



Guidelines for Developing a Research Idea

Introduction: The Research and Development Unit works with NCDOT business units to initiate contract research that addresses issues facing North Carolina's transportation community. Ideas are also accepted from university and business partners as they may have a novel approach to transportation related issues. 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.

➔ ***Most operational, policy and design areas of NCDOT are eligible for research funding.***

The Research Idea Form serves as the framework on which researchers build proposals. While preparing a Research Idea, you are strongly encouraged to communicate with NCDOT research staff and key business units at NCDOT in order to better define the topic and proposed research. *No commitment for funding can be made or should be implied from the acceptance of Research Idea.* Research Ideas submitted by NCDOT personnel will be advertised and distributed to all eligible researchers. Research Ideas submitted by external researchers will not be included a general RFP. Direct notification to the researcher will be made if a full proposal is needed.

Research proposals are funded on a competitive basis based on Departmental need, urgency and available funding.

Project Duration: Research projects typically vary in length between six (6) months and three (3) years, with two (2) years being the most common project length. Proposals generated from selected research ideas will include a researcher's 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 one (1) year duration.

Submitting a Research Idea

Please be concise and clear when filling out each portion of the web form.

The web form for submitting a new RNS can be found at the following link:

<https://connect.ncdot.gov/projects/research/Pages/RNS-Form.aspx>

Form Type: Please select whether you are an internal (NCDOT personnel) or an external customer (includes researchers and NCDOT business partners)

Idea Submitter Information: Please submit your Name, Affiliation, Phone Number, and Email Address. This information will be used in the Research and Development database and will provide a way for R&D or a business unit to contact you.

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

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. A brief reference to a lit review is appropriate in the research idea form. 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 unneeded jargon) will help reviewers understand the importance of the problem.

Research Tasks: This should be a basic list of what is *likely* to be required as part of this research. This does not have to be detailed, but will help any reviewers and proposal responders understand your thoughts behind the problem.

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 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 pertaining to the anticipated 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. 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.

Possible IT Components: If the suggested research has any type of IT component related to it, please describe that component here. If the research requires coordination with NCDOT's IT Department, we need to be sure that they are involved in project development from the onset.



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 a tangible and usable identifier of success in mind.* Please describe any general concepts for implementation and designate the unit, position title and name that will oversee placing this research into practice in the Sponsor/Champion fields. Be sure to include any potential issues/barriers to project implementation.

NCDOT Project Sponsor: A project Sponsor/Champion is REQUIRED for all submissions. For NCDOT ideas, the Project Sponsor/Champion information may be the same as the idea submitter, but this is not always the case. Please list the person most likely to guide project results into implementation. External ideas cannot be to be considered without a sponsor.

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 Researcher Contact with NCDOT Personnel:

Prospective researchers are encouraged to contact NCDOT technical and business experts when developing a Research Idea. Phone calls, emails, and visits are all appropriate to better understand departmental needs, define the scope of work and gain support for a topic. However, *NCDOT cannot make any statement regarding awarding of work.* Discussions should focus on technical and practical issues. *Cost should not be discussed during the idea phase.* Proposals will be requested only after received ideas are reviewed by research technical subcommittees.

Assistance:

For additional information or clarification, contact any of the Research and Development staff listed below.

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

Neil Mastin	Research Manager	919-508-1865	jmastin@ncdot.gov
John Kirby	Environment, Transit	919-508-1816	jkirby@ncdot.gov
Mustan Kadibhai	Pavement, Materials, Maintenance, Structures, Construction, Geotech	919-508-1819	mkadibhai@ncdot.gov
Curtis Bradley	Implementation, Tech Transfer, Planning	919-508-1832	cbradley8@ncdot.gov
Steven Bolyard	Mobility, Safety, Roadway Design	919-508-1874	sjbolyard@ncdot.gov
Lamara Williams-Jones	Research Librarian	919-508-1820	lcwilliams2@ncdot.gov
Research Service Address			research@ncdot.gov

Research Home Page: <https://connect.ncdot.gov/projects/research/Pages/default.aspx>