

# SAFETY FOCUS

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*This issue, which marks our newsletter's second anniversary, focuses on: a new report from the World Health Organization on road safety; seven new research reports from the 2004 Transportation Research Board conference; and an analysis of all active red light running and photo enforcement speed monitoring legislation. It's been a busy two years!*



## World Health Organization Report

A new road safety report issued by the World Health Organization (WHO) and World Bank concludes that red light and speed photo enforcement cameras are effective in reducing the number and severity of traffic crashes, which kill an estimated 1.2 million people worldwide every year.

The report, entitled *World report on road traffic injury prevention*, marks the first major research work issued by WHO and the World Bank on road safety. It provides a comprehensive overview of what is known about the causes of traffic crashes and how to best prevent them.

Among the report's findings on red light cameras:

- A meta-analysis (a way of statistically combining the results of a set of research studies) of the effectiveness of cameras at traffic lights has shown that the cameras are associated with a 12 percent reduction in the number of injury crashes.
- A cost-benefit analysis of cameras at traffic lights in the United Kingdom calculated that the return was nearly twice the investment after one year and 12 times the investment after five years.

The WHO report includes research results from Australia, where the introduction of red light cameras in the late 1980s led to a seven percent reduction in all crashes and a 32 percent reduction in front-to-side impacts at sites with cameras.

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The report also cites a well-regarded study conducted after the introduction of cameras at sites in Oxnard, California, where the number of injury crashes fell by 29 percent and the number of front-to-side impacts involving injury fell by 68 percent, with no increase in rear impacts.

Speed limit photo enforcement also is extensively referenced in the report, and its use is encouraged. According to the report, experience from a range of high-income countries has found speed cameras to be a highly effective means of speed enforcement. "The well-publicized use of such equipment in places where speed limits are not generally obeyed and where the consequent risk of a crash is high has led to substantial reductions in crashes."

The report's recommendations urge governments to:

- create multidisciplinary approaches to road enforcement;
- support the creation of safety advocacy groups;
- create budgets for road safety and increase investment in demonstrably effective road safety activities.

The WHO report was released on World Health Day (April 7) and reinforces the global health organization's year-long focus on road safety. *For more information, please visit <http://www.who.int/en/>.*

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## Synopsis of seven new research studies from the **2004 Transportation Research Board Conference**

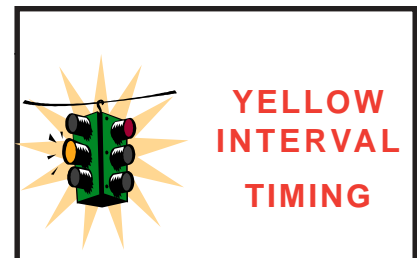
The 83rd Annual Meeting of the Transportation Research Board held in Washington, DC in January produced a significant amount of new research on red light and photo enforcement from around the world. The seven reports most related to red light running are summarized below. Internet links to the complete reports are included wherever possible.

**T**he objective of this research was to quantify the effectiveness of an increase in yellow interval duration as an engineering countermeasure to red-light violations.

Ten intersections in five Texas cities not previously identified as having a problem with red-light-running were selected for the study. Each "before" study and each "after" study included the collection of six hours of traffic flow data on each intersection approach. At each site, the "after" study was conducted six months after the yellow increase was implemented.

Based on this research, it was concluded that:

- An increase of 0.5 to 1.5 seconds in yellow duration (such that it does not exceed 5.5 seconds) will decrease the frequency of red-light-running by at least 50 percent;
- Drivers *do* adapt to the increase in yellow duration; however, the researchers say adaptation does not undo the safety benefit of an increase in yellow duration;
- Increasing a yellow interval that is shorter than recommended by the Institute of Transportation Engineers (ITE) is likely to provide the greatest reduction in violations relative to the cost of retiming a yellow interval in the field.



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The researchers conclude that "An avoidable red-running event is likely committed by a driver who is frustrated by excessive delay or congested flow conditions. This driver may also be indifferent to traffic laws. Short of major resource investments to increase capacity, enforcement countermeasures are likely to be the most effective means of curbing this driver's inclination to run the red indication."

