

# Abstract Submission Form



## 2010 ITE Western District Annual Meeting

San Francisco, CA  
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Paper Title:

Pedestrians vs. Turning Vehicles – Predicting delay

Relevant Session/Topic:

Traffic Signals, Traffic Operations and Management

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Abstract: 250 words maximum. Use 12 point Arial font, single space.

Predicting intersection operations where significant numbers of pedestrians are encountered has historically been done by gross estimation and engineering judgment. In an urban setting where pedestrian and turning volumes are high, the ability to predict delay of the current tools available to traffic engineers is woefully inadequate.

As part of a larger study for the City and County of Denver designed to better understand pedestrian - vehicle interactions, extensive pedestrian and turning vehicle data was collected at one way standard two phased intersections in downtown Denver. At these two phase intersections pedestrian walk indications and vehicle green indications are displayed at the same time. As with all intersections utilizing this phasing, there is a conflict between the turning vehicles and pedestrians crossing the intersection. Data collected included pedestrian volume from each corner, pedestrian paths through the intersection, pedestrian compliance behavior, vehicle turning movements, and number of vehicles delayed by pedestrians; among other data.

In analyzing the data, an apparently strong relationship between the conflicting pedestrian and turning vehicle volumes and the number of vehicles delayed was realized. Based on this relationship, a weighted geometric average of the conflicting pedestrian and turning volumes can be used to predict the number of vehicles delayed.

Using the data collected, this paper presents and describes the development and testing done to arrive at the relationship. It also details potential uses for the results as well as describes future research to solidify and improve the understanding of this apparent relationship.

**Abstracts are due by 5:00pm on Monday, January 11, 2010.**

e-mail your abstracts to:

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