

Study Shows Red Light Cameras in Iowa Save Lives and Reduce Injuries

During the 2011 session of the Iowa State Assembly, a Midwest Transportation Consortium (MTC) evaluation of camera-based programs to reduce red light running was cited by the Transportation Subcommittee as key to defeating a bill that would have prohibited such programs in the State. The evaluation was led by Shauna Hallmark, Ph.D., director of the MTC (a Tier One UTC).



Quad City Times

RLR camera installation in Davenport, Iowa.

The Federal Highway Administration (FHWA) estimates that red light running (RLR) causes more than 100,000 crashes and 1,000 fatalities annually and results in an estimated economic loss of over \$14 billion per year in the United States.¹ In Iowa, 24.5 percent of all crashes and 31.7 percent of fatal and major injury crashes at signalized intersections were due to red light running from 2001–2006.

Red light running can be particularly dangerous because many RLR crashes are right-angle collisions.

Communities rarely have the resources to field additional law enforcement to combat RLR. As a result many cities, including several in Iowa, are increasingly using automated RLR camera-enforcement systems at signalized intersections. The objective of Hallmark’s study

¹ Federal Highway Administration. *Stop Red Light Running Facts and Statistics*. U.S. Department of Transportation. FHWA Safety. Aug. 3, 2006. http://safety.fhwa.dot.gov/intersections/red_light_facts.htm. Accessed Feb. 28, 2008.

was to evaluate the effectiveness of camera-based RLR enforcement programs in three Iowa communities—Davenport, Council Bluffs, and Clive.

Davenport installed RLR cameras at eight approaches in five intersections in late fall 2004. Council Bluffs installed RLR cameras at seven approaches in five intersections in fall 2005. Clive installed RLR cameras at six approaches in four intersections in July 2006. The State of Iowa has no State-mandated laws regarding the use of automated enforcement and no recommended schedule of traffic fines for violations captured by cameras. Each of the Iowa communities implemented its camera-based RLR enforcement program under local, municipal ordinances allowed by the Code of Iowa.

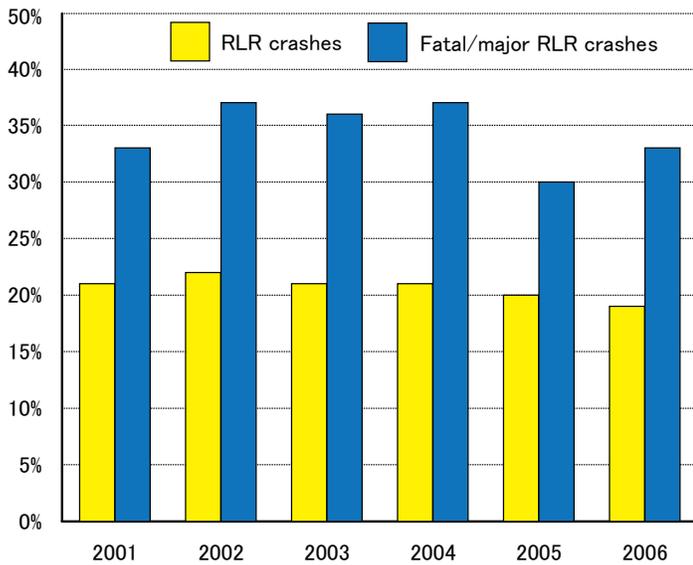
The effectiveness of the RLR camera systems was evaluated for Davenport using a crash analysis, and a reduction in the number of RLR violations was evaluated for Clive. Simple descriptive statistics were used to compare crashes in Council Bluffs because of limited data.

Hallmark and her team compared post-RLR camera installation crash data at the camera-enforced intersections and at control intersections in Davenport using a Bayesian analysis. Control intersections were selected because they had similar volumes, similar crash frequencies, and were located on roadway types that were similar to RLR camera-enforced intersections. They found that after RLR camera-enforcement systems were implemented, red light running crashes decreased by 40 percent while crashes of all types decreased 20 percent at these intersections. At the same time, total crashes increased by 7 percent at the control intersections. A study was conducted for Clive that compared red light running violations at camera enforced intersections to control intersections using a Poisson regression analysis. Results showed that red light running violations were 25 times higher at approaches for the control intersections

than at approaches with red light running cameras. The findings reflect a national trend. According to Hallmark, the Insurance Institute for Highway Safety estimates that from 2005 to 2009 cameras cut the rate of red light running deaths by 24 percent in 14 large cities, saving 159 lives. Hallmark emphasizes the importance of posting easily visible warning signs in advance of camera-controlled intersections. In Cedar Rapids, Iowa, she says, anyone can find the camera locations online, as well as the posted speed limits, vehicle speeds, and the duration of yellow and red lights.

Results from the MTC research have received extensive local media coverage, including a piece on Iowa Public Radio at the time of the subcommittee’s decision and an article in the *Des Moines Register* on June 1, 2011, the day that five red light cameras were turned on at intersections at designated Des Moines, Iowa, thoroughfares. In addition, the research results have been used by transportation and law enforcement agencies in the United States and internationally. ♻️

RLR Crashes as a Percentage of All Signalized Intersection Crashes in Iowa, 2001–2006



SOURCE: Midwestern Transportation Consortium

About This Project

Shauna Hallmark, Ph.D. (shallmar@iastate.edu), is the director of the Midwest Transportation Consortium (MTC) and associate professor of civil, construction, and environmental engineering at Iowa State University (ISU). More information about the project described in this article can be found online, www.intrans.iastate.edu/research/detail.cfm?projectID=1158685907. Through another MTC-sponsored project, Dr. Hallmark is currently evaluating the effectiveness of the RLR enforcement cameras in Cedar Rapids, Iowa. Cedar Rapids is also installing speed enforcement cameras at select approaches where RLR cameras are installed, providing a unique opportunity to evaluate the two countermeasures together.

This newsletter highlights some recent accomplishments and products from one University Transportation Center (UTC). The views presented are those of the authors and not necessarily the views of the Research and Innovative Technology Administration or the U.S. Department of Transportation, which administers the UTC program.

