

**The Bill Blackwood  
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**Red Light Camera Systems' Effects on Intersections**



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## **ABSTRACT**

One of the major causes of motor vehicle accidents is when a vehicle runs a red light. Nationwide, these accidents often result in injury, death, and property damages, which can range in the millions. The purpose of this Leadership White Paper is to determine the effectiveness of red light camera systems on reducing motor vehicle accidents and enhancing public safety.

A study conducted by the Insurance Institute for Highway Safety has shown that intersections monitored by red light cameras have a reduction in right angle traffic accidents ("Camera enforcement," 2011). Reducing the number of traffic accidents at any given intersection has multiple effects, including enhanced public safety, officer safety, and public trust.

Law enforcement agencies across the nation are faced with staffing levels that are lower than desired. This lack of manpower often requires agencies to focus their attention on more pressing issues other than traffic enforcement. Intersections that are monitored by red light camera systems no longer need to be visually monitored by patrol officers or deputies. This, in turn, frees up the street patrol units to focus their attention on other public safety related matters.

City governments and county commissioners typically do not incur any of the operating cost of red light camera systems. These systems are installed and maintained by a private company who, in turn, receives a portion of the fines assessed by the local governments. These fines are a source of revenue for the local governments with little to no investment.

It is widely believed that red light camera systems are necessary to change driver behavior. This change in behavior is based on the belief that as the motorist approaches a monitored intersection, he or she will become more cognizant of the traffic signal and their distance from safely clearing the intersection. This change in driver behavior is believed to translate into a reduction in accidents. Achieving a higher percentage of safety among the nation's drivers can be achieved through a combination of intelligent engineering, driver education, and traffic enforcement. The focus of this document will be on the traffic enforcement aspect of driver behavior.

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## INTRODUCTION

Here is a scenario that motorists who traverse the nation's highways face, sometimes multiple times during a single outing. A woman is late for work and driving aggressively to get to work before her boss notices. She approaches an intersection controlled by an electronic control device. Suddenly, the light changes from green to yellow and then to red just as she gets to the crosswalk. She considers whether she can make it through the intersection or stop and take the chance that she will be even later to work. At the same time, the thought races through her mind and she wonders if a police officer is nearby or if this intersection is monitored with a red light camera system.

Drivers across the nation face similar scenarios each and every day. While most drivers make it through the intersection safely, others are not so fortunate. The consequences of drivers that run red lights are at times tragic but, often times, avoidable.

Running a red light is a common traffic violation. There is no question that red light violations occur every day, at thousands of intersections across the county. Experts across the board agree that vehicles running red lights are major contributors to motor vehicle accidents. In 2009, the Insurance Institute for Highway Safety conducted a study regarding drivers of vehicles who ran red lights. Findings of the study estimated that 130,000 people nationwide were injured because of vehicles running red lights, and another 676 were killed ("Camera Enforcement," 2011). Motor vehicle accidents occur in urban communities of all sizes; however, the common denominator is that these accidents are often occurring at intersections controlled by traffic control devices. What

is of great concern is that 39% of these accidents are the direct result of a motorist running a red light (Retting, Williams, Preusser, & Weinstein, 1995). Local governments across the nation have decided to take an alternative route to reduce the number of red light runners in their jurisdictions. This electronic means of fighting back is both popular and unpopular. It is a way of taking advantage of technological advances to educate the public and increase public safety.

Statistics and studies have shown that intersections monitored by red light camera systems have a reduced number of violations when compared to the same intersection prior to installing cameras. It is also believed that driver behavior is affected by the installation of red light cameras at monitored intersections as well as intersections not monitored. Officers and deputies routinely tasked with monitoring such intersections are now able to focus on other police responsibilities within their respective jurisdiction. Local governments are not only rewarded with safer roadways, but roadways that are not being regularly congested due to motor vehicle accidents. With the reduction of accidents, the residents can expect to see their local police officers and sheriffs' deputies spending more time handling other pressing and serious police related issues.

## **POSITION**

It is no secret that traffic accidents are a significant cause of preventable deaths in the United States of America. According to the Insurance Institute for Highway Safety in 2009, there were approximately 130,000 people injured and 676 killed as a result of motor vehicle accident where a red light was ran ("Camera enforcement," 2011). Red light camera systems effectiveness can be viewed in terms of reductions in the

frequency of accidents, the severity of the accidents, and the frequency of red-light violations. There is no doubt that drivers who run red lights often put other drivers and pedestrians at risk. Unfortunately, in the minds of many drivers, a yellow light has come to mean they should “speed up” rather than “slow down.” A majority of citizens polled recognize red light running as a problem and support the use of red light camera systems. In 1998, the United States Department of Transportation conducted a survey regarding red light running issues. The results of the survey revealed that approximately 95% of Americans were concerned about the dangers revolving around drivers who run red lights. In a separate poll conducted in September 2001 approximately 78% of Americans were of the opinion that improvements needed to be made to make intersections safer (“Red Light Running,” 2003). According to this same poll, frustration and road rage were not factors in decision to run red lights; however, being in a hurry was the predominate factor when deciding to proceed through a red light.