Since the "after" study took place only six months after the interval change, it is logical to assume that more drivers might adapt to the increased yellow interval as they became more aware of the modified intersections over a longer period of time.

James A. Bonneson and Karl H. Zimmerman. *Effect of Yellow Interval Timing on Red-Light Violation Frequency at Urban Intersections*. Texas Transportation Institute, 2003. To learn more about this study, please visit <http://tcd.tamu.edu/Documents/4027-2.pdf> and <http://tcd.tamu.edu/Documents/4196-1.pdf>.



A Texas Department of Public Safety study examining the past 25 years of crash data establishes the severity of red light running through recorded instances of "fatal, incapacitation, non-incapacitating and possible injuries" and by focusing on the varying red-light-running behavior by gender and age group. Among the findings:

**RED LIGHT  
RUNNING IN TEXAS**

- In Texas, about 16 percent of people killed and 19-22 percent of people injured in intersection crashes are due to red light running.
- The number of people killed or injured in red light running crashes in Texas has increased substantially over the years. Although, as a percentage, it has increased in proportion to the percentage increase in vehicle miles traveled.
- Among drivers who ran red lights and caused a crash, substantially more men than women are involved. But for either sex, red light running incidents most frequently involved someone in the 20- to 35-year-old age group, with the highest number of crashes caused by drivers around age 20.

Kraus, Edgar and Cesar Quiroga. *Red Light Running — A Policy Review*. San Antonio, TX: Texas Transportation Institute, 2003. To learn more about this study, please visit <http://tti.tamu.edu/cts/reports/cts-02.pdf>.

This study looked at data for all injury accidents in Cambridgeshire in southeastern Britain between 1990 and 2002. The study analyzed the data from 49 different camera sites and found that in the immediate vicinity of the camera sites, the installation of a speed limit enforcement camera can be expected to lead to decreases in injury accidents numbers by 45

**45 PERCENT DROP IN  
INJURY CRASHES WITH  
SPEED CAMERAS**



percent. Lower, but still significant decreases were observed in the wider surrounding area. To gain further insight, the study grouped together sites by according to road category. This analysis showed that the biggest reduction in accident numbers can be obtained on roads with higher incidences of speeding offenses.

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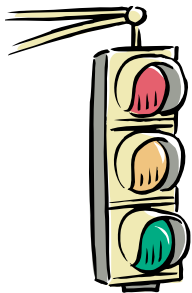
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Previous studies cited in the research revealed that the installation of speed enforcement cameras elsewhere in the UK lead to a decrease in casualties by an average of 28 percent, while another study estimated a 47 percent reduction in killed or seriously injured crash victims in the immediate vicinity of a camera and 18 percent in the wider surrounding area.

Hess, Stephane and J.W. Polak. *Effects of Speed Limit Enforcement Cameras With Differentiation By Road Type and Catchment Area*, Center for Transport Studies, Imperial College, London. To learn more about this study, please visit <http://www.cts.cv.imperial.ac.uk/html/ResearchActivities/projectDetails.asp?ProjectID=227>.

**B**y concentrating on four-way intersections, the study examined the frequency of violations (violations/hour) from the characteristics of operational traffic and intersection geometry in Alabama, Texas, Iowa and California. The results showed a total of 1,775 violations observed over 554 hours, giving a rate of 3.2 violations/hour.

**MODELS PREDICT RED LIGHT RUNNING VIOLATION FREQUENCY**



The findings prove there are a variety of equations that can be utilized to predict the frequency of red light running at an intersection. The variables that support these predictions are “average daily traffic (ADT), number of approach lanes, speed limit, number of lanes crossed by the approach, and the distance to preceding and following intersections.” The number of lanes on the approach, the speed limit, and the ADT proved to be the best ways to analyze and test red light running frequency.

