

**TRANSPORTATION POOLED FUND PROGRAM
QUARTERLY PROGRESS REPORT**

Lead Agency (FHWA or State DOT): Maine Department of Transportation

INSTRUCTIONS:

Lead Agency contacts should complete a quarterly progress report for each calendar quarter during which the projects are active. Please provide a project schedule status of the research activities tied to each task that is defined in the proposal; a percentage completion of each task; a concise discussion (2 or 3 sentences) of the current status, including accomplishments and problems encountered, if any. List all tasks, even if no work was done during this period.

Transportation Pooled Fund Program Project # <i>(i.e., SPR-2(XXX), SPR-3(XXX) or TPF-5(XXX))</i> TPF-5(373)	Transportation Pooled Fund Program - Report Period: <input type="checkbox"/> Quarter 1 (January 1 – March 31) <input checked="" type="checkbox"/> Quarter 2 (April 1 – June 30) <input type="checkbox"/> Quarter 3 (July 1 – September 30) <input type="checkbox"/> Quarter 4 (October 1 – December 31)	
TPF Study Number and Title: TPF-5(373) New England Transportation Consortium VII		
Lead Agency Contact: Jeffrey Pulver	Lead Agency Phone Number: 207-446-1009	Lead Agency E-Mail: jeffrey.pulver@maine.gov
Lead Agency Project ID: 23430.18	Other Project ID (i.e., contract #): Click or tap here to enter text.	Project Start Date: 1/4/2018
Original Project Start Date: 1/4/2018	Original Project End Date: 6/30/2022	If Extension has been requested, updated project End Date: 12/31/2024

Project schedule status:

<input type="checkbox"/> On schedule	<input checked="" type="checkbox"/> On revised schedule	<input type="checkbox"/> Ahead of schedule	<input type="checkbox"/> Behind schedule
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Overall Project Statistics:

Total Project Budget	Total Funds Expended This Quarter	Percentage of Work Completed to Date
\$2,734,259.00	\$149,708.39	81%

Project Description:

A transportation research program, where research projects are conducted primarily by the Land Grant Universities of the New England states. This study was preceded by TPF-5(222), TPF-5(201), TPF-5(168), SPR-3(089), SPR-3(029), and SPR-3(009). Other State DOTs may participate in individual research projects by providing funds and a project technical committee member to represent their agency.

The New England Transportation Consortium (NETC) is a research cooperative between the state transportation agencies of Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island and Vermont. NETC is a valuable regional partnership for the identification, prosecution and dissemination of shared transportation research initiatives. NETC represents:

- Financial leveraging opportunities and regional partnerships.
- Stronger partnerships between university faculty and state transportation agencies.
- User-defined, diverse research topics.
- Opportunities for research dissemination and training to practitioners in the field.

Now in its third decade, NETC was developed to help New England states meet their special research needs by pooling resources and expertise. NETC is now a well-established successful multi-state partnership.

The objective of the pooled fund is to pool the financial, professional and academic resources of the region and to use them to research and develop improved methods of dealing with common problems in the planning, design, construction, maintenance, rehabilitation, reconstruction, and operation of transportation systems in the participating states. The program is intended to supplement, not to replace, ongoing state and federal research activities and other national programs such as the Cooperative Research Programs of the National Academies.

Progress this Quarter

(includes meetings, work plan status, contract status, significant progress, etc.):

Monthly Advisory Committee meetings held on 5/12/23 and 6/27/23.

19-3: Deteriorated Steel Beam Ends - UMass Amherst

- Project timeline: 9/18/20 - 1/31/24. Project budget: \$179,995
- Task 3 (Laboratory testing) - In progress. Eleven beam tests are complete.
- Task 4 (Calculate and validate/update the new load rating procedures) - In progress.

20-2: Current Status of Transportation Data Analytics and AI Pilot Case Study Using Artificial Intelligence (AI)- \$200,000

- Project timeline: 5/5/21 - 12/31/23. Project budget: \$179,995
- Task 4 (Pilot project-Vehicle trajectory data collection and modeling) – Data collection is complete. Data analysis is in progress.
- TC meetings held on 5/4/23 and 6/29/23.

20-3: Investigating Thermal Imaging Technologies and Unmanned Aerial Vehicles to Improve Bridge Inspections

- Project timeline: 2/19/21 - 6/30/23. Project budget: \$174,931
- Task 4 (Draft final report) – Complete.
- Task 5 (Final report and Tech Transfer Toolbox) – Complete.

21-1: Quality Review and Assessment of Pavement Condition Survey Vehicle Data Across New England

- Project timeline: 2/15/22 - 7/31/23. Project budget: \$174,932
- Task 4 (Draft final report) - Complete.
- Task 5 (Final report and Tech Transfer Toolbox) – Complete.

21-3: Initiating Seed Production for Effective Establishment of Native Plants on Roadsides in New England - \$200,000

- Project timeline: 5/18/22 - 6/30/24. Project budget: \$200,000
- Task 1 (Current knowledge and practices) - In progress.
- Task 2 (Investigate local seed production opportunities) - In progress.

- Task 3 (Establish demonstration plots) - In progress.
- TC meeting held on 6/13/23.

