CAMERA ENFORCEMENT—
A PICTURE OF FRAUD

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Executive Summary

Introduction.

My comprehensive, investigative book Camera Enforcement—Developing the Factual Picture (March 2001), concluded that red-light ticket cameras violate your rights (due process, facing your accusers) while causing more crashes, injuries, and fatalities. Previous research by Andreassen (1995) and Monash University, plus later research by Congressman Dick Armey and Matt Labash (Weekly Standard) all concurred.

My book refuted 14 biased "studies" containing numerous methodology problems. With profits soaring into the billions of dollars, camera promoters still proclaim that safety motivates their agenda and that "cameras save lives." They said more time and data would prove their claim. Ticket cameras have expanded into over 200 jurisdictions in over 10 years while numerous new studies have come to light.

This final study comprehensively documents the effects of ticket cameras on traffic crashes—most importantly, fatal crashes. Conclusive analysis from seven different angles prove that ticket cameras cause fatalities.

Common Sense. Can cameras prevent or deter terrorism? Robberies at banks or stores? Shootings at schools? Traffic crashes? London, England, the camera capital of the world failed to deter or prevent the 60+ terrorist-related deaths in July 2005. Robberies occur daily across the U.S. despite numerous cameras at most stores and banks. Columbine had cameras. Traffic crashes increase at most red-light ticket camera enforced intersections. Cameras can NOT PREVENT anything—just take a picture of it.

Photos. Photos of red-light violation crashes and fatalities—at camera sites from around the globe (England, Australia, Virginia, etc.)—PROVE ticket cameras inability to prevent crashes or "save lives". Cameras from Oxnard and elsewhere continue to quietly photograph increases in rear-end crashes, PROVING that ticket cameras cause crashes, including fatalities.

Kinds of Crashes. Nearly half (45%) of serious/fatal red-light violation crashes result from DWI (Driving While Intoxicated on alcohol and/or drugs). Police even admit that red-light ticket cameras cannot stop drunken driving fatalities. The next most common cause of serious RLV crashes result from emergencies—police, EMS, and citizen—which comprise 24% of the fatal crash pie. Not paying attention (22%), license problems (17%) and elderly drivers (15%) round out the bulk of the human factors. Though not well documented, inclement weather plays a factor at

least 15% of the time. And not documented at all, traffic signal related engineering deficiencies (usually too short yellow time) cause at least 15% of fatal RLV crashes.

Ticket cameras fail to prevent any of the human fatal factors, while consistently CAUSING injury and fatal rear-end collisions. Cameras compound the accident potential during bad weather and at poorly engineered intersections.

Studies. This report analyzed 12 important RLTC studies. Six studies showed rear-end collision increases of +70% or more after ticket cameras. Two cities endured over +100% increases (Melbourne and Oxnard). Red-light violation crashes increased in at least five studies. Two biased studies (paid for by camera promoters) revealed net injury increases of (7%-24%) after cameras. Two objective studies revealed +64% and +81% additional injuries. Three biased studies inadvertently admitted to a few extra fatalities. All studies combined reveal a conservative estimate of +1000 crashes, +500 injuries, and +75 deaths attributed to the installation of ticket cameras.

Crash Results: Ticket Camera Sites Versus Non-camera Control Sites

Location	RLC Sites	Control Sites
Greensboro, NC	+78% rear-end; +40% ALL	-25% ALL
Oxnard, CA	-5% ALL? +180% rear-end	-10% ALL (Santa Barbara); Best Injury Rate (San Bernardino)
Winnepeg, Canada	+64% injury; +58% ALL	+7% ALL

Control Sites. These are intersections similar to red-light ticket camera sites but NOT using photo enforcement. Another secret: normal intersections (without ticket cameras) consistently score much safer than their camera enforced counterparts. Again, proving that ticket cameras CAUSE MORE crashes, injuries, and fatalities.

This chapter handily refutes the [positive] “spillover effect” myth and the theory that reduced red-light violations (by cameras) equal reduced crashes.

Statistics. Over 10 years of traffic signal related national crash data was comprehensively analyzed—five years before the serious proliferation of ticket cameras (1996-2000) versus five years after (2001-2005). Currently, over 200 cities employ multiple ticket cameras—more than enough to seriously affect national crash trends. National Highway Traffic

Safety Administration fatal crash data develops into a dire picture. Rear-end fatalities rose +12% (about +650 signal related). Fatal angle crashes increased +10.9%. ALL traffic signal related fatal crashes went up +2.9% (+465 fatalities). Red-light violation fatalities did decline on average—9.2%. However, Florida (control site) without ticket cameras, and driving 56% more miles than the national trend, saw RLV fatalities drop –18.3%. If Florida's fatal crash reductions (-125 from 2001-2005) were removed from the national statistics, the more accurate result would confirm an increase in RLV fatalities. Analysis of all pertinent data concludes: The national proliferation of red-light ticket cameras resulted in over 500 plus dead human beings from 2001-2005.

Truth. Camera promoters begrudgingly admit that ticket cameras CAUSE rear-end collisions but "only sometimes, just a few, and they're just a little bump." Not true. Photo enforcement increases rear-end collisions almost always, usually +70% and the crashes often result in serious injuries or deaths (see Statistics and Studies).

The National Motorists Association, Mauz, Armey, and Labash (Weekly Standard) all brought national attention to the yellow time shortcomings at most traffic signals. Recently, the Institute for Transportation Engineers—the main group responsible for signal timing standards worldwide—graded their own performance a D, one biased notch above failure. In plain English: There is an epidemic of malpractice in the posting, setting, and timing of traffic control devices. Camera proponents exhort the public to believe that all red-light violations result from "driver behavioral problems". ITE engineering handbooks (1965-present) reveal a systematic reduction of yellow timing at traffic signals, which manufactured the so-called RLV problem, while opening the door to camera enforcement. Unfortunately, short yellows (and under-posted speed limits) already CAUSE more crashes. But, when combined with cameras the results are often deadly.

The TRUTH becomes evident through the speech, public statements, research studies, and actions of the pro-camera coalition. They freely admit to rear-end crash increases after using their product. Their own financed studies admit to increases of injuries and fatalities. Their unpromoted engineering research shows that added yellow time seriously trounces cameras in both safety and red-light violation reductions. Their own control sites acknowledge that doing NOTHING is better than employing cameras. And almost all their actions clearly demonstrate that camera proponents foremost concern is making MONEY.

Conclusion.

Every angle of analysis—Common Sense, Photos, Kinds of Crashes, Studies, Control Sites, Statistics and Truth—results in the same conclusions. Ticket cameras CAUSE more crashes, injuries, and fatalities. More than 500 people are dead as a result of camera programs in over 200 cities. Countless more people are suffering long-term injuries. Then there's the cost in vehicle repairs and the ultimate cost to society in lives lost, billions of dollars, and further erosion of government trust.

Unethically short yellows were the precursor to allow ticket cameras economic viability. Short yellows cause more crashes. Add ticket cameras and crashes further increase. Camera enforcement CAUSES a double whammy AGAINST SAFETY.

Improving safety requires removing ALL ticket cameras, proven engineering solutions, and selective police enforcement.

Speed limits need to be properly set to the 85th percentile speed of traffic. It's the safest, most democratic setting and its federal law (MUTCD 2B.11).

At intersections, just removing the ticket cameras will reduce crashes and save lives. In addition, one second of yellow time—added to signals at violation and/or crash prone intersections—drops red-light violations from 40-75% and generally reduces crashes by 30-50% [see: chart and Truth].

Since 45% of fatal RLV crashes involve DWI, police need to better apprehend these deadly drivers before they kill.

Emergencies and police chases account for about 24% of fatal RLV crashes. Police need to curb unnecessary chases. EMS and citizens; Be more careful.

Not paying attention (22%) rounds out the top three killers. Awareness, education, driver training, and engineering can help. Curb cell phone use.

Camera enforcement is a complete FRAUD. Camera promoters own control sites reveal that doing NOTHING results in better safety and violation rates than employing ticket cameras. Over 500 (and counting) people have died as a result of these traffic enforcement for profit devices. The only ethical thing to do is dismantle all ticket camera programs forever. www.motorists.org/mauz.html

I. Introduction

My non-profit book, "Camera Enforcement - Developing the Factual Picture", was published in March 2001. This comprehensive, investigative report uncovers the truth about camera enforcement, including: the lack of an honest need, the propensity to cause crashes, the violation of several guaranteed rights, the malpractice in setting traffic control devices, the money connection and how to realistically improve traffic safety.

Armed with these facts, the National Motorists Association leads the fight to rid the nation of these detrimental devices. In June 2001, then House Speaker Dick Armey's research on yellow-timing malpractice mirrored my conclusions in the chapter, "The Trouble with Traffic Signals". The House Speaker flat out called red-light cameras a scam and un-American. After Armey stirred the cauldron, Matt Labash of the Weekly Standard read my book and did a 15 page story (**www.weeklystandard.com**). Camera supporters were on the defensive. Then 9-11. Everyone's attention diverted to terrorism. At that time about 40+ cities employed red-light cameras.

The years rolled by. Cameras were dealt many defeats as well as victories. Many city officials, searching for new sources of revenue, overlooked their citizen's guaranteed rights and proven methods to reduce signalized intersection crashes in exchange for camera company promises to share millions of dollars while creating "safer intersections." Currently over 200 jurisdictions usurp motorists money through ticket camera systems.

People are rising up against these controversial devices all over the globe--England, Scotland, Australia, Canada, and the U.S. There are many lawsuits pending, several won already, citizens destroying cameras in England, and Virginia dismantling camera programs in seven cities because of a significant increase of injury crashes. North Carolina and Mesa, Arizona's RLCs were down because of money squabbles. Cameras are under scrutiny everywhere.

With ticket camera profits collectively soaring into the billions of dollars, camera promoters still maintain that it's not about money, but "safety". "Cameras save lives", they insist. For proof, they point to studies like Oxnard (IIHS, 2001), Mesa (2000) and more recently the FHwA study (2005). However, failing to mention that these reported studies (and, most others) were financed by camera proponents. Furthermore, the studies results are often inconclusive, misinterpreted and easily refuted by an objective researcher (see Studies).

Camera supporters claimed, back in 2001, that more time and data would show that red-light (ticket) cameras significantly reduce crashes, injuries, and fatalities at our nation's signalized intersections.

We now have over 10 years of U.S. crash data and more than enough other documented evidence to ascertain irrefutable conclusions.

This final study comprehensively documents the effects of ticket cameras on traffic crashes. Most studies just look at localized camera enforcement programs. This report analyzes over a dozen of the most important of these studies. In addition, the author examines the question of whether "cameras save lives"? They DO NOT. He proves that ticket cameras cause fatalities from seven different angles, including kinds of crashes involving red-light violations, all U.S. statistics related to traffic signals, photo evidence, comparisons to non-camera [control] sites, truths admitted by camera proponents and even common sense.

II. Common Sense

London, England contains more cameras than anyplace on earth. The multitude of cameras failed to deter or prevent the July 2005 terrorist attacks that murdered about 60 people.

Cameras were present at Columbine. They recorded the carnage, while failing to deter or prevent the tragedy.

Have cameras prevented or even reduced robberies at banks or stores? Absolutely not. There occur more robberies in contemporary times (after cameras) than even during the Wild West. Sometimes South Florida experiences several bank robberies a week, despite each bank being equipped with numerous cameras.

It's impossible for cameras to prevent anything, especially random traffic crashes. Defibrillators save lives. Cameras take photos.

