REGION 2
UNIVERSITY TRANSPORTATION RESEARCH CENTER
RFP COVER SHEET

Title: High Visibility Reflective Sign Sheeting Evaluation
RFP Number: C-07-03
Sponsor: NYSDOT
Date Issued: April 5, 2010
Final Proposal Due at UTRC**: May 17, 2010** (submit through the UTRC Online Submission System at www.utrc2.org)

RFP Closing Date: May 17, 2010 at 5:00 PM

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 at www.utrc2.org. All proposals must include the UTRC cover page (http://www.utrc2.org/research/assets/Technical-CoverSheet.doc)

We will confirm that the proposals make comparable budget assumptions and will deliver the electronic proposals to the sponsoring agency by the closing date.

Funding available:
Up to $200,000 is 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/budget-Template.xls

For questions about this RFP, please contact:

Deborah L. Mooney, Director
Research & 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

New York State Department of Transportation
Request for Proposals
SPR # C-07-03: High Visibility Reflective Sign Sheeting Evaluation
April 5, 2010

RESEARCH PROBLEM STATEMENT

The use of external lighting on overhead signs has been a standard application through out urban areas in New York State. In general, the external lighting systems are difficult and costly to maintain, especially due to the high traffic of New York State urban roads. In the past few years, sign sheeting technology has advanced to the point where newer types of sign sheeting can be as visible, or more so, without external lighting than older types with lighting. At this time, there are more advanced sign sheetings available which appear to provide high visibility in multiple applications, including unlighted, overhead signs. These types of sheeting are new to New York State and need to be evaluated to see which ones work the best in this application and in other signage applications.

In order to do this properly, criteria needs to be developed to determine what sheeting requirements are truly needed, and how to evaluate these requirements. Once this is known and data collected, updated specifications and policies can be generated.

OBJECTIVES

The objectives of this project are to develop requirements and specifications and evaluation procedures for unlighted overhead guide signs, as well as other types of traffic signs. In addition, an evaluation of unlighted in-place overhead signs will be made to determine the performance of the sign sheeting and effectiveness of the proposed evaluation procedures and requirements. These evaluations will also help to determine what policies NYSDOT needs to enact in order to be compliant with the Federal Manual of Uniform Traffic Control Devices (MUTCD) retro-reflectivity requirements.

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 research period. Proposals must present the proposer's current thinking in sufficient detail to demonstrate their understanding of the issues and the soundness of their approach to meeting the research objectives.

Possible Tasks:

- Expand upon the results of SPR Study #C-05-08: *Field Evaluation of New Reflective Materials* (final report available from the NYSDOT designated contact or use the link below). Identify requirements for visual performance (i.e., visibility/legibility) of overhead highway signs that can be applied to a variety of highway types and geometries. These visual performance requirements should be applicable to a range of sign and letter colors, sizes, viewing distances and vehicle/headlamp types to be identified by NYSDOT. They should be able to be expressed in measurable, quantitative terms.
  https://www.nysdot.gov/divisions/engineering/technical-services/trans-r-and-d-repository/C-05-08%20Reflective%20Materials_July%202008_0.pdf

- Develop a measurement procedure that can be used in the laboratory to determine

whether a particular sign or combination of sign materials could be expected to meet the visual performance requirements developed under Task 1. Completion of this task includes development of an instruction manual for identifying proper measurement equipment, making the measurements and identifying the level of precision.

- Evaluate several different measurement systems and equipment types (e.g., hand-held luminance meters, digital camera based photometers), under a range of outdoor conditions (i.e., daytime and nighttime) to assess which method(s) are most suitable for conducting field measurements. Criteria for evaluation should include precision, repeatability, ease of use, portability, and cost of purchasing and maintaining equipment. Prepare a written guideline for making field measurements using the recommended procedure.

- Following the development of the recommended field measurement technique, perform a field evaluation and collect measurements on a statistically meaningful sample of unlighted highway signs along the Cross Bronx Expressway. Both daytime and nighttime measurements should be included, with emphasis on nighttime measurements. Measurements shall also be taken off a representative sample of older signs both lighted and unlighted. A written plan describing the number of signs to be measured with justification for the sample size, as well as a written request for the needed assistance from NYSDOT Region 11 regarding traffic control and safety of personnel, should be submitted and approved by NYSDOT.

- Approximately 12 months after the completion of the first field evaluation, a second set of measurements should be made for the same signs evaluated previously. Both daytime and nighttime measurements should be made and a written plan for the measurement and written request for assistance from Region 11 should be submitted and approved in advance by NYSDOT. The written plan should justify how the data from the two measurement tasks will be compared and assessed for consistency and discuss the relevance of the data to the visual performance requirements developed previously.

- Develop final recommendations for visual performance requirements and guidelines for both laboratory and field measurement based on both sets of field measurements and on feedback from NYSDOT. Submit a final report summarizing the results of the research, findings and final recommendations.

RESEARCH PRODUCTS

The products of this research project will include the following:

- Proposed requirements and specifications for NYSDOT signs, as well as written evaluation procedures, guidelines and an instruction manual for acceptance and field performance of retro-reflective sign sheeting.
- Initial report outlining the proposed specifications and evaluation procedures. The report will include evaluations of current NYSDOT approved sign sheeting and results based on the proposed requirements and procedures.
- Second report presenting the results of the first field evaluation and proposed changes to the evaluation procedures.
- Final report summarizing the research and presenting all collected data and final recommendations.
- One page summary of the project and project results for technical transfer purposes.

