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NEW ENGLAND TRANSPORTATION CONSORTIUM



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April 25, 2018

INVITATION TO SUBMIT A RESEARCH PROPOSAL

The New England Transportation Consortium (NETC) invites proposals for the following research project:

NETC QR17-2: “Quick Response: Quantification of Research Benefits”

Please distribute this RFP to faculty/researchers who may be interested. Any researcher (university or consultant) is eligible to respond to this six-month effort.

The New England Transportation Consortium is a cooperative effort of the Departments of Transportation and the Land Grant Universities of the six New England States. Through the Consortium, the states pool their professional, academic, and financial resources for transportation research leading to the development of improved methods for dealing with high priority problems associated with the administration, planning, design, construction, rehabilitation, reconstruction, operation and maintenance of the region's transportation system. For more information on NETC, visit our web site: <http://netc.w3.uvm.edu/>

This Request for Proposals is being sent to each of the six New England State Land Grant Universities, as well as other public and private research organizations. Proposals should be based on the project's Scope of Work (see Attached) and be prepared in the format shown in the Proposal Preparation Guidelines (see Attached).

Deadline: The proposal in Adobe PDF form should be emailed to netc@uvm.edu by 5pm on May 18, 2018.

Proposals will be reviewed and evaluated by the Project Technical Advisory Committee that developed the Scope of Work (see Attached). The committee will recommend a proposal, to the NETC Advisory Committee, for funding. The schedule for completing the selection process is

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also attached. Proposals become the property of the New England Transportation Consortium upon submittal and may be available to anyone after the project is awarded.

Questions concerning technical aspects of the Scope of Work should be directed to the Chairpersons of the Project Technical Advisory Committee, Dr. Emily Parkany, P.E., emily.parkany@vermont.gov; and, Dr. Flavia Pereira, Flavia.Pereira@ct.gov.

Questions concerning administrative matters relating to this RFP should be directed to Hannah Ullman, NETC Coordinator (Tel: 802-656-1306 / Email: netc@uvm.edu).

Sincerely,

A handwritten signature in cursive script that reads "Hannah Ullman".

Hannah Ullman
New England Transportation Consortium Coordinator
University of Vermont—Transportation Research Center

Attachments:

- Project Scope of Work
- Proposal Preparation Guidelines
- Proposal Evaluation Guidelines
- Schedule for Processing the Proposal and Project
- Technical Advisory Committee

NEW ENGLAND TRANSPORTATION CONSORTIUM

SCOPE OF WORK

NETC PROJECT: QR17-2: Quick Response: Quantification of Research Benefits

Research problem statement: The six states comprising the New England Transportation Consortium (CT, NH, ME, MA, RI and VT) are interested in developing a consistent way to evaluate and quantify the monetary benefits from our research projects. There is existing research performed by some State DOTs in this capacity and have implemented the process of quantifying the monetary benefits from their research projects in a systematic manner. In particular, the Minnesota Department of Transportation (MnDOT) recently developed an [Excel-based Benefit Estimation Tool and published a User Guide](#). The NETC is interested in implementing this tool to quantify 2-3 NETC projects and/or adapt it to fit the needs of NETC. Using the Benefit Estimation Tool necessitates identifying the appropriate benefit category of the research project and each project could have more than one benefit category. The selected benefit categories include: construction savings, decrease engineering/administrative costs, decrease lifecycle costs, environmental aspects, increase lifecycle, operation and maintenance saving, safety, user benefits, and risk management. Most of the research projects performed by NETC fall under one or more of the above mentioned benefit categories. An important step in the quantification process is determining the inputs for the benefit categories to quantitate the monetary benefits of the research. **Therefore, the objectives of this research project are to implement or adapt the MnDOT tool for 2-3 NETC projects; and, develop detailed guidelines to identify and gather the inputs required for the benefit categories of those projects.**

Quick Summary of Project Milestones and Deliverables:

- Month 1: TAC Kickoff meeting, Identification of 2-3 NETC or State DOT projects to quantify.
- Month 2-4: Interim TAC meeting; Demonstration about the feasibility of using the MnDOT Tool as is or adapting it to fit NETC needs for at least one of the selected projects.
- Month 5: Presentation of Draft Final Deliverables: An Excel-based Research Benefits Quantification Method/Tool and Guidelines about gathering inputs. Ideally this includes a demonstration of the Tool with an emphasis on the inputs. It may be on how to specify expected benefits at the beginning of the project and guidelines for how the data is collected.
- Month 6: Revise Final Deliverables based on TAC feedback

Tasks: This is a quick response project. All products are expected within six months of project start.

Task 1: Kick-Off Meeting

Within the first month of the project, the research team needs to meet (via web meeting or teleconference) with the Project Technical Advisory Committee (TAC) as listed on the last page of this Request for Proposals. We are expecting responding proposals to include 2-3 NETC projects that can be quantified. Completed NETC projects are found here: <http://netc.w3.uvm.edu/research/reports/>. The TAC will confirm support of these projects and/or State projects will be identified by the TAC for quantification. During the Kickoff meeting, the research team should describe its initial findings, expected methodology, and confirm the project schedule and milestones.

Task 2: Assessment of the MnDOT Tool.

The researcher will demonstrate the feasibility of using the MnDOT tool as is or adapt it to fit the NETC needs for at least one of the projects identified in Task 1. If the researcher finds that modification of the MnDOT tool will better serve NETC, a prototype of the new tool should be presented to the TAC. The TAC will decide the course of action upon analyzing the prototype and provide feedback.

Task 3: Gather inputs for the projects.

The researcher will update the TAC team about the progress in gathering the inputs for the 2-3 projects identified in Task 1. We expect an Interim TAC meeting (web meeting or teleconference) between the researchers and TAC in months 2-4 of the project. Ideally this TAC meeting demonstrates using the tool or a revised tool to obtain quantified project benefits for at least one project.

Task 4: Draft Final Deliverables

Draft final deliverables are expected by the end of the fifth month of the project. The final deliverables will be an Excel-based Research Benefits Quantification Method/Tool, Guidelines about Gathering Inputs, and Recommendations for how Quantifiable Benefits Should be Solicited at the Beginning of Projects and Collected During Projects. These final draft deliverables should be provided to the TAC two weeks before a TAC meeting is held to discuss the deliverables. As indicated in the project schedule provided at the end of the RFP, this TAC meeting should be on or before December 12, 2018.

Task 6: Final Deliverables

By the end of the six-month project, the final versions of the Task 4 deliverables are due. These products should incorporate the feedback of the TAC. The Final Deliverables should

include the following technical transfer deliverables: a one-page fact sheet, a poster, and a webinar describing the project.

MEETINGS WITH PROJECT TECHNICAL ADVISORY COMMITTEE: The Project TAC expects to meet by web meeting or teleconference with the project research team three times: at a project kickoff meeting held during the first month of the project; demonstration of the feasibility of using the MnDOT tool or a prototype of a new tool; and, demonstration of the final tool and presentation of final deliverables.

REPORTS: The Principal Investigator will be required to prepare and distribute the following reports:

Quarterly Progress Report: One (1) copy prepared and e-mailed to the NETC Coordinator, on a calendar quarter basis, so as to arrive no later than three (3) working days after the end of the calendar quarter (March, June, September, December). The Coordinator will forward copies to the Project TAC. This progress report is expected in early October.

Demonstration of the Tool: A demonstration of the feasibility of using the MnDOT tool or the prototype of a new tool in the second month and the final tool in the fifth month.

Draft Final Deliverables: In the fifth month of the project, the draft final deliverables are due. These may potentially be an Excel-based Research Benefits Quantification Method/Tool and Guidelines about Gathering Inputs.