Cameras may not PREVENT anything but they CAUSE lots of things. Fear of receiving a ticket causes motorists to slam on their brakes during a yellow light, often causing rear-end collisions (See: Studies and Photos). The profitability of photo enforcement causes local governments to overlook proven engineering safety improvements (example: more yellow time). Camera's ticket by mail scheme causes the violation of guaranteed Constitutional Rights (due process, facing accusers, right to a fair trial, etc). And in some cases, cameras cause the layoff of police officers (Scotland and Winnepeg).

III. Photos

A picture is worth a thousand words. Only six words are needed to explain photos from camera enforcement sites around the globe: THE CRASHES AND FATALITIES STILL HAPPENED.

The Learning Channel (TLC) show, "The Very Best of the World's Worst Drivers", displayed photo after photo of crashes at camera guarded intersections. The narrator exclaimed (paraphrased), "Cameras at intersections in England show the dangers of running red-lights."

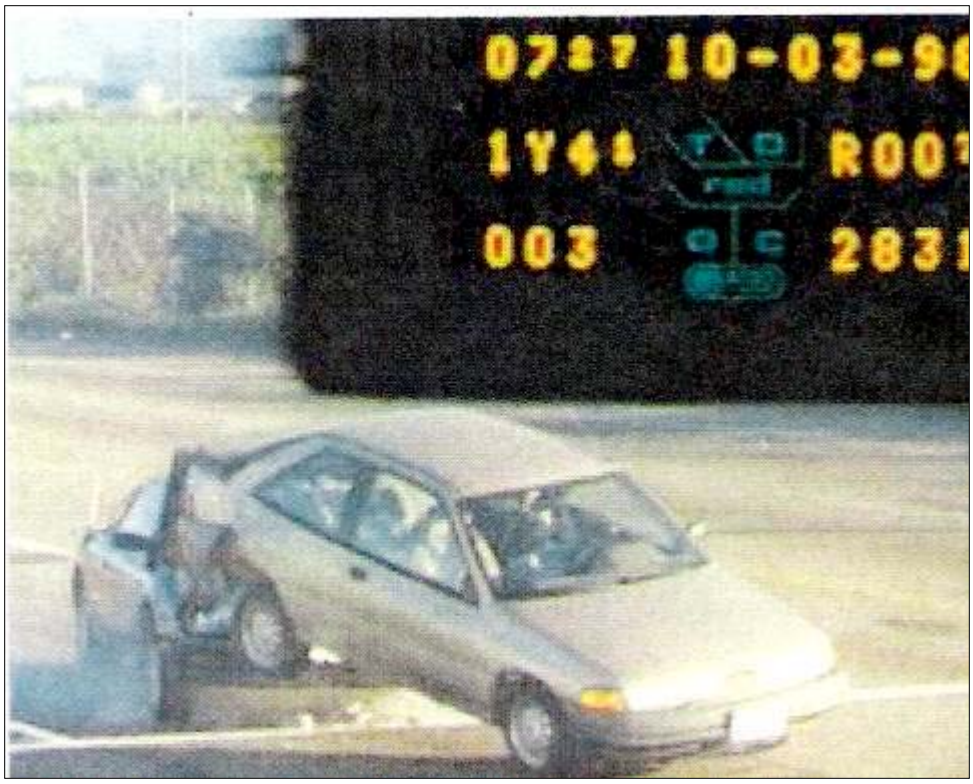
A photo of a fatal crash, from a camera enforced intersection in Virginia, graces the cover of the IIHS study, "Automated Enforcement of Traffic Laws." The camera data is displayed in the photo's upper left corner. Does anyone else see the irony here? This is akin to an advertisement for tobacco showing a guy in a coffin.

Pictures from fatal crashes in Arizona have appeared in that state's newspapers. The only 1998 fatal crash in the Mesa study occurred in a camera-enforced quadrant. Representative Steven Effman, the Chief Sponsor of Florida's Camera Enforcement Bill, showed a dramatic picture to the House Community Affairs Committee on April 19, 2000. The graphic photo contained the lifeless body of a pedestrian with his head under a car tire. The picture was taken at a camera-enforced intersection in Australia. Grasping the photo, he exclaimed, "This is what we are trying to prevent." (Sun-Sentinel and Public Television Channel 42, "Capitol Update").

If the camera failed to prevent this death in Australia, how could it possibly prevent a death in Florida or any other state? Australia has operated cameras since the 1980's, yet the deaths continue! Around the same general time of Effman's remarks, a man was run over at a Fairfax, Virginia camera site.

In addition to failing to prevent crashes or "save lives", cameras are causing more crashes and deaths, especially rear-end collisions. Photos from Oxnard Police show several serious (one fatal) rear-end collisions taken by the red-light ticket cameras. One is a semi-truck smashing a car. The other—also caused by the camera—involved a car stopping short for the impending red signal being rear-ended and lifted off the ground, while the rear bumper smashed through the second car's windshield.

Ticket camera promoters want you to believe that the abundance of rear-end collisions CAUSED by their machines are all just minor fender-benders. The photos prove otherwise. (Also see: Studies and Statistics).



Even camera promoters admit that ticket cameras cause an increase in rear-end collisions. They callously downplay the amount and severity. The facts differ. Ticket cameras cause a +70% or more rise in rear-end crashes. As the photos indicate, these collisions can be quite deadly. Since 2001 (after RLTC proliferation) over +600 more people have died in rear-end wrecks, as compared to 1996-2000, at USA signal-related intersections.

IV. Kinds of Crashes

What causes a serious/fatal red-light violation crash? The primary cause (first factor) of most of these collisions is NOT the signal violation. Hence, cameras enforcing the signal fail to address the real problem.

Serious RLV crashes are rare, even in large metropolitan areas. It took over five years of daily searching the Boca Raton News, Sun Sentinel, and other sources to find, clip and document 54 police-reported, serious RLV collisions. South Florida's Broward and Palm Beach counties contain over 2,000 signalized intersections combined, with a population exceeding 2.5 million people.

Nationally, RLVs cause only 1.46% of ALL accidents (92,000 of 6,279,000) and just 2.26% of fatal crashes (837 of 37,043, FHwA, 1999). Certainly NOT the "epidemic" preached by camera supporters. These small figures were significantly declining since 1996 and reached record lows in 1999, BEFORE the serious proliferation of ticket cameras. There was NEVER a need for cameras.

Serious RLV crashes (Exact data from chart): 54 severe crashes = 65 dead, 23 injured	**Approximate All US Serious RLV crashes:** 840 Fatal crashes = 950 fatalities

Factors (up to 3 per crash)

19 DWI (+5 DWI/Drugs?)	45%	378
13 Emergencies	24%	200
12 Not Paying Attention	22%	180
9 License Problems	17%	140
8 Elderly Drivers	15%	125
? Signal Problems	15%	125
? Wet/Snow/Ice	15%	125

As the charts clearly illustrate: Serious/fatal RLV crashes are totally NOT preventable by camera enforcement. Almost half of the fatal crashes are caused by DWI (not just alcohol-related). Drunk or otherwise impaired drivers lack the mental and physical faculties required to control their vehicles. Sheriff Newman and other cops admitted that "cameras will not prevent crashes by red-light running drunks." (Boca Raton News, February 10, 2000, "Police Want Traffic Cameras").

The second leading cause of RLV fatalities are emergencies (13 of 54, or 24%). These include police, fire, and EMS emergencies, police chases, citizen chases, stolen car joyrides and even a suicide attempt that killed 3 innocent people. These people purposely run red lights, risking life and limbs. They could care less about the possible presence of cameras. Police chases kill about 400 people annually, including over 100 RLV fatalities.

The third leading cause (or could be second) of RLV fatal crashes is not paying attention (at least 22%). These people didn't realize there was a red light, much less a camera.

On August 7, 1997, I was second in line proceeding through a green light. An inattentive, 72-year-old lady ran the red light smashing into my driver's-side door. She failed to see two large red lights, cars stopped on her side and vehicles crossing the intersection. She certainly would not have noticed a red-light camera and stopped.

The top three causes of RLV fatalities comprise up to 91% of the fatal crashes. Cameras CANNOT stop these crashes or any others. In fact, the chart contains 4 fatal crashes at camera-enforced intersections—all containing a top 3 factor.

Other factors include drivers with no licenses, suspended licenses, and lots of traffic violations. They account for about 17% of RLV fatal crashes. Close on their heels, the elderly cause about 15% of the fatalities—usually themselves, sometimes others.

Not well documented, at least 15% of RLV fatal collisions result from bad weather. Cameras complicate this situation by encouraging drivers to brake to avoid a ticket, when going through the red light would be safer. Think semi-truck.

Although not documented for obvious reasons (lawsuit), the nationwide malpractice in traffic engineering does cause about 15% of RLV fatalities. Check studies where engineering improvements (including longer yellows) result in significant crash reductions (see: Truth).

For cross-reference, the IIHS study freely admits that DWI is the number one cause of serious RLV collisions. They insist that young males are the most dangerous "red-light runners". Motorists causing RLV fatalities come from all backgrounds and age groups.

Buried in IIHS research and NOT emphasized is the fact that 28% of daytime fatal RLV crashes result from at-fault elderly drivers (70+ years). Also buried and not promoted is the fact that longer yellows reduce crashes (and RLVs).

Slower perception/reaction times due to the aging process, along with health conditions often accompanied by strong prescription medication, can

cause an assortment of driving difficulties for senior citizens. An 80-year-old woman, on 4 different medications, can be just as dangerous as a 22-year-old drunk male. DWI (drugs) is vastly under-reported for seniors. Most seniors are good, responsible drivers. Their high involvement in RLV fatalities can, in part, also be attributed to improperly short yellow times.

It should be obvious to any objective person that, at least, ticket cameras fail to correct any of the factors causing fatal RLV crashes. Hence, they cannot "save lives". At worse, cameras cause RLV fatalities by suspending needed engineering improvements at traffic crash-prone intersections. Indirectly, RLTCs cause crashes by removing the police presence needed to apprehend DWI and other dangerous drivers before they kill. And, concerned drivers panic stop on yellows (to avoid a ticket) causing serious increases in rear-end collisions, including a significant amount of deaths. Again, cameras cannot "save lives". The truthful slogan is: Cameras cause fatalities.

