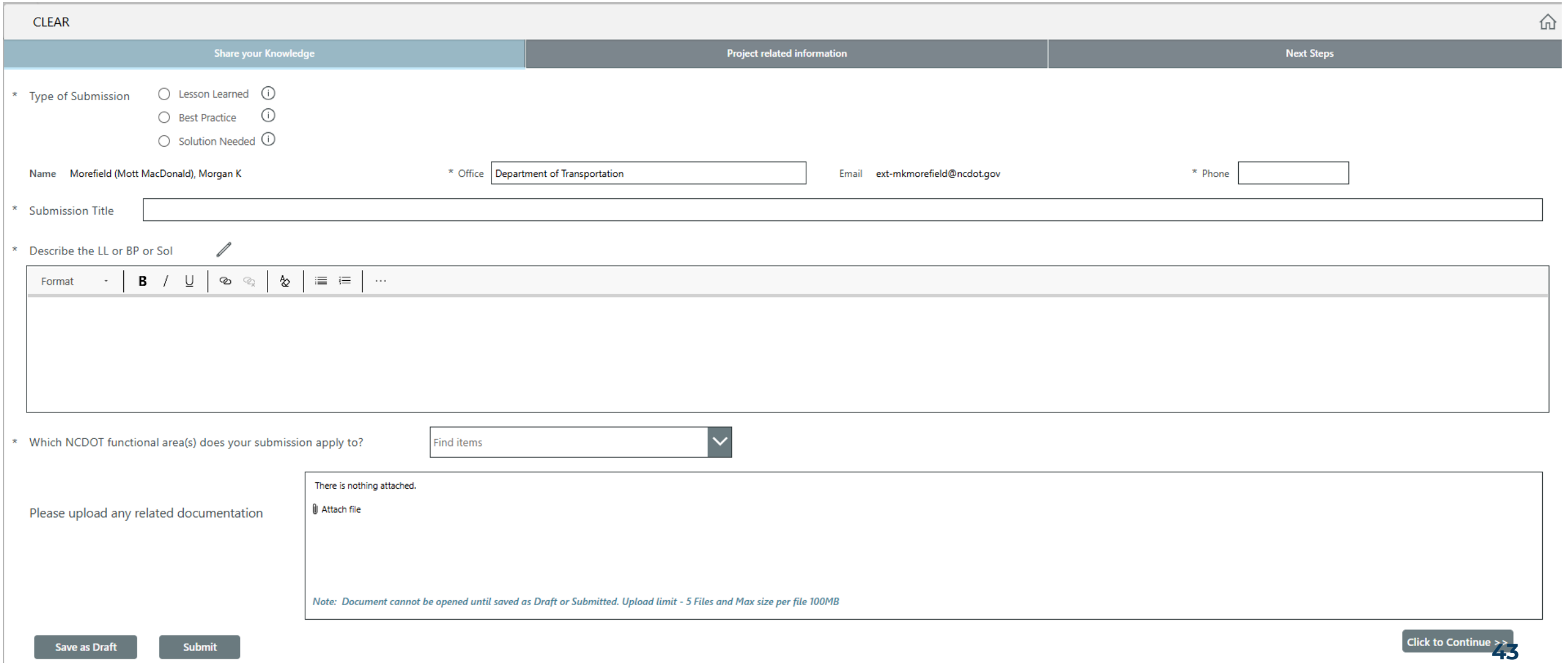
New CLEAR Submission Summary Page



ID	Save Type	Status	Type	Submission Title	Functional Area	Created By	Created On
22	Submitted	Expert Review	Solution Needed	Hydro Test Submission	Highways	Tamer, Alyson W	3/5/2026 11:44 AM
21	Submitted	Gatekeeper Review	Lesson Learned	Testing	Strategic Planning and Programming	Flowers (GFT Inc.), Lawrence E	3/5/2026 9:13 AM
20	Submitted	Expert Review	Lesson Learned	Expert Training	Strategic Planning and Programming	Flowers (GFT Inc.), Lawrence E	3/2/2026 2:04 PM

