

Understanding and Mitigating Pedestrian Crashes at Crosswalks – Selection of Treatments that Work

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ABSTRACT

Pedestrian safety continues to be a major and rising problem around the world. While most crashes involving pedestrians occur in urban areas, fatal and severe crashes tend to be distributed disproportionately across various space, temporal, weather and road design conditions. The variability of crash occurrences as well as injury severity levels across space, temporal, weather and road design conditions calls for careful crash investigations as well as selection and implementation of crossing treatments that can effectively reduce fatalities and other severities. This presentation will discuss results and recommendations from two studies conducted in the state of Michigan, United States of America. In the first study, statistical analysis methods as well as crash typing of five-year statewide pedestrian crashes were employed to identify the most prevalent causes. In addition to causes related to infrastructure, traffic and weather conditions, it was found that the common behaviors associated with pedestrian crashes include failing to yield (by both pedestrians and motorists), pedestrians being in roadway (standing, lying, walking, playing, etc.), and pedestrian walking along roadway (with traffic, etc.). The analysis further indicated a strong association of demographics of the parties involved and risk behaviors. In the second study, a careful identification of effective pedestrian crossing treatments was performed based on analysis of eleven years pedestrian crashes and field investigations of high-risk corridors, including measuring light levels, particularly on higher speed roads (45 mph/72 kph and above). One of the major findings was that most of the fatal and serious injury pedestrian crashes occurred at nighttime and were typically associated with low measured light level readings. It was further determined that a limited number of countermeasures were appropriate for application to higher speed roads.