Serious Red-Light Violation Crashes

Date	**Location**	**At Fault**	**Factors**	**Fatalities/Injuries**
8/20/98	Virginia	N/A	RLV (7.8 secs), 55 mph, RLC Photo	Yes
5/99	Boca Raton, FL	M, 40s	Weaving, cell phone, 80 mph, medical	6 Fatalities
1999	Scottsdale, AZ	N/A	DWI, 90 mph, RLC Photo	3 Fatalities
7/14/99	Boca Raton, FL	M, 53	DWI (.15), revoked lic., 6 prev. DWI	1 Fatality
11/99	Tampa, FL	M	DWI (.23) 76 mph	3 Fatalities
11/99	Boca Raton, FL	N/A	DWI	1 Fatality
12/99	Boca Raton, FL	N/A	DWI	1 Fatality
2/00	Pompano, FL	M + F	Car chase	1 Fatality
N/A	Ft. Lauderdale		Suspended License	2 Fatalities

2/6/00	Boca Raton, FL	M, 23	DWI (12 beers) No License Up all night	2 Fatalities
2/26/00	West Palm Beach, FL	M, 21	DWI 5:15am	1 Injury
3/19/00	Lauderhill, FL		Police Emergency	1 Fatality
4/00	Australia		Pedestrian hit NPA? RLC Photo	1 Fatality
5/8/00	Boca, FL	F	DWI	1 Fatality
7/30/00	Miami, FL		Hialeah Police Emergency	1 Fatality
11/28/00	Delray, FL	F, 77	NPA? Medication?	1 Fatality
12/6/00	Delray, FL	F, 80	NPA? Medication?	1 Fatality
1/5/01	Delray, FL	M, 37	Sheriff Emergency	1 Injury
1/29/01	Boca, FL	?, 44	NPA? Bicyclist	1 Fatality
2/24/01	Hollywood, FL	M, 26	DWI (.24)	1 Fatality 1 Injury
3/24/01	Delray, FL	M	N/A	1 Fatality
3/31/01	Boca, FL	M, 25	N/A	1 Injury
6/29/01	Boynton, FL	F, 35	DWI (.26) Previous TVs	1 Fatality
7/28/01	West Palm Beach, FL	F, 69	NPA?	3 Fatalities
11/1/01	Delray, FL	F	DWI? 4 a.m. Hit cop car	2 Injuries
11/13/01	Belle Glade	M, 66	NPA?	1 Fatality
12/17/01	West Palm Beach, FL	M	Sheriff Emergency	3 Injuries
12/27/01	Boca, FL	M, 17	DWI (.18)	2 Fatalities
5/16/02	West Palm	M, 36	Sheriff Emergency	2 Injuries
7/02	Boca, FL	M, 21	DWI (.15)	1 Fatality
7/16/02	Delray, FL	M	Sheriff Chase	1 Injury
8/2/02	W.P.B., FL	F, 18	DWI	2 Fatalities
8/02	P.B.C., FL	F, 62	Flashing red	1 Fatality

			1:30pm NPA?	1 Injury
9/15/02	Daytona, FL	F, 36	DWI	2 Fatalities
11/27/02	P.B.C., FL	M, 32	No license Fled Illegal immigrant	1 Fatality
2/16/03	Lantana, FL	M	DWI? 1:30am	3 Injuries
2003	Boynton, FL	M	NPA Bicycle rider	1 Fatality
2003	Delray, FL	M, 83	NPA? Medication? Fire truck siren/lights	1 Injury
5/18/03	W.P.B., FL	M, 32	DWI (.13)	1 Fatality
6/9/03	W.P.B., FL	M, 54	DWI (Cocaine) Suspended lic. 20 TVs	1 Fatality
6/26/03	Miami, FL	M+F	Chase (lover's spat)	1 Fatality
7/03	Mesa, AZ	M, 31	State trooper chase RLC Photo	1 Fatality
1/13/04	Lantana, FL	N/A	Car into bus	1 Fatality
1/23/04	W.P.B., FL	M, 29	DWI	1 Fatality
2/12/04	P.B.C., FL	N/A	Lincoln into bus	5 Injuries
5/17/04	Boca, FL	M, 91	NPA? Medicated?	1 Fatality
7/11/04	P.B.C., FL	M, 22	Bad driving record 2am	2 Fatalities
8/13/04	Boca, FL	M, 25	DWI (.10)	2 Fatalities
8/30/04	Boynton, FL	F, 47	NPA Moped driver	1 Fatality
2/6/05	P.B.C., FL	M, 25	DWI (alc/drugs) Citizen chase	1 Fatality
4/4/05	P.B.C., FL	F, 70	DWI (pres drugs?)	1 Fatality
7/17/05	Chicago, IL	F, 23	Attempted suicide 3 RLVs	3 Fatalities
8/24/05	W.P.B., FL	M, 16	Stolen pickup	2 Fatalities
12/16/05	Orlando, FL	M	Sheriff chase	2 Fatalities

			Perp had 30 TVs	

54 RLV (serious) crashes, 65 Fatalities, 23 Injuries
Factors:
19 DWIs (36%), +5 (DWI?) (9%), 13 Emergencies/chases (24%), 12 NPA? (22%), 9 license problems (17%), 8 62+ years old (15%)
14 F, 31 M, 11 ?

V. Studies

"Nearly every study and crash analysis reviewed had some experimental design or analysis flaw." [Synthesis 310].

That is PC speak meaning: most pro-camera studies remain inaccurate.

♦National Cooperative Highway Research Program, NCHRP Synthesis 310, "Impact of Red Light Camera Enforcement on Crash Experience" (Transportation Research Board, US DOT, FHwA, 2003).

This study is a compilation of crash data from over 40 red-light ticket camera enforced cities, reviewed by a biased panel of 11 people who all profit from the promotion of ticket cameras.

STILL, these panelists could NOT find "enough empirical evidence to state conclusively" that cameras reduce crashes or save lives. That statement speaks volumes.

They freely admit, but downplay the fact that ticket cameras cause an increase in rear-end collisions (see: Truth). Also admitted—though still propagated—is the fact that "spillover effect" remains unproven (page 36) and there occurs no correlation between reduced RLVs [by ticket cameras] and reduced crashes (pages 11, 30). All these downplayed truths obfuscate the fact that ticket cameras CAUSE many more crashes, injuries, and fatalities.

Australian Road Research Report

(ARR 261) "A Long Term Study of Red Light Cameras and Accidents," by David Andreassen, Principal Research Scientist (1995), stands as the most comprehensive study concerning photo enforcement's effect on accidents. Mr. Andreassen studied 41 red-light camera sights in Melbourne, Australia. The cameras began operating in 1984. Accident records were compared before and after RLC installations over an eleven year period from 1979 to 1989. Equivalent analysis of non-RLC signalized intersection crashes provided additional objective answers.

The study compiled the frequencies of four types of intersection crashes—pedestrian, adjacent approaches (right angle), right thru (left turn, U.S.) and rear-end. "This study suggests that the installation of the RLC at these 41 sites did not provide any reduction in accidents, rather there has been increases in rear-end and adjacent approaches (right-angle) accidents on a before and after basis and also by comparison with the changes in accidents at intersection signals."

Page nine reveals that 36 RLC sites (of 41) incurred increases in rear-end collisions. "Although the vast majority of sites had low frequencies (three or less), the preponderance to increase was quite marked." In fact,

collectively, there occurred over double the amount of rear-end crashes after cameras versus before. About 60 annual rear-end accidents happened from 1979-1984, before photo enforcement. By 1988, rear-end collisions climbed to 139, or a 125% increase (figure 5).

Even more disturbing were the results relating to right angle crashes. According to camera proponents, these types of accidents become seriously diminished in frequency after photo enforcement. Right angle collisions decreased before cameras, but increased after cameras. Page nineteen says, "For Code (101-109) there was a significant drop from 1980, 1981 to 1985 and a significant rise from 1985 to 1988, 1989." Cameras actually helped reverse a positive historical safety trend while increasing crashes by over 150%. By 1985, right angle crashes decreased to 30, but increased to 80, collectively, at the 41 sites by 1989 (figure 5).

Even collective right thru (left turn, U.S.) collisions increased after cameras. Only pedestrian crashes showed "no significant change over time." The other three crash types constituted 210 accidents in 1984. By 1989, the tally increased to over 360 (figure 6).

When comparing camera to non-camera intersections, the latter showed better safety results. "Accident frequency over the period 1985-1989 at the RLC sites were greater than those for the accidents at signalized intersections in the Melbourne Statistical Division." Before cameras, the proposed sites maintained 2.19 times the average crash frequency. After cameras, the number rose to 2.35 times over average versus non-camera intersections.

No matter how you slice it, RLCs at intersections decreased public safety. Furthermore, Mr. Andreassen uncovered several flawed findings from other Australian studies. He refuted the South et al (1988) study that falsely claimed a 32% reduction in right-angle crashes. Other claims used by the IIHS were also invalidated. The Zaal Study (1994) asserted that South et al showed that rear-end accidents decreased over time. Not true. The study from Adelaide (Mann et al 1994) shows, "a net increase (non-significant) over a five year period after RLC were installed." Andreassen concluded, "There has been no demonstrated value of the RLC as an effective countermeasure." A vast understatement.

♦The Monash University Accident Research Center Study, "Red Light Running Behavior at Red Light Camera and Control Intersections," performed a "simple correlation analysis" which concurred with Andreassen's extensive study.

♦Charlotte, North Carolina (1999-2001). WBTV reported that rear-end collisions increased by 15% at RLC intersections.

♦Greensboro, North Carolina (2000-2001). News and Record reported that RLV crashes increased +100% at the city's 18 RLC intersections. Intersections without RLCs did not show increases.

♦North Carolina (July 2004). Mark Burkey, Ph. D. and Kofi Obeng, Ph. D. of the Urban Transit Institute studied accident records at 303 intersections for 26 months before RLCs and 31 months after. The doctors found that rear-end crashes increased 78% at RLC sites, while decreasing 5% annually at normal signalized intersections without cameras (-25% total).

Even these doctors showed a previous bias toward cameras. "The failure of a reduction in severe or angle accidents comes as somewhat of a surprise."

Overall, accidents at normal intersections continued to decline throughout the 5-year study. "When analyzing total crashes, we find that RLCs have a statistically significant and large (40% increase) effect on accident rates."

The authors concluded, "In many ways, the evidence points toward the installation of RLCs as a DETRIMENT (my emphasis) to safety."

♦Howard County, Maryland (1997-2000). First the police set up 4 demonstration sites, but only reported on two. Site #1 saw angle crashes increase from 3 to 6, from 97-98. Site #2 showed a decrease from 5 to 2. During the hearing held by Representative Dick Armey (mid-2001) against RLCs, Howard County Police presented accident numbers totally contrary to the numbers obtained by writer Matt Labash of the Weekly Standard. Labash's analysis showed that rear-end collisions increased 21% and all crashes rose 15.9% at RLC enforced intersections.

♦Oxnard, California (1995-2000, by Richard Retting of the Insurance Institute for Highway Safety). I wrote a complete refutation for the NMA that became a news release on May 23, 2001.

TICKET CAMERAS INCREASE CRASHES
(OXNARD STUDY REFUTED)

By Greg Mauz

On April 26, 2001, the Insurance Institute for Highway Safety—whose supporters profit from ticket surcharges—unveiled their study, "Crash Reductions Associated with Red Light Camera Enforcement in Oxnard, California." It was sensationally reported as a breakthrough (first in the U.S.) study proving "cameras save lives".

The News Release claimed a 29% reduction of injury crashes at signalized intersections and 32% less overall angle crashes.

The actual eight-page study compared crash records for 29 months before ticket cameras began operating to 29 months after. However, the report failed to provide any conclusive, objective data proving that cameras reduced collisions. The IIHS admits that specific crash types—such as red-light violation—were not identified. Plus, "crashes at the 11 camera equipped intersections were not analyzed separately" from the other 114 signalized intersections.

Tables 1 and 3, which documented numbers and percentages, actually establish a case against photo enforcement. Oxnard, with ticket cameras and a "40% reduction in red-light running," recorded a drop in signalized intersection crashes from 1322 before, to 1250 after automated enforcement or a 5.4% decrease. Santa Barbara, without red-light cameras and lacking any reductions in RLV's (page 3), shows a decline from 488 crashes to 438 or—10.2%. In plain English: the town without cameras and not manipulating driver behavior generated roughly twice the safety improvements of camera-enforced Oxnard.

Oxnard posted a 20% (not 29%) reduction of injury crashes versus—5.6% for Santa Barbara. However, their rate of injuries was identical at 19% of all crashes. San Bernardino, without ticket cameras and lacking accident reductions, maintains only a 17.6% injury rate.

The study abounds with misinformation. "Spillover effect" is a false theory derived from the myth that enforcement produces a meaningful effect on traffic safety. If reduced violations resulted in less crashes, no control site could ever maintain better safety records than a ticket camera site. Many control sites also contain lower average violation rates than photo enforced intersections, including Oxnard. Which leads us to the real problem—traffic signal engineering malpractice.

