Crosswalk Safety: Evaluation of the Light Guard System

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Accidents involving pedestrians on crosswalks are a common cause of road fatalities. In-pavement flashing warning lights have been proposed as a means of increasing the conspicuity of a crosswalk when a pedestrian is using it. Evaluations in California and Washington have demonstrated the effectiveness of such in-pavement flashing warning lights on moderating drivers' behavior when approaching a crosswalk. However, in-pavement flashing warning light systems are more expensive to install than striping, the conventional way of identifying crosswalks. This project studied the effect of an in-pavement flashing warning light system installed on a crosswalk on pedestrian safety, relative to striping.

The study looked at a pair of crosswalks in Denville, New Jersey. Evaluations were made before and after installation of a pavement flashing system. From the data collected it is concluded that:

- Clear striping of a crosswalk enhances the noticeability of the crosswalk to drivers who are not familiar with the location and reduces conflicts between pedestrians and vehicles. Clear striping does not reduce the mean speed at which vehicles approach the crosswalk, nor does it reduce the mean number of vehicles passing over the crosswalk while a pedestrian is waiting to cross.

- Adding an in-pavement flashing warning light system to a crosswalk that is already clearly striped reduces the mean speed at which vehicles approach the crosswalk, although this effect tends to diminish over time. The warning light system also reduces the mean number of vehicles that pass over the crosswalk while a pedestrian is waiting.

Lessons from this study were published in:
J. Van Derlofske, P.R. Boyce, and C.M. Hunter (2003) "Evaluation of in-pavement warning lights on pedestrian crosswalk safety," International Municipal Signal Association Journal, 41:3, 20, 54.

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