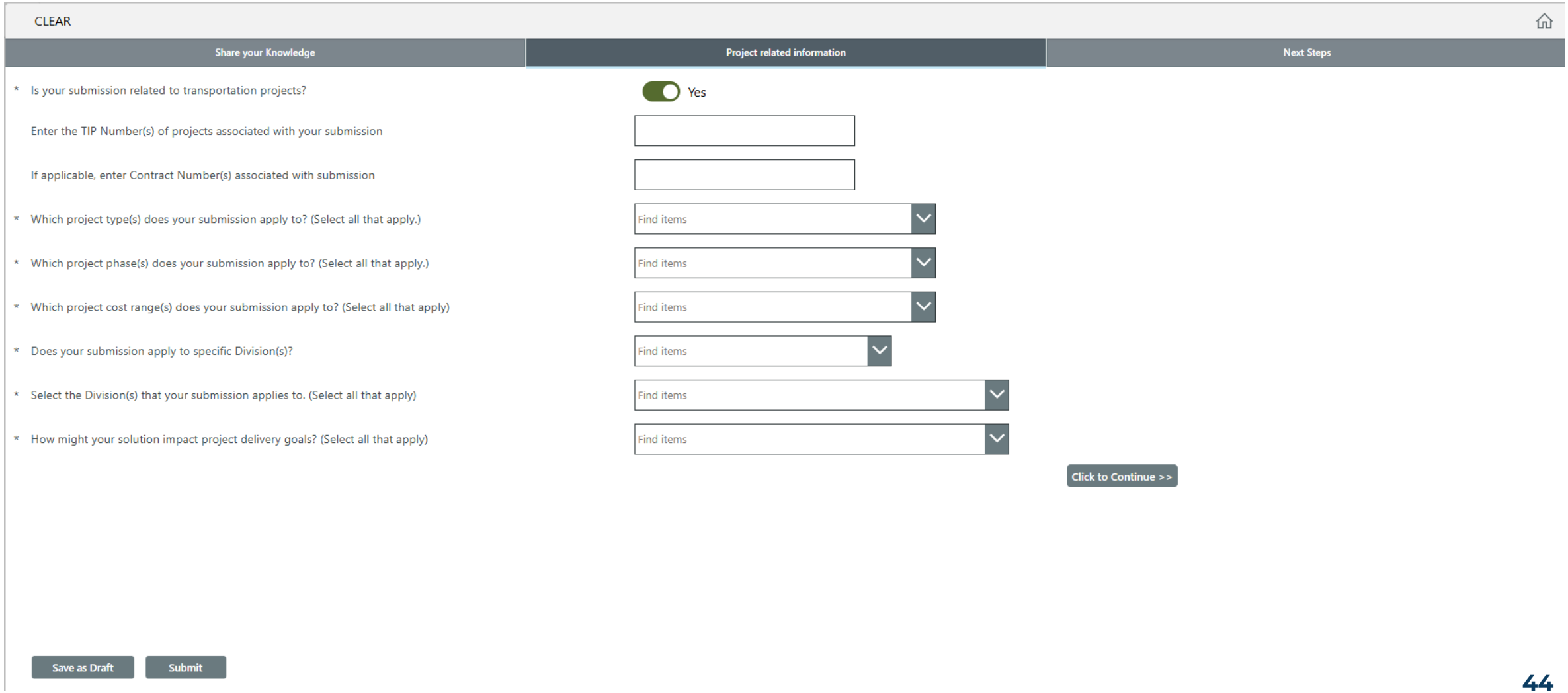
New CLEAR Submission Page

Share Your Knowledge Tab



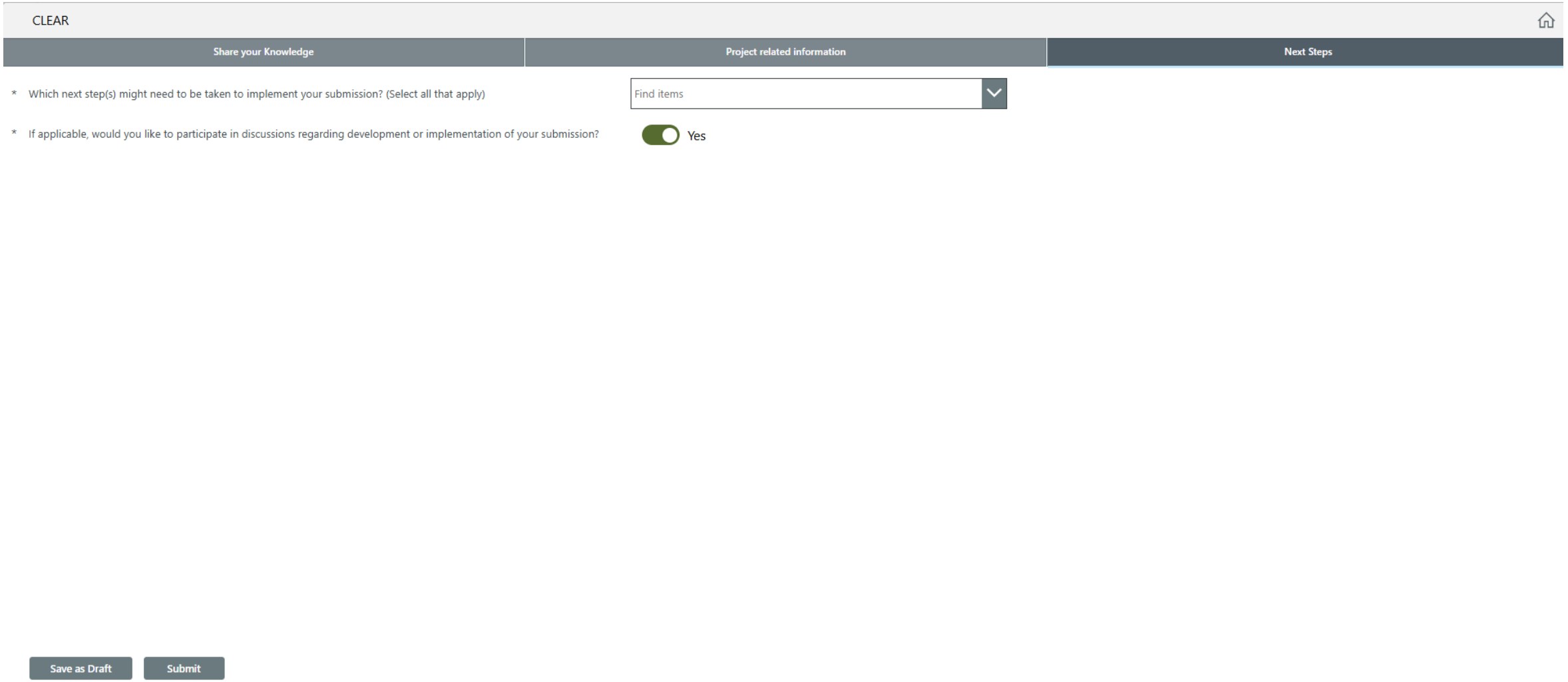
New CLEAR Submission Page

Project Related Information Tab

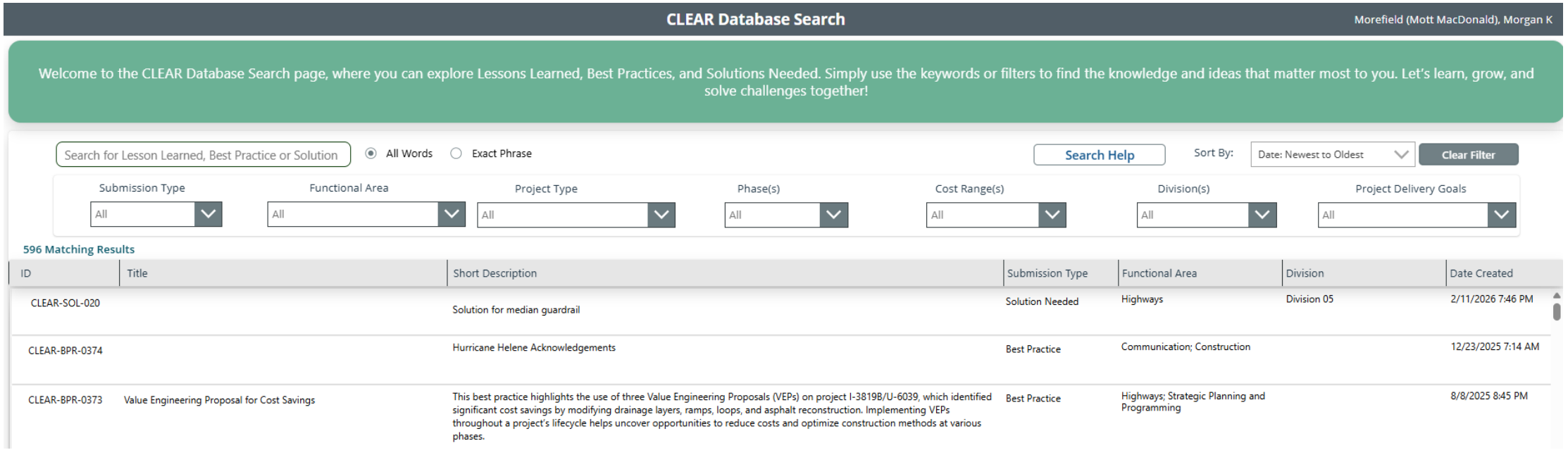


New CLEAR Submission Page

Next Steps Tab



New Search Page Features



- Word Search Box
- All Words/Exact Phrase
- Search Help Button
- Sort By
- Submission Type filter
- Functional Area filter
- Project Type filter
- Phase filter
- Cost Range filter
- Divisions filter
- Project Delivery Goals filter

New CLEAR Database

CLEAR Website:

CLEAR Database:

Looking Towards the Future of CLEAR

CLEAR 2.0

High Priority

- Advanced Search Capabilities
  - Implement an AI-driven search engine (background AI with Co-Pilot style integration)
- Search Enhancements
  - Search available for external users
  - Add Technical Discipline as a filter on the search page
- Submission Visibility
  - Submitters can see all of their submissions, regardless of status
- Governance and Analytics
  - Add more analytics for website traffic counts, user behavior, conversion metrics, and engagement

Questions?