♦ ♦ ♦

We later learned that the IIHS failed to report a 180% increase in rear-end collisions, including at least one fatality (18 before to 51 after ticket cameras, Kadison). See photos.

♦Mesa, Arizona (1995-1998). The police department financed this inconclusive, pro-camera report. I did a complete analysis in my book. Crash rates were documented from four equivalent quadrants of 6 dangerous intersections. Data from individual years or crash types (rear-end, RLV) were NOT documented. Still, quadrant one—without cameras—scored second best in crash rate reductions (-10.2%). The quadrant with RLCs and photo radar scored first (-15.9%). The RLC only quadrant scored third (-9.7%) and the photo radar section came in last (-7.5%). The authors conjectured that "spillover effect" caused the control site improvements.

I took the analysis two steps further. In addition to crash rate reductions, injury rates and a ranking system chart proved that the NO CAMERA quadrant maintained the lowest injury rates and best overall safety of the four quadrants. There occurred one fatality in 1998—in a camera-enforced quadrant. But, "cameras save lives"?

♦Scotland (12-22-2004). Daily Express of the U.K. and The Scotsman (11-28-2004) reported a 9% increase in traffic fatalities (331 total). "Over the same period the number of speed cameras has soared to 500 and the number of Scots caught speeding last year rose by more than 60% to a record 180,948, generating 111 million pounds in fines." (2003).

As I predicted in my book (2001) more cameras will equal less cops and more fatal crashes. The Scottish police force was cut from 60 patrol officers to only 30 over several years as the number of cameras multiplied.

The rise in deaths is actually higher than 9% if you factor in the previous years declines.

♦Virginia (January 2005). The pro-camera Virginia Transportation Research Council studied crash records from the seven RLC equipped cities in their state. The net effect overall was a definite increase of injury accidents after RLC installations. Fairfax "claimed" a 24-33% decrease in RLV accidents. However, rear-end collisions increased between 50-71% at RLC sites. Total injury crashes increased between 7-24% depending on the RLC intersection. The researchers also found that rear-end crashes were no less dangerous than RLV crashes.

Later that year, after much wrangling (the RLCs usurped millions of dollars) the legislature did the right thing and cancelled the camera programs.

♦Washington, D.C. (1998-2004). Washington Post and NMA Foundation News reports show that crashes at RLC intersections increased over 107% from 1998 versus 2004 (365 before and 755 after cameras). Injury and FATAL crashes climbed 81% from 144 to 262. Right angle (RLV) crashes rose 30% from 81 to 106.

Many normal intersections, without cameras, recorded better traffic safety results.

Despite the serious increases in real people being maimed and killed, D.C. Police Chief Charles H. Ramsey reportedly still wants the cameras. How could that be?

The cameras have usurped over $32 million from 500,000 tickets in the last six years while making the roads very dangerous. Is money really more important than human life?

♦Winnepeg, Manitoba, Canada (2003-2005). Police claimed their camera program reduced RLV (right angle) crashes from 37 in 2003, to 15 in 2004 and 12 in 2005. To Winnepeg's credit, they sent an honest auditor to check the biased, conflict of interest source's data. Checking insurance claims revealed a completely opposite story. Collisions at RLC intersections increased 58%, with injuries rising 64%. Property damage claims increased 113% in the $10,000-$15,000 bracket.

Areas without cameras in the rest of the city recorded only a 7% increase in crashes.

Cameras wrote 317,385 tickets, usurping $17.6 million in fines. Like Scotland, the police department laid off 46 traffic officers.

♦Federal Highway Administration (April 2005). "Safety Evaluation of Red Light Cameras" reviewed data from 7 jurisdictions in this "final study".

This becomes at least the third big study for the very biased FHwA, which provides "education materials", website, phone numbers, and even money for RLC demonstration projects (your tax dollars). Congressman Dick Armey tried to stop this practice.

The FHwA is allied with the Insurance Institute for Highway Safety (IIHS) and the National Campaign to Stop Red Light Running—a fake advocacy group entirely bought and paid for by 3 big camera companies. Both of these groups are motivated by huge ticket camera monetary profits.

Page one, of the Executive Summary, begins by repeating the same 15-year-old deception that red light running (violation) crashes are a "major safety problem". Like "speeding", RLV crashes have NEVER been a "major safety problem." About "1,000 fatalities annually" equals a mere 2% of all traffic fatalities nationwide (43,000 annually). Objective researchers show perspective. But that would question the supposed need for RLTC's. The truth is: there remains no honest need for camera enforcement of any kind. For the record, "speeding" causes only 1% of all crashes and < 5% (about 1800) of fatalities. For a detailed explanation, see my book. Note: RLR (Red Light Runner), exclusively used by pro-camera studies, is a prejudicial term used to imply that all RLVs are intentional. The truth is: about 70% of RLVs result from honest human error and/or short yellow timing.

Annual Fatalities in Perspective (Approximate Averages)

- RLVs = 950 [45% (425) DWI, 24% (225) police emergencies]
- Vision Obscured = 1700
- Rear-end = 1850 [many caused by red-light ticket cameras]
- Overcorrecting = 2500
- Collision w/ Large Truck = 5000 [yellow times do not accommodate trucks]
- Rollovers = 10,000
- DWI = 10,000
- Not Paying Attention = 10,700 [the number ONE cause of accidents]
- Murders 18,000 [despite DNA, forensics, death penalty, and finger prints—half (9,000) go unsolved]

The obvious point of the chart above is that we have numerous real "major problems" that need solving. The ONLY reason RLVs are a "major safety problem" is because enforcement (by RLTCs) creates "major" money. Unfortunately, some motorists [Americans] die in the process.

This "final study" can be easily refuted. For example: Improvements in San Francisco resulted from engineering improvement programs started in the late 1990's. Howard County cannot be trusted. San Diego showed crash increases (Synthesis 310, 2003). Police chief admitted some RLC sites recorded increases in collisions. The cameras were shut down after a court battle revealed all manner of deceptions perpetrated against the public by government and camera officials. Maryland sites had illegally short yellows….

Although not stated properly, this biased study reveals that cameras caused an 8% increase of injury collisions. Right angle crashes (not all are

RLV—some left turn on green, right turn on red) allegedly decreased 25%. However, RA injury crashes only decreased 16%. Rear-end collisions increased 15%, but RE injury wrecks rose 24%. These "results" show a net increase [+8%] of injury crashes percentage-wise. Consider that rear-end collisions usually significantly outnumber angle crashes before cameras, makes the results worse.

Furthermore, the study admitted that there occurred "slightly more severe angle crashes" after red-light ticket camera programs in 2 jurisdictions, while the other five showed no decreases. In plain English: there occurred a few extra deaths or very serious injuries after cameras. Shouldn't one extra death be unacceptable?

This study, like Synthesis 310, kept promoting "spillover effect", over and over like a TV commercial. On page four, they admitted (in PC speak) that the theory "lacked credibility".

The authors of the study still reach very far to show a "modest economic benefit of $39,000" per RLC site. Their 3 conclusions points talk mainly about money, NOT "safety". They mention the $39,000 (meaningless <5% benefit), how RLCs generally pay for themselves and recommend placing cameras at the busiest signal-related intersections.

After 10 years of promoting RLCs as a "life saving" device this, their own "final study", showcases just the opposite. Cameras caused an understated +8% net increase of injury crashes and a few extra fatalities.

Red-Light Ticket Camera Studies

Location Study/Year	Notes/RLTC Crash Results
Synthesis 310 (2003) [TRB, FHwA, IIHS]	40 cities, 11 camera promoters, tons of data; still, no "conclusive evidence" to support RLCs
Melbourne, Australia [Andreassen, 1995]	41 RLC sites, 11 years data, identified crash types, +70% ALL (includes RLV), +100% rear end, RLCs reversed positive historical trends, refuted other studies
Monash University (1999)	Concurred with Andreassen
Charlotte (2001)	News report: +15% rear-end collisions
Greensboro (2001)	News report: +100% red-light violation crashes
North Carolina (2004) [Urban Transit Institute]	5 years data, 303 intersections. +40% ALL, +78% rear-end, non-camera control sights -25%
Howard County (2000)	+15.9% ALL, +21% rear-end
Oxnard, CA (2001) [IIHS]	5 years, 125 intersections (11 RLC sites), RLC promoter, –5% ALL (inconclusive), +180% rear-end (1 fatal), not reported. No RLC controls: -10% ALL--Santa Barbara; San Bernardino--best injury rate
Mesa, Arizona (2000)	4 years, 4 quadrants (6 intersections each), no crash types, rates only, TC sites = -7% to –15% (1 fatal); control sites = -10%, lowest injury rate
Scotland (2004)	Speed Cameras (photo radar), +9% fatalities (+28 deaths)
Virginia (VTRC, 2005)	7 cities, 5+ years, RLC promoter Net injury crashes +7% to +24%; rear-end +50% to +71%
Washington, D.C. (2006) [Washington Post, NMA News]	6 years data, $32 million fines (500,000 tickets), +81% injury/fatal crashes (including RLV) [+118 injuries/deaths]
Winnepeg, Manitoba Canada (2006)	+58% ALL, +64% injuries, control sites = +7%
FHwA (2005)	7 cities, 132 sites, RLC promoter 10+ years. Net increase +8% (understated) injury crashes, a few extra fatalities

The first study (in the charts), the biased Synthesis 310, admitted that "nearly every study" was inaccurate. Up until 2003, almost all studies were fabricated by people who profited from the red-light ticket camera programs. This is akin to R.J. Reynolds being the foremost research on the "health benefits" of smoking. Hardly objective or fair.

Winnepeg and Howard County police reportedly deceived the public about ticket cameras reducing crashes. The IIHS report covered up the serious increase in rear-end collisions in Oxnard and misrepresented other data. Mesa corrected some unethically short yellow arrows. However, to maximize RLVs and profits, they moved the violation lines closer to the signals, eliminated the .3-second grace (into the red), and seriously increased the fine amounts.

Despite methodology problems and incorrect conclusions, with proper analysis, one can extract some anti-camera truths from their biased, conflict of interest "studies". Charts in the IIHS report revealed that no-camera Santa Barbara scored twice as well in safety as Oxnard.

It's quite undeniable from the studies—even 6 pro-camera ones—that ticket cameras remain a failure as a "safety" device. Generally, all signal-related crashes (including RLV) increase after photo enforcement. Rear-end collisions rise the most, with 6 studies revealing over 70% increases, including 2 over 100% (Melbourne and Oxnard). These are major increases and most certainly led to increases of serious injuries and at least a few additional fatalities—whether reported or NOT. Even one extra death should be unacceptable. Two biased studies (VA and FHwA, 2005) admitted additional net injury crashes after RLTCs (+7% to +24%). Two unbiased studies (Winnepeg and Washington, D.C.) document a +64% to +81% rise of injuries.

