Will you stop for me? Roadway design and traffic control device influences on drivers yielding to pedestrians in a crosswalk with a rectangular rapid-flashing beacon.

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The rectangular rapid-flashing beacon (RRFB) is a relatively recent pedestrian crossing treatment that has shown great potential in improving driver yielding to pedestrians compared to more traditional treatments that also use yellow beacons. Though observed results from RRFB treatments have been generally promising, results from several studies showed widely varying yielding rates (19 to 98 percent), indicating that there are variables other than RRFBs that have an effect on driver yielding. In this project, researchers combined data from previous Texas Department of Transportation and Federal Highway Administration projects to create a larger dataset that would be better suited to identify characteristics related to driver yielding. Funding from Texas A&M Transportation Institute Center for Transportation Safety (TTI CTS) permitted both the collection of additional field data that were added to the dataset and the analysis of that dataset to identify variables associated with driver yielding. Results from statistical analysis of staged pedestrian crossings at the 128 site-periods indicated that intersection configuration, presence of median refuge, crossing distance, approach of the crossing, and direction of vehicle travel (i.e., one-way or two-way) were statistically significant. A subset of the data was analyzed when one-minute volume counts were available near the time of the pedestrian crossing. Variables that had at least one level shown as significant included the one-minute count of vehicles per lane, intersection configuration, posted speed limit, presence of advance yield or stop signs, presence of transit stop within 200 ft, presence of a school within 0.5 mi, legend on the sign face, location of beacons (e.g., overhead or roadside), near or far side of the approach, and crossing distance.

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