



Research Happenings

Fall is here and that means our research committees are in full swing evaluating proposals!

Over 70 preliminary proposals were received based on 35 NCDOT and Researcher identified needs. By the end of February, and 2 more rounds of reviews, we will have a program in place for FY2019.

Next year, why not get *your* idea into the hopper. New specification? New material analysis? New guidelines? Need a better understanding of our constituent populations and how to best serve them? Almost everything we do at NCDOT is eligible for the research program.

I highly recommend you take a few moments to browse our [Research Home Page](#). You'll find general information about the program, details on all complete and ongoing projects and forms you can use to send us ideas at any time. We don't only take ideas during our summer solicitation. We accept ideas year-round, catalog them and make sure they make it out in our Request for Proposals. We are also happy to help further develop ideas to maximize their potential or connect you to someone that can.

You will find forms for Pooled Fund Participation and Technical Assistance Requests and information on sending our one-off RFP documents.

Take a bit of time to go through the [Research Overview Presentation](#) to learn more about our program and resources, including our Staff Research Librarian.

Please feel free to call, email research@ncdot.gov, myself or any of the R&D staff with questions.

Neil Mastin

Research & Development Unit Manager



NC Scenic Byway: Pottery Road

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Meet the Engineers

Mustan Kadibhai



Mustan Kadibhai has over 20 years of experience in the Research & Development Unit. He provides project management in all topical areas of research. His current focus is on Pavement, Maintenance, Materials, Structures, Construction and Geotechnical Research. In addition to the projects he manages, Mustan is also involved in the Strategic Highway Research Program (SHRP) and the Long Term Pavement Performance Program (LTPP) as well as serving as a Title VI liaison for the Unit.

Mustan assists and participates in official correspondence and in communicating with Headquarters and Field Divisions personnel of the Division of Highways, with officials of the UNC systems and research faculty, with Federal Highway Administration (FHWA), and other organizations. He also assists with all aspects of FHWA and State administered Pooled Fund studies, AASHTO, NCHRP and other funding sources research activities. Prior to immigrating to the USA, Mustan had 10 years of construction experience in Tanzania.

Mustan has a Bachelor of Science degree in Civil and Environmental Engineering from Indian Institute of Technology in India and Master of Science degree in Urban and Regional Planning from Center for Environmental Planning and Technology University also in India. He is a registered Professional Engineer (PE) as well as a Certified Public Manager and has completed Legacy Leadership Level IV.

He is married with two children. In his spare time Mustan enjoys math puzzles including Magic Math.

John Kirby



John Kirby has been with the Research & Development Unit for seven years. His current focus is on Environment & Hydraulics research projects, but has also focused in areas of planning, programming, policy and transit. Apart from research projects, John is also involved in TRB's "Ahead of the Curve" as a member of the national subcommittee and has been active in recruiting HBCU involvement in NCDOT's research program.

Prior to John's employment with the Research Unit he spent eleven years with NCDOT's Roadside Environmental Unit concentrating on groundwater remediation at contaminated asphalt testing sites and managing the Department's hazardous waste program. Previously John worked in NC's Division of Waste Management focusing on illegal waste disposal classification and enforcement.

In addition, John has worked at UNC-Chapel Hill in the Chemistry Department and spent five years with Glaxo Smith-Kline in Research Triangle Park.

John has a Bachelor's degree from North Carolina State University and a Master's Degree from Duke University in Durham. Currently, John is in the Leg-

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acy Leadership Level III program. He is married and has one child in high school. In his spare time John enjoys biking, the outdoors and reading.

Recently Completed Research Projects

RP 2016-17: [Economic Analysis of Vegetation Management Practices](#) Principal Investigator: James B. Martin, Institute for Transportation Research & Education (ITRE) North Carolina State University

Vegetation growth along highways has always been a significant maintenance issue for transportation departments, given the adverse impact that poorly managed vegetation can have on a modern highway system through increased risks to traffic, premature deterioration of the road system infrastructure and adverse environmental impact. The need for effective vegetation management is further underscored by other factors such as reductions in resource availability due to budget cuts, new environmental laws and a general increase in public awareness of environmental impact of herbicides, carbon emissions and invasive species. In response to these, there has been the development of Integrated Roadside Vegetation Management Program (IRVMP) that is gaining increased recognition among transportation managers in the United States.

