

**NEW ENGLAND TRANSPORTATION CONSORTIUM
QUARTERLY PROJECT 20-1 PROGRESS REPORT**

A. PROJECT NUMBER AND TITLE:

NETC 20-1: In-Service Performance Evaluation of New England Transportation Consortium (NETC) Steel Bridge Railings

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

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Chuck Plaxico Ph.D.

RoadSafe LLC

C. WEB SITE ADDRESS (If one exists):

<https://www.roadsafellc.com/>

<https://www.newenglandtransportationconsortium.org/projects/netc-20-1/>

D. START DATE (Per NETC Agreement):

January 20, 2021

E. END DATE (Per NETC Agreement):

June 30, 2022

F. ANTICIPATED COMPLETION DATE:

June 30, 2022

G. PROJECT OBJECTIVES:

The research objective is to determine the in-service performance of the NETC bridge railings and transition systems based on the percentage of fatal and serious injury crashes and barrier penetrations. The evaluation should examine all NETC bridge railing sites constructed in each cooperating state. Construction records and bridge inventories will be reviewed to develop an inventory of NETC bridge railings. Crash data for five years (and more if possible) will be collected for all NETC bridge railings identified in the inventory. Traffic data (e.g., posted speed limit, AADT and percent trucks) will also be collected, if available, for each inventoried NETC bridge rail. The crash, inventory and traffic data will be merged into a single database and the fatal and serious injury proportions will be calculated for each type of NETC railing by a variety of potentially confounding factors (e.g., posted speed limit, vehicle type, highway facility type, percent trucks, etc.). Similarly, the crash records will be examined for any indication of bridge railing penetration or rollover.

This study is being conducted using the now available NCHRP 22-33 Guidance for the conduct of ISPEs. NCHRP 22-33 (Collaborative Approach to In-Service Performance Evaluations) has outlined an approach to the conduct of ISPEs which uses crash data to mimic the MASH evaluation criteria, thereby providing a direct comparison of actual field performance to the MASH evaluation criteria. Further, the NCHRP 22-33 Guidance was developed with the intent of collaborating across state lines to conduct more robust ISPEs.

H. REPORT PERIOD:

Quarter 3, 2021 (July 1 - September 30)

I. ACCOMPLISHMENTS THIS PERIOD:

- The contract required a meeting prior to proceeding to Task 3. The TC and research team attended the meeting and the TC agreed to the following research team recommendations:
 - ME, NH, and RI: It is recommended that the ISPE does not distinguish between values of NAME, but rather considers all field performance of all the identified NETC rails and AGTs.
 - ME, NH, and RI: It is recommended that an ISPE report be developed for these states. This will support the combining of the results with the other states.
 - VT, MA, and CT: It is recommended that no further data collection or analysis be conducted.

Updated: September 27, 2021

- All: It is recommended that a meta-analysis be conducted using the completed ME, NH, and RI ISPE reports. This will provide the best available information on the field performance of NETC rails and AGTs.
- ME: Extend the study period to include 2013 – 2015.

- The inspection reports were reviewed and “site visits” for the development of the Vtrans NETC bridge rail inventory dataset and data dictionary were completed.
- A review of the Police reports/narratives/photos from MaineDOT, NHDOT, RIDOT, and Vtrans to confirm collision with NETC bridge rail or AGT was completed.
- The assembled data were presented to the TC.
- A draft ISPE for the ME data has been developed.

J. PROBLEMS ENCOUNTERED (If any):

- There were no problems encountered this quarter.

K. TECHNOLOGY TRANSFER ACTIVITIES:

- There were no technology transfer activities.

L. STATUS BY TASK:

M.

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| ● Task 1: Develop an inventory of NETC steel bridge railings | Completed | 100% Complete |
| ● Task 2: Develop an ISPE dataset | Completed | 100% Complete |
| ● Task 3: Conduct ISPE | Initiated | 25% Complete |
| ● Task 4: Draft Final Deliverables | Not Initiated | 0% Complete |
| ● Task 5: Final Deliverables | Not Initiated | 0% Complete |
| ● Task 6: 508 Compliance | Not Initiated | 0% Complete |

N. PERCENT COMPLETION OF TOTAL PROJECT: 50 %

O. ACTIVITIES PLANNED FOR NEXT QUARTER:

- Develop drafts for the NH and RI ISPEs.
- Conduct and document a meta-analysis.
- Begin the development of the draft final deliverables.
- Attend a teleconference to discuss the analysis and findings of Task 3.
- Coordinate with 508 compliance subconsultant.

P. FINANCIAL STATUS:

As of: September 27, 2021
Total Project Budget: \$ 119,997.73
Total Expenditures: \$ 45,600.34