

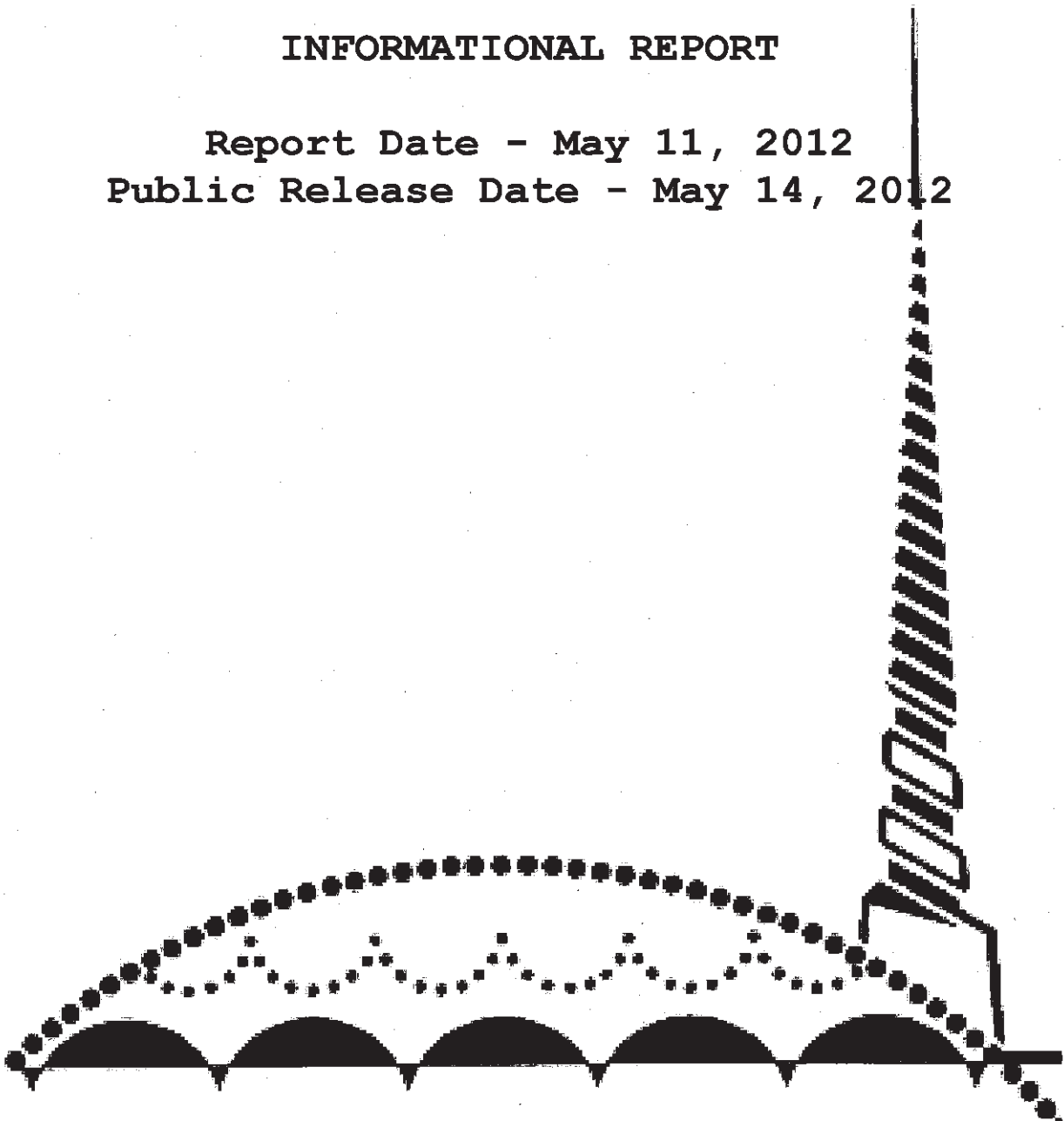
2011/2012 MARIN COUNTY CIVIL GRAND JURY

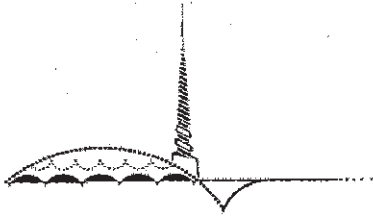
**Red Light Cameras:
Big Money, Big Brother or Big
Safety?**

INFORMATIONAL REPORT

Report Date - May 11, 2012

Public Release Date - May 14, 2012





RED-LIGHT CAMERAS - Big Money, Big Brother or Big Safety?

