TRANSPORTATION POOLED FUND PROGRAM
QUARTERLY PROGRESS REPORT

Lead Agency (FHWA or State DOT): Maine DOT

INSTRUCTIONS:
Project Managers and/or research project investigators 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.e, SPR-2(XXX), SPR-3(XXX) or TPF-5(XXX)*	**Transportation Pooled Fund Program - Report Period:**
TPF-5(373)	☐ Quarter 1 (January 1 – March 31) ☐ Quarter 2 (April 1 – June 30) ☑ Quarter 3 (July 1 – September 30) ☐ Quarter 4 (October 1 – December 31)

Project Title: New England Transportation Consortium VII		
Name of Project Manager(s): Dale Peabody	**Phone Number:** 207-624-3305	**E-Mail** dale.peabody@maine.gov
Lead Agency Project ID: 23430.18	**Other Project ID (i.e., contract #):**	**Project Start Date:** January 4, 2018
Original Project End Date: June 30, 2022	**Current Project End Date:** June 30, 2022	**Number of Extensions:** 0

Project schedule status:

☑ On schedule ☐ On revised schedule ☐ Ahead of schedule ☐ Behind schedule

Overall Project Statistics:

Total Project Budget	Total Cost to Date for Project	Percentage of Work Completed to Date
$2,400,000	$1,156,702	48%

Quarterly Project Statistics:

Total Project Expenses and Percentage This Quarter	Total Amount of Funds Expended This Quarter	Total Percentage of Time Used to Date
$1,156,702 (16% of total funds spent)	$187,852	89%

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 DOTs of Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island and Vermont. The NETC is a valuable regional partnership for the identification, prosecution and dissemination of shared transportation research initiatives. The NETC represents:

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

Now in its third decade, the NETC was developed to help New England states meet their special research needs by pooling resources and expertise. The NETC is now a well-established successful multistate 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 47/27/21, 8/24/21 and 9/28/21.

19-1: Curved Integral Abutment Bridge Design project - WSP USA Inc.

- Project time line: 2/12/20 - 3/31/22. Project budget: $151,316
- Task 2 (Finite element studies) - In progress.
- Task 3 (Design guidelines) - In progress.
- TC meeting held on 7/21/21.

19-2: Erosion Modeling - GZA Environmental Inc.

- Project time line: 2/13/20 - 2/28/22. Project budget: $148,035
- Task 5 (Toolkit) - In progress. The final toolkit and draft final report were sent to the TC for review and feedback.

19-3: Deteriorated Steel Beam Ends - UMass Amherst

- Project time line: 9/18/20 - 3/31/23. Project budget: $179,995
- Task 2 (Review of existing structures) - In progress. Beams have been received from two bridges and several others have been identified as candidates for beam specimens.
- Task 3 (Laboratory testing) - In progress.
- TC meeting held on 7/28/21.

20-1: In-Service Performance Evaluation of NETC Bridge Railings

- Project time line: 1/20/21 - 6/30/22. Project budget: $119,978
- Task 1 (Develop an inventory of NETC steel bridge railings) - Complete

Anticipated work next quarter:

Monthly Advisory Committee meetings to be held on 7/27/21, 8/24/21 and 9/28/21.

19-1: Curved Integral Abutment Bridge Design
• PI will continue work on Task 2 (Finite element studies) and Task 3 (Design guidelines).
• TC meeting will be held on 10/27/21 to review tasks 2 and 3.

19-2: Erosion Modeling
• PI will complete Task 5 (Finalize toolkit).
• Final TC meeting will be held on 11/3/21.
• A project webinar will be scheduled.

19-3: Deteriorated Steel Beam Ends
• PI will continue work on Task 2 (Review of existing structures) and Task 3 (Laboratory testing).
• The PI is planning on reallocating the budget to add more graduate student hours to the project.
• TC meeting will be held on 12/16/21.

20-1: In-Service Performance Evaluation of NETC Bridge Railings
• PI will start work Task 3 (ISEP evaluations)
• TC meeting will be held on 10/21/21.

20-2: Current Status of Transportation Data Analytics and AI Pilot Case Study Using Artificial Intelligence (AI)- $200,000
• PI will continue work on Task 1 (Review of current data collection and utilization practices).
• TC meeting will be held on 10/1/21.

20-3: Investigating Thermal Imaging Technologies and Unmanned Aerial Vehicles to Improve Bridge Inspections
• PI will continue work on Task 2 (Field demonstration of chosen IR/UAV models and data analysis)

Significant Results:

See Progress this Quarter.

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.

• 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

• The project will make develop an experimental plan for future research with the goal to further refine the development, validation, and implementation of a BMD approach for New England states. State-specific recommendations will be made for CT, MA and VT, and general recommendations will be made for all states. TAAC members will forward the project webinar invitation to their Materials staff to encourage them to attend the webinar and discuss potential implementation activities.

• NH doesn't feel these particular research findings are able to be implemented for NHDOT. However, the lowest level of BMD may be realistic and beneficial for NHDOT to implement at some point in the future.

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