Evaluation of Automated Camera Enforcement on Red Light Running Violations by Time into the Red Phase
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Abstract
Red light running is a problem in the United States which has resulted in 165,000 injuries and 885 fatalities annually from 2000 – 2009. Automated red light running enforcement cameras have been found to be an effective if controversial solution to reduce red light running. In addition to privacy issues and the potential for an increase in rear end crashes, one of the main concerns is that automated enforcement cameras only target early red light runners, and do not target drivers who are running the light later into the red phase when right angle crashes are more likely to occur.

This study evaluated violations by time into the red for 7 approaches at 4 intersections in Cedar Rapids, Iowa where red light running cameras had been installed. Only those vehicles which did not allow right or left turn on red were considered. A before and after analysis was conducted in order to determine if the cameras had an effect on violation rates at different times into the red phase. These times were 0.0 to less than 1.0 second into the red, when no crashes are expected, 1.0 to less than 3.0 seconds into the red, when left turn-opposed crashes are likely to occur, and more than 3.0 seconds into the red, when both left turn-opposing and right-angle crashes occur. Overall results showed the cameras had the greatest effect on red light runners who entered the intersection 3 or more seconds into the red.

Keyword: automated enforcement – safety

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