

**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):

Christine Carrigan P.E., Ph.D.

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 4 (January - March 2022)

I. ACCOMPLISHMENTS THIS PERIOD:

- The individual ISPE reports have been completed.
- The meta-analysis report has been completed.
- The final report has been completed.
- The final project closeout meeting was held.

J. PROBLEMS ENCOUNTERED (If any):

- There were no problems encountered this quarter.

K. TECHNOLOGY TRANSFER ACTIVITIES:

- The implementation plan has been completed.
- The project poster has been completed.

Updated: April 1, 2022

- The PowerPoint slides for the project have been completed.
- The draft findings were presented at the TRB Annual Meeting.

L. STATUS BY TASK:

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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 | Completed | 100% Complete |
| • Task 4: Draft Final Deliverables | Completed | 100% Complete |
| • Task 5: Final Deliverables | Completed | 100% Complete |
| • Task 6: 508 Compliance | Initiated | 75% Complete |

N. PERCENT COMPLETION OF TOTAL PROJECT: 90 %

O. ACTIVITIES PLANNED FOR NEXT QUARTER:

- Coordinate with 508 compliance subconsultant.

P. FINANCIAL STATUS:

As of: March 31, 2022

Total Project Budget: \$ 119,997.73

Total Expenditures: \$ 97,331.39