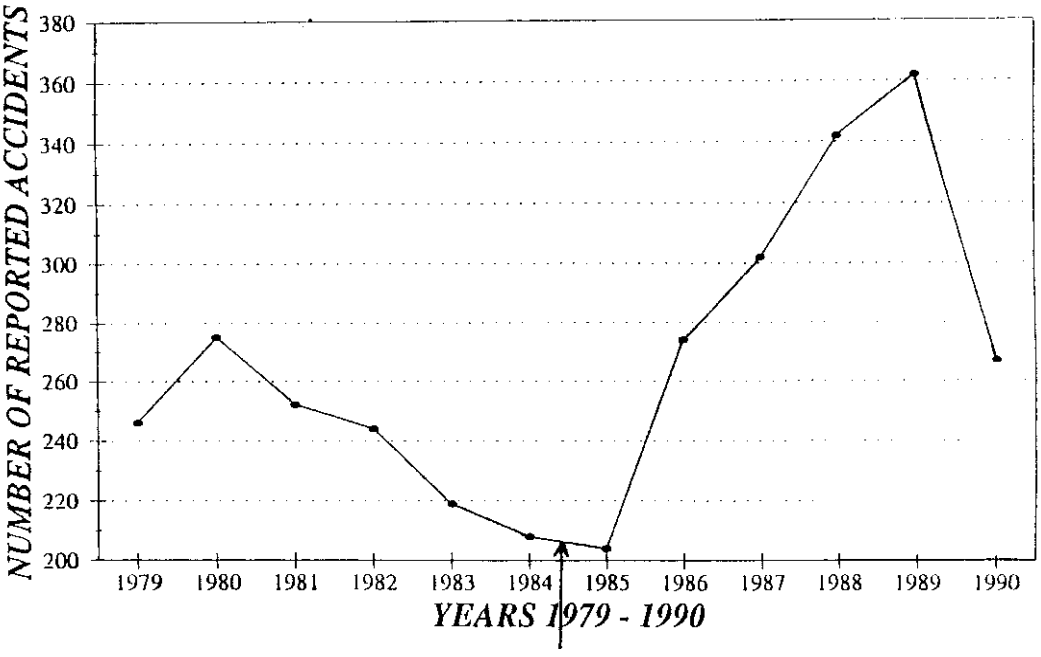
Pro-camera or objective, it's conclusive: Ticket cameras cause significantly more crashes and injuries. More importantly, is there any credible evidence that "cameras save lives"? There NEVER existed any real evidence that cameras reduced fatalities. My 2001 book correctly concluded that cameras increased traffic deaths. However, the magnitude of the increase is greater than former research suggested.

Ticket camera advocates have been promoting for more than 12 years that "cameras save lives", despite the lack of proof. The same deceptive tactic, used by many of the same people (enforcement for profit advocates), helped prolong the most unjust law in American history—the National Maximum 55 Speed Limit. They kept parroting "55 saves lives", despite no real proof. These "safety experts" predicted 6,400 people would die as a result of the NMA inspired repeal of 55/65 on November 28, 1995. Two

years later, about 40 states had raised speed limits. The results: about 400 less fatalities on limited access divided highways.

NOT EVEN ONE of the six biased (for cameras) studies in this report can prove that "cameras save lives". In fact, three of the pro-camera studies inadvertently reveal some extra fatalities after cameras (FHwA, Oxnard, Mesa). Scotland and Washington, D.C. straight up show about 30 additional deaths each after ticket cameras. Considering all of the dozen studies combined, there occurred more than 1,000 extra crashes, with over 500 injuries, after cameras. All told, about 75 deaths resulted from these ticket camera programs. That's way more than enough evidence to shut down all ticket cameras forever. Unfortunately, it's way worse than this. See Statistics.

TOTAL ACCIDENTS FOR 101- 109, 202 & 301 - 303 COMBINED FOR 41 RLC SITES



Camera enforcement begins

Andreassen (1995) Melbourne, Australia
Before RLTC's, crashes decline - 20%
After RLTC's, crashes increase +70%

VI. Control Sites

Control sites are intersections similar to camera enforced intersections, but without ticket cameras. In comparison studies, camera promoters assumed there would occur a triple-win situation. If RLTCs "reduced crashes", then whether normal intersections (without cameras) saw crash increases, decreases, or stayed steady, cameras would appear to be a true "safety" device. Crash increases could be blamed on not having a camera and decreases were because of nearby cameras and called [positive] spillover effect.

Reality dealt this theory a negative blow. In almost all major studies—where controls were observed—control sites consistently outscored camera sites in safety comparisons. In addition, control (no camera) sites often outscore camera sites in red-light violation rates.

Control sites can be used to check for "regression to the mean", an idea that also doesn't help cameras. "The statistical tendency for locations chosen [for RLTCs] because of high crash histories to have lower crash frequencies in subsequent years even without treatment" (FHwA). In other words, with or without cameras many intersections will record less and less crashes as the years go by. This is called positive historical [safety] trends. Cameras often lessen or even reverse these safety improvements as in Melbourne, Australia (Andreassen 1995) and North Carolina (2004).

Intersection A averaged 20 crashes annually from 1995-1999, but recorded 25 in 2000. Most likely, by 2001 or 2002, crashes will drop back to 20 or perhaps 18 collisions per annum, with or without ticket cameras. Camera supporters would rather the public NOT know this information. It doesn't sell cameras.

The above type example has been reported by the news from the police or local government like this: "Cameras reduced crashes by 20% from 25 in 2000 to 20 in 2001. The 'success' of the RLCs has prompted city officials to expand the program to 10 more locations." The newspaper reporter would NOT "offend" the police by digging up the 1995-1999 data, hence the public is deceived. The state auditor of California deceived the whole state's citizenry in this manner.

Failure to account for "regression to the mean" can exaggerate any supposed positive safety results from ticket cameras. Ignoring "spillover effect" can underestimate supposed RLC benefits. Could this be why many studies embrace "spillover effect" while completely ignoring "regression to the mean"? The problem is: "spillover effect" is a completely false theory.

"Spillover effect is the expected effect of RLCs on intersections other than the ones actually treated because of jurisdiction wide publicity and the public's lack of knowledge of where RLCs are installed." (FHwA, 2005).

Note: "Spillover effect" is an insurance/government myth first used to insinuate that raising the speed limit on one road will lead to an increase in travel speeds on other, usually lower posted streets. This they called "negative spillover effect". Now they reversed it to "positive spillover effect". The Federal Highway Administration Speed Limit Survey (1992) says, "There is no evidence in our studies that raising the speed limit to 65 on rural interstate freeways led to an increase in speeds off the freeway."

The plain English false theory supposes that: Camera enforcement frightens people into driving more carefully—even at non-camera (control site) intersections—in a ticket camera enforced city.

Spillover effect is false for so many reasons:

A. It is historically false (see above). Ironically, the FHwA admitted this 3 times—"no evidence" in 1992, "unproven" in 2003, and "lacks credibility" in 2005.

B. Frightened or paranoid drivers perform worse, not better. Yellow suddenly (and falsely) means "stop" causing panic-breaking in order to avoid a ticket, resulting in +70% or more increases in rear-end crashes, including injuries and fatalities. See: Studies and Statistics.

C. Bad drivers are NOT afraid of tickets or cameras or apparently death. See: Kinds of Crashes.

D. The best, conscientious drivers learn where cameras are located and seek alternate routes.

E. The Monash University Study (Australia) states, "Interestingly, there were no statistically reliable differences in red light encroachments observed between camera and non-camera approaches."

F. The majority (70%) of the RLV problem is NOT a driver behavioral problem but a traffic-engineering problem. There is an epidemic of malpractice in the posting, setting, and timing of traffic control devices. Most yellow times are too short. See: Truth.

G. Enforcement (especially by cameras) does nothing for safety. It is the least effective of all the three E's of traffic safety. Good engineering is #1. Education is second best.

H. Ticket cameras CAUSE crashes, injuries, and fatalities.

I. Control sites—without cameras—consistently score better safety-wise than RLC or Photo Radar sites.

Crash Results: Ticket Camera versus No Camera

Location	Ticket Camera Sites	No Camera Control Sites
North Carolina	+40% ALL, +78% RE	-25% ALL
Oxnard, CA	-5% ALL (?), +180% RE, at least 1 fatality	-10% ALL—Santa Barbara, Best injury rate—San Bernardino
Mesa, AZ	-7-15% ALL (inconclusive), 1 fatality	-10% ALL, best overall, no fatalities
Winnepeg, CAN	+58% ALL, +64% injuries	+7% ALL
FHwA (2005)	-16% angle injuries, +24% RE injuries, +8% ALL, a few extra fatalities	Some angle decreases, no rear-end increases

Regardless of being pro-camera or objective, the studies all show that the non-camera sites recorded much better safety results than the ticket camera sites, often greater than 50%. Whether close to RLTC sites [Mesa] or 35 miles away, in a different county and totally unaffected by publicity or enforcement [Oxnard versus Santa Barbara] normal intersections are way safer than camera enforced locations.

These consistent findings provide additional proof that cameras cause more crashes, injuries, and fatalities. Noting the reversal of positive historical trends (at camera locations) means the negative safety impact is so much worse than the actual stated results. For example: Intersections A, B, and C operated cameras that caused on average a +20% increase in crashes. Intersections E, F, and G—without cameras—showed a –20% decrease in collisions. It is reasonable to expect that if A, B, and C did not have ticket cameras, they too would experience 20% safety improvements. Therefore, cameras caused +40% more crashes than would have occurred without the fraudulent devices. To my knowledge, only the North Carolina study looked into this phenomenon.

Another false theory still propagated by camera promoters is that reduced violations by photo enforcement somehow translate into reduced

crashes (Synthesis 310, many others). My 2001 book accomplished what nobody else has done—a complete analysis and proper perspective on the issue of red-light violations.

At the joint Legislative Delegation/County Commission Meeting on January 13, 2000, camera enforcement became a Priority Legislative Issue. Palm Beach County Commissioner Burt Aaronson exclaimed that cameras can reduce red-light running by 40%, which will result in a corresponding 40% reduction in crashes and fatalities. This translated into huge monetary savings to the public in less hospital visits, reduced EMS and police workloads, etc. This approach is encouraged by FHwA and IIHS literature.

To those unknowledgeable about traffic safety, the aforementioned statements appear to be logical. However, the statement is pure ignorance. Does everyone violating a red-light crash? Of course not! In fact, signal violations and crashing are extremely, rarely synonymous.

Data from Cam Film Works at the Boca Raton, Florida test site recorded over 3,000 violators in January/February 2000. How many accidents happened? Not even one.

Violation and crash data from Howard County show equally non-distressing results for 1997, before camera enforcement.

- Intersection #1
  90 daily violators x 365 days = 32,850 annual RLVs
  32,850 ÷ 3 angle crashes = 10,950 RLVs per each crash
  Percentage of red-light violators who caused a crash = 0.01%

- Intersection #2
  24 daily violators x 365 days = 8,760 annual RLVs
  8,760 ÷ 5 angle crashes = 1,752 RLVs per crash
  Percentage of red-light violators who caused a crash = 0.06%

Camera proponents would emotionally exclaim that there are 90 violators daily (or 32,850 a year!). Numbers, without regard to proper perspective, cloud the issue. On the surface, 32,850 sounds like an epidemic. However, in proper perspective, 40,000 cars traverse these intersections daily, revealing that a mere 2/10 (.22) of one percent of the drivers violate the red signal. And then, understand that less than 2/100 of one percent of these people cause an accident.

The violator/crash numbers reveal a clear contradiction to proponent's claims of a very dangerous red-light running/crashing epidemic. Way less

than 1% of violators actually cause a crash. Therefore, reducing violations with photo enforcement by 40%, or even 90%, still could not prevent the RLV that caused the crash. In fact, RLTCs reduced the RLVs to 60, but the angle crashes increased from three to six.

We later learned from the San Diego court case (my book was used as evidence) that the city placed cameras at an intersection, which produced 2,000 tickets (RLVs) a month. However, there were NO crashes at that location for over 6 years. Only dangerous intersections have RLTCs?

Control sites are almost always much safer than camera-enforced intersections. In addition, they often record less RLVs than camera sites.

