

**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, 2021 (October 1 - December 31)

I. ACCOMPLISHMENTS THIS PERIOD:

- The TC and research team attended the meeting on October 21, 2021. The individual state final results were presented.
- The draft individual ISPE reports have been finalized.
- The meta-analysis was conducted and a draft report has been completed.
- A draft of the final report has been completed.
- A draft of the implementation plan has been created.

J. PROBLEMS ENCOUNTERED (If any):

- There were no problems encountered this quarter.

Updated: January 6, 2022

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 | Completed | 100% Complete |
| • Task 4: Draft Final Deliverables | Initiated | 75% Complete |
| • Task 5: Final Deliverables | Not Initiated | 0% Complete |
| • Task 6: 508 Compliance | Not Initiated | 0% Complete |

N. PERCENT COMPLETION OF TOTAL PROJECT: 75 %

O. ACTIVITIES PLANNED FOR NEXT QUARTER:

- Finalize development of the draft final deliverables.
- Attend a teleconference to discuss the draft final deliverables.
- Coordinate with 508 compliance subconsultant.

P. FINANCIAL STATUS:

As of: December 31, 2021

Total Project Budget: \$ 119,997.73

Total Expenditures: \$ 73,332.56