This guide is designed to answer the most common questions about the research program. If you need additional information or would like a copy of program forms or example documents please visit the TDOT research Program Web Site at:

http://www.tdot.state.tn.us/
or

TENNESSEE DEPARTMENT OF TRANSPORTATION
APRIL 2003
PROGRAM PURPOSE

The purpose of the TDOT Research Program is threefold:

- develop
- conduct
- implement research initiatives

All research conducted should be designed to advance or complement TDOT’s strategic plan.

This is accomplished by identifying research needs that address the problems and needs of TDOT and its various divisions. Results of the research are then made available to transportation agencies and researchers throughout the country.

Who can submit project ideas?

Theoretically anyone can submit a project idea for consideration under the research program. In the past, successful project ideas have come from a variety of sources. Once a TDOT employee identifies a problem for which a cost effective solution is not readily available he/she can then submit their project idea to their supervisor or the research manager. Alternatively, University researchers, consultants and private firms sometimes approach TDOT technical experts with a promising idea for solving a problem faced by TDOT and other state departments of transportation. A flow chart showing this process can be found on page 6.

What types of projects are eligible?

The TDOT research program is sensitive to the needs of all divisions and units of the department.

During the past several years every TDOT division has sponsored at least one research project. Research projects are diverse and have included topics that range from Oversize Truck Permitting Software and The Detection of Bridge Scour to The ADAM Project (Advanced Traffic Data Analysis & Management) and Airport Runway White Topping.

RESEARCH PROGRAM PROCESS

Staff Researchers Field

Research Problem Identified

Sponsor Develops Problem Statement

Review & Revision by the Appropriate TAC Member

TAC Evaluates Research Problem

Recommendation for Funding

Executive Committee Review

Research Project Funding Approval

UT CTR Initiates Contract
How are the results implemented?
The nature of these research projects is such that project results can vary to the degree in which they are implemented. Some result in innovations in materials or processes that the agency or its contractors can begin using immediately. Others produce findings indicating the concept is not suitable or cost effective to implement. The underlying assumption is that the division who sponsors a project will take it upon themselves to implement the results of projects that are expected to benefit the agency. Therefore, the research program does not have a formalized process for implementing the findings of the research projects.

Who can I contact if I have more questions regarding the TDOT Research program?
Mike Presley manages the Research and Technology Transfer Programs at TDOT. He can be contacted at the following:

Mike Presley
(615) 532-9838
mike.presley@state.tn.us

Who can sponsor a project?
Any TDOT employee can sponsor a project. TDOT staff is encouraged to be proactive in looking for ways to improve the quality and efficiency of the agency's various transportation services and projects. If you identify a tool, material, process, etc. that needs to be improved then you are encouraged to develop a problem statement and discuss the idea with your supervisor.

What are the requirements for problem statements and project proposals?
Typically a problem statement is submitted to the research office at 505 Deadrick in the Polk Building on the 9\textsuperscript{th} floor prior to the development of a formal project proposal. The problem statement should be limited to 1-2 pages. The following elements should be included:

- Title of the Problem
- Problem Statement
- Background
- Benefits Expected
- Research Proposed
- Name and Phone Number of Submitter
- Rough Cost Estimate
- Estimated Performance Period

\textit{A form template is on the last page of this file.}

Who decides which problems should be researched?
The TDOT Technical Advisory Committee (TAC) has the primary responsibility for assessing which problems warrant funding for research under this program. The TAC membership is made up of all the division heads of TDOT. The TDOT planning division director serves as chair for the committee.
How are projects selected and approved?
Research problem statements follow a three-step process for approval. First, each problem statement is screened by passing it through the TAC member for the division where the problem statement was initiated. Second, if the TAC member believes the problem warrants research then it is submitted to the TAC. The TAC then evaluates the problem based on the following criteria:

- Is There a Real Need for the Research?
- Is It Truly Research, Not Just a Different Application of an Existing System?
- Is Anyone Else Doing Similar or the Same Research (TRIS Search)?
- Does the Risk of Failure Outweigh the Proposed Success/Costs of the Suggested Research?
- Are There Measurable Benefits?
- Is the Research Implementable?
- Are there “Experts” on Hand to Carry Out This Research?

The TAC judges the technical merit and feasibility of the proposed project and then makes its recommendations. Finally, these are forwarded to the TDOT Executive Committee who is responsible for approving the funding for each proposed project.

What are the responsibilities of a project sponsor?
Prior to a problem statement being selected as a research project, the primary role of the sponsor is to champion the project idea. The merits of a proposed project may not be obvious to others so the project sponsor may need to "sell" the idea to their supervisor or the appropriate TAC division member.

Once a project is selected, the project sponsor often takes the lead in forming a monitoring team. These teams are comprised of individuals with special knowledge and a particular interest in the topic of the project. The teams meet with the researchers on a regular basis to provide support, discuss progress, findings and problems. The monitoring team works with the researcher to ensure that the project maintains the proper focus, stays within budget and on schedule.

Who is eligible to conduct research projects?
When possible the researchers at colleges and universities within the state are utilized to conduct TDOT's contract research. By working with these institutions the department can play a part in the educational process of the state's students in addition to reaping the benefits of the national and international expertise available at these schools. Vanderbilt, ETSU, Tennessee Tech, University of Memphis, MTSU and UT have each conducted and participated in the program in the past. When the required expertise is not available at one of the state's universities private contractors, consulting firms and even universities in other states can be used to conduct research.

What are the responsibilities of a Principal Investigator (P.I.)?
Projects often involve several researchers working cooperatively. The principal investigator is the lead researcher and is the one responsible for managing the overall project. Specific duties include, but aren’t limited to the following:

- Develop Proposal
- Conduct Research
- Manage Budget and Schedule
- Coordinate with Monitoring Team
- Submit Regular Progress Reports to TDOT
- Develop and Submit Final Report and Other Products

How are research contracts administered?
A broad-based University Research Program was first established in Tennessee in 1970. The Center for Transportation Research at the University of Tennessee (UT) was appointed to manage the Department's effort as a fully competitive research program with all Universities throughout the state and if needed, private consulting firms. The University of Tennessee does not receive nor review proposals, nor select the research agency.
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UT does provide assistance to TDOT in the management and operation of the program. UT enters into a contract with each agency selected by TDOT to perform research. The invoices are sent to UT and TDOT. The project sponsor and the TDOT research program manager review and approve the invoice for payment. Once TDOT approval is received UT pays the invoice.

How are the results implemented?
The nature of these research projects are such that project results can vary to the degree in which they are implemented. Some result in innovations in materials or processes that the agency or its contractors can begin using immediately. Others produce findings indicating the concept is not suitable or cost effective to implement. The underlying assumption is that the division who sponsors a project will take it upon themselves to implement the results of projects that are expected to benefit the agency. Therefore, the research program does not have a formalized process for implementing the findings of the research projects.

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Note: A form template is available online at the UT CTR website for your convenience. http://ctr.utk.edu/tdot/pdf/researchsponsorguide.pdf

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