Hill, Stephen E. and Jay K. Lindly. *Red Light Running Prediction and Analysis*. Tuscaloosa, AL: The University of Alabama, 2003. To learn more about this study, please visit [http://utca.eng.ua.edu/projects/final\\_reports/02112-rpt%20.htm](http://utca.eng.ua.edu/projects/final_reports/02112-rpt%20.htm).

**A** study was conducted to analyze the precision of automated photo enforcement systems normally used for red light running for speeding. It concluded that the speed camera system was rather insensitive to errors in this measurement. While the red light camera system’s speed estimates were almost exact, the study included a 24.5 percent speed estimate miscalculation without falsely identifying a violator.

**RED LIGHT RUNNING SPEED VIOLATION DETECTION IS HIGHLY ACCURATE**



To ensure accuracy and fair evaluation, the research compared the speed measurements of the red light cameras system, an autoscope, and a radar gun to assess speed estimations. The findings were also reconfirmed by the observations of project researchers and Department of Transportation employees who examined violator photos taken by the camera system.

Howell, Jon et al. *Speed Sensitivity of a Red-Light Camera Enforcement System*. Tuscaloosa, AL: The University Transportation Center for Alabama, 2003. To learn more about this study, please visit [http://utca.eng.ua.edu/projects/final\\_reports/00470FNLRPT.htm](http://utca.eng.ua.edu/projects/final_reports/00470FNLRPT.htm).

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These last two studies concentrate on the effectiveness of signage and photo enforcement used to monitor speeding in order to provide safety in work zones.

## Comparing the effectiveness of Speed Monitoring Displays (SMD) vs. police presence in highway work zones

Many studies have been conducted in order to improve highway work zone safety. Some of the proposed improvements from these studies include “providing better visibility of work zone hazards, increasing driver alertness in the work zone, and reducing speed and speed variance in the work zone.”

This study examines speed monitoring devices as an alternative to traditional police supervision but did not attempt to measure the effectiveness of automated speed enforcement for work zones.

Although police presence is thought to be the most effective way to reduce traffic speed in any roadway, the cost of police monitoring and the limited number of officers make it impractical to use this method in highway work zones. Therefore, substitutes have been developed. One substitute to police presence is speedmonitoring display (SMD), a technology that uses a radar gun to measure the speed of vehicles as they approach the device.

While the results for each approach were positive, police presence had a better affect, reducing the average speed through work zones by 10 percent, or about 6 mph. In contrast, SMD decreased the average speed by 6 percent, or about 4 mph.

Bowie, Jeanne et al. *Efficacy of Speed Monitoring Displays in Highway Work Zones*. Provo, UT: Brigham Young University, 2003. To learn more about this study, please visit <http://www.udot.utah.gov/index.php?m=c&tid=235>.

## Warning signs help reduce speed inside work zones but not before



Highways where work zones are present have been found to have an accident rate increase of nearly 30 percent. This study examined the effectiveness of signs advising motorists of work zone enforcement and fines in accordance with speed. It proved that fixed signs within work zone limits are effective but have little influence prior to the zone.



Abraham, Dulcy et al. *Compliance with Reduced Speed Limits in Work Zones*. Lafayette, IN: Purdue University, 2003. To learn more about this study, please visit [http://rebar.ecn.purdue.edu/JTRP\\_Completed\\_Project\\_Documents/SPR\\_2496/FinalReport/spr\\_2496\\_Form1700.pdf](http://rebar.ecn.purdue.edu/JTRP_Completed_Project_Documents/SPR_2496/FinalReport/spr_2496_Form1700.pdf).

### More on TRB studies

Those interested in the technological operation of camera equipment, the study, *Development of Visibility Assessment Methods using Digital Images under Foggy Conditions*, is available by contacting [smenard@blakey-agnew.com](mailto:smenard@blakey-agnew.com).

### Something Different

Tired of that same old screensaver on your computer? Try the National Campaign to Stop Red Light Running screensaver featuring the Empire State Building lit up like a traffic signal! Contact [smenard@blakey-agnew.com](mailto:smenard@blakey-agnew.com).