2023 Topical Discussion Events

- Asset Management for ITS – Half-day event held on 6/22/23 with 24 attendees from all New England states.
- Animal Vehicle Collision Avoidance – Planning Team meeting scheduled for 7/21/23.
- Geotech – Planning Team meeting scheduled for 7/20/23.
- e-Construction for Pavements – Planning Team meeting scheduled for 7/26/23.
- Advanced Air Mobility Regional Plan – Planning Team meeting scheduled for 7/13/23.

Implementation webinar

- Implementation webinar for 09-03: Design, Fabrication and Installation of ACM Bridge Drain System held on 5/15/23. Joe Stilwell, MaineDOT, presented. Thirty three people attended.

Administration Contract

- CTC & Associates scheduled, facilitated and distributed minutes for the 5/12/23 and 6/27/23 Advisory Committee meetings.
- CTC & Associates continued to manage all research projects.
- CTC & Associates tracked implementation of research projects.
- CTC & Associates updated the NETC website as needed.
- CTC & Associates worked with the Advisory Committee to plan five Topical Discussion events.

Anticipated work next quarter:

Monthly Advisory Committee meetings will be held on 8/10/23 and 9/26/23.

19-3: Deteriorated Steel Beam Ends

- PI will continue work on Task 3 (Laboratory testing) and Task 4 (Calculate and validate/update the new load rating procedures).
- TC meetings scheduled for 9/11/23, 10/12/23 and 11/13/23.

20-2: Current Status of Transportation Data Analytics and AI Pilot Case Study Using Artificial Intelligence (AI)- \$200,000

- PI will continue work on the pilot project (Speed Collection on Horizontal Curves), by completing the data analysis using AI.
- PI will begin work on the draft final report and Technology Toolbox deliverables.
- TC meeting scheduled for 11/15/23.

20-3: Investigating Thermal Imaging Technologies and Unmanned Aerial Vehicles to Improve Bridge Inspections

- The project webinar will be held on 8/8/23.

21-1: Quality Review and Assessment of Pavement Condition Survey Vehicle Data Across New England - \$200,00

- The project webinar will be held on 7/18/23.

21-3: Initiating Seed Production for Effective Establishment of Native Plants on Roadsides in New England - \$200,000

- Finalize Task 1 (Current knowledge and practices) report for TC review.
- Task 2 (Investigate local seed production opportunities) – In progress.
- Task 3 (Establish and monitor roadside demo plots) – In progress.
- TC quarterly meeting scheduled for 9/12/23.

2023 Topical Discussion Symposiums

- Asset Management for ITS – Finalize the posting of event recording and materials on the NETC website.
- Animal Vehicle Collision Avoidance – Planning Team meeting to be held in September.
- Geotech – Planning Team meeting to be held in September.
- e-Construction for Pavements - Planning Team meeting to be held in September.
- Advanced Air Mobility Regional Plan – Planning Team meeting to be held in September.

- CTC & Associates will facilitate and distribute minutes for the 8/10/23 and 9/26/23 meetings.

- CTC & Associates will continue project management of all research projects.
- CTC & Associates will continue to track implementation of research projects.
- CTC & Associates will update the NETC website as needed.
- If approved, CTC & Associates will make all final reports from 18-3 onward 508-compliant.

Significant Results:

See Progress This Quarter section.

Circumstance affecting project or budget. (Please describe any challenges encountered or anticipated that might affect the completion of the project within the time, scope and fiscal constraints set forth in the agreement, along with recommended solutions to those problems).

None.

Potential Implementation:

18-1: Development of MASH Computer Simulated Steel Bridge Rail and Transition Details

- ME is implementing 18-1 results, confirming NETC steel bridge rail is MASH crashworthy and adjusting our standard details to reflect recommended changes (for improved performance). ME does not plan on having MASH crash tests done.
- VTrans S-360 series standards for the NETC 2-Rail bridge rail and approach rail are being updated to reflect the findings in the study. VTrans S-361 series NETC 3-Rail bridge rail and approach rail are being developed. NETC 20-1: In-Service Performance Evaluation of Bridge Railings is a follow up to this project.
- ME submitted this project as a High Value Research project and it was selected as a Sweet Sixteen project.

18-2: Framework of Asphalt Balanced Mix Design for New England Agencies

- VTrans will implement aspects of this project. VTrans will base their pass/fail criteria for performance test results during mix design review/approval on the anticipated traffic loads, at least for Hamburg results.
- NHDOT feels the lowest level of BMD may be realistic and beneficial for to implement at some point in the future.
- The Connecticut Advanced Pavement Lab is building a library of BMD test results, which will be implemented once the library is complete.

18-3: Integration of Unmanned Aircraft Systems (UAS) into Operations Conducted by State Departments of Transportation

- A UAS New England peer group formed as a result of this project.
- NH is pursuing a UAS implementation plan that will build off the NETC project. The NETC project provided a broad base while the NH plan will be specific to New Hampshire needs.
- VTrans will use the project's results to look at new platforms, as a starting point to fill in gaps in their existing UAS procedures and workflows, and as a reference for future discussions in the peer group.

20-1: In-Service Performance Evaluation of NETC Steel Bridge Railings is a follow on project to 18-1: Development of MASH Computer Simulated Steel Bridge Rail and Transition Details.