



## TRAFFIC COMPLETED RESEARCH PROJECT

PROJECT NAME: NEBRASKA RAIL CROSSING SAFETY RESEARCH

PROJECT NUMBER: SPR-P1(19) M091

### RESEARCHERS

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### SPONSORS

Nebraska Department of Transportation

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### FINAL REPORT

[Click here to access Final Report](#)

### NDOT RECOMMENDATIONS BASED OFF RESEARCH

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Readiness Level \(RRL\) Assessment](#)

### PROJECT ABSTRACT

“The research objectives of this project were to update Nebraska Department of Transportation (NDOT) 1999 Nebraska Accident Prediction Model for Highway-Rail Grade Crossings (HRGCs) and to develop guidelines using Lancaster County Nebraska HRGCs for improving safety at urban gated HRGCs that are not designated quiet zones but are in the vicinity of quiet zone crossings.

FRA crash and HRGC inventory data were utilized for estimation of the new model after inventory information on 742 HRGCs was updated. HRGC crashes for 2008-2018 period were used for model estimation while 2019 HRGC crashes were used for model prediction validation. After consideration of several different model formulations, a Poisson regression model with scaled parameters was selected as the 2020 Nebraska HRGC Crash Prediction Model.

Lancaster County HRGCs consistency assessment was performed using Federal Railroad Administration’s (FRA) Quiet Zone Calculator to analyze gated non-quiet zone HRGCs that are in proximity of designated quiet zone HRGCs. The general guidance on achieving a more consistent driving experience at such HRGCs is to consider the use of Supplemental Safety Measures including the use of mountable medians with reflective traffic channelization devices (vertical panels or tubular delineators) or non-traversable curb medians with or without channelization devices at non-quiet zone gated HRGCs that are in proximity of established quiet zones.

A complete update of the statewide HRGC inventory is recommended to remove errors and missing values from the existing database.”

*As quoted by P.I. Aemal Khattak, in the December 2020 final report abstract*



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