SUMMARY

The introduction of a red-light camera in San Rafael has generated volumes of heated discourse but little in the way of clarification. Opponents question whether red-light cameras actually reduce intersection accidents. Even more fundamental is the prevailing doubt that intersection accident rates are serious enough to warrant this high-tech solution. The answer to both issues is "yes." Two million intersection-related crashes in the U.S. each year are hardly trivial and the San Rafael Police Department reports a reduction in its intersection accident rate at red-light camera monitored intersections by 12% in the first year of operation. (National statistics report that number at 25%.)

The three most viable *validations* of red-light cameras are that they:

- Are vigilant 24 hours each day, 7 days a week
- Are totally impartial and color blind
- Modify driver behavior even at non-monitored intersections.

Marin citizens' most vocal *anti-camera* arguments can be summarized in three sentences:

- Five hundred dollars is too much to pay for a red-light infraction.
- Fourth amendment rights to privacy are violated when a picture is taken without consent.
- Red-light cameras don't actually make intersections any safer.

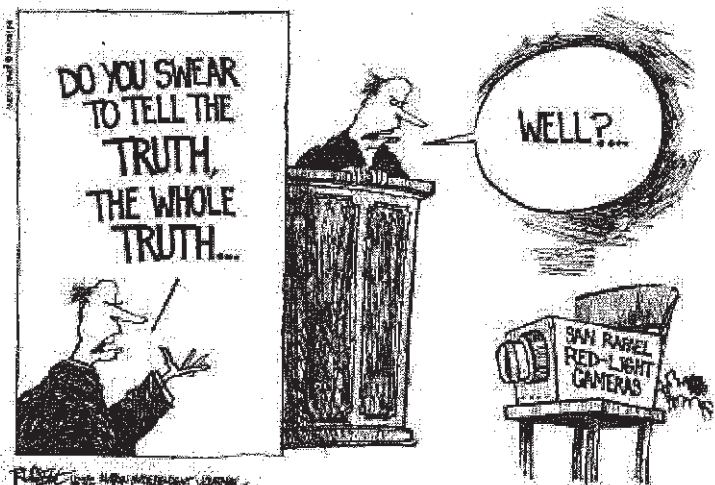
As a result of a 2011-2012 Marin County Civil Grand Jury investigation, the Jury can attest that all the previous arguments and the stated statistics above are only *partially* accurate. The issues are far too complicated to be validated by sound bites, unqualified numbers and percentages that can be tweaked to prove either side's positions. As you will see in the discussion below, each statement and argument must be clearly defined and further clarified to allow us to understand the issues fully enough to make our own personal decision.

As with many technological changes, issues associated with red-light cameras initially *appear* simple and straightforward on the surface and that simplicity tends to lull us into tacit acceptance of sound bites. A more in-depth review, however, quickly unveils layer after layer of social, economic, and legal entanglements and complexities.

Balancing the pros and cons, the Marin County Civil Grand Jury concludes that red-light cameras constitute a viable safety option for the reduction of red-light intersection accidents, but only when they are used in conjunction with creative city planning, constant reviews of traffic flow and continued use of other innovative traffic distribution options. The remaining issues of cost, privacy and safety are discussed in the body of this report along with the sources used to gather and verify the data.

BACKGROUND

The City of San Rafael recently installed a red-light camera. This single camera-monitored intersection installation generated extensive and frequently heated public debate in the form of editorials, Op Ed pieces and even a cartoon or two. Differences of opinion abounded with all sides proclaiming their positions to be the truth.



This cartoon was drawn by Mr. George Russell (Sat., Jan 28, 2012) and reprinted here by permission of The Marin Independent Journal.

Although Civil Grand Juries are not generally in the "urban-myth busting" business, occasionally an issue arises where both sides

vociferously claim the opposing side is disseminating myths as truth. Confronted with sufficient public outcry, a Civil Grand Jury is frequently compelled to investigate, talk to the experts on both sides, separate fact from myth, and report both sides of an issue so the County has adequate data from which to make personal decisions.