**SAFETY FOCUS** is published monthly, with occasional breaks, by  
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202-828-9100

# LEGISLATIVE UPDATE

If there is legislation pending in your state that is not listed here, please contact the Campaign at (202)828-9100 or [smenard@blakey-agnew.com](mailto:smenard@blakey-agnew.com).

## **RED LIGHT RUNNING**

**Arizona:** S.B. 1231, introduced by Sen. Bee in January, would authorize the Director of the Department of Transportation to place traffic control devices in intersections where three or more accidents have occurred within a 12-month period. The bill passed in both the Senate and the House.

**Connecticut:** S.B. 68 (Public Safety Committee) would establish vehicle owner liability for red light running violation either observed or recorded via a camera. This bill was introduced on February 6<sup>th</sup>, referred to the Committee on Public Safety on February 9<sup>th</sup>, and had a public hearing in which it failed.

**Florida:** H.B. 377 (Slosberg) and its companion bill S.B. 1876 (Wise) would provide for devices to enforce traffic control signals. The bills have been withdrawn from further consideration.

**Hawaii:** H.B. 57 (Souki) was carried over into the 2004 legislative session and would provide for the implementation of a traffic-control monitoring system to catch red light runners entering an intersection.

S.B. 2025 (Kawamoto) on January 26, 2004 was referred to the Transportation, Military Affairs and Government Operations Committee, as well as the Judiciary and Hawaiian Affairs, and Ways and Means Committees for review. This bill would authorize the Department of Transportation to contract with a private vendor to assist with the implementation of a photo red light system to deter motorists from running red lights.

S.B. 2344 was passed in the House and is now being reviewed by the Senate would authorize the deployment of photo radar and red light cameras for traffic enforcement.

**Illinois:** S.B. 2538 was introduced by Senator Cullerton and referred to the Rules Committee. It would provide that a government agency establish an automated traffic law enforcement system that produces a recorded image in response to a traffic control signal or speed. This bill would assume vehicle owner liability.

**Indiana:** H.B. 1225 (Porter) was killed in the House. It would have allowed Indiana cities and counties to install automated traffic law enforcement systems.

**Kansas:** H.B. 2144 (Goossen) was referred to the Committee on Transportation and a hearing was scheduled for February 3, 2004. This bill would allow cities and counties to implement automated traffic control signal enforcement systems.

**Louisiana:** H.B. 1078 (Murray) would authorize the use of photographic equipment for enforcement of traffic violations. This bill was referred to the Transportation Committee for review.

**Michigan:** H.B. 4864 (Minore) would provide for the installation of a pilot program of unmanned traffic monitoring devices in ten locations. Was introduced and referred to the Committee on Transportation in the 2003 session and reactivated on February 6, 2004.

**Minnesota:** S.F. 439 (Robling) and its companion bill H.F. 508 (Hausman) would authorize cities and towns to implement automated traffic control devices, assuming vehicle owner liability. The bills were referred to the Crime Prevention and Public Safety Committee and the Transportation Committee.

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**Missouri:** S.B. 1145 (Kennedy) would authorize cities and counties to adopt ordinances for the use of automatic traffic control enforcement systems to catch red light runners, would assume vehicle owner liability, and include a sunset clause. Is now being heard by the Senate Transportation Committee.

**New York:** A.B. 5651 (Lafayette) would make the traffic control signal photo monitoring system demonstration program (the red light camera program) permanent in New York. It would also permit any municipality in the State of New York utilizing traffic-control signals to implement a red light camera program at intersections and at highway railroad crossings. The bill was referred to the Committee on Transportation in January.

A.B. 772 (Cohen) would authorize a photo radar demonstration program in cities of one million or more, imposing liability on vehicle owner. It would also require New York City to conduct a three-year demonstration of this program to show its effectiveness. The bill was referred to the Committee on Transportation.

A.B. 2126 (Stavisky) is similar to AB772, and authorizes a photo radar demonstration in cities of one million or more and imposing liability on the vehicle owner. The bill was introduced to the Committee on Transportation.