URGENCY / EXPECTED BENEFITS

Under new Federal MUTCD requirements, all agencies must be compliant within 5 years. The data collected by this project and the procedures proposed will allow the Department to make accurate and cost-effective decisions on how to meet the new regulations as well as how to specify and evaluate new sign sheeting material. The data will allow for proper sign sheeting selection for overhead signs as well as other signs and help determine criteria for selecting signs in need of external lighting.

RESEARCH PERIOD

The research period is approximately twenty-four (24) months.

FUNDING

$200,000 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.

The net cost to New York State is one of the selection criteria. When compared to competing proposals, a proposal that requires fewer New York State dollars will receive a higher score on the cost component of the selection criteria. The value of New York State funds required could be reduced through efficiencies (fewer hours per task and / or lower cost per hour) or through cost-sharing where other funds substitute for New York State funds.

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:

Deborah L. Mooney, Director
Research & Policy Studies Section, 6th Floor
New York State Department of Transportation
50 Wolf Road
Albany, NY 12232

SPECIAL NOTES

- **Proposals are due by close of business, Monday May 17, 2010.** This Request for Proposals is being offered to the University Transportation Research Center (UTRC) members only**.** Members should submit proposals through the Administrator of this research consortium. The receipt of an electronic PDF copy of the proposal by NYSDOT on or before the above due date is satisfactory, providing hard copies follow within a week.

- **Seven (7) hard copies** of the proposal are to be provided.

- 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 the details provided in a supporting detailed budget.

- Please provide a Budget Chart which shows for each task the deliverable and cost. Task headings in the Budget Chart are to match the scope task headings.

- Please include a Gantt Chart, showing the duration (start to finish) for each task in terms of months (i.e. Month 1, Month 2, etc) since the actual start date is an estimate. This can be combined on one page with the Budget Chart.

- If the proposal involves a joint venture or sub-consultants, it must be clear as to how tasks will be distributed or shared in the scope of work.

- The Principal Investigator is required to submit all project task deliverables, first, in draft formats for review and comment by the NYSDOT Project Manager and Technical Working Group (TWG). The Principal Investigator is required to revise draft task deliverables, based upon comments, as needed, and re-submit to the NYSDOT Project Manager. Upon acceptance by the NYSDOT Project Manager, the Principal Investigator is required to submit draft task deliverables to the NYSDOT Project Manager in final formats, as specified in the Task Assignment.

- The Principal Investigator is required to submit project status reports to the NYSDOT Project Manager, as specified in the Task Assignment.

- The final report on the results of the research is to contain, at a minimum, the information described in Attachment A, *Requirements for the Final Report*.

- 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

- **The designated contact for this solicitation is Deborah L. Mooney**. Questions seeking clarification on the RFP will be accepted up to three (3) weeks prior to the due date for proposals and should be e-mailed to: dmooney@dot.state.ny.us

CRITERIA FOR SELECTION

- **Expertise / Understanding / Approach (**Weight: 60%)

  Expertise: What is the extent of the relevant expertise of the Principal Investigator? What is the extent of the relevant expertise of others who will be involved in the research?

  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 existing data and the current state of knowledge in New York State?

  Approach: Is the proposed approach clear, especially in how it will build upon and enhance the state of knowledge in New York State? 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 Principal Investigator will be considered. These projects should include areas of expertise, such as photometry, evaluation of visual performance and human factors.

- **Cost to New York State** (Weight 20%)
  The lower the New York State cost, the greater consideration a proposal will receive.

Attachment A

Requirements for the Final Report

Copies of Final Report – **Twenty (20) hard copies** of a bound, final report is required at the conclusion of the research study. An electronic PDF copy of the final report is required, as well. In addition to the final report, a one page document, summarizing the project and project findings, shall be provided for technical transfer purposes. This is required in PDF format only.

Required Organization for the Final Report

Title Page (front cover) - that contains:

- The research number (C#) assigned by the Research & Policy Studies Section of the Policy & Planning Division;
- The name of the research study as stated in the Task Assignment (contract);
- The words "Final Report;"
- The date (month & year) the final report is completed;
- The name(s) of the Consultant(s) / Principal Investigator(s), along with the name(s) of the organization(s) they represent and their address(es); and,
- If the final report has a security classification, it shall be noted on the title page.

Disclaimer (inside cover) - as follows:

DISCLAIMER

This report was funded in part through grant(s) from the Federal Highway Administration, United States Department of Transportation, under the State Planning and Research Program, Section 505 of Title 23, U.S. Code. The contents of this report do not necessarily reflect the official views or policy of the United States Department of Transportation, the Federal Highway Administration or the New York State Department of Transportation. This report does not constitute a standard, specification, regulation, product endorsement, or an endorsement of manufacturers.

Form DOT F 1700.7 – complete the standard form used throughout the country to summarize federally funded transportation research

Table of Contents

Executive Summary - a non-technical summary of the research and its findings

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 – a brief discussion on what would need to occur to introduce the results into practice, and a discussion on possible technology transfer activities

Appendices – as appropriate