New CLEAR Database

CLEAR Website:

CLEAR Database:

Division 14 Bat Bridge

NORTH CAROLINA
Department of Transportation

Innovative Bat Habitat Integration

Kenny McCourt – NCDOT Division 14

I-40 Pigeon River Gorge Project

March 20, 2026

Connecting people, products and places safely and efficiently with customer focus, accountability and environmental sensitivity to enhance the economy and vitality of North Carolina

The Challenge:

Determining how to provide a suitable bat habitat without attaching it directly to the bridge

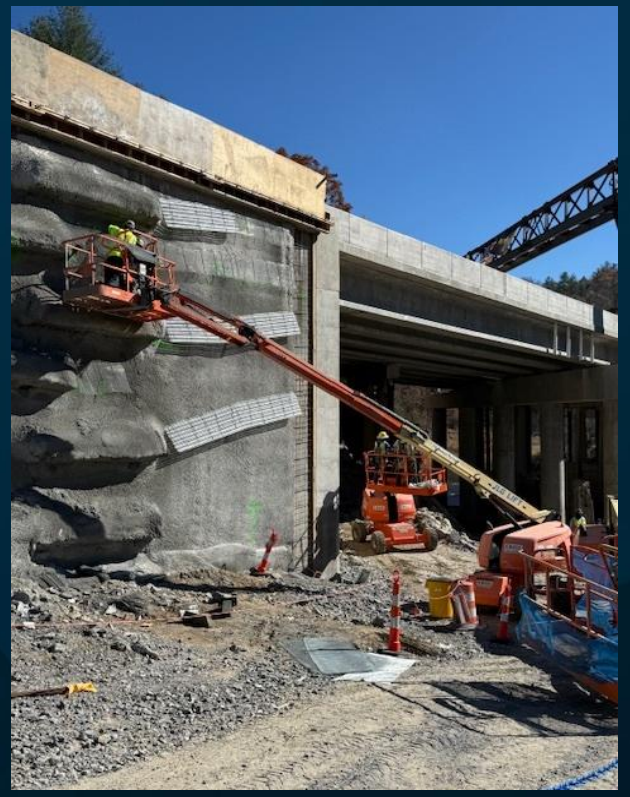
Field observations: Close proximity of the bridge

Concept Inspiration: Kitchen table sketches–where it all began!

Collaboration:

NCDOT
Fish and Wildlife
Boulderscape
Kiewit Construction

Construction: Cavities formed during the shotcrete placement



Boulderscape Sculpting: Texturing created natural rock roost cavities

Final Bat Habitat Wall: Integrated bat habitat within bridge infrastructure

Endangered Gray Bat: Observed using the wall about one week after completion

Questions:

NC SuRe Infrastructure Center of Excellence

NC SuRe Infrastructure Center

North Carolina Sustainable and Resilient Infrastructure
NCDOT University Transportation Center of Excellence

Presentation Overview

- NC SuRe Infrastructure Center of Excellence (COE) Overview
- COE Project Updates
- Leveraging and Building on COE Work
- Resilience and Recovery UTC Proposal
- Questions / Discussions

Institute for Transportation Research and Education

Civil, Construction, and Environmental Engineering

NC Clean Energy Technology Center

NC STATE UNIVERSITY

Geospatial Analytics Center

Computer Science

Partner Departments / Centers

Intelligence Studies, and Geospatial Science

Fayetteville State University

ECU

Construction Management

Math and Computer Science

Economics

Center Mission Statement:

Develop cutting edge, practice ready research to address future disruptions in the transportation system stemming from natural hazards, everyday disruptions, and other unexpected large-scale disruptive events within the network.

Center Goals and Objectives

- Develop **cutting edge, practice ready research to address future disruptions** in the transportation system stemming from natural hazards, everyday disruptions, and other unexpected large-scale disruptive events within the network.
- Establish **new collaborative research partnerships** to build a foundation of integrated, multidisciplinary sustainable and resilient transportation research for North Carolina.
- **Leverage research expertise** and previous funding to further develop emerging and cutting-edge sustainable and resilient applied transportation research.
- Situate **North Carolina as a leading candidate** for a future US Department of Transportation (USDOT) and US Department of Energy (DOE) sustainable and resilient transportation funding.

Center of Excellence Projects

Project 1:

Resilience Informed Decision Guide for Asset Rehabilitation and Repair of Infrastructure Assets

Project 2:

Electric Vehicle Resilience: EV Evacuation Modeling

Project 3:

Resilient Cybersecurity for TMCs

NC STATE UNIVERSITY FAYETTEVILLE STATE UNIVERSITY ECU

Resilient Infrastructure

Resilient highway infrastructure and asset management

B. Shane Underwood
Lead-PI

Trung Tran
Co-PI

Amin Akhnoukh
Co-PI

Burcu Adivar
Researcher

Chase Nicholas
Researcher

Steve Bert
Researcher

Electric Vehicles

Resilient electric vehicle infrastructure development

Heather Brutz
Lead-PI

Greg Howard
Co-PI

Alex Yoshizumi
Lead Researcher

Isaac Panzarella
Researcher

Autumn Proudlove
Researcher

Art Samberg
Researcher

Leila Hajibabai
Advisor

Cybersecurity

Resilient cyber networks for transportation operations

Shoaib Samandar
Lead-PI

Sambit Bhattacharya
Co-PI

Man-Ki Yoon
Co-PI

George List
Advisor

Ali Hajbabaie
Advisor

Project 1:
Resilience Informed Decision Guide for Asset Rehabilitation and Repair of Infrastructure Assets

- The NCDOT experiences substantial transportation disruptions and economic consequences when any of its assets must be repaired, upgraded, or replaced.
- These effects are heightened when the needs occur due to an extreme event.
- Several NCDOT studies (RP2024-13, RP2021-03, RP2021-08, RP2020-57) have been carried out to understand the vulnerabilities and risks associated with sources of disruptions on the transportation network.