A.B. 766 (Hoyt) would authorize the city of Buffalo to install and operate traffic-control signal photo-monitoring devices at intersections and highway-railroad crossings, assuming vehicle owner liability. It is currently in the Transportation Committee.

**Oklahoma:** S.B. 1298 (Helton) was defeated in the house and would have allowed for the installation of red light cameras at any intersection with traffic lights.

**Pennsylvania:** H.B. 2357 (Horsey) would permit the installation of speed cameras in all 15 mph school zones in first-class cities. The bill was referred to the Committee on Transportation.

H.B. 1315 (Godshall) was reactivated in 2004 and would allow a police officer to give a citation to a bus driver caught violating traffic laws via a camera located on the bus. This bill was passed in the House after review by the Transportation Committee.

**Rhode Island:** S.B. 2828 (Polisena) would provide traffic monitoring systems to take photographs of red light running vehicles, as well as allowing the city or town to initiate such a program where owner liability is assumed. This act would be known as the "RI Red Light Running Act of 2004". The bill is being reviewed by the Commerce, Housing and Municipal Government Committee.

**South Carolina:** S.B. 794 (Richardson) was approved by the Senate Transportation Committee on February 4, 2004. This bill permits statewide use of red light camera programs. It requires the camera to capture images of a vehicle's license plate and the red light. The bill went to the Senate for debate on February 10<sup>th</sup> and the Majority was favorable with the amendments, while the Minority was unfavorable.

**Virginia:** S.B. 92 (Devolites) authorizes statewide use of red light cameras and addresses several opponents' concerns with photo enforcement. H.B. 19 (McQuigg) would expand photo-monitoring systems for all traffic signal enforcement to all of Virginia, assuming vehicle owner liability. H.B. 370 (Rust), which would repeal the July 1, 2005, "sunset" on photo red programs in Virginia, was continued to 2005. S.B. 176 (Stolle) provides that no locality may begin a photo red program after June 30, 2005, but it would allow programs already in place at that time to continue. S.B. 132 (Edwards) would extend the use of photo red to Roanoke. All bills have been deferred until next year.

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**Washington:** H.B. 1324 (Lovick) and its companion bill S.B. 5369 (Wingsley) have been carried over from 2003. H.B. 1324 will remain in the House Transportation Committee. The companion bill, S.B. 5369, passed out of committee last year and will be referred back to the standing committee for purposes of amendment. The bills include statewide authorization for red light cameras and railroad crossing cameras – but not speed cameras. They also provide for owner liability. The bill was passed in the Senate and is currently under House consideration.

**West Virginia:** S.B. 606 (Love) would establish red light monitoring systems and is currently being reviewed by the Senate Judiciary Committee.

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**NOTE:** If anyone is interested in learning about current *speed camera legislation*, please contact [smenard@blakey-agnew.com](mailto:smenard@blakey-agnew.com) for a complete list.

## **SURVIVOR ADVOCATES NEEDED**

*Survivor advocates* have suffered the personal consequences of motor vehicle crashes and have decided to work to protect others from the pain they have had to endure — they can become as involved as they would like in efforts to curtail red light running. No previous advocacy experience is needed. If you or anyone you know has survived a red light running crash or lost someone due to a red light runner and might be interested in working to make America's roads safer, please contact:

Advocates for Highway and Auto Safety  
750 First Street, NE, Suite 901, Washington, DC 20002  
202-408-1711 or 800-659-2247  
Fax: 202-408-1699  
E-mail: [advocates@saferoads.org](mailto:advocates@saferoads.org)  
Website: [www.saferoads.org](http://www.saferoads.org)

*All discussions and information will be kept confidential.*

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## **Attention Campaign Members!**

Do you have friends, family or colleagues who would be interested in receiving our newsletter? Do you regularly forward the newsletter on to others who are interested? Help us increase awareness of the dangers of red light running by asking anyone who is interested to e-mail us at [smenard@blakey-agnew.com](mailto:smenard@blakey-agnew.com) and be added to our mailing list.