Fairfax, Virginia Camera Enforcement Program

(One Year After Ticketing by Mail Began) – Daily Averages Recorded

Intersection	Number of Vehicles	Violators (0.4 Delay)	
VA: Fairfax Circle	20,685	78	
Main/University	20,646	21	44% reduction
123/Eaton	20,874	37	from last year
123/North	17,040	38	
Lee Hwy. /123	14,946	18	(= 25 at 21,000)
Control: Fairfax County	36,891	25	
Arlington County	29,550	28	
Boca: Palmetto/St. Andrews	21,000	29	

With all things being equivalent, Boca shows much better average driver compliance to traffic signals than Fairfax's camera-enforced intersections. Also, the Virginia town's numbers had allegedly dropped by 44% since the previous year!

What else does the chart reveal, but not mentioned by the IIHS? The control sites, without cameras or threat of a ticket, maintain much better compliance than all of the photo-enforced intersections. This leads us to the secret camera supporters don't want you to know. The majority of RLVs result from improperly timed or synchronized traffic signals, not driver behavioral problems. See: Truth.

VII. Statistics

Whether camera company VPs, insurance reps, police officers, "safety" groups (enforcement agencies) or politicians, ticket camera proponents all proclaim, "Cameras save lives." In addition to "saving lives," red light cameras "significantly reduce" angle crashes and ALL traffic signal intersection crashes and injuries ["Automated Enforcement of Traffic Laws," Richard Retting, IIHS, 1999].

Many localized studies have refuted these claims and discovered that cameras actually cause more crashes, injuries, and fatalities [Australia, NC, VA, Washington, D.C.].

There is now enough data (five years before cameras versus 5 years after) to observe results on a national basis. By the end of 2000 about 40 cities operated RLCs. Thus, national trends in traffic accidents started to be affected by ticket cameras. Currently, over 200 cities employ photo enforcement.

Proper analysis of National Highway Traffic Safety Administration (NHTSA) USA statistics clearly prove that ticket cameras cause an increase of injuries and fatalities.

In the first chart, Traffic Signal Related (intersection) crashes, the promise was to "significantly reduce" all crashes and injuries. Comparisons from 96-00 versus 01-05 show almost no reductions in ALL crashes [-0.4%] and only a modest decrease in injury crashes [-4.2%]. However, the modest improvement pales in comparison to national trends in Chart 2. ALL USA crash injuries have declined over +300% more than traffic signal related injuries [-12.8%]. This mirrors how RLC studies have shown crash/injury increases at camera sites while non-camera sites clearly show decreases [Australia, NC, Mesa, etc.]. Positive historical safety trends are being stymied by the presence and proliferation of ticket cameras. In any event, fender bender and injury crashes are much less important than actual lost lives.

"Cameras save lives" is a completely fraudulent statement. Chart 3 reveals that cameras contributed to an increase of 412 fatal crashes [+2.9%] or about 465 more dead people during the 5-year (01-05) period of serious RLTC proliferation. Cameras were supposed to "significantly reduce" ALL traffic signal related crashes, injuries, and fatalities, period. Cameras failed on all 3 accounts.

Charts 4 and 5 deal specifically with red-light violation (RLV) crash fatalities. The national figures are presented up to 2002. After that date, figures could not be confirmed, despite internet searches and repeated phone

calls to the Federal Highway Administration, who sponsors and endorses RLCs. Nevertheless, the conclusion remains accurate.

Florida is presented for comparison (control site). The Sunshine State ranks third highest in the USA for number of licensed drivers, vehicle miles traveled (VMT) and traffic fatalities. Florida comprises over 12% of the nation's RLV fatality pie and employed NO RLCs through 2005.

Before the proliferation of red-light ticket cameras (96-99), national RLV fatalities dropped from 1066 to 947 (-11.2%). After RLCs, fatalities dropped –2.7% to 921. By 2002, about 75 cities employed RLCs. Comparing 96-99 versus 2002 results in a –9.2% decrease in RLV fatalities. However, Florida – without ticket cameras – scored almost 100% better (00-02) by decreasing fatalities –18.3%. The Sunshine State improved –20% [-125 fatalities] when comparing 1996-2000 versus 2001-2005. In fact, if one removes Florida from the national RLV fatality pie, there would be an increase in fatalities, instead of a decline. Again, photo/ticket enforcement is costing lives.

Although the vast majority of angle crashes are NOT RLV crashes, their results reside in Chart 7. Fatal angle crashes rose over +10% after RLCs versus before.

Begrudgingly admitted, but downplayed, is the fact that ticket cameras consistently cause an increase in rear-end collisions. Promoters of camera enforcement argue that its just a few extra crashes and that they are just a little "bump" in the rear, according to ACS Camera VP Maurice Hannigan. Trading a "bump" for less RLV crashes is a "no brainer," he was quoted by the Philadelphia Inquirer.

Ticket cameras increase rear-end collisions by way more than a few. Try +70% or even +180% (Oxnard 18 to 51 before versus after RLCs). Virginia, North Carolina (+78%) and Australia (+100%) recorded tremendous amounts of rear-end crashes after cameras, while many non-RLTC sites recorded declines.

Oxnard police web site photos show several serious (including a fatal one)rear-end collisions caused by the RLTCs. I sent Mr. VP the photos.

Data from Chart 6 paints a dire story. Rear-end fatalities increased +980 (+12%) in the five year period after ticket cameras. They were stabilizing from 1997-1999, but cameras have changed all that. Consider also where rear-enders have significantly decreased at normal (non-RLC) intersections, helping to offset the number of deaths. As noted: rear-end collision deaths at traffic signals increased about +650 (+12%) during the period [01-05] after ticket cameras.

The national statistics are conclusive. In addition to violating American rights [due process, facing accusers, etc.] and extorting people's money, ticket cameras cause fatalities. The national proliferation of red-light ticket cameras resulted in over 500 more dead human beings from 2001-2005. It's time people's lives become more important than money. Remove the cameras and save human lives.

National Highway Traffic Safety Administration

1. Traffic Signal Related Crashes, ALL and Injury Crashes

Year	All	Injury	Year	All	Injury
1996	1295000	489000	2001	1353000	493000
1997	1334000	483000	2002	1356000	476000
1998	1318000	462000	2003	1308000	466000
1999	1347000	493000	2004	1328000	444000
2000	1391000	505000	2005	1314000	450000
Total (96-00):	6685000	2432000			
Total (01-05):	6659000	2329000			
Difference:	-26000	-103000			
Percent Change	-0.40%	-4.20%			
Average Inj. year (96-00)	486400				
Average Inj. year (01-05)	465800				
Difference:	-20600				

2. All USA Traffic Crash Injuries

Year	Injured	Year	Injured
1996	3483000	2001	3033000
1997	3348000	2002	2926000
1998	3192000	2003	2889000
1999	3236000	2004	2788000
2000	3189000	2005	2700000
Total (96-00):	16448000		
Total (01-05):	14336000		
Difference:	-2,112,000		
Percent Change:	-12.80%		

A Injury Rate per 100M VMT

Year	Rate
1996	140
2000	116
2005	90
Difference	-50
Percent	-36%

B US ALL CRASHES

Year	Crashes
1996	6770000
2004	6181000
Difference	-589000
Percent	-8.70%

3. Traffic Signal Related Fatal Crashes

Year	Fatal Crashes		Year	Fatal Crashes
1996	2812		2001	2925
1997	2900		2002	2922
1998	2849		2003	2867
1999	2803		2004	2897
2000	2785		2005	2950
Total	14149	(+412FC)		14561
				+2.90%, +82 FC annually

1996-2000 2830 yr average
2001-2005 2912 yr average
412 FC or 465 more fatalities

4. Florida Dept. of Highway Safety and Motor Vehicles
Disregard Traffic Signal Fatal Factors, Injury, and VMT

	Year	Fatal Factor	Injury	Year	Fatal Crashes	Injury
	1996	121	7833	2001	93	6969
	1997	126	7640	2002	99	7149
	1998	136	7587	2003	109	6602
	1999	119	7209	2004	96	6341
	2000	116	7109	2005	96	6300
Total		618	37378		493 (-125)	33361 (-4017)

Vehicle Miles Traveled (VMT)=72 Billion more from 1996 to 2005.
All US 96=2.5T to 3T in '05=+20% (+56%) VMT=129 BVMT to 201B
Licensed drivers increased from 12.3 (96) to 15.3 million (2005)
There occurred a -20% decrease in fatal factors (-125) from 96-00 versus
01-05 and a -10.8% decrease of injuries (-4017)
despite 20% more drivers traveling 56% more miles

5. Red Light Violation Fatalities, ALL USA, Federal Hwy. Administration

Year	Fatalities	
1996	1066	
1997	1059	
1998	986	
1999	947	(record low)
2002	921	

2000=40 cities with RLCs
2002=75 cities with RLCs

4058 (96-99) divided by 4=1014.5 avg yearly vs. 921 (2002)=-9.2%

Florida 96-99 yrly avg=125.5 vs. 102.6 (00-02)=-18.30%

Greatest national fatality declines (-119 or -11.2%) occurred before RLTC proliferation (1996-1999)

Florida, without Red Light Ticket Cameras, scored over 100% better than the national trend (100 cities with RLTCs in 2005). In fact, the national improvement can be almost solely attributed to Florida's -25 less annual RLV fatalities.

6. Vehicle Occupant Rear-end Fatalities

Year	Fatalities	Year	Fatalities
1996	1529	2001	1766
1997	1590	2002	1853
1998	1666	2003	1862
1999	1661	2004	1790
2000	1733	2005	1888
Total	8179	(+980)	9159 (+12%)

1529 (96) to 1888 (05)= +359 or +23%
Before RLCs=1636 avg year fatalities
After RLCs=1832 avg year fatalities

7.Fatal Angle Crashes

Year	Fatal Crashes	96-00 avg
1996	7566	7518
1999	7542	
2000	7447	**02-04 avg**
2002	8388	8334
2003	8356	(+816)
2004	8257	

22555 (96-00) to 25001 (02-04)
is +2446 or +10.9%

There occurred +196 more average annual rear-end fatalities after ticket cams
There occurred +980 more rear-end deaths (01-05) after RLCs (+12%)

Note: Not all of these fatalities occurred at traffic signal intersections. Judging from many sources and statistics, at least 650 extra deaths occurred at traffic signal related sights from 01-05 AFTER serious proliferation of cameras. Also included in Chart 3. The rear-end fatality increase at signals probably exceeds +12%.

VIII. Truth

In 1999, 'Automated Enforcement of Traffic Laws' (IIHS, Richard Retting) admitted, "In some cases, cameras are associated with an increase in rear-end collisions." He further downplayed this by claiming they quickly "decrease over time."

In some cases? He referenced the Andreassen study, but failed to mention that 36 of 41 RLC sites recorded marked increases in rear-end accidents. Decrease quickly? After a year or two? Even after five years, the rear-end collisions still remained almost +100% higher than before RLCs (average 60 annually before versus 115 in 1990). That equates to over 300 more rear-end crashes thanks to cameras. And how many fatalities? Nobody researched to find out.

"In some cases…" Whether documented or not, almost every ticket camera program causes rear-end collisions. Camera proponents now begrudgingly admit this negative aspect of RLTCs. But, they claim it's a trade off – cameras cause less serious rear-end crashes, while reducing the number of more serious red-light violation crashes.

The 1999 IIHS "Automated…" reports, "It's generally accepted that red-light cameras SIGNIFICANTLY REDUCE angle crashes and the overall number of intersection crashes and injuries." It does NOT say anything about "trading" one type of crash for another. Cameras were suppose to "SIGNIFICANTLY REDUCE" ALL traffic signal intersection crashes, injuries and fatalities, period. Cameras fail on all three accounts.

ACS Camera Companies' Vice President Maurice Hannigan called trading a "bump" in the rear for less RLV crashes a "no-brainer." I sent him a letter and photos (from Oxnard) refuting his callous comments.

