

**TRANSPORTATION POOLED FUND PROGRAM  
QUARTERLY PROGRESS REPORT**

Date: 9/30/2018

Lead Agency (FHWA or State DOT): Vermont Agency of Transportation

<b>Transportation Pooled Fund Program Project #</b> TPF-5(222)		<b>Transportation Pooled Fund Program - Report Period:</b> <input type="checkbox"/> Quarter 1 (January 1 – March 31) <input type="checkbox"/> Quarter 2 (April 1 – June 30) <input checked="" type="checkbox"/> Quarter 3 (July 1 – September 30) <input type="checkbox"/> Quarter 4 (October 1 – December 31)																																																																									
<b>Project Title:</b> New England Transportation Consortium (VI)																																																																											
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<b>Lead Agency Project ID:</b> CA0306		<b>Other Project ID (i.e., contract #):</b>																																																																									
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		<b>Number of Extensions:</b>																																																																									

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
NETC 06-4	\$242,909	\$214,777.87	100%
NETC 07-1	\$198,154	\$190,421.37	100%
NETC 09-2	\$80,000	\$78,811.11	100%
NETC 09-3	\$165,000	\$149,695.39	100%
NETC 10-3	\$150,158	\$87,819.56	100%
NETC 13-1	\$191,710	\$188,770.26	99%
NETC 13-2	\$249,785	\$238,408.29	100%
NETC 13-3	\$100,000	\$70,810.41	95%
Phase II	\$39,713	\$0.00	10%
NETC 14-1	\$100,000	\$63,855.07	76%
NETC 14-2	\$205,554	\$166,251.89	100%
NETC 14-4	\$200,000	\$197,283.82	100%
NETC 15-1	\$164,970	\$132,440.77	95%
NETC 15-2	\$150,000	\$138,424.05	70%
NETC 15-3	\$150,000	\$135,377.45	99%
NETC 15-4	\$50,000	\$0.00	40%
NETC 17-1	\$50,000	\$43,000.00	97%
NETC 17-2	\$50,000	\$0.00	40%

Quarterly Project Statistics:

Total Project Expenses and Percentage This Quarter	Total Amount of Funds Expended This Quarter	Total Percentage of Time Used to Date
NETC 06-4	\$0.0 0%	\$0.0 183% (based on 24 months)
NETC 07-1	\$0.0 0%	\$0.0 121% (based on 33 months)
NETC 09-2	\$0.0 0%	\$0.0 110% (based on 30 months)
NETC 09-3	\$0.0 0%	\$0.0 125% (based on 28 months)
NETC 10-3	\$0.0 0%	\$0.0 221% (based on 24 months)
NETC 13-1	\$0.0 0%	\$787.83 102% (based on 47 months)
NETC 13-2	\$0.0 0%	\$69,572.36 200% (based on 24 months)
NETC 13-3	\$0.0 0%	\$0.0 375% (based on 12 months)
Phase II	\$0.0 0%	\$0.0 20% (based on 5 months)
NETC 14-1	\$0.0 0%	\$0.0 191% (based on 22 months)
NETC 14-2	\$0.0 0%	\$0.0 104% (based on 26 months)
NETC 14-4	\$0.0 0%	\$0.0 129% (based on 24 months)
NETC 15-1	\$29,368.81 17.8%	\$7,344.24 88% (based on 24 months)
NETC 15-2	\$4,029.42 2.7%	\$3,851.47 83% (based on 24 months)
NETC 15-3	\$0.0 0%	\$24,774.72 104% (based on 24 months)
NETC 15-4	\$20,292.20 40.6%	\$0.0 33% (based on 6 months)
NETC 17-1	\$16,500.00 33%	\$43,000.00 83% (based on 6 months)
NETC 17-2	\$4,195.00 8.4%	\$0.0 33% (based on 6 months)

\*Note: 13-3 Phase II was fully executed as a contract modification on August 17, 2018.

