

**TRANSPORTATION POOLED FUND PROGRAM
QUARTERLY PROGRESS REPORT**

Date: 4/30/2018

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

Transportation Pooled Fund Program Project # TPF-5(222)		Transportation Pooled Fund Program - Report Period: <input checked="" type="checkbox"/> Quarter 1 (January 1 – March 31) <input 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)	
Project Title: New England Transportation Consortium (VI)			
Name of Project Manager(s): Emily Parkany		Phone Number: 802-272-6862	
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Lead Agency Project ID: CA0306		Other Project ID (i.e., contract #): NETC 06-4 NETC 07-1 NETC 09-2 NETC 09-3 NETC 10-3 NETC 13-1 NETC 13-2 NETC 13-3 NETC 14-1 NETC 14-2 NETC 14-4 NETC 15-1 NETC 15-2 NETC 15-3	
Project Start Date: 9/16/13 7/1/13 9/1/13 9/1/13 9/16/13 9/1/14 6/1/14 12/1/14 3/1/15 2/1/15 7/06/15 12/1/16 1/1/2017 8/1/16			
Original Project End Date: NETC 06-4 9/15/15 NETC 07-1 3/31/16 NETC 09-2 2/28/16 NETC 09-3 8/31/15 NETC 10-3 9/15/15 NETC 13-1 4/2/16 NETC 13-2 5/31/16 NETC 13-3 11/30/15 NETC 14-1 4/2/16 NETC 14-2 4/2/16 NETC 14-4 7/05/17 NETC 15-1 11/30/18 NETC 15-2 12/31/18 NETC 15-3 7/31/18		Current Project End Date: NCE to 9/15/16 NCE to 6/30/16 2/28/16 NCE to 12/31/15 NCE to 6/30/2016, NCE to 5/31/17 NCE to 8/31/16 (NETC), NCE to 1/14/17, Amd. to 1/31/18, NCE to 5/31/18 NCE to 12/1/17 NCE to 3/31/16, 9/30/16, NCE to 4/2/17 NCE to 12/31/16 (NETC), NCE to 12/31/17 NCE to 4/2/17 (NETC), NCE to 5/31/17 NCE to 12/31/17 11/30/18 12/31/18 7/31/18	
Number of Extensions: 1 1 0 1 2 2, 1 (for NETC) 1 3 1, 1 (for NETC) 1, 1 (for NETC) 1 0 0 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
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	\$187,451.99	92%
NETC 13-2	\$249,785	\$238,455.29	100%
NETC 13-3	\$100,000	\$92,935.41	95%
NETC 14-1	\$100,000	\$85,615.73	70%
NETC 14-2	\$205,554	\$166,251.89	100%
NETC 14-4	\$200,000	\$197,283.82	100%
NETC 15-1	\$164,970	\$99,391.69	60%
NETC 15-2	\$150,000	\$136,433.37	50%
NETC 15-3	\$150,000	\$110,602.73	80%

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	\$2,465.21	1.3%	\$26,575.85	179% (based on 24 months)
NETC 13-2	\$0.0	0%	\$113,793.86	192% (based on 24 months)
NETC 13-3	\$0.0	0%	\$0.0	333% (based on 12 months)
NETC 14-1	\$0.0	0%	\$8,750.05	168% (based on 22 months)
NETC 14-2	\$0.0	0%	\$7,087.17	104% (based on 26 months)
NETC 14-4	\$0.0	0%	\$16,945.34	129% (based on 24 months)
NETC 15-1	\$47,859.67*	29.0%	\$51,532.02	67% (based on 24 months)
NETC 15-2	\$17,915.44	11.9%	\$109,047.11	63% (based on 24 months)
NETC 15-3	\$11,284.38	7.5%	\$50,522.01	83% (based on 24 months)

*Note: Included here are expenses from invoices dated February and March 2018 for expenses since Nov. 1, 2017 to March 31, 2018.

Project Description:

- 06-4 Preventative Maintenance and Timing of Applications, Completed June 2017:
http://www.uvm.edu/~transctr/pdf/netc/netcr101_06-4.pdf
- 07-1 In-Place Response Mechanisms of Recycled Layers Due to Temperature and Moisture Variations, Completed November 2016: http://www.uvm.edu/~transctr/pdf/netc/netcr96_07-1.pdf
- 09-2 Effective Establishment of Native Grasses on Roadsides, Completed June 2016:
http://www.uvm.edu/~transctr/pdf/netc/netcr97_09-2.pdf
- 09-3 Advanced Composite Materials: Prototype Development and Demonstration, Completed August 2016:
http://www.uvm.edu/~transctr/pdf/netc/netcr98_09-3.pdf
- 10-3 Low Temperature and Moisture Susceptibility of RAP Mixtures with Warm Mix Technology, Completed March 2018: http://www.uvm.edu/~transctr/pdf/netc/Final%20Deliverables/10-3/NETC_10-3_Final%20Report_03_23_18.pdf
- 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
- 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:
http://www.uvm.edu/~transctr/pdf/netc/netcr100_14-2.pdf

14-4	Optimizing Future Work Zones in New England for Safety and Mobility, Completed March 2018: http://www.uvm.edu/~transctr/pdf/netc/Final%20Deliverables/14-4/NETC_14-4_Final_Report_20180322.pdf
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

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

NETC 10-3, The final report, fact sheet, and poster were submitted and finalized in March 2018.

