

Pedestrian/Bicyclist Warning Devices and Signs at CTA Rail-Highway Grade Crossings

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The number of pedestrian and bicycle fatalities at highway-rail grade crossings have increased over the past 10 years. This is contrary to a decrease in the number of train-vehicle collisions at highway-rail grade crossings during that same time period. The focus of this research was on pedestrians and cyclists who utilize legally authorized Chicago Transit Authority highway-rail crossings with pedestrian access. A team at the Urban Transportation Center at the University of Illinois at Chicago undertook the research to learn ways to improve pedestrian and cyclist safety at rail grade crossings and augment a 2013 study that analyzed safety at various freight and passenger rail crossings.

Project Objective

The objective of this study was to contribute to the still limited research on pedestrian and cyclist safety at rail grade crossings by expanding the scope of a previous study (Metaxatos and Sriraj, 2013) to include rail grade crossings in the City of Chicago with rail operations by the Chicago Transit Authority.

Location of Surveys

This study identified seven locations at CTA rail grade crossings as hot spots of pedestrian/cyclist activity suitable to conduct paper/pen manual user surveys; a total of 211 surveys were gathered.

Project Scope

The study was divided into three components:

1. A literature review.
2. Identification of seven hot spots used for survey locations.
3. Survey of non-motorized users and analysis of pedestrian attitudes.

The research led to conclusions and recommendations that may have implications about the design and placement of signs and warning systems at CTA pedestrian-rail grade crossings, as well as provide education and enforcement initiatives.



Figure 1. Kedzie Avenue crossing on Brown Line.

Key Project Recommendations

- Overall, female respondents in all age groups appear to be more safety conscious than male respondents when using a crossing.
- Pedestrians older than 51 years of age noticed active signs at grade crossings more frequently than passive signs.
- Safety improvements at pedestrian grade crossings should always consider the special needs of people with disabilities.
- Governments need to expand Manual on Uniform Traffic Control Devices (MUTCD) compliance on all warning signs and devices and develop methods to determine the effectiveness of warning signs and devices utilized.
- Greater support is needed for educational campaigns that promote environmental awareness, especially among younger male users.

Key Survey Finding

One survey finding revealed a significant number of people sometimes walk across tracks when warned to stay put. As stated in the report: “A great majority of the respondents said they would not cross the tracks when the lights are flashing, the bells are ringing, or the gates are down. However, up to 25% of the respondents, on occasion, would still cross the tracks against activated signals/warning devices.”

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