Project Description:

- 06-4 Preventative Maintenance and Timing of Applications, Completed June 2017:  
[http://www.newenglandtransportationconsortium.org/files/netcr101\\_06-4.pdf](http://www.newenglandtransportationconsortium.org/files/netcr101_06-4.pdf)
- 07-1 In-Place Response Mechanisms of Recycled Layers Due to Temperature and Moisture Variations, Completed November 2016: [http://www.newenglandtransportationconsortium.org/files/netcr96\\_07-1.pdf](http://www.newenglandtransportationconsortium.org/files/netcr96_07-1.pdf)
- 09-2 Effective Establishment of Native Grasses on Roadsides, Completed June 2016:  
[http://www.newenglandtransportationconsortium.org/files/netcr97\\_09-2.pdf](http://www.newenglandtransportationconsortium.org/files/netcr97_09-2.pdf)
- 09-3 Advanced Composite Materials: Prototype Development and Demonstration, Completed August 2016:  
[http://www.newenglandtransportationconsortium.org/files/netcr98\\_09-3.pdf](http://www.newenglandtransportationconsortium.org/files/netcr98_09-3.pdf)

10-3	Low Temperature and Moisture Susceptibility of RAP Mixtures with Warm Mix Technology, Completed March 2018: <a href="http://www.newenglandtransportationconsortium.org/files/Final%20Deliverables/10-3/NETC_10-3_Final%20Report_03_23_18.pdf">http://www.newenglandtransportationconsortium.org/files/Final%20Deliverables/10-3/NETC_10-3_Final%20Report_03_23_18.pdf</a>
13-1	Development of High-Early Strength Concrete for Accelerated Bridge Construction Closure Pour Connections
13-2	HMA Mixtures Containing Recycled Asphalt Shingles (RAS): Low Temperature and Fatigue Performance of Plant-Produced Mixtures: <a href="http://www.newenglandtransportationconsortium.org/files/Final%20Deliverables/13-2/NETC%2013-2%20Final%20Report_20180625.pdf">http://www.newenglandtransportationconsortium.org/files/Final%20Deliverables/13-2/NETC%2013-2%20Final%20Report_20180625.pdf</a>
13-3	Improved Regionalization of Quality Assurance (QA) Functions
14-1	Measuring the Effectiveness of Competency Models for Job-Specific Professional Development of Engineers & Engineering Technicians
14-2	Investigation of Northern Long Eared Bat Roosting Sites on Bridges, Completed May 2017: <a href="http://www.newenglandtransportationconsortium.org/files/Final%20Deliverables/14-4/NETC_14-4_Final_Report_20180322.pdf">http://www.newenglandtransportationconsortium.org/files/Final%20Deliverables/14-4/NETC_14-4_Final_Report_20180322.pdf</a>
14-4	Optimizing Future Work Zones in New England for Safety and Mobility, Completed March 2018: <a href="http://www.uvm.edu/~transctr/pdf/netc/Final%20Deliverables/14-4/NETC_14-4_Final_Report_20180322.pdf">http://www.uvm.edu/~transctr/pdf/netc/Final%20Deliverables/14-4/NETC_14-4_Final_Report_20180322.pdf</a>
15-1	Use of Forested Habitat Adjacent to Highways by Northern Long-Eared Bats
15-2	Using the new SHRP2 Naturalistic Driving Study Safety Databases to Examine Safety Concerns for Teens and Older Drivers
15-3	Moisture Susceptibility Testing for Hot Mix Asphalt Pavements in New England
15-4	Quick Response: Quality Assurance (QA) Processes for Asphalt Pavement Construction in the Northeast
17-1	Quick Response: New England Connected and Autonomous Vehicles
17-2	Quick Response: Quantification of Research Benefits

**Progress this Quarter (includes meetings, work plan status, contract status, significant progress, etc.):**

NETC 13-1, For Task 4 (Test Mixture), Panel specimens were tested during this reporting period after the closure pour was cast in the laboratory. The mix used for the first panel closure pour was also used to fabricate two prisms that will be cycled in the freeze-thaw chamber owned by MassDOT in October 2018. Additional prisms were cast using the same mix as used for the closure pour but in a separate batch to demonstrate consistency of the mix between batches. Pictures of the panels during are after testing are presented below. Pictures of the prisms that were cast for freeze-thaw cycling are also presented.