NC STATE UNIVERSITY FAYETTEVILLE STATE UNIVERSITY ECU

Project 1:

Resilience Informed Decision Guide for Asset Rehabilitation and Repair of Infrastructure Assets

1. Identify and document the **policy and process landscape** related to NCDOT policy on **asset rehabilitation and repair**;
2. Develop a ranking system to aid the NCDOT to choose **strategies that manage infrastructure assets for resilience** considerations;
3. Develop a **decision support guide** that documents and quantifies the resilience impacts from engineering and operational strategies;
4. Identify the **policy implications to implementing** the guide; and
5. Develop the rankings for **network asset prioritization**.

Project 1:
Resilience Informed Decision Guide for Asset Rehabilitation and Repair of Infrastructure Assets

- Completed an internal project team summit in January to discuss and plan final year of project and deliverable targets.
- Completing the establishment of a **universal resilient asset scoring system that is compatible with Statewide RIP** and would apply to pavement, bridge and hydrology/stormwater assets.
- Using NCDOT road closure data to **assess economic cost** of roadway outages, understand **recovery and repair cost**, understand roadway **resilient design cost**, and create a SPOT compatible CBA.

Project 2:
Electric Vehicle Resilience

- Understanding how **driver behavior and system capacity** impact hazard evacuation scenarios with EVs.
- What configurations of DCFC infrastructure (e.g., how many, where) **perform best under varying scenarios**?
- Under what conditions do charging stations begin to experience capacity issues?
- How is charging infrastructure capacity along a corridor **impacted during hazard events**?

Project 2:
Electric Vehicle Resilience

Updating a one-minute-resolution mesoscale, agent-based model. With updates, the model will be capable of answering a variety of **planning questions at varying scales and levels of complexity**.

The model will be well suited for addressing questions related to how **individual driver behaviors** contribute to aggregate effects.

In the future, this work could be further extended by: (a) enhancing scenario parameterization with **region-specific evacuation surveys**, (b) applying the model to **different geographies**, and/or (c) applying the model to different **planning questions**.

Project 2:
Electric Vehicle Resilience

- Completed analysis and developing white paper on Electric Vehicle Evacuation Behavior survey. Survey included approximately **5,500 responses** from NC electric vehicle owners.

- Survey results are being incorporated into **EV evacuation model**.

Project 3:
Resilient Cybersecurity

Goal:
Enhance the cybersecurity and resiliency of TMCs within NCDOT.

Key Objectives:
Identify and analyze vulnerabilities in ITS technologies used in TMCs.

- Conduct **cybersecurity audit and risk assessment**.
- Potentially Develop a **Cyber-Physical Systems (CPS) testbed** to simulate cyber threat scenarios.
- Create tailored **cybersecurity measures** and recommendations

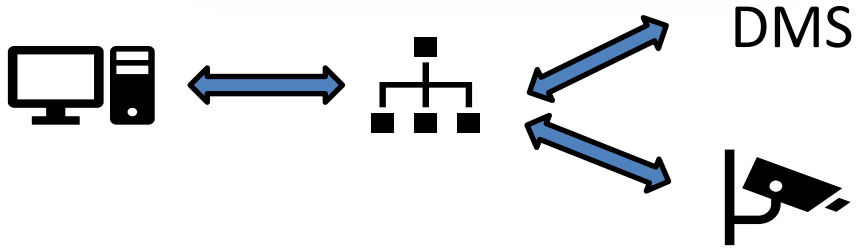
Significance:

- Ensure **continuous and efficient traffic operations** across North Carolina.
- Enhance NCDOT's ability to stay in touch with the public through TMCs during natural disasters and other emergency situations.

Project 3:
Resilient Cybersecurity

Cyber-Physical Testbed

- **Main targets**
  - Dynamic Message Sign (DMS)
  - Traffic Camera
- **Emulation in an indoor lab environment**
  - PC (central controller) + network switch + camera + monitor (message board)
- **Communication protocol analysis**
  - NTCIP for DMS
  - RTSP for video stream
- **Secure communication implementation**



