How to Write an Effective Research Needs Statements

Slide	Talking Points
1. Intro	
2. FA	Writing an effective Research Needs Statement is not as simple as it seems, even to transportation practitioners who face serious problems and challenges on a daily basis. The research need might be obvious to you but difficult to describe to non-specialists. You may not have thought about how to quantify it or how to justify the needed research with respect to other agencies or national priorities. First and foremost, remember your audience – for the most part, educated generalists will select projects, not subject experts. Write accordingly. The more specialized one's field of expertise, the harder it can be to describe it to others. You must appeal to the funding program sponsors needs to get your foot in the door.
3. Funding programs	Here are some of the programs we're talking about that accept Research Needs Statements.
4. Funding Guidebook	… and here is where you can get more information about the specifics of each program.
5. Funding Guidebook	Understanding the details of each program, such as knowing the answers to these questions, is essential, but only the first step towards getting your research ideas funded. These programs are very competitive, and each year receive many more Research Needs Statements than they can afford to fund.
6.RNS	If you want your ideas to rise to the top, you need to write a clear, compelling Research Needs Statement that will persuade the funding bodies that your idea has merit and deserves attention. This slide lists the various criteria that make a Research Needs Statement successful. You need to consider each part of the Research Needs Statement carefully and craft it to highlight the most important ideas and needs. So, let's get into the details.
7. Research Needs	First, you'll want to know if others have the same or a similar research need; this facilitates coordination and collaboration and prevents duplication of efforts. Within the transportation field, the RNS database contains RNS from TRB committees that are vetted by those committees.
8. Research Needs	Also, a Google Custom Search tool was created where research needs from a number of sources can be searched. This Transportation Research Needs Meta Search tool is designed to search websites and databases that already exist, rather than creating something new. It currently searches: 1. TRB RNS DB 2. Transportation and Environment Research Ideas (TERI) DB 3. NCHRP 2010-2013 unfunded problem statements (Other CRP's unfunded problem statements will be added as TRB staff time allows) 4. It also searches unfunded Pooled Fund Studies and

	5. Mn/DOT unfunded research needs Others will be added as they are available. Posting guidance to allow this tool to search your research needs is available as well as guidance on how to create your own Google Custom Searches.
9. Research Needs	…And here is what you'll see when you click of the link.
10. Research Needs	On RITA's Transportation Research Collaboration website, under RPPM which stands for (Research Program & Project Management – under - Setting The Research Agenda – and then under - Strategic Research Documents, there is an effort to pull together research needs, agendas, roadmaps, etc. from various sources in one place.
11. Multidisciplinary topics	More and more transportation research topics don't exclusively fall within the field of transportation. Make connections with potential stakeholders, which can include local, state, federal agencies, national organizations, non-profits, private companies, etc. TRB staff, members, other TRB committees, and the tools described later in this document may be good venues to identify potential stakeholders from other disciplines. Is there research related to your topic being conducted, already has been conducted, or in the works, through the EPA, USFWS, or through other entities? Can these potential stakeholders sponsor or in some other manner help with the funding of your RNS?
12. RNS	Moving on to the RNS, here are the typical components of a generic Research Needs Statement. Each will be briefly described in this document. Finally, you'll need to know the specific requirements and submittal form for the funding program to which you plan to submit your RNS so that you submit it on the right form in the right format with the right content. This will ensure your RNS at least makes it through the door. For funding program links, please refer to the funding guidebook website described earlier in this document.
13. Title	The title should **BRIEFLY AND IMMEDIATELY** convey to the reader what the proposed study is about. Don't try to capture every element, nuance, and expected task of the research problem. You'd be surprised how commonly this is done. Like the **Title Of A Book** –attract the reader's attention, quickly convey the subject, draw the reader in, and make the reader want to read what's inside. --- You may be tempted to title your Research Needs Statements something like this … "Collection, analysis, and compilation of current best practices for the design of roundabouts for U.S. roadways and how those design elements will impact safety, capacity, and contribute to effective traffic management objectives." … rather than this: "Design guide for roundabouts." --- **Remember that BRANDING** is important – a good title will help the reviewer establish

	a connection with your proposal. A good title is like a good sound bite. People will remember it and be left with a **Positive Impression**.
14. Background	Here is where you set the **Context** and relate this particular issue to **Larger National or Regional Goals** and objectives. It is also where you can begin to **CONVINCE** the reviewer that this Research Needs Statement addresses a serious issue and merits funding. As best you can, describe the extent and importance of the problem. Estimate how much **TIME, MONEY, or LIVES are LOST** as a result of this specific problem. --- **For EXAMPLE**, if you are proposing a study that will reduce congestion on urban streets, describe the extent of the problem. How much time is lost due to congestion nationally? How much does it impact air quality? How does your particular problem contribute to the solution? --- Demonstrating that something is a serious problem in your state doesn't make it a national issue. If you are submitting your research idea to a national funding program and if you know this problem is affecting other regions or states, name them in your Research Needs Statement. Involve others and garner support. If you can get other agencies or committees to endorse your Research Needs Statement, you're doing a better job of demonstrating that the effort warrants funding. As mentioned earlier, many times research is multidisciplinary. Make sure to include information from other disciplines.
15. Rel'n to existing information	The first time a reviewer reads your Research Needs Statement, it will **probably REMIND them of other projects** they've heard about on the same or similar topics. You need to **anticipate this** and explain how your project is different - how it **BUILDS** on the existing body of research, how your proposed study takes a **DIFFERENT approach**, how it uses **NEW methodologies or expanded data sets**, or how it **PULLS TOGETHER** all the existing work into an implementable product. Base your comments on a thorough review of the **RELEVANT LITERATURE AND ONGOING RESEARCH**. The place to start in the transportation sector is **TRID** which stands for the (Transportation Research International Documentation) database, and also includes items from the Research in Progress (RiP) database and information on current and completed research from other sources and other countries. If you need help, contact your librarian or information specialist. If you don't have one, contact a major reference library, or TRB Information Services. If your Research Needs Statement fails to find or identify a high profile project on the same or similar topic, your credibility may be suspect. If reviewers believe the research is or has already been conducted, it will not be funded. If the research has been completed, but the findings have not been deployed, identify the barriers and develop a strategy to support deployment. This could be achieved through a research project. Making good use of investments is critically important.
16. Rel'n to existing	Other sources for research in progress and/or completed research include those listed here.

