

**NEW ENGLAND TRANSPORTATION CONSORTIUM
QUARTERLY PROJECT PROGRESS REPORT**

A. PROJECT NUMBER AND TITLE:

NETC 13-1: Development of High Early-Strength Concrete for Accelerated Bridge Construction Closure Pour Connections

B. PRINCIPAL INVESTIGATOR(s) & UNIVERSITY(s):

Sergio F. Breña (PI) – University of Massachusetts Amherst
Scott A. Civjan (Co-PI) – University of Massachusetts Amherst

C. WEB SITE ADDRESS (If one exists):

D. START DATE (Per NETC Agreement): September 01, 2014

E. END DATE (Per NETC Agreement): April 02, 2016

F. ANTICIPATED COMPLETION DATE: August 31, 2016

A no cost extension is expected to be requested to accommodate the current coordination contract that NETC has with the University of Vermont. The proposed project period was for 24 months.

G. PROJECT OBJECTIVES:

To develop and validate concrete mixtures capable of developing high early strength without detrimentally affecting their long-term durability. The mixtures are for use in projects using accelerated bridge construction methods.

H. REPORT PERIOD: January 01, 2015 – March 31, 2015

I. ACCOMPLISHMENTS THIS PERIOD:

- Began a written summary of the literature review including main findings of relevant research reports, technical papers and survey responses.
- Tested preliminary concrete mix designs and compared test results using compressive strength tests on 4 by 8 in. cylinders and workability of each trial batch.
- Adjusted existing concrete mix design specifications based on preliminary test results; design specifications will continue to be modified throughout the duration of the project.

J. PROBLEMS ENCOUNTERED (If any):

No problems encountered to date.

K. TECHNOLOGY TRANSFER ACTIVITIES:

No technology transfer activities were performed.

L. STATUS BY TASK:

Task 1: Literature Search – 85% complete

Task 2: Develop Mixture Design Specification – 35% complete

Task 3: Develop Mix Design – Trial batches being developed – 10%

Task 4: Test Mixture – Work for this task has not started (0%)

M. PERCENT COMPLETION OF TOTAL PROJECT: 22 %

N. ACTIVITIES PLANNED FOR NEXT QUARTER:

- Complete the written summary of the literature review including main findings of relevant research reports, technical papers and survey responses.
- Adjust existing concrete mix design specifications based on feedback from the NETC Project Technical Committee (pending feedback from committee).
- Test preliminary concrete mixtures that reach compressive strength goal for remaining initial short-term performance criteria (set time, air content and slump).
- Design and prepare experimental setups for short and long-term tests

O. FINANCIAL STATUS:

As of: March 31, 2015

Total Project Budget: \$ 174,923

Total Expenditures : \$ 30,431

Note: This report should not require more than 2-3 pages & should be e-mailed to the NETC Coordinator so as to arrive no later than three (3) working days after the end of each calendar quarter.