Project 3:
Resilient Cybersecurity

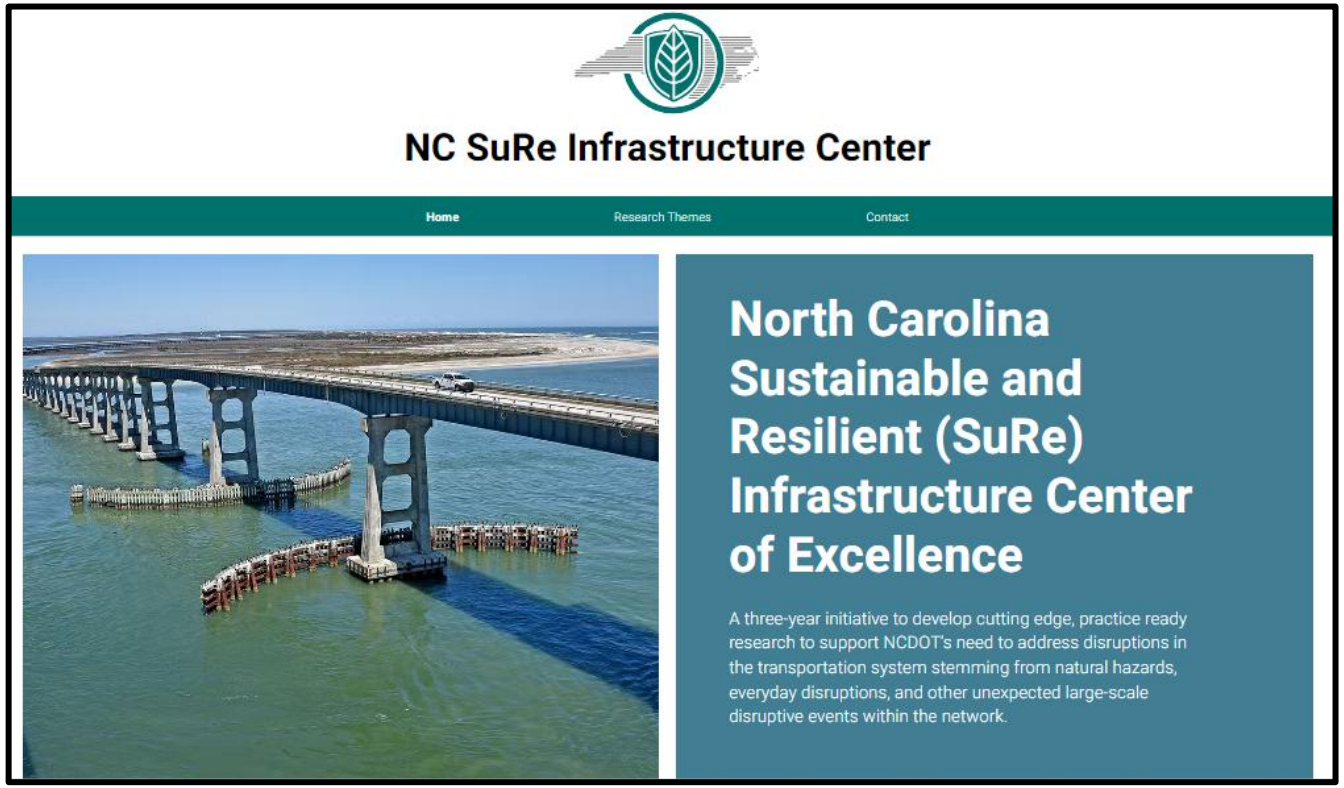
- Wrapping up a development of a network map and cybersecurity posture and resilience, tailoring a cybersecurity assessment evaluation, and studying security/monitoring of DMS signage and CCTV.
- Future meeting with NCDOT and NCDIT (preferably at TMC). FSU student team may present some cursory findings.

Benefits and Impacts

Building relationships and research capacity with new collaborations and integrating new research specialties.

Working to leverage new research collaboration to obtain new funding sources.

Future workforce development by engaging graduate and undergraduate students in the research process.



Leveraging and Building on COE

- **NCHRP 1-62: Impact of Flooding on the Resiliency of Pavement Systems**
  On-Going (Lead: Applied Pavement Tech)
- **FHWA: Asset Management Plan for Natural Disaster Recover**
  On-Going (Lead: ESC)
- **FHWA: Sustainable Pavements Program Cooperative Center**
  On-Going (Lead: UC-Davis)
- **NCDOT: GA Airports as Recovery-Ready Disaster Management Centers**
  Starting July (Lead: ITRE)
- **NC Governor's Office:** Tim Brock and Shane Underwood invited to serve as Transportation Sector authors on **NC Climate Science Report (NCCSR)**

Current Resilient Transportation Research Pursuits

- **NCHRP 23-53: Guide to Integrating Transportation Asset Management, Planning, and Programming**
  Decision Pending (Lead: AECOM)
- **NCHRP 25-78: Guide to Measuring Community Mobility Resilience**
  Decision Pending (Lead: HDR)
- **NASA Jet Propulsion Lab: Project Fire Alarm – AI Wildfire Digital Twin**
  Decision Pending (Lead: Fayetteville State)
- **USDOT: University Transportation Center for Continuity, Recovery, and Resilience (CTCR2)**
  Proposal Development (Lead: NCSU; NC Partners: ECU, FSU)
- **USDOT: University Transportation Center for Cybersecurity**
  Proposal Development (Lead: Idaho State)

Overall Statement of Purpose

- A University Transportation Center focused on strengthening the reliability and recovery of the nation's transportation system by advancing how infrastructure is planned and managed to support effective restoration after extreme events, ensuring continued mobility, economic activity, and responsible stewardship of public investment.

