



TECHSUMMARY *November 2013*

SIO No. 30000203 / LTRC Project No. 10-3SSS

Automated Enforcement and Highway Safety

INTRODUCTION

The Louisiana Transportation Research Center (LTRC) funded the Automated Enforcement and Highway Safety project to evaluate the advantages and disadvantages of automated enforcement at intersections, identify strategies to enhance public opinion related to automated enforcement, develop policy guidance for statewide implementation, and develop a guidebook for local jurisdictions considering implementing automated enforcement at signalized intersections.

OBJECTIVE

The objectives of the Automated Enforcement and Highway Safety Research study were to:

- Conduct a literature review of national research related to the effectiveness of red light camera (RLC) programs in changing crash frequency, crash severity, crash costs, and violations;
- Identify red light running program noteworthy practices, strengths, weaknesses, opportunities, and barriers;
- Establish a record of current RLC applications in Louisiana communities and the observed safety impact of the programs;
- Conduct a survey to understand public perception of RLC programs in Louisiana; review the existing statewide RLC policy, compare it to noteworthy practices, and identify potential improvements; and
- Develop a guidebook for implementing red light camera programs.

SCOPE

The literature review provided national level information about the effectiveness and public perceptions of RLC programs. The literature review also included a review of the existing state automated enforcement policy. The project public opinion survey focused on understanding the public perception of red light running cameras and identifying the measures that might enhance public approval of red light camera programs.

METHODOLOGY

The literature review scanned domestic and international documentation related to the effectiveness of RLC programs and RLC implementation policies. It used the National Transportation Library online Transportation Research International Documentation and Research in Progress (RIP) databases. Google Scholar was also searched to identify additional documents and cross verify references.

Two types of public opinion surveys were conducted:

- Tier 1 – An intercept survey was conducted in three Louisiana communities – two with active RLC programs (Baton Rouge and Lafayette) and one without (Alexandria). The Tier 1 survey also included an internet-based survey released through the DOTD web site.
- Tier 2 – Conduct interviews with respondents from the Tier 1 surveys who volunteered to participate in more detailed conversations.

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The project recommendations were evaluated for ease of implementation, consistency with existing Louisiana practices, effectiveness, and potential impacts on public perception.

CONCLUSIONS

Vehicle characteristics, intersection design and operations, and driver behavior are central to the red-light running (RLR) phenomenon. Engineering and education countermeasures should be the first line of action adopted by traffic engineers to mitigate RLR violations and crashes. Intersections that continue to exhibit abnormal levels of RLR violations even after engineering and educational countermeasures have been in operation are typical candidates for RLCs.

RLC programs have been used in over 500 cities [Insurance Institute of Highway Safety (IIHS)] in the U.S. to augment efforts by law enforcement to curb intersection crashes in general and red-light running crashes in particular. RLC program implementation has reduced angle crashes and injury crashes in a majority of the cities; however, rear-end crashes increased in many jurisdictions. A majority of the studies also show a decline in the number of RLR violations at intersections following RLC program implementation.

The public opinion survey conducted in this project showed an even split between respondents who perceive RLR to be a problem and those who do not. Similarly, respondents were evenly split between being in favor of and opposed to RLC programs. Opposition was slightly higher in the regions with RLC programs compared to regions without.

Among those who favor RLC programs, the leading reasons to support the program (in order of response) are: it encourages drivers to obey traffic laws, reduces crashes, and reduces RLR. Conversely, the leading reasons respondents oppose RLC programs are because respondents believe it is just a program to increase revenue and RLCs go against the United States' system of justice. Respondents also provided several other reasons to oppose RLC programs, such as RLCs increase rear end crashes, remove officer discretion, create disagreements with a private company having a financial interest in the system, violate privacy, discriminate against certain sociodemographic groups, and impose responsibility on vehicle owner, even if they were not driving the vehicle.

Survey respondents also identified strategies that could be used to enhance their perspectives about RLC programs. The most popular strategy was to provide more information about how the revenue from the RLCs is actually used. Other strategies that might enhance opinions about RLCs include using the revenue to improve safety in the community, providing better warning about

when and where RLC programs are going to be implemented, and educating the public on the effectiveness of RLCs.

RECOMMENDATIONS

1. Modify the photo enforcement policy to require public education programs prior to and throughout deployment of a RLC program.
2. Modify the policy to clarify the type of crashes under consideration in the automated enforcement portion from "vehicle/pedestrian" crashes to "crashes that can be avoided with an automated enforcement countermeasure."
3. Modify the photo enforcement policy to require enhanced methods for screening signalized intersections to identify sites with potential for safety improvement.
4. Modify the photo enforcement policy to require signs indicating electronic traffic enforcement at the specific installation location and at jurisdictional limits of the local governments.
5. Modify the Law Revised Statute Title 32 Section 232 (RS 32:232) or the photo enforcement policy to achieve a consistent definition of a red light violation. Louisiana law requires vehicles to clear the intersection prior to the signal indication changing to red. The MUTCD (Manual on Uniform Traffic Control Devices) indicates the vehicle shall not enter the intersection during a steady red indication. The state-automated enforcement policy allows for a citation to be issued if the motorist is beyond the stop bar at the beginning of a red indication, which is permissible according to MUTCD procedures. It is recommended the state further evaluate these issues and consider revising RS 32:232 to provide consistency with the MUTCD.
6. The state automated enforcement policy permits motorists to enter the intersection to turn right on a red light after stopping and, as necessary, yielding to pedestrians and other motorists without receiving a red light running citation. Drivers who do not stop prior to turning right on red are in violation of the law and subject to enforcement. Agencies should operate RLC programs consistent with this policy, and it should be deployed across the state. Imposing a reduced fine for right-turn-on-red violations may increase public support for enforcing these common violations and should be incorporated into state policy.
7. To decrease the public opposition and avoid a potential conflict of interest, agencies should control the site selection process, with vendor support limited to data collection or other activities at the discretion of the agency. Agencies should avoid a vendor compensation structure based on the number of paid citations.
8. Eliminate the requirement for agencies to report RLC deployment effectiveness.