NETC 13-3, The project team is in the process of preparing the final report, poster, and fact sheet.

NETC 13-3 Phase II, The phase-II of this study started near the end of first month of the reported quarter. During Phase II of this project, the research team is in the process of developing a questionnaire that will be sent to each NETC constituent agency. These will be followed up with phone interviews.

NETC 14-1, The final report draft was completed, with all technical analysis of competencies from job postings and specifications. A presentation was completed for interviews of HR representatives of each state. All state DOT HR representatives were contacted; half of the interviews are scheduled.

NETC 15-1, The project team has accomplished the following items this quarter:

- Species distribution models were adjusted for quality issues in the underlying road data. Road density is not a significant covariate in the region-wide models. However, novel modeling methods allow for covariates to vary across the region thus the research team will produce more accurate species distribution maps and zone of influence tool.
- Project outputs were presented at the Northeastern Transportation and Wildlife Conference in Amherst, MA on September 12<sup>th</sup>, 2018.

NETC 15-2, The project team has accomplished the following items this quarter:

- A conference call meeting was held on September 20<sup>th</sup> with the project's Technical Advisory Committee to discuss project progress and the latest analysis and results, and to get feedback from committee members. A PowerPoint presentation was prepared for the meeting.
- The project research team members met to develop additional models and strategies for analyzing the SHRP2 data from VTTI.
- Additional statistical and machine learning models were created for predicting the (a) crash/near crash risk for all drivers (ages 30-49, 65+); (b) crash risk for all drivers not including near crashes; (c) crash risk for older drivers (age 65+); a driver's age group based on their driving behaviors.

- The team completed scoring of the additional video footage obtained from VTTI for left turns where the video sent from VTTI to UMass ended before the completion of the left turn.

NETC 15-3, During this quarter the final report for the project as well as the final project recommendations were prepared and submitted to the project technical advisory panel for their review and comments. Reviews and comments from the panel were received and the recommended changes to final report have been made. Also, during this past quarter project PI travelled to Montpelier VT to present the findings of the study at VTrans research symposium.

NETC 15-4, The focus of the work in this quarter was on reviewing of the current state of the practice of QA for asphalt pavement construction in the northeast, including current FHWA recommendations and requirements. The research team conducted a survey of NETC member agencies to identify the cross-border issues that may be a challenge to the adoption of a uniform QA process. The response of the survey were analyzed and compiled. The project kickoff meeting was held with the TAC to present and further discuss the results of the survey. Proceedings of the kickoff meeting were documented and made available to the TAC members with topics for internal agency discussion in preparation for the workshop. The research team has begun the process of scheduling the workshop for late October or early November.

NETC 17-1, The Draft Report was completed and presented to the TAC. The Final Report is in progress.

NETC 17-2, A kickoff meeting was held on July 16, 2018. The research team completed a comprehensive assessment of the MnDOT tool. This included doing an in-depth review of NETC 09-03 project to gather inputs to demonstrate the Excel-based tool with the project. An interim conference call was scheduled with the TAC on October 1, 2018 to demonstrate the draft version of the tool and solicit comments/inputs from TAC members. Draft guidelines were also developed for identifying and collecting outputs. A final TAC meeting was scheduled for December 18, 2018 to review all draft deliverables.

**Anticipated work next quarter:**

NETC 13-1, The freeze-thaw prisms will be brought to the MassDOT laboratory for freeze-thaw cycling in early October. Although the project end date has been officially reached, the research team will transport the prisms to the testing laboratory for assistance with freeze-thaw testing.

NETC 13-3, Submission of the final report (Phase I).