Final Deliverables: The final deliverables are due within six months of the project start date (ideally by January 4, 2019) and should incorporate any comments received before, during or after the Project TAC meeting, where the draft final deliverables were presented. The final deliverables should include the Benefit Estimation Tool and detailed Guidelines about Gathering Inputs. Technical transfer deliverables: a one-page fact sheet, poster of the project, and a webinar should also be included.

TECHNOLOGY TRANSFER: The project scope should include a one-page fact sheet, a project poster, and a webinar of project results. These items will aid in technical transfer of the project.

FUNDS AVAILABLE: \$50,000

TIME TO COMPLETE: 6 months (including preparation and review of final report).

DEVIATION FROM THE SCOPE OF WORK: In the event that the principal investigator deems it necessary to deviate from the Scope of Work (Cost, Principal Tasks, Time to Complete, etc.) in order to accomplish the objectives of the research project, such deviation must be made known to the NETC Coordinator and TAC chairs prior to any such work being performed. Any deviation from the proposed Scope of Work needs to be approved by the TAC.

NEW ENGLAND TRANSPORTATION CONSORTIUM PROPOSAL PREPARATION GUIDELINES

The proposal should be a well thought-out document that establishes in clear, concise terms the necessity of the research undertaking, definite project objectives, and a systematic work plan designed to attain the project objectives. The technical proposal (not including cover page, table of contents (if used), one-page resumes or the proposed budget) should not exceed 8 pages. The proposal should contain, but is not limited to, the following:

1. **Project Identification:** The project number, title and name or names of the principal investigator(s) [P.I.(s)]. **One page** resumes or bio sketches of all key personnel including a description of the personnel's related research and publications, should be included as an appendix to the proposal.
2. **Significance of the Problem:** A clear definitive statement of the problem and its significance.
3. **Objectives of the Research:** In clear, concise terms, state the objectives of the proposed work.
4. **Methodology:** A description of the major tasks that will be undertaken to complete the proposed work. A number and title should be assigned to each task followed by a description of the methodology to be used in carrying out the task. *NOTE: Since the NETC recognizes that research results are not automatically put into practice upon completion of the research and that implementation is more likely when researchers and user agencies collaborate to plan for implementation) NETC requires that all research proposals include a technology transfer and implementation plan for incorporating the research results/products into practice.*
5. **Schedule of Major Activities:** To allow for flexibility in the project start date, the schedule should be generic and not refer to particular months or a particular year. The schedule should show, in terms of elapsed time (number of months or weeks) from the start of the project, the planned start and completion of each of the major tasks described in the methodology and the following tasks:
 - ***Submission of Quarterly Progress Report to Coordinator:*** Quarterly Progress reports are to be submitted electronically to the NETC Coordinator for distribution to the Project Technical Committee no later than three (3) working days after the end of each calendar quarter.
 - ***Submission of Draft Final Report to Project Technical Committee for Review:*** The technical committee should receive the draft final report two weeks before the meeting between the TAC and research team is scheduled to review the draft final report.
 - ***Submission of Final Report:*** The final report should be submitted within six months of the project start.
6. **Budget and Total Cost:** If the cost of the proposal exceeds the "Funds Available", as given in the Scope of Work, an explanation should be provided. In the event that this proposal is selected for funding, the proposal budget will be incorporated into the funding agreement. Invoices for project costs will be reviewed against the proposal budget for consistency. Therefore, it is the responsibility of the Principal Investigator to insure that the proposal's budget categories are consistent with the categories that will be used for invoicing project costs. Principal Investigators are encouraged to break their costs down into lump sum invoices that correspond to major task deliverables, with the final report delivery constituting at least 10% of the total project budget.

The University of Vermont currently acts as the Contract Coordinator for the New England Transportation Consortium and will issue the contract for proposals selected for funding. For agents who have not done business with UVM a financial risk assessment will be conducted by the University of Vermont's Sponsored Projects Administration. A copy of the initial forms needed to begin the risk assessment are available here (<http://www.uvm.edu/spa/documents/subrecipientcommitmentform.pdf>).

