Applying Pre-Accident Observational Methods for Accident Assessment and Prediction at Intersections in Norrkoping City in Sweden

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Abstract : Traffic safety at intersections is highly represented, given the fact that accidents occur randomly in time and space. It is necessary to judge whether the intersection is dangerous or not based on short-term observations, and not waiting for many years of assessing historical accident data. There are active and pro-active road infrastructure safety methods for assessing safety at intersections. This study aims to investigate the use of quantitative and qualitative pre-observational methods as the best practice for accident prediction, future black spot identification, and treatment. Historical accident data from STRADA (the Swedish Traffic Accident Data Acquisition) was used within Norrkoping city in Sweden. The ADT (Average Daily Traffic), capacity and speed were used to predict accident rates. Locations with the highest accident records and predicted accident counts were identified and hence audited qualitatively by using Street Audit. The results from these quantitative and qualitative methods were analyzed, validated and compared. The paper provides recommendations on the used methods as well as on how to reduce the accident occurrence at the chosen intersections.

Keywords : intersections, traffic conflict, traffic safety, street audit, accidents predictions

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