

# Modeling Vehicle-Pedestrian Interactions at Intersections with a Right Turn FYA

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The use of flashing yellow arrow (FYA) indications for left turns has been studied extensively. Many researchers have concluded that the use of FYA indications is a more effective method for communicating permissive left turns when compared to the circular green. As a result, cities have started using FYA indications on right turns. The growing use of FYA indications for right turns is based on the premise that the need for drivers to yield to conflicting pedestrians is communicated better. However, even when use continues to grow, there is limited knowledge on how FYA indications on right turns perform. For example, limited research exists on how drivers and pedestrians interact at intersections with a right-turn FYA.

As part of an ongoing research project, the interactions between the drivers of right-turning vehicles and pedestrians were documented. Using a frame-by-frame analysis of video from signalized intersections, derived measurements such as the time for a right-turn movement to be completed by a driver and the position of conflicting pedestrians within the crosswalk were obtained. The vehicle-pedestrian interactions were documented for sites with and without a right-turn FYA indication. A regression model was created to explain how drivers deviate from an expected right-turn behavior (time to complete a right-turn) as a result of the presence of a pedestrian. While results obtained are early-stage ones, the regression model suggests that a right-turn FYA indication has the potential to positively impact the safety of vehicle and pedestrian interactions because drivers appear to take longer to complete a right-turn, an indication of slower speeds during the right-turn and potentially greater awareness about conflicting pedestrians.

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