REGION 2
UNIVERSITY TRANSPORTATION RESEARCH CENTER
RFP COVER SHEET

Title: Evaluation of Metalized Bridge Structures

RFP Number: C-06-39
Sponsor: NYSDOT
Date Issued: March 17, 2008
Pre-Proposal Meeting Date: None
Draft Budget Due at UTRC: April 24, 2008 (send to ckamga@utrc2.org)
Final Proposal Due at UTRC: April 27, 2008 (send to peickemeyer@utrc2.org, cc: ckamga@utrc2.org)
RFP Closing Date: April 28, 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:
Up to $150,000 is available from NYSDOT. In addition, USDOT (UTRC) will provide up to $30,000 in matching funds for requested funding above this budgeted amount. To the extent possible, we request that PIs identify sources of in-kind funding from their home institution (e.g., tuition waiver/reductions, overhead cost-sharing, faculty release time, etc.)
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
SPR # C-06-39: Evaluation of Metallized Bridge Structures
March 17, 2008

RESEARCH PROBLEM STATEMENT

The New York State Department of Transportation (NYSDOT) has traditionally used, and continues to use, liquid applied coating systems (paint) on its bridges for protection against corrosion and, as a secondary benefit, aesthetics. Such systems are expected to yield a service life of 15 years prior to maintenance. Thermal sprayed metallic coatings, also referred to in the industry as metallizing, have recently been employed by NYSDOT and various other facility owners to provide long-term corrosion protection to their structures, often lasting upwards of 35 years of service.

This research project will investigate the performance of metallized coatings on bridges owned by NYSDOT and the NYS Thruway Authority (NYSTA) to determine its field performance, cost, and viability as a standard corrosion protection system for use by the Department either as a shop-applied system, field-applied system, or both. The aesthetic aspects of metallizing will also be investigated.

OBJECTIVES

To generate a report that provides a clear, professional assessment of the engineering, economic and aesthetic aspects of thermal-sprayed metallic coatings (metallizing) as used for corrosion-protection on bridges in New York State within the past 10 years, and if such assessment is positive in nature, such report shall include specifications for the metallizing of structural steel in shop and field environments.

PROPOSED RESEARCH TASKS

Possible Tasks:

- Perform literature search yielding a concise history of metallizing, including its use on bridges.
- Review specifications, scope of work, contract documents, inspection reports and any other relevant documentation for projects that performed metallizing on bridge structures, along with the attached list of bridges described by identification number, owner, and feature carried/feature crossed.
- Research the cost of metallizing and all of its associated activities.
- Perform hands-on inspection of bridges provided in the scope, to determine and report on the condition of the thermal-sprayed (metallized) coating system. (NYSDOT will provide a list of physical parameters to be checked, along with any suggested by the consultant.) Inspection should assess the performance of the coating. The NYSDOT Research Project Manager shall be contacted prior to the field inspections so that the NYSDOT Technical Working Group (TWG) may schedule a field visit to the bridges being inspected.
- Perform a field visit (with the TWG) to a shop that does metallizing.
- Interview facility-owner, engineers-in-charge, inspectors, contractors and shops that applied the system; obtain and

document their opinion of the metallizing work with regards to specifications, application, containment, blasting, etc.

- Report on any technical faults/issues with specifications used, materials, equipment, containments, methodology, etc. for these metallizing applications from both the owner and contractor perspectives.
- Hold Quarterly meetings with the TWG at NYSDOT Main Office at 50 Wolf Road, Albany, NY. A presentation on the progress of work and milestones achieved shall be delivered at these meetings.

RESEARCH PRODUCTS

- Research Report summarizing the results of the research tasks
- Specifications for metallizing structural steel if the results of research are positive
- Expected cost of using these specifications on a trial project.
- Recommended professional criteria/certification program for metallizers performing metallizing on bridge structures

URGENCY / EXPECTED BENEFITS

The cost of doing coatings work on NYSDOT, NYSTA and other agency bridges increased exponentially after lead paint was outlawed in the late 1980's, along with corresponding increases in job complexity and public & environmental impact. In addition, the Department and other agencies have had to contend with repeated changes in laws that have consistently lowered the maximum volatile organic compound (VOC) content of architectural industrial coatings (AIMs) used to coat bridges. These changes have resulted in approved (Qualified) product lists that change often, resulting in repeated, expensive re-evaluations of coatings to maintain a populated list. *Consequently, the Department and other agencies have been forced to continuously seek technologies that provide the greatest return and lowest impact when it comes to corrosion-control on its structures.*

New technologies have emerged which seem to indicate that long-term corrosion protection strategies such as metallizing are more affordable than ever before for use on structural steel. It falls within the goals of NYSDOT, NYSTA, and other agencies to investigate metallizing at this time to determine if it indeed provides an economical alternative to standard coating systems that exhibit much shorter service lives.

