



**REGION 2
UNIVERSITY TRANSPORTATION RESEARCH CENTER
RFP COVER SHEET**

Title: Reliability of New York State Bridge Inspection Program

RFP Number: C-07-17

Sponsor: NYSDOT

Date Issued: October 17, 2008

Pre-Proposal Meeting Date: None

Draft Budget Due at UTRC: **December 4, 2008** (send to ckamga@utrc2.org)

Final Proposal Due at UTRC: **December 5, 2008** (send to peickemeyer@utrc2.org, cc: ckamga@utrc2.org)

RFP Closing Date: December 8, 2008

If you plan to apply:

Please contact Penny Eickemeyer at peickemeyer@utrc2.org (cc: ckamga@utrc2.org) to let us know you are assembling a proposal. We will make sure you receive any additional information that becomes available about this RFP.

Proposal submission guidelines:

Please submit your proposal electronically to UTRC. We will confirm that the proposals make comparable budget assumptions and will deliver the proposals to the sponsoring agency by the closing date.

Funding available:

Funds between \$200,000 and \$400,000 are available from NYSDOT. Facilities and Administrative Costs (or Indirect Costs) charged by academic institutions are included in the above amount. Budget forms can be downloaded at <http://www.utrc2.org/research/assets/nysdotbudgetproposal.xls>

For questions about this RFP, please contact:

Paul Hoole, Director
Research and Policy Studies Section, 6th Floor
New York State Department of Transportation
50 Wolf Road
Albany, NY 12232

For questions about budget preparation, please contact: Camille Kamga, ckamga@utrc2.org

Request for Proposals
C-07-17: Reliability of New York State Bridge Inspection Program
October 17, 2008

RESEARCH PROBLEM STATEMENT

A Federal Highway Administration (FHWA) study completed a few years ago showed that bridge inspection ratings on a national level have high variability; and questioned the quality and reliability of visual based inspection procedures (<http://www.tfhrc.gov/hnr20/nde/01020.htm>). This is a potential vulnerability in New York State, although the results of the FHWA study may not be applicable in New York State (NYS). The NYS bridge inspection program is more robust and detailed than what is mandated by FHWA and differs in several aspects from inspections conducted in other states including number of components inspected, rating scale, personnel qualifications, the quality control and quality assurance (QC/QA) program, and training provided to bridge inspection related personnel. Research is required to confirm that the New York State bridge inspection program provides reliable results using common practice in bridge inspections.

The goal of this project is to quantitatively document the variability associated with the bridge inspection program, suggesting improvements to policy and procedures and areas requiring further training, if needed, to reduce the variability and improve the reliability/consistency of the program.

OBJECTIVES

1. Quantitative evaluation of the variability associated with the New York State Bridge Inspection policies and procedures.
2. A report documenting suggested improvements to bridge inspection policy and procedures and training.

PROPOSED RESEARCH TASKS

Task descriptions are intended to provide a framework for conducting the research. NYSDOT is seeking the insights of proposers on how best to achieve the research objectives. Proposers are expected to describe research plans that can realistically be accomplished within the constraints of available funds and the research period. Proposals must present the proposers' current thinking in sufficient detail to demonstrate their understanding of the issues and the soundness of their approach to meeting the research objectives.

- Task 1: Review National Bridge Inspection Standards, New York State Bridge inspection policy and procedures, FHWA visual inspection study reports, recent studies available in the bridge inspection area on reliability and variability of the bridge inspection methods (both visual and routine nondestructive methods), quality control and quality assurance, reference bridges, and inspector certification. Conduct personal or telephone interviews of one or more of the key investigators of the FHWA visual inspection study and three to four inspectors who participated in the study. Prepare a report summarizing the studies and interviews.

- Task 2: Based on the knowledge gained from Task 1, working with the Department Project Manager, develop a methodology to quantitatively evaluate the consistency of the New York State Bridge Inspection rating scores as well as inspection procedures (both visual inspection, flagging procedure, and use of routine nondestructive testing methods such as sounding, chain drag, etc.) to reflect the actual condition of bridges. Prepare a detailed report summarizing the proposed study aspects.

The proposal should give specific details on how the team plans to objectively approach this problem, i.e., key evaluation criteria. The methodology proposed can include field testing, use of several inspection teams currently used by the Department, and data mining and analysis of existing data. The Department will provide, at no cost to the consultant, assistance from the bridge inspection teams currently used by the Department, access to inspection personnel details such as their qualifications, and work zone protection and other field work related equipment.

The proposal should also include an optional component, if additional funding becomes available, on how well current inspection procedures identify conditions reliably compared to advanced NDT methods such as Ground Penetrating Radar, Impact Echo, and Infrared Thermography.

- Task 3: After the approval of the Project Manager, conduct the study. Summarize a report with study details, data analysis, and conclusions.
- Task 4: A final report summarizing the above three tasks and suggested recommendations/improvements to bridge inspection policy, procedures, and training. If possible, suggest a process or tools to periodically evaluate the variability and consistency of the New York State bridge inspection and evaluation process using the current bridge inspection operations.

RESEARCH PRODUCTS

Final report summarizing the entire study and further recommendations

URGENCY / EXPECTED BENEFITS

This project is initiated based on the recommendations of the Detailed Risk Assessment conducted by the Enterprise Risk Management Bureau and the report was accepted by the Executive Management. The Bridge Inspection Program affects public safety, mobility, reliability, and the economy of the state. Thus, any improvements will definitely affect the priority result areas positively. This study will also give the public more confidence in our bridge inspection program and our ability to adjust it based on more systematic data.

