

Traffic Conflict Analysis for Pedestrian Crossings at Un-Signalized Pedestrian Crossings in Kandy

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Abstract

Road traffic safety is normally measured in number of crashes and the consequences of the crashes in terms of severity. When the crash data are not available, the Traffic Conflict Technique (TCT) is used as an indirect method for determine the magnitude of the safety problem. TCT provides information on relative risks to diagnose the types of problems at a particular location, and it represents efficient tool to check location safety issues when there is limited or no crash data. The Lane Based Post Encroachment Time (LPE'T) will be the conflict analyzing method which used by many researches including Almodfer et al. (2016) followed to identify the pedestrian traffic safety in this study. LPE'T is the time difference between when the pedestrian leaves the conflict zone and at the same starting time when the vehicle approaches the conflict zone related to each lane. Pedestrian crossing area will be selected as the conflict zone in this method. For each pedestrian who uses the conflict zone, the time of he/she leaves the conflict zone and the time of the vehicle arrives the conflict zone is recorded.

This study was conducted at two marked un-signalized crossings in Kandy; Katugasthota - Kandy road and Peradeniya-Kandy road. The pedestrian crossings which were selected to conduct the research were on four-lane roadways having flexible pavements with good condition. Data were gathered monitoring the videos recorded during the peak hours at the pedestrian crossings. For each pedestrian crossing 100 pedestrians were observed covering the approaching from both side of the crossing. The pedestrian crossing in Katugasthota-Kandy road had 50.5% of slight conflicts, 24.5% of serious conflicts and 25% potential conflicts for one direction. The other direction had 50.5% slight conflicts 33% of serious conflicts and 16% of potential conflicts. The crossing at Peradeniya-Kandy road had 40% of slight conflicts, 34% of serious conflicts, and 26% of potential conflicts for one direction. The other direction had 36% of slight conflicts, 39% of serious conflicts, and 25% of potential conflicts. The percentage of serious conflicts in Katugasthota-Kandy road crossing was high that may be due to the placement of a Filling station in front of the pedestrian crossing. Also, the existence of a bus stop near the pedestrian crossing in Peradeniya-Kandy road may be the reason for high percentage of serious conflicts in that crossing.

Keywords: Pedestrian Safety, Non-signalized Crosswalk, Conflict Analysis

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