FUNDING

$150,000 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.)

RESEARCH PERIOD

One Year

SPECIAL NOTES

- **Proposals are due by close of business, April 28, 2008.** NYSDOT has contracts in place with 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 six (6) 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 [See special note on Lobbying Law.]

- Lobbying Law: Principal Investigators should be familiar with and follow the requirements of New York State (the Compliance Procurement Lobbying Law of 2005) with regard to consultant contract procurement. Information can be found on the NYSDOT web site (www.NYSDOT.gov) under "Business Center," then "Consultants," then "Non-Architectural Engineering," then Active Solicitations."

  In particular, please note that communications between Contractors, Consultants/Principal Investigators, and Vendors with the Department are restricted during the period of time when services for more than $15,000 have been requested (Request for Proposals issued), up until the time when the Consultant is selected. During this time communications, where *a reasonable person would infer that the communication was intended to influence the procurement*, should be limited to Department staff identified in the solicitation as "designated contact."

  Any communication with an employee, who is not a designated contact which is intended to influence the solicitation, could result in the outside party being prohibited from competing for the solicitation. A second violation will ban the Consultant/Principal Investigator from competing for any Department solicitation for four years.

- 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.

- 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.

- 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.

- Proposals, where the New York State costs total more than 10% over the budgeted cost, will not be considered for selection. If a potential Principal Investigator believes the research cannot be reasonably conducted without an increase in the budget, he or she 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

  If a sufficient number of potential Principal Investigators indicated in writing that they believe the research cannot be reasonably conducted within the funding constraints specified 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.

- The final report on the research will be expected to contain, as a minimum, the information described in Attachment A, *Requirements for the Final Report*.

CRITERIA FOR SELECTION

Expertise / Understanding / Approach (Weight: 65%)
Expertise: What is the extent of the relevant experience of the Principal Investigator? What is the extent of the relevant experience 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?

Investigator(s) Previous Experience with Similar Projects (Weight 15%)
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, coatings, and corrosion control.

Cost to New York State (Weight 20%; must be 20% or more)
The lower the New York State cost, the greater consideration a proposal will receive.

Attachment A

Requirements for the Final Report

Copies of Report – Fifteen (15) 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 Strategy 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, 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.

Appendices – as appropriate

The coating on the following bridges is in somewhat good condition:

BIN	
5513800	MP 0.48 – steel was shop metalized when it was new.
5513840	MP 3.15 – some rust, bleached areas
5513279	MP 124.53 – some rust, some bleached areas
5515282, 5515281	MP 816.09, 816.10 – parallel bridges with some rust, some bleached areas
7513732, 7513731	MP 162.19, 162.20 – parallel bridges with some rust, some bleached areas. Single span riveted multi-girder
5510021, 5510022	MP 273.16, 273.17 – parallel bridges with some rust –especially fascia flange edges. Single span over creek –Syracuse Maintenance may have been looking into repairing these.
5063120	MP 425.98 – last inspected in 2004, rated 7 at the time
5512079	MP 426.70 – some new steel shop applied metalizing, old steel field applied metalizing
1076449	I678 & SH 25 over Main Street Ramp (Owned by NYSDOT) Four years old and in good condition
1055720	Pedestrian Bridge at 86th Avenue over I678 Van Wyck Expressway (Owned by NYSDOT), four years old and in good condition

The following bridges have more widespread coating deterioration:

BIN	
5513940	MP 16.44
5512740	MP 269.37 – the first contract where we metalized two bridges. Coating was 100% zinc. In later contracts we switched to 85/15. Syracuse Maintenance may have been looking into doing repairs.
7714570	MP 431.22 – last inspection rated coating on the spans over roadway at 4. End spans were in better shape.
1029910	MP 436.65 – last inspection rated coating on spans over the roadway at 5.

MP is the milepost on the NYS Thruway where the bridge is located.