



Instructions and Guidelines for Developing a Research Need Statement (RNS)

Introduction: The primary function of the Research and Development Unit is to work with NCDOT business units to initiate contract research that addresses issues facing North Carolina's transportation community. Contract research is typically carried out with the assistance of universities and research centers. Most of NCDOT's research is applied research: Research that is intended to solve a specific problem or set of problems. Potential projects include, but are not limited to: new or revised specifications, new or revised design guides, new or updated performance or traffic models, safety studies, material testing, economic impact studies, environmental studies and revised policies.

→ *Nearly all operational, policy and design areas of NCDOT are eligible for research funding.*

While preparing a Research Need Statement, you can communicate with NCDOT research staff, others at NCDOT, national peers or even researchers in order to help to better define the problem. *No commitment for funding can be made or should be implied to researchers that provide input to an RNS.* Research Need Statements submitted by NCDOT personnel will be advertised and distributed to all eligible researchers. Research proposals are funded on a competitive basis.

Project Duration: Research projects typically vary in length between 6 months and 3 years, with 2 years the most common period. Proposals received from potential researchers include their best estimate of a schedule based on the complexity and needs of the proposed project. **Synthesis projects**, for which a researcher compiles knowledge and best practices to produce a guidance document typically have a maximum 1 year duration.

Please note that all fields on the form will expand as needed.

Take as much space as required to complete each portion, but try to be concise and clear.

Contact Information: Please fill in your name, email, phone number and the NCDOT branch and the NCDOT unit you work for. This information will be used in the Research and Development database. It will also be provided to potential researchers so they may reach out to the idea generator when preparing proposals. *You should expect contact from researchers interested in preparing a proposal for your idea.* The best proposals will be developed by researchers that fully understand the problem.

Title: The title of the RNS should be a few words describing the idea. Concise is best, but be specific.

Problem or Issue Needing Investigation: This field should be used to broadly outline the scope of the problem. Is a new specification needed? Does a new intersection design require investigation for safety and efficiency before being placed in wide use? Is material durability in question for certain applications? Is increased knowledge in a particular area needed?

When preparing the statement, you should identify the specific problem to be addressed by the research and think about the questions of How?, What?, and Why?.

If possible, conduct a preliminary research or literature review on the topic in current periodicals and journals to see what research has already been conducted and if it meets your needs. The research unit can assist with this. One of the best sources of existing research is the TRB Database, TRID: <http://trid.trb.org/>

Background: Please provide a brief background statement describing events, procedures, experiences and/or processes leading up to your idea. Providing sufficient background in non-technical language (without jargon) will help the researchers (and other NCDOT employees) understand the importance of the problem.

Research Tasks: A full listing and description of tasks to be completed as part of the research project will be developed by researchers submitting proposals. However, a basic list of what is *likely* to be required will be helpful during proposal development. Will data need to be acquired from the NCDOT sources? Will field studies be needed? Will surveys be required? Is lab testing likely to be needed? You are not committing yourself or the researcher to a particular task. If a task isn't needed, it can be dropped after further review during proposal development.



Products of the Research: Research products are deliverables associated with the research that will be used for implementation and integration of the results into departmental processes, policies, standards, and practices. This is not simply a final report document. Examples might be the development of manuals, protocols, improved processes, new products, new procedures, increased general practice knowledge, improved current practices, validated or improved models, developed guidelines, developed methodologies, updated design criteria, project prioritization methods, inputs for analysis systems, identification of additional resources needed, training manuals and courses, cost-benefit analyses, improved testing methods, etc.

Benefit to the Department / Explain Anticipated Benefits: This section includes a set of check boxes to capture the general area of benefit. In the explanation box, please provide additional details the benefits of the research. Each customer of the research program has a different set of needs, and for this reason each end-user and stakeholder may have a different way of evaluating the benefits of a research project. Providing a concise statement will encourage prospective researchers to develop relevant research proposals that address the range of end-users and expectations. Examples of benefits include: cost or time savings for the agency or the public, efficiency improvements, improved accuracy of models or design methods, validation of a design, material or technique, etc.

Implementation: Implementation is a key component of the NCDOT research program. By describing potential implementation measures, NCDOT personnel are able to move research from the lab and computer screen to the field and design office. *It is not expected that a detailed implementation plan can be developed at this early stage in the research process, but research ideas should be developed with the goal of production usage in mind.* Please describe any general concepts for implementation and also designate the unit, position title and name that will oversee placing this research into practice.

Additional Comments and Information: Include any additional information you think is relevant to the proposal. Key information could include units and personnel that were consulted during the development of the RNS and any additional business units that would be involved in implementation.

A Note on Contact with Researchers: The compiled Research Need Statements for the Department will be distributed to eligible researchers. You should expect to receive phone calls, emails and visits from researchers as they develop their proposals. Accurate and honest answers to their questions are critical to receiving the highest quality proposals. You may answer questions, but remember: *NCDOT cannot make any statement regarding awarding of work.* Responses should focus on technical and practical issues. Cost should not be discussed at this time. All research proposals will be evaluated by the research subcommittees and final approval will be made by the Research Executive Committee.

Assistance: If you would like assistance in preparing a statement, the Research Unit can help or we can put you in contact with an experienced project sponsor (i.e. former research project chairperson) in the appropriate technical area.

For questions or comments, please contact any of the following:

Neil Mastin	Research Manager	919-508-1865	jmastin@ncdot.gov
Rasay Abadilla	Structures, Construction, Geotech	919-508-1832	rabadilla@ncdot.gov
John Kirby	Planning, Environment, Transit	919-508-1816	jkirby@ncdot.gov
Mustan Kadibhai	Pavement, Materials, Maintenance	919-508-1819	mkadibhai@ncdot.gov
Ernest Morrison	Traffic, Safety, Roadway Design	919-508-1874	eemorrison@ncdot.gov
Lamara Williams-Jones	Research Librarian	919-508-1820	lcwilliams2@ncdot.gov
Melvena Sams	Admin Support and General Assistance	919-508-1790	msams@ncdot.gov