Effectiveness of Iowa’s Automated Red Light Running Enforcement Programs

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ABSTRACT

One of the most controversial topics facing traffic engineers, city councils, and public awareness groups is the implementation of automated red light running enforcement camera systems at urban signalized intersections. Red light running is a significant safety problem, as drivers become more aggressive on city roads and become impatient waiting for a traffic signal to change. Red light running camera systems are automated enforcement systems that detect vehicles running a red light and then issue the vehicles a citation. They are becoming widely used in the United States to reduce the number and severity of red light running crashes. The effectiveness of automated red light running enforcement cameras is constantly debated among government officials and citizens who see cameras as either intrusive or constitutionally illegal to an extent. In some cases, it has been argued that automated red light running enforcement increase the percentage of rear-end collisions.

In 2004, the state of Iowa reported over 2,900 crashes (approx. 4.9% of all reported crashes) involving “failure to yield right of way making right turn on red signal” and “ran traffic signal,” both which constitute a driver being involved in a red light running collision. This paper presents the results of a research project that evaluated the effectiveness of Iowa’s currently deployed automated red light running camera systems in Council Bluffs, Davenport, and Clive. Violation data were collected from each community, and system effectiveness was measured through a before-and-after study and a comparison of enforced intersections with similar intersections where the automated enforcement system is not expected to have any spillover effect. The before–and-after data study investigated the reduction in total accidents, red light running-related crashes (e.g., broadside, right-angle, and rear-end), and crash severity. The findings were compared to other communities around the nation to see if Iowa’s automated red light running enforcement system was effective on a national level.

Key words: automated enforcement—public acceptance—red light running camera effectiveness—spillover effects—urban intersection crashes