RP 2017-12: [Strategies to Reduce Wrong Way Movements](#) Principal Investigator: Daniel Carter, Highway Safety Research Center University of North Carolina at Chapel Hill

Wrong way driving crashes continue to be a persistent highway safety problem for North Carolina. The objective of this project was to develop recommendations for geometric elements, traffic control devices, and other strategies to reduce wrong way driving at priority freeway ramp locations in North Carolina. The research team developed two main products in this research project. The first prod-

uct was a 24-page toolbox of signs, markings, and geometric design strategies that can be implemented at any freeway ramp terminal to reduce the potential for wrong way driving. This compilation of strategies was based on a state-of-the-practice review from other states and recent research.



Image: Example of dynamic warning beacon

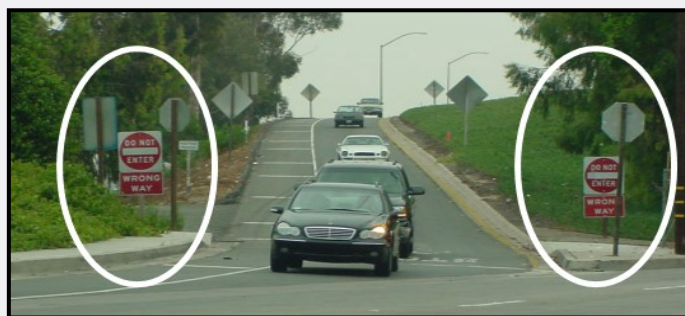


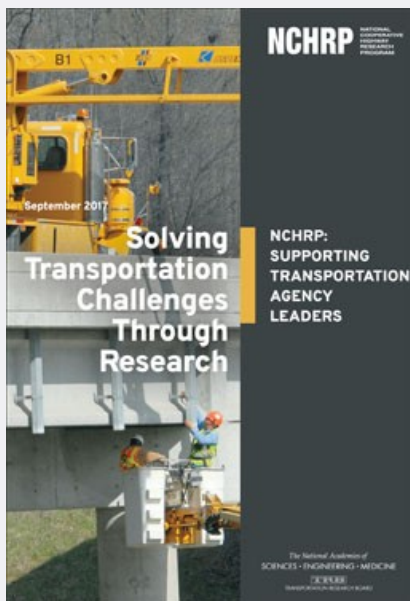
Image: Example of lowered sign height

The second product was a set of site-specific recommendations for selected priority interchanges. The researchers reviewed 129 reports from wrong way crashes in Durham, Forsyth, Guilford, Mecklenburg, and Wake counties. The team identified 34 interchanges where wrong way driving had originated or likely had originated. Researchers conducted a field review of each interchange to identify whether there were characteristics linked with increased risk of wrong way driving

The final report produced recommendations for improvements to the signs, markings, and geometrics of the ramp intersections to reduce the potential for wrong way driving.

New Publications from Transportation Research Board

Supporting Transportation Agency Leaders



TRB's National Cooperative Highway Research Program (NCHRP) has developed a brochure for CEOs of state departments of transportation (DOTs) to help familiarize them with the range of research-based, practical benefits provided to states through NCHRP. The brochure explores the types of products released by NCHRP to help states with developing cost-efficient, safer, or more reliable practices or procedures.

Developing and Sustaining a Transportation Systems Management & Operations Mission for Your Organization



The U.S. Federal Highway Administration has released a primer that discusses the key elements of successful transportation systems management and operations (TSMO) program planning. This primer is meant to serve as a practical resource to help state and local departments of transportation integrate TSMO within their organizations.

Please note: The National Academies Press; publisher of TRB publications now requires an email before downloading some publications to view. An account with [My NAP](#) is encouraged.

Many more publication links can be found at [TRB Publications by Subject](#)

Calendar of Events 2017

November 2017

- NC DOT Board of Transportation Meeting, November 1-2 2017

December 2017

- NC DOT Board of Transportation Meeting, December 6-7 2017



NCDOT Research and Development Unit General Information

How to find us:

We are located at 104 Fayetteville Street, Raleigh, in the Transportation Technology Center (formerly The Raney Building).

The Research & Development [web page](#) contains more information about the Unit and what we do.

The Research Library's [catalog](#) is also available on the web.

NCDOT RESEARCH AND DEVELOPMENT

The Research & Development Unit oversees transportation-related research that investigates materials, operations, planning, traffic and safety, structures, human environments, natural environments, and more. Please contact one of our engineers listed on this page if you have questions.

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RESEARCH & DEVELOPMENT