Nobody can accurately predict the outcome of any crash. Purposely causing a crash, especially for financial gain, is not only immoral, but it's a crime. The following common traffic crash scenarios (and Statistics) completely refute the "rear-end crashes aren't serious" theory.

- Small car (2800 lbs) rear-ended by an SUV (5500 lbs)
- Motorcycle rear-ended by anything (125 deaths in 2004)
- Any vehicle rear-ended by loaded (80,000 lbs) SEMI

NOTE: Almost NO intersections provide enough yellow time to safely accommodate large trucks (ITE).

Engineering has greatly improved front-end crash safety, rollover safety and even side-impact safety (more steel and airbags). Thanks to airbags, vulnerable children occupy many back seats. Think. Most rear-ends are just hollow trunks between a bumper and back seat. IIHS crash tests found that the Toyota Camry's seatbacks are not stout enough to

withstand rear-end collisions. Toyota Camry is the #1 selling car in the U.S. This, of course, is not just a Toyota problem, but an industry-wide vehicle problem. Suddenly, the Insurance Institute for Highway Safety shows concern for the injuries, fatalities and billions in medical costs caused by rear-end collisions. Thanks to the IIHS (and other camera proponents) worldwide promotion and proliferation of ticket cameras, rear-end crashes and fatalities have increased significantly. About +650 U.S. deaths occurred from 2001-2005 because of cameras (see: Statistics).

Rear-end crashes are the leading cause of whiplash. When someone's neck suffers injury, their whole body remains out of alignment. It's very painful and takes a long time, with physical therapy, to heal.

Allstate commercial: A car approaches an intersection, the light turns yellow… The spokesman says, "Will that light stay yellow for three seconds or six? Uncertainties on the road can lead to accidents."

There's the inadvertent truth from one of the IIHS's biggest monetary contributors. Inconsistent, usually too short yellow times are a major cause of red-light violations (70%) and a significant cause of RLV crashes.

The National Motorists Association (www.motorists.org), my book, Dick Armey and Matt Labash (Weekly Standard) have all documented the signal timing malpractice pervading the entire country. I discussed the numerous documented problems with the leader of the Institute for Transportation Engineers – the main group responsible for signal timing standards worldwide (July, 2001). He begrudgingly agreed with me on most points. Three years later, the ITE actually graded themselves a D. Biased engineers – grading their own job performance across America – could only judge themselves one notch above complete failure. Houston, we have a problem!

I read the ITE Traffic Engineering Handbooks from 1965 to this century regarding "determining traffic signal change intervals." My book comprehensively documents and explains this dangerous practice (call 325-896-2595 for a copy). The addition of ticket cameras create signalized intersections that are positively deadly.

ITE 1989 subsection, "Measure of Effectiveness (of Yellow Change Intervals)" states, "When the percentage of vehicles… which enter on red, exceeds that which is locally acceptable (many agencies use a value of 1 – 3%), the yellow interval should be lengthened until the percentage conforms to local standards."

Later in the report, Mr. Hulscher, an Australian, suggests a new enforcement technique to deter drivers who enter on red intentionally – cameras. This is the subtle set-up.

Here's the punch line. The same subsection in 1994 states, "When the percentage of vehicles that enter on a red indication exceeds that which is locally acceptable, the yellow change interval may be lengthened (or shortened) until the percentage conforms to local standards, or ENFORCEMENT (emphasis mine) can be used instead." Camera enforcement working 24/7 is inferred. Also, note the addition of the word "shortened" in regards to yellow timing.

Enforcement to correct engineering deficiencies? Since several ITE members, including Retting (IIHS), actively promote and profit from cameras, there certainly appears to be a conflict of interest here. An engineers job should not involve promoting enforcement. Engineers should properly engineer traffic controls to maximize safety and compliance.

ITE Journal (1989) reveals more language/procedure changes. "If it is the policy to provide clearance time, the traditional practice has been either to add the time to the yellow warning interval, or to use what has previously been called the 'all red interval', herein referred to as the red clearance interval. When clearance time is provided, it should be in the form of a red clearance interval (additional details are elsewhere in this proposed recommended practice)."

As revealed in the ITE Journals, there occurs substantially LESS yellow time than there used to be. Hence, a manufactured increase in the number of red-light violations began in the middle to late 1990's.

To spotlight the serious nature of the problem, here's a comparative example of past versus present yellow interval lengths, determined by the Kinematic Formula. Using a level intersection, 100 feet across with an approach speed of 35 MPH, the 1980's yellow time would be 5.05 seconds. The 1999 yellow time calculates to only 3.57 seconds. This equates to 1.48 seconds less yellow time than before, a reduction of 29.3%

Federal law 'requires' a minimum of 3.0 seconds of yellow and 'suggests' a maximum of 6 seconds. The absolute minimum should be 4.0 seconds, as three seconds is too short for perception/reaction time AND time to safely stop, forcing motorists to violate the red. Is it any wonder that camera promoters usually set up their photo enforcement machines at these unethically short yellow time intersections (New York, Fairfax, Beaverton, Mesa, Maryland, etc.)? It's simple: the closer yellow time is to six seconds, less accidents and much less violations result. Conversely, closer to three seconds greatly increases RLVs and crashes, but increases profits.

The following outline reviews the multitude of documented problems concerning traffic signals.

The Trouble With Traffic Signals
Documented Problems

- Unwarranted installations.
- Series of signals lacking synchronization.
- Flashers not being employed during slow hours.
- Inappropriately short green arrow durations followed by solid red-lights.

- All formulas (Kinematic, Rule of Thumb and Uniform Value) to determine signal change intervals contain the following limitations:
    - Too short duration for driver reaction – one second.
    - Dry weather conditions only.
    - Truck guidelines not available or established.
    - Minimum stopping distance times too aggressive.

- Using the posted speed limit as the approach speed fails to provide an accurate value for determining amber change intervals.
- Illegal approach speed value documented in Florida.
- Illegally short yellow timing documented in Virginia, Oregon, Maryland, etc.
- Driver disobedience purposely programmed into signals.
- Proposals to unethically shorten yellow times.
- All-red intervals stealing away yellow time for clearance.

As proven in this chapter, traffic signals do not even remotely resemble the "infallible devices" asserted by camera proponents. As outlined, there occur at least 15 distinct problems that can be associated with signals.

The majority of "red-light running" results from government malpractice, created by programming unethical and illegal traffic signal timing deficiencies, NOT "aggressive driver behavior." Furthermore, the overwhelming majority of RLVs occur less than 2 seconds into the red-light or during the all-red clearance intervals and are not dangerous actions threatening public safety.

Even proper engineering of traffic signals is not an exact science. Therefore, it remains hypocritical for local governments to micro-manage the actions of ordinary drivers who would need to outperform the honed reflexes of professional racecar drivers just to avoid violating an improperly

timed light. But, to publicly demonize the pre-programmed failure of reasonable drivers and violate their rights by issuing camera-based citations while causing more crashes, injuries and fatalities is unconscionable.

The following traffic engineering studies demonstrate how engineering improvements seriously enhance safety and greatly reduce red-light violations.

♦AAA Foundation for Traffic Safety funded the re-engineering of 4 dangerous intersections in Detroit, Michigan. David Feber, Transportation Engineering Manager for AAA Michigan explains the simple low cost changes in the Progress Report article, "AAA Michigan Program Prevents Crashes, One Intersection at a Time." "For traffic lights, we go from 8" to 12" lenses so they're 50 percent larger. We re-stripe left turn lanes with pavement markings, re-time the traffic signals and add something called an all-red clearance interval, where you leave both sides red for a second or two while the signals are changing. Intersections also get better signs and improved pedestrian signals and parking that can block drivers' ability to see oncoming traffic is eliminated."

The results were called "astonishing". After 27 months, "crashes decreased by 47% with a 50% reduction in injuries." The approximate cost for these impressive safety improvements: a mere $35,000 per intersection. This is less than the cost of one ineffective camera.

The larger, more readily visible signal heads helped improve motorists acknowledgement of forthcoming traffic lights. The re-timing of the amber signal change intervals produced a 50% reduction in red-light violations! These results far exceed any positive RLV reductions allegedly produced by camera enforcement. Proper engineering produced a 47% reduction in crashes with 50% less injuries. RLVs diminished by 50%. Yet, there occurs even more good news as explained in the article. "The biggest savings is really from a societal perspective, from the reduced injuries," Feber says. "As the severity of an injury gets worse the insurance costs get less and the societal costs get higher." The estimated societal savings of the AAA seed projects is $100 million.

♦Police Lieutenant Terry Campbell relates a similar result observed in Omaha, Nebraska. An intersection on L Street incurred a high rate of accidents. Enforcement – the predominant response of most government officials – failed to reduce the incidence of traffic collisions. The Lieutenant surprisingly suggested that city engineers investigate the problem. The traffic signals were re-timed and accidents declined to insignificant levels. Problem solved.

♦"Can We Make Red-Light Runners Stop? Red-Light Photo Enforcement in San Francisco, California," by Jack Fleck and Bridget Smith in Transportation Research Record 1693, TRB, admits that "experience shows that engineering solutions should be considered first." As mentioned earlier, the study could not honestly prove any crash reductions related to cameras, but allegedly, RLVs diminished by about 40%.

An intersection near San Francisco State University suffered a fatal crash in 1994. In the aftermath, the all too common scenario of emotion over objectivity ensued. Nobody bothered to blame or check for engineering problems at the intersection. The pervading mentality propagated is that it's always the crazy drivers fault and only enforcement can curb these maniacs and "save lives." This began San Francisco's unnecessary camera program.

After ticket cameras operated for many months, several intersections (including the University one) still showed little improvement in violations or potential for crashes. Finally, engineering improvements were implemented. The results are documented below.

Arizona Transportation Research Centers Document Review of TRR 1693 says, "After traffic engineers modified the signal progression, red-light running virtually stopped at this location. Preliminary data from other pilot intersections suggest that engineering solutions often reduce red-light violations significantly. Several pilot locations are undergoing engineering improvements such as increasing the yellow light interval…"

Even the Insurance Institute knows [but does NOT promote] that engineering improvements far exceed any supposed safety benefits from cameras. Two of their unadvertised programs handily beat the results of their own Oxnard study [-5% ALL crashes].

Many cities contain unnecessary traffic signals at low volume, safer intersections. These signals often cause more crashes.

♦"Crash Reductions Related to Traffic Signal Removal" (IIHS, 1996) states, "Recent crash analyses of signal removals at 199 low-volume intersections in Philadelphia reported an overall crash reduction of 24 percent." Other studies concur.

♦Along with local officials, the IIHS participated in a program that increased yellow times at 40 Long Island intersections. These "small changes" in the amount of yellow times at traffic signals produced –8% all crashes, -12% injury crashes and –37% pedestrian/bicycle crashes as compared to a similar number of control sites that lacked the yellow increases. These decreases were recorded over the 36 month period after the signal timing changes. Surprisingly missing from this report is any mention of reduction in red-light violations that surely occurred. You see, more

yellow timing not only trounces ticket cameras in safety, but in reducing RLVs as well.

♦Texas Transportation Institute (2005) studied accident records, over a three year period, at 181 intersection approaches in three Texas cities. The results mirror those of many other studies, including the AAA Detroit study. Adding one extra second of yellow time reduced crashes by –40%. In addition, red-light violations decreased by –53%. These improvements far exceed even the exaggerated results of the most biased red-light camera studies.

As evidenced in the aforementioned San Francisco study, when cameras go head to head against engineering improvements (mostly longer yellow times) the cameras lose big, not only safety wise but in reducing red-light violations as well. Even with the threat of expensive tickets and license points, cameras still lose.