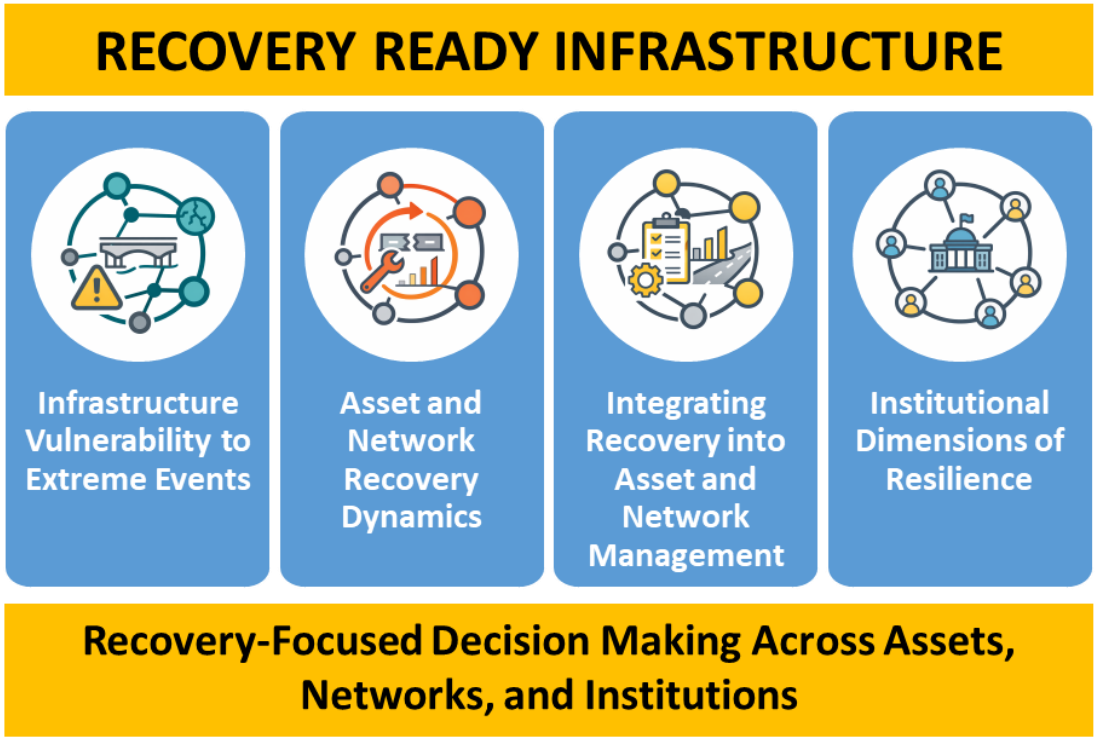
CTCR²
CENTER FOR TRANSPORTATION CONTINUITY, RECOVERY, AND RESILIENCE

NC STATE UNIVERSITY
Carnegie Mellon University
University of Nebraska Lincoln
Northern Arizona University
Washington State University
ITRE
ECU
Fayetteville State University

NC STATE UNIVERSITY
Fayetteville State University
ECU

Center Structure

- **Infrastructure Vulnerability to Extreme Events:**
  - Identifying failure modes, performance limits, and cascading vulnerabilities in transportation networks.
- **Asset and Network Recovery Dynamics**
  - Modeling restoration trajectories, service recovery, and performance rebound after disruptions.
- **Integrating Recovery into Asset and Network Management**
  - Embedding recovery considerations into asset management, programming, and planning decisions.
- **Institutional Dimensions of Resilience**
  - Linking institutional structures, funding, and decisions to effective recovery outcomes



