



University Transportation Research Center  
RFP Cover Sheet

**Assessment of a Dynamic Back Calculation Analysis of FWD Deflection Data**

Proposal Number: 2008-14  
Sponsor: NJDOT  
Date Issued: August 15, 2007  
Pre-Proposal Meeting: Contact NJDOT by Sept. 1, 2007  
Draft Budgets Due: Send to Camille Kamga by October 8, 2007  
RFP Closing Date: October 15, 2007

If you plan to apply:

1. Please contact Camille Crichton-Sumners (camille.crichton-sumners@dot.state.nj.us) or Stephanie Nock (609-530-5637) to request a pre-proposal meeting, and so that you will receive information about this meeting if it is held. *This meeting will be your only opportunity to ask questions about this proposal.*

2. If you plan to submit a proposal through UTRC, please notify us by email at [nadia@utrc2.org](mailto:nadia@utrc2.org) and [ckamga@utrc2.org](mailto:ckamga@utrc2.org). Please indicate whether you are open to teaming up with faculty at other universities on this project.

Proposal submission guidelines:

Please contact Camille Kamga ([ckamga@utrc2.org](mailto:ckamga@utrc2.org), 212-650-8087) to discuss submission logistics. After UTRC confirms that the proposals' budgets meet UTRC and NJDOT guidelines, we can either provide you with a UTRC cover sheet, or you can send us the printed proposals for hand-delivery to NJDOT.

Proposals must be prepared in accordance with NJDOT's Information and Instructions for Preparing Proposals. Please visit:

<http://www.state.nj.us/transportation/refdata/research/pdf/techpropresproj.pdf>

For questions about budget preparation, contact: Camille Kamga, [ckamga@utrc2.org](mailto:ckamga@utrc2.org)  
NJDOT has not specified a budget or timeline for this project. Please note that matching funds up to \$50k are available from UTRC for projects that are relevant to UTRC's theme of "Planning and Managing Regional Transportation Systems in a Changing World." Decisions about the availability of these funds will be made pursuant to the relevance of the topic and the volume of requests.

New Jersey Department of Transportation  
Bureau of Research  
**RESEARCH PROJECT**  
Scope and Request for Proposals  
2008 Program

Date of RFP  
August 15, 2007

Closing Date  
October 15, 2007

Assessment of a Dynamic Back Calculation Analysis of FWD Deflection Data  
Project 2008-14

(Proposals must be prepared in accordance with NJDOT's *Information and Instructions for Preparing Proposals*. Please visit: <http://www.state.nj.us/transportation/refdata/research/pdf/techpropresproj.pdf> *Revised Proposal Evaluation Forms are available for your information on the website.*)

Proposals will be based on the merit of the information contained in the proposal. Budgets will be evaluated separately. Please place three (3) copies of the budget for this project in a separate sealed envelope.

**1. RESEARCH PROBLEM STATEMENT, BACKGROUND AND OBJECTIVES**

The new Mechanistic Empirical Pavement Design Procedure will rely heavily on the use of Falling Weight Deflectometer (FWD) to provide material stiffness inputs for rehabilitation and new pavement designs. The current back calculation procedures use static analysis to estimate material stiffness values despite the dynamic nature of the loading. Recent research work has developed a dynamic analysis method to estimate material stiffness values from FWD data. The Pavement Technology Unit would like to evaluate the new dynamic method and compare it to the current static methodology for estimating material stiffness values from FWD.

The new dynamic methodology for back calculating material stiffness values from FWD could provide more accurate material input data for the ME Pavement Designs and enhance pavement life.

**2. Tasks**

[Provide a listing of appropriate general tasks divided into phases based on types of work (e.g., laboratory, field) or by year (e.g., year 1, year 2) or other appropriate milestones]

*The NJDOT is seeking the insight of proposal responders on how best to achieve the research objectives. Proposers are expected to describe a research effort that can realistically be accomplished as **expeditiously as possible**. Proposals must present the proposers' current thinking in sufficient detail to demonstrate their understanding of the problem and the soundness of their approach for conducting the required research.*

**PHASE I – Literature Search**

Conduct a literature search of the current state of the practice.

After the award of the project, a more comprehensive literature search should be conducted. At the completion of this literature search, the PI will make a presentation to the Research Project Selection and Implementation Panel to discuss their findings and to discuss the appropriate research approach.

**PHASE II – Research Approach and Anticipated Results**

**Clear description of how you will solve the problem and implement anticipated findings.** Work may be divided into phases (e.g., Laboratory, Field or Year 1, Year 2) as necessary to clarify tasks. **Exit Criteria must be developed during this phase.**

**3. Implementation and Training Plan**

The PI must meet with the Research Project Selection and Implementation Panel (RPSIP) and other NJDOT units to present the findings and as appropriate train these personnel in the use the project results.

**The PI will develop an implementation plan as per the guidelines provided by NJDOT Research Bureau.**

**4. Deliverables:** [List of minimum deliverables necessary to complete the project]

- Presentation of Summary of Literature Search Results
- Discussion to Support and Refine the Project Tasks
- Project work plan.
- Technical Memorandum on the survey results
- Technical memorandum on the measures that are working or not working
- Technical memorandum on actions taken
- Interim Status reports suitable for Senior Leadership if required
- Quarterly Reports, and
- Final report with appropriate tables, graphs and charts in hard copy version, PDF file format, Word, and on CD ROM. Two copies plus one per RSIP member of each presentation, technical memorandum, draft final report and Final Report (plus 10 copies). The Final Report and Tech Brief are due three (3) months before the end date of the project to allow time for review by the Research Project Selection and Implementation Panel.

**5. Contract Time:**

The PI must provide anticipated research study duration based on the proposed tasks. Please include 3 months for review and revision of the final report. Final Acceptance will be granted upon receipt of ten copies of the approved final report.

**6. Contacts:**

A Pre-proposal meeting will be scheduled with interested parties after the RFP's are distributed to refine the objectives and deliverables and to promote a better understanding of the research needs. Questions on this topic **shall not** be directed to any Research Project Manager, Research Customer, or any other NJDOT person. All questions and answers will be addressed **during this meeting**. Contact Camille Crichton-Summers ([Camille.CrichtonSummers@dot.state.nj.us](mailto:Camille.CrichtonSummers@dot.state.nj.us)) on or before September 1, 2007 to confirm your participation in this meeting.

**7. Deadline**

**Proposals (10 single-bound copies) are due at NJDOT Bureau of Research no later than 4:00 p.m. October 15, 2007**

This is a firm deadline, and extensions simply are not granted.

**Authorization to Begin Work:** January 1, 2008--estimated

**8. Delivery Instructions:**

**For private, paid messenger services such as Federal Express, DHL, UPS, etc., or for hand-carried deliveries:**

2008 PROPOSAL-NJDOT  
New Jersey Department of Transportation  
Bureau of Research  
1035 Parkway Avenue  
Trenton, New Jersey 08625-0600

**For U.S. Postal Service mail:**

New Jersey Department of Transportation  
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