NETC 13-3 Phase II, The following activities are planned for the next quarter:

- Administration of survey for financial administrator at various transportation agencies to collect information on the process of invoicing and payment between agencies for shared inspection resources. These surveys will be followed up with phone interviews to obtain clarification on responses and to gather additional information on basis of the surveys.
- Collection of data from NETC members on upcoming PSE/PCE projects as well as their current consultant inspection contracts. During this survey a revised set of required QA process paperwork (such as inspection checklists) will also be gathered.
- Coordination meeting with the technical advisory members for the project will be held during the upcoming quarter.

NETC 14-1, The research team plans to finish their interviews with the DOTs and complete the final report next quarter.

NETC 15-1, The project team will work on the following tasks:

- Finalize GIS model for zone of influence (Task 5, 7, and 8)
- Project update meeting with NETC committee will be held October 16<sup>th</sup>, 2018
- Continue to work on final report for project
- Prepare publication from results of work

NETC 15-2, The following activities are planned for the next quarter:

- At least two conference call meetings will be scheduled with the Technical Advisory Committee.
- Continued analysis and modeling of the SHRP2 data from VTTI, including models incorporating more driver demographics and the results of the pre-study questionnaires, and more roadway and intersection characteristics.
- Preparation of the draft report on the results of the data analysis, for the Technical Advisory Committee's review.
- Preparation of the project's final report, with edits based on Technical Advisory Committee feedback.

NETC 15-3, The following activities are planned for the next quarter:

- Submission of revised final report, project fact sheet and project summary poster to NETC for dissemination purposes.

NETC 15-4, The following activities are planned for the next quarter:

- Survey selected asphalt contractors that work in multiple New England states.
- Organize and run a workshop to discuss cross-border challenges and possible approaches to address these challenge.
- Develop an initial roadmap and readiness evaluation for a regional QA process for asphalt pavement construction.
- Prepare draft final report.

NETC 17-1, The project team will complete the final report.

NETC 17-2, The following activities are planned for the next quarter:

- Hold the interim TAC meeting on 10/1/2018 to demonstrate the draft tool (Task 3).
- Gather inputs for the second example project: NETC 09-3 Effective Establishment of Native Grasses on Roadsides in New England (Task 3).
- Demonstrate the Excel-based tool with the second example project and incorporate comments and suggestions from the TAC into the tool (Task 4).
- Continue to fine tune and enhance the tool for both example projects and improve its usability and adaptability (Task 3 and Task 4).
- Develop the final draft tool, guidelines for identifying and collecting inputs, one-page factsheet, poster, and webinar (Task 4).
- Hold the final TAC meeting to review all draft final deliverables (Task 4).
- Address comments from the TAC on the draft deliverables (Task 5).
- Complete and submit all deliverables (Task 5).

#### **Significant Results:**

There were no significant results to report during 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).**

NETC 13-1, The end date of the project has been reached but the team is still receiving comments on the draft project report that was sent in mid-August 2018. The freeze-thaw prisms will be transported to the MassDOT testing facility for cycling in early October 2018. The results of this testing will be sent to NETC as an addendum to the project report after they are received by the research team.

NETC 13-3, The researcher were initially under the impression that only a single combined report of Phase I and II would need to be submitted for the two phases, thus they had temporarily stopped working on final edits for the Phase I report. This was clarified and now the team will submit a 2-part report. Phase I final report should be submitted next quarter.

NETC 13-3 Phase II, None during the current period.

NETC 14-1, Project funding has expired. Work on the project continues toward completion of a draft final report.

NETC 15-1, None during the current period.

NETC 15-2, None during the current period.

NETC 15-3, None during the current period.

NETC 15-4, None during the current period.

NETC 17-1, None during the current period.

NETC 17-2, None during the current period.

**Potential Implementation:**

Nine of the 17 research projects listed above are still in the research phase or working towards a final report. Project 14-1 implementation is not planned by the PI. Seven research projects (NETC 06-4, 07-1, 09-2, 09 -3, 10-3, 13-2, 14-2, and 14-4) have completed their final reports and technical transfer items (poster and fact sheet). Project 17-2 is a six-month long project looking at quantification of research benefits focusing on recent NETC projects. The Advisory Committee is hopeful that this project will provide guidance for themselves and researchers on how to think about implementing these research projects.