NETC 13-1, For Task 4 (Test Mixture), most activities have been completed. Freeze-thaw testing and panel tests are the only two activities missing that will be conducted during the project's No Cost Extension. The geometry and preliminary design of the specimens for panel testing were sent to the TAC for review and comments. To avoid further delays, the project team is proceeding using the dimensions proposed on a communication dated Sept. 27, 2017. The panel specimens are being fabricated for testing. Formwork and epoxy coated reinforcement are ready.

NETC 13-2, Work continues on the draft final report.

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

NETC 14-1, During this quarter current job postings were collected, job descriptions/postings were compared to the competency model, and civil engineer 1 job postings were compared across DOTs.

NETC 14-4, The final report, fact sheet, and poster were submitted and finalized in March 2018.

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

- Task 3 and 4: Data from all states and current sources has been received and incorporated into the database of occurrence/deletions
- Species distribution models have been run with only road density being a significant variable affecting NLEB presence. NLEB presence decreases with increasing road density. Near significant variables include total forest coverage (positive relationship) and distance to water (negative relationship).

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

- Received SHRP2 data tables and two batches of video data from VTTI in February and conducted various queries on the received data.
- A new secure location for review and scoring of the video data was set up.
- The research team developed strategies and a scoring matrix for scoring of the video data. They then began the scoring.
- The research team held a TAC meeting on March 2nd to give progress updates and receive feedback on the approach.
- The research team prepared and updated IRB and DUL materials in response to TAC and VTTI feedback regarding additional staff working on the project.

NETC 15-3, Significant amounts of laboratory testing was completed during this quarter. For all ten mixtures, compaction characteristics and volumetric testing have been completed. In addition, a majority of the testing and data analysis has been completed. Only a select few tests remain to be completed, which are anticipated to occur during the beginning of the next quarter.

Anticipated work next quarter:

NETC 10-3, The project has been completed.

NETC 13-1, The project team expects to cast and test the panel specimens during the next quarter. At the time that closure pours between panels are cast, the research team will also fabricate freeze-thaw specimens for shipping to a MassDOT freeze-thaw testing facility.

NETC 13-2, Work continues on the final draft report.

NETC 13-3, Work continues on the final draft report.

NETC 14-1, The research team plans to review and update model framework, summarize and discuss results, and complete a draft final report.

NETC 14-4, The project has been completed.

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

- Task 5, 7, and 8: Further develop code for novel modeling methods and GIS model for zone of influence.
- Task 5 and 8: Test alternate statistical methods for effect of roads on NLEB presence.
- Prepare and submit abstract for Northeastern Transportation and Wildlife Conference presentation, UMass-Amherst, MA. September 9-12, 2018.

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

- Two-three additional meetings for next quarter will be scheduled with the TAC.
- Complete video scoring and data analysis of the SHRP2 data from VTTI.
- Begin preparation of a draft report of results of the analysis.

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

- Complete the remaining laboratory testing
- Continue conducting data analysis on laboratory results to assess changes in mechanical characteristics of mixtures due to laboratory moisture conditioning. Begin comparative evaluation of mixtures in terms of test results
- Conduct pavement life evaluations using both PavementME and IliTC to determine potential loss of life due to moisture damage
- Develop recommendations for the lab procedure to be used by New England DOTs for screening of moisture susceptible asphalt mixtures.
- Plan and schedule final TAC meeting.
- Begin preparing final deliverables.

Significant Results:

Final reports for projects 10-3 and 14-4 were finalized during this quarter and are available on the NETC website. See the "Project Description" section of this report (pg. 2) for links to these reports.

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 10-3, The project has been completed.

NETC 13-1, The requested No Cost Extension for May 31, 2018 was approved. The research team reinitiated project activities at the end of February 2018.

NETC 13-2, None during the current period.

NETC 13-3, 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 14-4, The project has been completed.

NETC 15-1, None during the current period.

NETC 15-2, The delivery of the SHRP2 data from VTTI took longer than initially anticipated when the study began. The contract with VTTI, finalized in November, indicated that the PI would receive the full dataset of the SHRP2 NDS data he requested before the end of January 2018, however the data was received at the end of February. Additionally, a PI change and budget reallocation were both completed this quarter. An additional budget reallocation was requested by the NETC Coordinator.

NETC 15-3, None during the current period.

Potential Implementation:

The seven of the 14 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, 13-3, 14-2, and 14-4) have completed their final reports and technical transfer items (poster and fact sheet). During these processes, the technical advisory committees and researchers will continue to work to identify strategies for implementing the results of this research.