To say that red light running is an epidemic is an understatement. Prior to installing red light cameras in Fairfax Virginia a study was conducted at five different intersections. On average, a motorist ran a red light every 20 minutes at each intersection. These results are from a community of approximately 25,000 residents (Retting, Williams, Farmer, & Feldman, 1999). It can be inferred that if this same study was conducted in a large, urban metropolis that the frequency of violations would be staggering.

During the peak time hours of 2:00 pm to 7:00 pm, there are more vehicles on the roadways and the red light violations are more frequent. The increase in roadway

traffic during this time is directly related to the rush hour traffic congestion that all cities have on a daily basis. In 2003, The University of Alabama's Transportation Center conducted a red light violation survey in Mobile. The study focused on 19 different intersections, which were individually monitored for approximately 23 days. The results were that a total of 1,775 red light violations occurred (Hill & Lindly, 2003).

Further studies indicated that a majority of drivers on public roadways realize that running a red light can contribute considerably to traffic accidents; however many do so anyway. Drivers who knowingly put themselves and others at risk by running red lights have a plethora of excuses. The AAA Foundation for Traffic Safety conducted a telephone poll in 2010. The finding of this survey revealed that approximately one-third of the individuals polled admitted to running a red light during their daily travels. Approximately 93% of the individuals polled believed it is unacceptable to go through a red light when it is possible to stop safely (Foundation for Traffic Safety, 2010.)

A February 2011 study comparing cities with red light cameras to those without red light cameras determined that these systems reduced the number of fatal red light running accidents by a rate of 24%. The same study determined that all types of fatal crashes and intersections with signalized traffic control devices dropped by 17% (Hu, McCartt, & Teoh, 2011). Similar tests were conducted in Fairfax, Virginia, and Oxnard, California. Once again, the results were a decrease in red light violations as well as accidents where running a red light is involved.

As motorists traverse through intersections monitored by red light camera systems, their driving behavior and habits are typically influenced by the possibility of receiving a citation in the event they run the red light. When a motorist's driving habits

are influenced because they believe an intersection may be monitored by a red light camera, this is often referred to as a spillover effect. The spillover effect describes a driver's propensity to change their behavior when traveling through an intersection whether or not they are equipped with a red light camera system. While there are no scientific studies to support this issue, it is of common belief that drivers who are under the impression they are traveling through an intersection possibly monitored by a red light camera will be more attentive to the signal light and approaching vehicles. This was seen in the study conducted in Fairfax, Virginia (Retting et al., 1999). Not only did the red light violations decrease in monitored intersections, but they also decreased in intersections that were not monitored.

Many police agencies and sheriff's departments nationwide are operating at staffing levels that are less than desired. This is commonly referred to as "doing more with less." This shortage often requires police services, such as traffic enforcement, to be sacrificed to address more pressing police matters. City and county governments oftentimes fall victim to budget cuts due to the struggling economy. When budgets are forced to be reduced, the first items to be cut are typically training or preventative programs. Police agencies across the United States are then forced to streamline patrols to make up differences created by these cuts (Bohn, 2008). Intersections where red light cameras are in place are proven to be safer and have fewer accidents, thus reducing the amount of attention required by police and sheriff's departments. The officer's attention can now be focused on more pressing matters that they must handle on a daily basis.

## COUNTER POSITION

Monitoring intersections through automated photo enforcement, or red light camera systems, has gained wide support among city and county officials. Red light cameras are a proven method of reducing accidents, enforcing traffic laws, as well as freeing officers to respond to more serious crimes. However there is outrage among many communities currently using red light camera systems, which, too many angry drivers seem to be at every intersection.

Red light camera systems were first introduced in the United States in the 1990s. According to statistics provided by the Insurance Institute for Highway Safety, as of 2011, there are 661 cities and towns across 24 states using red light camera systems to monitor intersections (Dade, 2012). For example, many chapters of the National Association for the Advancement of Colored People oppose the use of red light cameras at intersections to record drivers who run red lights. They are of the opinion that red light camera systems unfairly target those who live in urban cities, many of which are minorities or indigent. Scott X. Esdaile, president Of the Connecticut State Conference of the NAACP Branches said in a statement, “proposed legislation to allow red light cameras in Connecticut cities with populations of 48,000 or more would impose unequally on the people living in those cities” (Lender, 2012, para. 3). His argument is that in order for red light camera systems to be profitable, they must be deployed in urban areas with substantial populations. By targeting these densely populated areas, minorities and the poor will be disproportionately targeted to pay red light violation fines, when these individuals are least able to pay in the first place.