♦San Diego, California usurped $300 fines, with a license point, from about 2,000 Americans a month at a poorly engineered intersection. This intersection was accident free for six years before cameras (see: Control Sites). Despite usurping $600,000 monthly from citizens, the violations stayed steady. After one second of yellow was added to the signals violations finally dropped to 900 or less. The city/county/state/camera company lost $330,000 per month.

♦Mesa, Arizona claimed a –22% drop in RLVs after installing ticket cameras. Still, camera citations were mailed to over 2,600 people monthly from 6 intersection's left turn arrow phases. The intersections contained very inadequate 3 second (federal minimum) yellow arrows. Yellows were increased to 4 seconds and violations dropped –73% to 716 the following month [Arizona Republic, February 6, 2001]. The city/camera vendor lost about $300,000 a month. Lockheed Martin – later sold to ACS – forced a renegotiation with Mesa to recover their financial loss. It's all about safety, right? The ticket camera program was suspended over money squabbles or lack thereof.

Camera proponents manufacture all sorts of misinformation to deter lengthening yellow times. The most common deception asserts that yellow improvements are only very temporary and drivers "learn" the longer yellows making even more future violations. As demonstrated in Mesa and San Diego, the real reason camera promoters hate increased yellow times is because MORE YELLOW EQUALS MUCH LESS MONEY. Despite the fact that adding more yellow time greatly increases safety, camera company contracts often forbid the practice. In reality, those opposed to longer

yellows or properly engineered signals and speed limits are actually ANTI-SAFETY.

The TRUTH is revealed through the speech, public statements, research, studies and actions of the pro-camera crowd. These biased, ticket camera salespeople have inadvertently, but clearly admitted that their product is a complete failure as a "safety" device. They admit the TRUTH that ticket cameras cause rear-end collisions, that there IS serious engineering malpractice at traffic signals and that added yellow time seriously defeats cameras in both safety and RLV reductions. Their own control sites show that DOING NOTHING is better than employing cameras.

Actions speak louder than words. As documented in New York, Los Angeles, San Diego, Mesa, etc., camera proponents clearly demonstrate that safety is, at best, an after thought. All of their actions involve schemes to usurp more MONEY, even at the cost of safety.

The guilty have admitted the TRUTH. Through a preponderance of self-implicating evidence, camera promoters have revealed that ticket cameras are a big fraud. If someone reads this chapter (TRUTH) alone, it contains more than enough evidence – beyond any reasonable doubt – to ban ticket cameras from U.S. streets forever.

IX. Conclusion

Every angle of analysis—Common Sense, Photos, Kinds of Crashes, Studies, Control Sites, Statistics and Truth—results in the same conclusions. Ticket cameras CAUSE more crashes, injuries, and fatalities. More than 500 people are dead as a result of camera programs in over 200 cities. Countless more people are suffering long-term injuries. Then, there's the cost in vehicle repairs and the ultimate cost to society in lives lost, billions of dollars, and further erosion of government trust.

The whole "red-light runner [violation] problem" is an illusion manufactured by people who profit from promoting camera enforcement. ITE Traffic Engineering Handbooks reveal that between 1989 and 1994 yellow times were shortened by about –30%, resulting in a corresponding large (40-70%) increase in RLVs, which were promptly blamed on "aggressive drivers". Camera companies to the rescue!

Unethically short yellows are required for ticket cameras to be economically viable, that is: to provide more than enough tickets (money) for all corporate/government interests to profit. Unfortunately, short yellows—in addition to causing a multitude of highly profitable citations—also cause a significant increase in RLV crashes and rear-end accidents (ITE).

Short yellows PLUS ticket cameras greatly exacerbates the aforementioned increase in crashes (especially rear-end collisions which rise about 70% or more). Enforcement by ticket cameras results in a double whammy AGAINST SAFETY.

The same deceptions and results also apply to speed limits. Many speed limits and yellow times remain so under posted that they are ILLEGAL, according to state and federal laws (Manual on Uniform Traffic Control Devices). And like short yellows, under posted speed limits CAUSE more crashes (FHwA) by increasing speed variance between vehicles, increasing tail-gating, and denying enough yellow time at traffic signals.

Returning safety improvements to our streets requires three basic things—removing ALL ticket cameras, properly engineering speed limits and traffic signal intersections, and employing live police enforcement against the few truly dangerous drivers who actually cause serious/fatal crashes.

There's no such thing as a "speeding problem", only speed limit problems. Over 90% of U.S. speed limits are posted too low (FHwA Speed Limit Survey—5 years, 27 states, 1992). Therefore, enforcement—whether traditional or by camera—is not the solution. The answer entails setting speed limits according to proper engineering standards.

The ITE/FDOT literature states, "For a speed limit to be effective, at least 85% of the drivers must voluntarily comply with the posted limit." To accomplish this, the speed limit must be posted at the 85th percentile speed—"the speed at, or below, which 85% of the observed free-flow vehicles are traveling."

An 85th percentile limit reflects the SAFEST and most DEMOCRATIC speed limit. That's why it's the law (MUTCD section 2B.11). "When a speed limit is to be posted, it should be the 85th percentile speed of free-flowing traffic, rounded up to the nearest 5 mph increment." If the government, police, and insurance funded "safety groups" truly cared about people and their safety, they would encourage the setting of properly engineered speed limits. Those opposing proper speed limits, in reality, oppose democracy, justice, real safety, and the law.

Reducing traffic signal related crashes is fairly simple. The best solution has been known for decades. Since the majority of the problem occurs from traffic engineering malpractice, then obviously engineering improvements are the answer.

Just removing the cameras will reduce collisions, injuries, and most importantly, fatalities. In addition, one second of yellow time—added to signals at violation and/or crash prone intersections—drops red-light violations from 40-75% and generally reduces crashes by 30-50% [see: chart and Truth]. Unlike ticket cameras, engineering improvements have never been known to cause more injuries and deaths. Almost every study shows "astonishing results" (Detroit quote). Just increasing the size (visibility) of the signal head decreased RLVs by -25% in Texas, which outscores RLTCs in Mesa and San Diego, despite big fines with points.

Location	Engineering Improvements	Results
Detroit	4 dangerous intersections: larger signals, improved markings, visibility improved, added more yellow time	-50% RLVs; -47% ALL; -50% injuries; societal savings +100 million dollars
San Francisco	Signal progression (University); more yellow time (several signals)	RLVs "virtually stopped"; RLVs "significantly reduced"
Omaha, NE	Signal retimed (L Street)	Accident problem solved

Philadelphia	Signal removals (199 intersections)	Crashes reduced -24%
Long Island	40 intersections retimed (added yellow time about +0.5 second)	RLV reductions NA; -8% ALL; -12% injuries; -37% cyclists/pedestrians
Texas	181 intersections; added 1.0 second yellows	-53% RLVs; -40% crashes

Location	**Ticket Cameras**	**Signal Timing Improvements**
San Francisco	RLTC at University--$271.00 fines/point--RLVs continue	Signal progression--RLVs "virtually stopped"
San Diego	RLTC at RLV prone intersection--$300 fines/point--still 2,000 RLVs (monthly)	1.0 second added yellow; -56% RLVs (<900/month)
Mesa, AZ	RLTCs at 6 intersections = -22% RLVs fines/points (still 2,600 RLVs/month)	1.0 second added yellow; -73% RLVs (700/month)
Location	**Ticket Cameras**	**Doing Nothing (Control Sites)**
North Carolina	RLTCs increased ALL crashes +40%; rear-end crashes +78%	Reduced crashes -25%
Oxnard, CA	RLTCs = -5% ALL (inconclusive); +180% rear-end (18 before/51 after)	-10% ALL (Santa Barbara); best injury rate (San Bernardino)
Winnepeg, Canada	RLTCs = +58% ALL; +64% injuries	+7% ALL
Fairfax, VA	RLTCs (5 sites) one year after = 40 average daily RLVs	25 RLVs (Fairfax County) 28 RLVs (Arlington County) 29 RLVs (Boca Raton, FL)

The three leading human factors related to serious red-light violation crashes are DWI, emergencies, and not paying attention. Ticket cameras fail to deter or prevent these dangerous situations, which comprise over 90% of the RLV fatal crash pie.

DWI accounts for 45% of fatal RLV crashes. Police need to better apprehend dangerous drivers intoxicated on alcohol and/or drugs (illegal and prescription) BEFORE they kill. The lack of police enforcement at ticket camera signals indirectly causes more fatalities. Cameras can NOT deter, prevent, apprehend, or even identify reckless drivers (including felons). RLTCs can only helplessly photograph their license plate, allowing them longer time on the road. Only live, alert police officers can apprehend these deadly motorists and possibly PREVENT a fatality.

About 24% of serious/fatal RLV collisions involve emergencies, including at least 12% of national annual RLV fatalities (110 of 950) caused by police chases. Police departments need to curb unnecessary chases, especially after traffic violators. It's not worth dying over. EMS and citizens need to be alert and carefully negotiate intersections during emergencies.

Not paying attention (22% or more) rounds out the top three causes of fatal RLV wrecks. This can be improved through awareness, education, driver training, and also engineering. Some police enforcement might help. People, please refrain from cell phone use, especially on busy streets with traffic signals. Being sober, alert, and paying attention is the cornerstone of safe driving.

As revealed in TRUTH, camera proponents themselves have inadvertently, but clearly admitted that their product is a complete failure as a "safety" device.

Ticket cameras are not even a good deterrent to red-light violations. Added yellow time seriously trounces cameras in reducing RLVs as well as safety (Mesa, San Diego). Camera promoters own control sites reveal that doing NOTHING results in better safety and violation rates than employing ticket cameras.

Camera enforcement remains a complete and total FRAUD designed to deceive people into surrendering their guaranteed rights, money, and safety to provide millions $$$ in corporate/government profits. Over 500 (and counting) people have died as a result of these traffic enforcement for profit devices. The only ethical thing to do is dismantle all ticket camera programs and ban them forever.

About the Author

I began my experience as a professional driver in 1978, while serving in the U.S. Army. My latest job involved delivering auto parts (including airbags) for Honda/Pontiac/GMC. As people who enjoy driving, my wife and I think nothing of driving over 6,000 miles on our summer vacations. Since 1990, I have driven extensively in 45 states.

As a traffic safety researcher since 1986, I have written many research papers about speed limits, airbags, camera enforcement, and Driver's Education. Thus far, I have been published over 50 times—as a free-lance writer—regarding traffic safety issues.

By 1995, I volunteered to become the official Florida Activist for the National Motorists Association. Since then, I have been interviewed over 125 times concerning motorist issues, including 12 television appearances.

In short, I have the knowledge, experience, and integrity required to honestly help improve traffic safety and create a better driving environment for all American motorists.

About the NMA

Motorists across the nation owe a debt of gratitude to the National Motorists Association. On November 28, 1995, NMA inspired legislation, signed by President Clinton, repealed the most disobeyed law in U.S. history—the 55/65 MPH National Maximum Speed Limit (NMSL). Speed limit powers were returned to the states, unencumbered by federal restrictions.

The NMA remains (since 1982) a grassroots organization dedicated to the "protection and enhancement of individual mobility." The thousands of members represent concerned motorists from all segments of society, including: professional drivers, car enthusiasts, engineers, and even police officers. We advocate and support traffic laws based on sound engineering criteria and public consensus.

Lately, the NMA leads the fight against ticket cameras, preventing their installation in several states and helping remove them in Virginia.

As an American driver, you pay for everything from cars to roads to insurance. Don't you think you should have a say? Join the NMA today by calling 1-800-882-2785 or access the website at www.motorists.org.

I received no compensation for this extensive work.

Greg Mauz
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