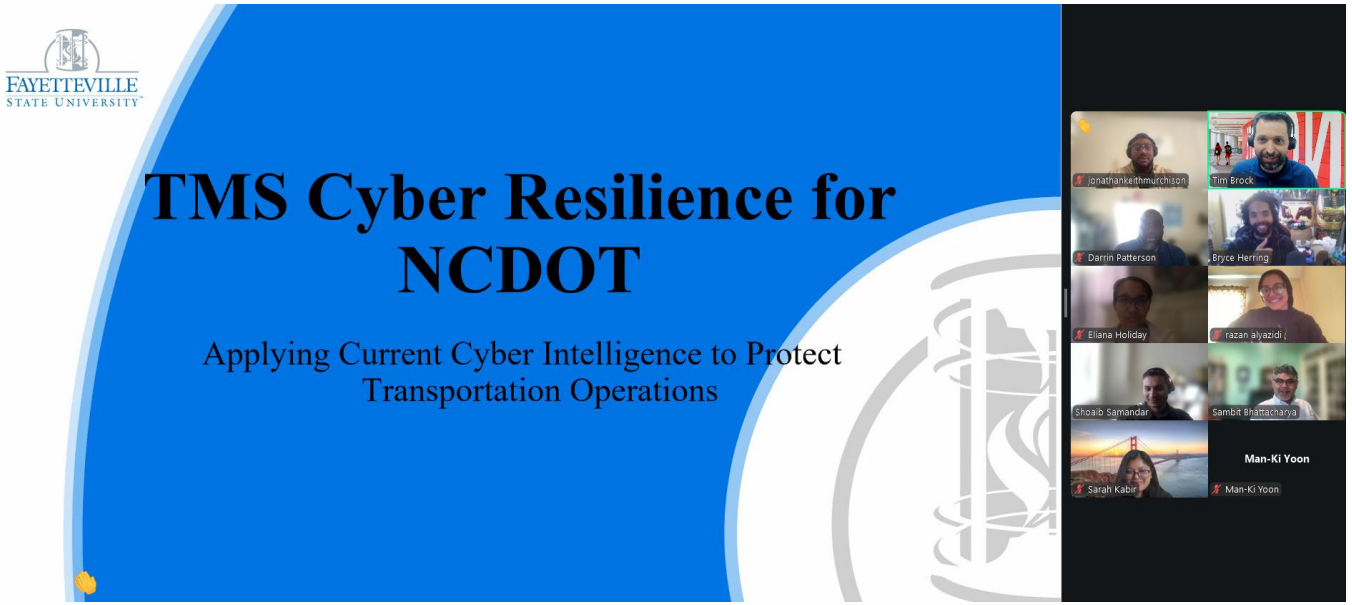
NC STATE UNIVERSITY FAYETTEVILLE STATE UNIVERSITY ECU

Research Dissemination and Student Engagement

- Two Sessions at NCDOT Research Innovation Summit
- Student Presentations at the Summit
- Student Lead CS Demonstration

NC STATE UNIVERSITY FAYETTEVILLE STATE UNIVERSITY ECU

Research Dissemination and Student Engagement



- FSU Student Supporting Cyber Security Research Project
- FSU led NASA Geospatial Resilience High School Summer Camp with COE co-presenters

Questions Discussion

2026 STIC Incentive Program Overview and Scoring Review

STIC Incentive Program

Overview

- Provides technical assistance and up to $125,000 in total funds per state to offset the costs of standardizing innovative practices.
- Funds activities such as conducting internal assessments, initiating capacity building, developing guidance, drafting standards and specifications, organizing peer exchanges, implementing system process changes, etc.
- At the local level, the **NC-TIC determines which projects/activities to fund**.

Recent Projects in North Carolina

Project Name	Funding Year	Point of Contact	Status
Pilot Debris Removal Systems	2023	Jennifer Portanova	Ongoing
Develop Data Governance for Rail Division	2023	Todd Meyer	Completed
Use of AI to Improve Vulnerable Road User Safety	2024	Daniel Carter	Completed
Project Delivery Enhancement through Integration of New Tools	2025	Derrick Weaver	Ongoing
Deployment of Drone Illumination for Worksite Safety	2025	Christopher Arnette	Ongoing

STIC
State Transportation Innovation Councils

Now Accepting Applications

until April 17, 2026

The State Transportation Innovation Council (STIC) Incentive Program funds activities such as:

- Conducting internal assessments.
- Initiating capacity building.
- Developing guidance.
- Drafting standards and specifications.
- Organizing peer exchanges.
- Implementing system process changes.

Example STIC Projects in NC

Awards up to $125,000

to offset the costs of standardizing innovative practices

Online Application

STIC Projects Completed in North Carolina

- Advancing Collaboration Technology Best Use Study – REKOR One Pilot
- Automated Waze Road Closures
- Highway Emergency Linked Platform (HELP) Alerts
- Knowledge Transfer Tools
- Ladders of Opportunity
- Safety Service Patrol Technology Pilot Project
- Tactical Library and Deployment Selection Tool for Bike and Pedestrian Safety Countermeasures
- Develop Data Governance for Rail Division
- Use of AI to Improve Vulnerable Road User Safety

NC-TIC's Scoring Criteria for Proposals

Finalized in March 2025 NC-TIC TCC meeting

Criterion No.	Description	Weight
1	On a scale from 1 - 5, with 1 being not at all and 5 being completely, how much does the proposal advance the identification or practice of the identified innovation?	20%
2	On a scale from 1 - 5, with 1 being not at all and 5 being completely, how will the proposed project implement the innovation beyond research?	15%
3	On a scale from 1 - 5, with 1 being a current idea/technology/process already being used by NCDOT and 5 being a completely new idea to NCDOT, how new is the innovation?	15%
4	On a scale from 1 - 5, with 1 being not at all and 5 being completely, how much does the proposal advance the goals and mission of NCDOT?	30%
5	On a scale from 1 - 5, with 1 being not at all and 5 being completely, how much does the proposal meet the goals of the STIC Incentive Program?	20%
6	Is the proposal eligible for federal-aid funding under Title 23 U.S.C?	Y/N

Open Discussion

Adjournment