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NEW ENGLAND TRANSPORTATION CONSORTIUM



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January 2, 2018

INVITATION TO SUBMIT A RESEARCH PROPOSAL

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

NETC QR17-1: “Quick Response: New England Connected Automated Vehicles”

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).

The proposal in Adobe PDF form should be emailed to netc@uvm.edu by 5pm on February 1, 2018.

Proposals will be reviewed and evaluated by the Project Technical 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 also attached.

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Questions concerning technical aspects of the Scope of Work should be directed to the Chairperson of the Project Technical Committee, Dr. Emily Parkany, P.E., emily.parkany@vermont.gov.

Questions concerning administrative matters relating to this RFP should be directed to Glenn McRae, NETC Coordinator (Tel: 802-656-1317 / Email: netc@uvm.edu).

Sincerely,

Glenn McRae
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: QR17-1: Quick Response: New England Connected Automated Vehicles

Research problem statement: The six states comprising the New England Transportation Consortium (CT, NH, ME, MA, RI and VT) are interested in identifying issues related to the testing and deployment of connected vehicles (CV), automated vehicles (AV) and connected automated vehicles (CAV) that extend beyond state lines. Each state is working to some extent on policies, legislation, and technical issues within their own states. There is a lack of information on the types of issues that extend beyond state lines, and how states may want to collaborate to minimize the challenges and to pursue the opportunities. The idea is that this summary may lead to a gap analysis and potential roadmap of activities the states need to conduct to facilitate the operation of CV, AV and CAV in the region. We expect this to be unique research focused on cross-border issues and not a regurgitation of existing CV, AV, and CAV literature.

Research Objectives:

- Identify multi-state issues related to the testing and deployment of CVs, AVs and CAVs in New England
- Document opportunities and challenges related to the multi-state CV, AV and CAV issues
- Prepare an action plan that minimizes the challenges and pursues the opportunities

Tasks: This is a quick response project with only a few tasks leading up to a draft report. A final report should be compiled based on Technical Committee responses to the draft final report and initial roadmap.

Task 1: Kick-Off Meeting

Within the first month of the project, the research team needs to meet (likely via web meeting) with the Project Technical Committee as listed on the last page of this Request for Proposals. The research team should describe its initial findings, expected methodology, and confirm the project schedule and milestones. The Technical Advisory Committee expects an initial discussion of specific cross-border issues at this meeting so that we can feel comfortable that we're all on the same page.

Task 2: Cross-Border Issues: Challenges and Opportunities

Researchers will provide a summary of cross-border issues that may impact the New England States. The summary should include a description of the issue and how each state currently addresses the issue as appropriate. The researchers should use a literature review, expert interviews, and other techniques specified in the proposal to get this information. Cross-border issues may span:

- Legal/regulatory
- Infrastructure
- Operations
- Data/technology
- Outreach/education

This is not a comprehensive list. This is intended to focus on cross-border issues related to policy, planning and operations of CV, AV and CAV. This should not be a repetition of CV, AV, and CAV items as found in the literature. Some of these may be unique to New England. We need to know what issues are the most critical.

Proposal should include preliminary ideas of cross-border issues that the team has considered.

Task 3: Roadmap of Actions and Workshop

Based on the research conducted in Task 2, the contractor should provide the steps that will be needed to address cross-border issues and readiness. Potential actions may be a deeper research dive into one of the cross-border issues, a Peer Exchange, development of practices and procedures, something we have not thought of, etc.

The research team should schedule an in-person meeting or workshop with the Technical Advisory Committee and others to share what the researchers have learned about cross-state issues, validate/add ideas, and then provide feedback on action steps. The workshop may be held in conjunction with Connecticut's Northeast Automated Vehicle Summit. Alternatively, it may be held in New Hampshire at a location where participants can travel for the day to a 5-6 hour meeting. NETC and the TAC Chair are likely responsible for the meeting arrangements. The researchers will lead and facilitate this meeting. The participants (outside of the research team) will pay for their own time and travel. The workshop will ideally be held in the fourth month of the project.

Task 4: Draft Final Report, Readiness Evaluation, and Initial Roadmap

The draft final report (delivered by the end of five months after project start) should include the Task 2 summary, and the Task 3 Initial Roadmap of Actions. The draft final report should include responses to the feedback and discussion from the Task 3 Workshop.

Task 5: Presentation of Draft Final Report to Project Technical Committee

The Project Technical Committee should meet (likely by web meeting) at the end of the fifth month or early in the sixth month of the project. The draft final report should be made available to the Project Technical Committee at least two weeks before the Technical Committee meeting. Comments and responses of the Technical Committee before, during and after the meeting should be incorporated into the Final Report.

Task 6: Final Report and Recommendations

The final report should include responses to comments from the Technical Committee before, during, and after the presentation of the draft final report. The final report is due within six months of the start of the project.

MEETINGS WITH PROJECT TECHNICAL COMMITTEE: The Project Technical Committee expects to meet by web meeting or teleconference with the project research team at least three times: at a project kickoff meeting held during the first month of the project, at a meeting or workshop where the cross border issues are presented and preliminary actions are addressed before the writing of the draft final report and at the presentation of the draft final report and initial roadmap of actions held in the fifth month of the project.

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

Quarterly Progress Reports: 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 Technical Committee. These progress reports are expected in early July and early October.

Draft Final Report: The draft final report should be delivered to the NETC Coordinator and the Project Technical Committee four months after the project start date and two weeks before a web meeting or teleconference with the Project Technical Committee. The draft final report should

include an initial roadmap of what the six New England States should be doing to address automated vehicle cross border issues.

Final Report: The final report is due within six months of the project start date and should incorporate any comments received before, during or after the Project Technical Committee meeting where the draft final report was presented. The final report should include guidance and actions for the six New England states with respect to Automated Vehicles.

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 proposer 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 should be noted and the reasons clearly stated in the proposal.

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 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**

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
PROPOSAL SCHEDULE
Project QR17-1: CAV Quick Response**

ITEM	COMPLETION DATE
Deadline for Questions about the Scope of Work.....	Jan. 20, 2018
Deadline for Coordinator's receipt of proposals.....	Feb 1, 2018
Coordinator forwards proposals to Project Technical Committees for evaluation.....	Feb 2, 2018
Deadline for Coordinator's receipt of Project Technical Committees' evaluation of proposals and recommendation of award	Feb. 23, 2018
NETC Coordinator forwards Project Technical Committees' recommendations of award to NETC Advisory Committee for action	Feb 26, 2018
NETC Coordinator notifies Principal Investigator and Project Technical Committee of NETC Advisory Committee's action on award of funding and initiates preparation of the project agreement.	Feb 27, 2018
Target date for start of project	April 1, 2018
Target date for project Workshop (ideally in fourth month of project), by	August 1, 2018
Target date for presentation of draft final report (draft final report presented to TAC two weeks before presentation date):	September 10, 2018
Completion of project (submission of final report before this date)	October 1, 2018

NETC TECHNICAL COMMITTEE CHAIRPERSON

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