Those in favor of red light camera systems argue that these systems are incapable of targeting minorities in urban areas. It is a known fact that running a red light is an equal opportunity killer and does not distinguish between race or financial background. Police officials across the country dispute these accusations. Democratic Congressman Ed Perlmutter said in a recent news story that “police officers are the only sure way to apprehend seriously impaired, or reckless drivers. All of us are concerned with reducing accidents” (Stokols, 2015, para.7).

It is of common opinion that drivers opposed to red light camera systems complain of an intrusion of “big brother” watching over them. Many victims who have been issued citations from a red light camera system have filed lawsuits claiming this type of traffic enforcement is unfair or unconstitutional because it shifts the government’s burden of proof to the ticket driver or vehicle owner. It is now the driver’s or vehicle owner’s responsibility to prove they are innocent. The equipment used to operate the red light camera systems is continually exposed to the weather elements, which inevitably can affect the reliability of the camera system. These camera systems are also prone to mechanical failures that produce erroneous citations to innocent drivers. Since these are machines, they lack the reasoning an officer would have when witnessing a potential traffic violation.

Regarding the “big brother” syndrome, where opponents feel there is an invasion of privacy, they must remember this is a public roadway, and the camera systems are not targeting motorists. These red light cameras are only taking pictures of a vehicles outer shell and its license plate (Stokols, 2015). Vehicles that do not run a red light will not get their pictures taken. When driving on a public roadway, operators must abide by

the law. Most importantly, the courts have ruled that there is no expectation of privacy when operating a vehicle on a public roadway and a traffic law is broken.

But as would be expected, the loudest argument against red light camera systems is that they are “cash cows.” They are in place to simply generate money for the governmental agencies and companies who install them. Many opponents of red light camera systems will argue these devices actually increase the number of rear end automobile accidents due to drivers breaking unnecessarily at intersections.

Furthermore, the belief is that they are simply in place for the purpose of being a money maker for the manufacturer and the financially strapped governments. Also called into question are the motives of many of the pro camera safety groups who receive money from the camera system manufacturers (Kedmey, 2014). In Texas alone, there are approximately 333 cameras installed in 36 different cities. According to the Texas Department of Transportation, between July 1, 2008 and June 30, 2009, these red light camera systems generated \$95,799,675 worth of ticket violations (“Texas Red Light Cameras,” 2009). Cities across Texas and other states have plans to install cameras at intersections that have been identified as being the most dangerous. As more Texas cities install red light camera systems, the state could soon top the \$1 billion mark. Opponents of red light camera systems indicate this is the logic behind these devices.

Individuals who argue that red light cameras are in place to generate money for the governing body are absolutely right. The truth of the matter is that the fines for running the red lights do make money for the governments who put them in place. They always have and they always will. Here is a more important truth. Approximately 7

billion dollars in damages, lost wages, and work days are a direct result from accidents involving red light violations. On top of this destruction, there are approximately 800 deaths each year directly attributed to red light violations (“Camera Enforcement,” 2011). The bottom line is that intersections where a red light camera system is in place will see a reduction in red light violations and a reduction in accidents.

## **RECOMMENDATION**

Law enforcement agencies across the nation are faced with dwindling staffing levels, while vehicular traffic continues to be on the rise. Police officers, sheriff’s deputies, and constables are continually asked to “do more with less.” With no relief in sight, city and county governments must be creative and find ways to effectively deploy their personnel for the greater cause.

It is no secret to anyone that motorists who continue to run red lights on crowded and congested roadways are a threat to everyone and unnecessarily put lives at risk. To combat these actions, city and county governments are identifying their most dangerous and frequent intersections for red light violations and installing camera systems to identify and cite these offenders. One study, conducted by the Insurance Institute for Highway Safety has shown that the camera systems have effectively reduced the amount of accidents at these intersections (Hu, McCartt, & Teoh, 2011). The reduction, in part, is due to the attention the cameras bring to motorists who traverses these streets, as well as the effect the cameras are having in changing the driver’s behavior. This behavioral change can be contributed to driver knowledge and “hitting the violators where it hurts most, their pocket books.”

Red light camera systems potentially affect the way departments will deploy their officers. With red light violations and accidents being reduced at these intersections, officers will be able to focus their attention on other more pressing issues. The reduction in accidents will also aid in traffic flow. Busy intersections where an accident has taken place can quickly “bottle neck” traffic until police have had an opportunity to clear the intersection.

Opponents of red light camera systems continue to argue that these systems are simply in place to generate money and to keep an eye on the general public. One cannot argue that money is not generated as a result of red light violations, but it should also be noted that taxpayers are funding this program, and are the same individuals who are committing the violations in the first place. While the law enforcement community continues to battle dwindling staffing levels, it must will rely on creative and innovative ideas such as red light camera systems to keep the nation’s growing population safe while operating vehicle’s on the public roadways. In the end, for drivers and red-light cameras, it is the same as it has been since their inception: Drivers should not run the red light or they will be fined. This is a simple concept that would make streets safer and make red light camera systems unnecessary.

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