Justification for this report, in addition to the plethora of hugely divergent points of view, included the sobering national statistics that:

- In the United States, there were more than 2.3 million reported intersection-related crashes resulting in more than 7,770 fatalities and 733,000 injury crashes in 2008¹, and
- Specifically, red-light running injured an estimated 113,000 people and killed 676 people in 2009.²

METHODOLOGY

To fully explore the topic of red-light cameras, the Civil Grand Jury familiarized itself with legal statutes and contracts regarding red-light intersections. They then reviewed legal briefs from complainants and lawyers who fought or are presently fighting red-light camera citations in court. The Jury then researched statistical safety information from national sources with the explicit intent of including well respected investigative sources³ who might garner financial gain from red-light cameras as well as equally respected investigative sources⁴ who did not garner financial gain from their findings.

¹ Source: National Highway traffic safety Administration (NHTSA).

² Source: Insurance Institute for Highway Safety (IIHS) dated 2/1/11, Vol. 46, No. 1.

³ Wen Hu report for the IIHS - City of Chicago study.

⁴ National Highway Traffic Safety Administration (NHTSA) www.nhtsa.gov and the American Automobile Association at <http://www.csaa.com>.

In addition to statistical information, the Jury collected subjective data in the form of letters to, and editorials from, local news media to supplement their understanding of the stated nature of the public discontent. Personal interviews were then conducted with offenders and citizens and local experts such as police chiefs and city managers in Marin cities with and without red-light cameras. Seeking further clarification, interviews were conducted with key representatives of the San Rafael Public Works Department, Marin County Traffic Court, and San Rafael Traffic Enforcement personnel. And finally, interviews were conducted with police officers presently (or recently) assigned to street patrol.

DISCUSSION

To clarify both objective and subjective topics, the report has been divided into two sections:

1. "*The Installation Process*" clarifies the scope of a red-light camera installation project.
2. "*Addressing the tough questions*" explores stated public concerns and is further segmented into topics of excessive fines (**Big Money**), the potential loss of personal privacy (**Big Brother**) and accident reduction (**Big Safety**).

THE INSTALLATION PROCESS

The process for San Rafael (or any city) to install red-light cameras, is both lengthy and deceptively complicated. The work started in earnest after the (San Rafael) City Council granted approval to proceed. At that point the process required the formation of a working committee with representation from the Department of Public Works, the City Council and the Traffic Enforcement Division of the local Police Department. The committee:

- Established program objectives, identified legal requirements and assessed procurement and vendor alternatives
- Chose a red-light camera provider (Redflex Traffic Systems, Inc.) under a fixed fee contract that conforms with legal precedent
- With Redflex's assistance, calculated and evaluated a go-no-go evaluation of revenue vs. cost
- Determined to use red-light cameras as mechanisms for *modifying driver behavior* as well as provide safety monitoring, and
- Chose to cite only the more flagrant offenders. They directed their traffic engineers to be lenient as they calculated the technical specifications for the cameras. The engineers calculated "*speeding*" triggers not on the posted speed limit, but rather on 85% of the speed at which drivers actually entered the intersection (typically 3 to 4 mph above the posted limit). (Note: cameras trigger only when the front bumper of a vehicle crosses the inner crosswalk after the Red light has changed.) And finally, they added an additional 0.5 seconds to the duration of the yellow lights and activated stop lights in every direction during each cycle.

After all design issues were determined, the committee then supervised:

- The installation of signage announcing the presence of red-light cameras at the upcoming intersection(s).
- A State-mandated 30-day grace period - meaning that all offenders were notified of their offense but no penalties were levied for 30 days after the cameras went live.

- The finalization of the Redflex contract.⁵ Major contract provisions require Redflex to check and re-calibrate each camera every 30 days (or more if required). Additionally, they are mandated to check the calibration accuracy weekly via remote access over the internet as well as daily automated camera checks using the same technology.
- A six-month review of the data covering every aspect of camera operations. The full committee reviewed all the data and evaluated the technical and economic validity of the cameras. That process continues periodically.

At this writing, San Rafael is the only city in Marin that has opted to use red-light cameras although other Marin cities have evaluated them. Novato, for example, had Redflex survey half a dozen major intersections in 2010, but found the volume of potential citations would produce insufficient revenue to self-finance a program of camera monitoring. Local note: Vintage Oaks shoppers may be surprised to learn that even the notorious "no-turn-on-red" Roland off-ramp would not provide sufficient revenue to sustain a cost-free camera installation.

BASIC OPERATING PROCESSES

When triggered, red-light cameras generate citation evidence by snapping four separate still images. The pictures show:

- A rear view of the offending vehicle crossed over the violation line showing the red-light "on"
- A wider angle view of the entire intersection and again showing the red-light "on"
- A close-up of the license plate and enough of the vehicle to discern make and model, and
- A frontal close-up showing the driver's face with opaque ovals over any passenger.

