New England UTC Year 24 – Research Project Description

UTC Project Number: UCNR24-30A

Project Title: Effectiveness of Interventions at Midblock Crossings for Improving Senior and Other Pedestrian Safety

University: University of Connecticut

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Funding Sources:
- Federal: New England University Transportation Center at MIT
- Cost Share: University of Connecticut [in-kind resources]

Total Project Cost:
- Federal: $112,416
- Cost Share: $116,647

Funding Agency: USDOT/RITA

Grant number: DTRT12-G-UTC01

Start date: 6/1/14

End date: 5/31/16

Brief description of project:
This project evaluated the effectiveness of designed interventions on pedestrian crash experience at midblock crossings, focusing on seniors, children and other pedestrians. From the large crash database, we studied crashes involving pedestrians in situations with and without the interventions, and merged this data against a database containing the road and roadside characteristics. We fit a suitable regression and identify important covariates. Conflicts between pedestrians and vehicles subject to the interventions were observed using a variation of the Swedish Traffic Conflicts Technique, and classified by estimated age of the pedestrian and the severity of the conflict. Observations were made at locations specifically targeted for having characteristics found to be associated with senior pedestrian crash severity relative to non-seniors. We carried out a statistical test of association between conflict severity and crash severity based on data obtained through field observation and sampled from the crash database.

Describe intended implementation of research:
This project compared pedestrian – motor vehicle interaction experience at similar or proximate midblock crosswalks with and without three interventions (raised or contrasting pavement crosswalks, center roadway warning signs and traffic signals) to identify significant differences in safety effectiveness for seniors and other pedestrians [as permitted by observed samples]. Some combinations of these interventions in pairs were also observed. The results of these analyses provide more solid information about the effectiveness of these interventions for improving pedestrian safety, especially for these two vulnerable population
groups. The Connecticut State Crash Data Repository and the newly formed Connecticut Transportation Safety Research Center will be employed as a “living laboratory” for sharing these results with safety and planning professionals in the State.

**Describe anticipated impacts/benefits of implementation:**

Most efforts to improve safety of pedestrians, especially for the frail groups such as seniors and children, have focused on behavioral and human factor considerations. This project will identify physical characteristics of the road and roadside associated with higher severity for pedestrian crashes with and without the designed interventions. The following interventions are associated with reducing the severity of interactions between pedestrians and motor vehicles: installing traffic signals (with or without textured pavement crosswalks) and the combination of textured pavement crosswalks with center roadway warning signs. Using center roadway warning signs was associated with an increase in the interaction severity, and using a textured pavement crosswalk alone was not significantly associated. These findings will be valuable for road safety analysts both to learn the road and neighborhood contexts and designed interventions that are most critical for improving pedestrian safety as well as the value of using short term observations of conflicts as a tool for learning where to further focus safety improvement efforts.

**Web links:**

- Reports
- Project website