Please note any contracting party which does not have a single annual audit may need to provide additional financial documents in lieu of an annual audit report.

NEW ENGLAND TRANSPORTATION CONSORTIUM PROPOSAL EVALUATION GUIDELINES

- 1. Understanding of the Problem:** A clear and succinct statement and understanding of the problem and the research objectives is desired. A review of the present state-of-the-art and a description of how the proposed work will create new knowledge and benefit the New England Transportation Consortium should be presented
- 2. Research Approach:** The evaluation of the research approach will consider consistency with the objectives and the scientific and practical aspects of the research methodology. This evaluation will include such items as the approach to data collection, cooperative features, innovative concepts, and reliability of equipment proposed for use. Consideration will also be given to whether or not the approach is sufficiently detailed, both in terms of work and budget allocations by tasks.
- 3. Application of Results:** The evaluation will include a realistic appraisal of the prospects for successful accomplishment of project objectives. The evaluation will consider the statements in the proposal indicating the manner in which the anticipated results would be reported and how they could be used to improve transportation engineering or transportation evaluation practices; e.g., mathematical models, design techniques, field or laboratory test procedures, changes in highway specifications, impact methodologies, etc. Consideration will also be given to whether or not there might be any financial or institutional barriers to implementation of products from the research.
- 4. Qualifications of Principal Investigator(s):** Proposals are desired from individuals having demonstrated capability and expertise in the subject problem area. The evaluation will be based on the evidence contained in the proposal pertaining to both the experience and the indicated amount of effort by the principal investigator(s).

**NEW ENGLAND TRANSPORTATION CONSORTIUM
PROPOSAL EVALUATION GUIDELINES**

(Cont'd)

Analysis Sheet [This sheet may or may not be used by the TAC in their proposal reviews.]

PROJECT TITLE:

PRINCIPAL INVESTIGATOR(S):

<u>COMMENTS</u>	<u>WEIGHT</u>	x	<u>RATING</u>	=	<u>WEIGHTED RATING</u>
1. Understanding of the Problem: _____ _____ _____	25	%	x	=	_____
2. Research Approach: _____ _____ _____	25	%	x	=	_____
3. Application of Results: _____ _____ _____	15	%	x	=	_____
4. Qualifications of Principal Investigator(s); _____ _____ _____	35	%	x	=	_____
TOTAL WEIGHTED RATING					_____

NOTES:

1. Weight: To be assigned by the Project Technical Committee.
The total of the five weights must equal 100%
2. Ratings:

'Outstanding'	= 5
'Very Good'	= 4
'Good'	= 3
'Fair'	= 2
'Poor'	= 1
3. Each Technical Committee member will rank the proposals '1st', '2nd', '3rd', etc., based on the TOTAL WEIGHTED RATING they assigned to the proposal. The PI with the most '1st' rankings from all of the Technical Committee members will be selected.

**NEW ENGLAND TRANSPORTATION CONSORTIUM
PROJECT SCHEDULE
Project QR17-2: Quantification of Research Benefits**

ITEM	COMPLETION DATE
Deadline for Questions about the Scope of Work.....	May 2, 2018
Deadline for Coordinator's receipt of proposals.....	May 18, 2018
Coordinator forwards proposals to Project Technical Advisory Committee for evaluation.....	May 21, 2018
Deadline for Coordinator's receipt of Project Technical Advisory Committees' evaluation of proposals and recommendation of award	June 5, 2018
Target date for start of project	July 5, 2018
Target date for interim TAC meeting.....	October 17, 2018
Target date for presentation of draft final deliverables (draft final deliverables presented to TAC two weeks before presentation date):.....	December 12, 2018
Completion of project (submission of final report before this date).....	January 4, 2019

NETC TECHNICAL ADVISORY COMMITTEE CHAIRPERSONS

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