information	**USDOT Research Hub** searches USDOT ongoing and completed research. Records are transferred to TRID periodically. **NTL Integrated Search** which searches the USDOT Headquarters Catalog, Digital Repository of full text research reports, and records that point to external transportation website content. Website content is diverse and includes data sets, publications, and institutional information. There is some duplication with TRID. **TRIP** is the Transport Research & Innovation Portal (formerly known as the Transport Research Knowledge Centre or TRKC); it contains information on research programs, research in progress, and completed research from 30 European countries. It also contains thematic and policy summaries of ongoing and completed research.
17. Rel'n to existing information	…And some more resources are… **Transportation Libraries and Information Centers Directory** where you can search resources individually. There is some duplication with TRID. **NTIS** searches government reports and information. Again, there is some duplication with TRID
18. Rel'n to existing information	..And yet more… **WC** is the largest database of library records in the World and TLCat (Transportation Libraries catalog) is a subset of WC and searches a number of transportation libraries. There is some duplication with TRID. **Pooled-Fund studies** – These should be in RiP and TRID. There are a lot of resources to find ongoing and completed research, but the bottom line is TRID is the most comprehensive. Search TRID above all else and include the results in your RNS.
19. Objective	The objective should be **SHORT, CONCISE**, and **ACCURATE**. Describe what you will put into the user's hands at the end of this study if it is funded. The details will be in the research plan and reflected in the final product. Describe the **PRODUCT.**
20. Benefits	This is where you need to **JUSTIFY the funding** for your project. If the program can only fund 20 projects from a pool of 50 good Research Needs Statements, **WHY should yours be picked**? You need to be specific and provide as much detail as you can on the potential benefits of your project. Be positive but honest. Use real numbers if you can measure or estimate them. Four big benefits to consider**: reductions in TIME or MONEY, and increases in SAFETY or CUSTOMER SATISFACTION**. For example, --- "Streamlining the review process could cut 6 months off average project delivery times". or "65% of road users indicate that this is a major problem. Resolving this issue could result in a significant increase in customer satisfaction". or

	"If this project is brought to a successful conclusion and the results implemented, and could produce only a 2% decrease in mitigation costs, the savings to highway agencies and road users could be in excess of $5 million a year".
21. Tasks	If you can identify specific tasks that absolutely have to be part of the project workplan, include them in the Research Needs Statement. However, don't let your own biases determine the research plan. Focus your attention on providing a full and accurate description of the problem and the desired final product.
22. Funding	What **kind of TASKS** do you anticipate? If field testing will be required, it will be more expensive than "desk-based analysis". If specialized equipment must be purchased or developed, the costs can escalate quickly. If you work with **CONSULTANTS or ACADEMICS on TRB or other committees**, talk to them about the level of resources needed to undertake the work. They are in a position to review the project objectives and help you come up with a reasonable budget estimate. Take a look at other projects funded by the **SAME program** and determine the typical funding range. If you propose an amount well beyond this, you had better be prepared to back it up with a high estimated payoff. On the other hand, don't lowball the figure. If you can't achieve the project objectives with the amount you requested, the funding body is not likely to be receptive when you come back and ask for more and if funded as originally requested, it could jeopardize the outcome.
23. Implementation	Many funding programs support only or mostly applied research and require implementable research results. If you **consider IMPLEMENTATION** aspects in your Research Needs Statement, it demonstrates that you are aware of the potential barriers and impediments, and the activities and champions that will be needed to support the end work. This **increases the COMFORT level** of the funding agency that the results of the research project have a good chance of finding their way into practice and hence yield the benefits to their fullest potential.
24. Submitter	This speaks to the credibility … The more sponsors and/or endorsements, the better. As I mentioned previously, many research topics are multidisciplinary in nature, requiring coordination and collaboration among various fields within and potentially outside of transportation. Make contacts, coordinate research efforts, and develop sponsors with others who might be interested in research on your topic.
25. Resources	Resources include: Tools, presentations, webinar recordings, and a listing of CRC and CRC Council members are all posted on the CRC website. Know who represents your committee on the CRC Council. The CRC Council is working on addressing a number of needs identified by CRCs. Also, TRB staff work with each committee and funding program, and the CRCs and CRC Council.
26. Resources	There are also TRB committees that focus on the research process and library and information sciences. The committee membership has a wealth of information on the research process and is willing to help. They are represented on the CRC Council and, therefore, tied into the CRC effort.

27. Conclusions	If at first you don't succeed, don't give up. It can be an iterative process. If your Research Needs Statement is not selected, find out why. If possible, **get the REVIEWERS' COMMENTS**. Don't be discouraged or embarrassed by constructive criticism: they are the best guidance you will ever get for writing better Research Needs Statements. Good research starts with a good statement of the problem, because RFPs are derived from the Research Needs Statements and Proposals, which define the work, are derived from RFPs, all resulting from the research Needs Statement. When Research Needs Statements are well-written, everyone benefits. The selection process becomes more informed, and the greater needs rise to the top. Hopefully the tips and suggestions presented today will help you make a positive contribution.
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