FUNDING

A rough order of magnitude cost between \$200,000 to 400,000 has been budgeted for this project, exclusive of administrative fees. New York State believes this is a reasonable estimate for the total cost of the work being requested. Proposals with a New York State cost over the budgeted amount will also be considered,

provided the New York State cost, exclusive of administrative fees, does not exceed the budget estimate by more than 10%. (Note: Cost-sharing funds may increase the total project cost further.)

If a sufficient number of potential Principal Investigators indicate in writing that they believe the research cannot be reasonably conducted within these funding constraints and there are only a limited number of proposals submitted within the funding constraints, New York State reserves the option of not proceeding with the work or revising the budget estimate and issuing a new Request for Proposals. Potential Principal Investigators who believe the budget estimate is unreasonable should write to:

Paul Hoole, Director
Research and Policy Studies Section, 6th Floor
New York State Department of Transportation
50 Wolf Road
Albany, NY 12232

RESEARCH PERIOD

18 Months

SPECIAL NOTES

- Proposals are due by close of business, **Monday, 12/08/08**. NYSDOT has a contract in place with two research consortia. This Request for Proposals is being offered to the members of these consortia only. Members should submit proposals through the administrators of these consortia. The receipt of a pdf copy of the proposal by NYSDOT on or before the above due date is satisfactory, providing hard copies follow within a week.
- The designated contacts for this solicitation are Paul Hoole and Deborah Mooney. Questions seeking clarification on the RFP will be accepted up to two weeks prior to the due date for proposals and should be e-mailed to: phoole@dot.state.ny.us **and** dmooney@dot.state.ny.us
- Principal Investigators should be familiar with and follow the requirements of New York State with regard to the Compliance Procurement Lobbying Law and consultant contract procurement. Information can be found on the NYSDOT website under Business Center / Doing Business with NYSDOT / Consultants / Non-Architectural Engineering Information / Active Solicitations: <https://www.nysdot.gov/main/business-center/consultants>
- Principal Investigator and/or a key member of the proposed team could be a Professional Engineer licensed to practice in New York State.
- Proposals should indicate direct and indirect costs, hourly rates and hours by task, travel costs, and material costs to assist NYSDOT in understanding how the total cost for the work was estimated. The winning proposal will result in a fixed cost contract based on details provided.

- Eleven (11) hard copies of the proposal should be provided. Cost information should be kept separate from the remainder of the proposal.
- The final report on the research will be expected to contain at a minimum the information described in Attachment A, *Requirements for the Final Report*.

CRITERIA FOR SELECTION

Expertise / Understanding / Approach (Weight: 75%)

Expertise: Relevant experience of the Principal Investigator and other co-investigators in the field of the bridge engineering, bridge inspection, nondestructive testing, experimental design, and data analysis.

Understanding of the Problem: Does the proposal reflect an understanding of the problem and its relevance to New York State? Does the proposal reflect an understanding of bridge inspection and evaluation methods used in New York State and the Nation?

Approach: Is the proposed approach clear and will it yield the deliverables called for in the RFP? Does the approach show insight that will lead to results that will sufficiently assist New York State in addressing the problem? Is the proposed approach practical given the schedule and total budget? Will the proposed research draw upon all critical sources of pertinent information?

Investigators Previous Experience with Similar Projects (Weight 20%)

Successful completion of previous projects by the Investigator(s) will be considered. These projects should be in the area of expertise required for successful completion of this project, such as bridge inspection, bridge evaluation, data mining, statistics and probability, etc.

Cost to New York State (Weight 5%)

The lower the New York State cost, the greater consideration a proposal will receive.

Requirements for the Final Report

Copies of Report – Twenty-five (25) copies of a bound, final report shall be provided at the conclusion of the research study. A pdf copy of the report is required as well.

Required Organization for the Final Report

Title Page - that contains:

- The research number assigned by Policy and Planning Division;
- The name of the research study as stated in the contract;
- The words “Final Report”;
- The date (month & year) the final report is finalized;
- The name(s) of the consultant(s) / principal investigator(s), along with the name of the organization(s) they represent and their address(es); and,
- If the report has a security classification, it shall be noted on the title page.

Disclaimer - as follows:

DISCLAIMER

The contents of this report reflect the views of the author who is responsible for the facts and accuracy of the data presented herein. The contents do not necessarily reflect the official views or policies of the New York State Department of Transportation, the United States Department of Transportation, or the Federal Highway Administration. This report does not constitute a standard, specification, regulation, product endorsement, or an endorsement of manufacturers.

Form DOT F 1700.7 – A copy of USDOT form DOT F 1700.7

Executive Summary

Introduction – a discussion of the problem, its background, and a concise history of research previously completed on the topic, and a discussion of what NYSDOT policies, procedures, and practices are currently in place related to the research topic.

Research Method – a description of the methods used in conducting the research

Findings and Conclusions – a discussion on the analysis of the data (findings) and the conclusions reached based on the findings. Suggestions for additional research, if appropriate, would appear in this section.

Statement on Implementation – the statement shall discuss the potential for implementation, along with what resources and actions will be required to have the benefits of the research fully achieved.

Other – as appropriate

Appendices – as appropriate