A data bar is printed above each still photo displaying date and time, elapsed time into the red-light cycle and the posted speed limit for each alleged violation. Simultaneously, a video is made which registers the entire event starting from the time the vehicle crosses the violation line to its exit from the intersection. The video is posted on-line so the offenders may view their own video in the privacy of their own home. Redflex Traffic Systems, Inc. downloads and analyzes all generated data daily.

Based on State statutes and the Redflex contract with San Rafael:

- Redflex Traffic Systems has seven days from the day of the violation to complete its visual review of the data and forward the necessary evidence to the San Rafael Police Department. Note: At this writing, Redflex visually invalidates about one third of the citations they receive. Evidence must be clear, show obvious proof of violation, have valid license data, etc.
- San Rafael has three days from citation receipt to complete a second review of the evidence. During that time they are also authorized to accept or reject any violation sent by Redflex.
- When the San Rafael Police have determined to their satisfaction that there was, indeed, a clear violation, they will return the validated list to the vendor, send a notice to the driver and submit a copy to the County Traffic Court.

⁵ To read the San Rafael/Redflex contract, go to: <http://www.srpd.org> and search on "red-light cameras."

- The Court then has seven days to issue the official violation notice with detailed information for paying the fine and detailed explanation of the local process for contesting the ticket in court.

Although cameras record traffic violations 24 hours a day - year round, and are extremely accurate, all mechanical devices fall short in situations that require a human judgment call. A few representative examples falling into this category would include:

- When the driver of the vehicle was not the registered owner⁶
- Offenders who are wearing wide-brimmed hats or in any way cover or hide their faces
- Cars with missing or unreadable plates and new cars with a temporary window certificate
- Unlicensed drivers and people with inaccurate addresses on their license or registration
- Vehicles with license plates obscured by tailgates, large trailer hitches, rear-mounted wheel chairs, bike racks or towing trailers⁷
- Vehicles committing the violation that are obscured by a larger vehicle in the line-of-sight of the camera, and
- People contesting that they weren't the driver, as might happen with identical twins.

Many opponents of red-light cameras noted that Los Angeles recently abandoned all of their red-light cameras. They naturally wonder if San Rafael might ultimately suffer the same fate. This is not very likely since San Rafael and Los Angeles have totally different situations. There are a number of reasons for Los Angeles abandoning their cameras but there is one main reason that overshadowed the rest. At the outset, Los Angeles undertook a massive, one-time program of installing cameras at hundreds of intersections. In doing so, they did not anticipate the huge volume of citations that would be generated by cameras that were active 24/7 year-round. But more than that, they also did not anticipate the commensurate increase in the number of contested tickets. The increased volume of complaints flooded and finally overwhelmed Los Angeles traffic courts and, lacking immediate monies to increase the size of the courts, Los Angeles was forced to abandon the cameras.

ADDRESSING THE TOUGH QUESTIONS

The preponderance of complaints lodged against red-light cameras could be categorized by cost, privacy and safety. The following list is not intended to be all inclusive, but it does attempt to address the most prevalent issues the Jury ascertained from recent complaints, letters and editorials.

Big Money?

It is a fair question to ask if red-light cameras are being installed for increased public safety or because local governments have found a new way to generate revenue. It is also accurate to say that, when compared with other jurisdictions, the cost of a red-light ticket in California is astronomical. The penalty for red-light running in California is about \$450. The San Francisco Chronicle recently reported that the next highest fine outside California is \$250. They also reported that most fines throughout the U.S. are more likely to be in the \$100

⁶ In this case, the citation holder may call the San Rafael Police Department and ask for "*Traffic Enforcement*" or go online at www.photoenforcement.org.

⁷ California law requires drivers to have visible license plates on both the front and back of every vehicle.

range. There have been at least two recent efforts by Sacramento lawmakers to reduce red-light fines. Both bills were vetoed by the Governor who felt that decreasing an existing fine would be "*sending the wrong message*."⁸

Although the broader issue of public safety vs. revenue generation might be fodder for other Civil Grand Jury reports, in the case of red-light cameras, it is moot because the fine is the same whether the offender is cited by the cameras or by a live officer.

At this writing, the Redflex Corporation charges San Rafael a fixed fee of \$5,900 per intersection entrance road, per month, for camera calibration and maintenance. (Thus, a standard multi-camera cross-road would normally cost $4 \times \$5,900 = \$23,600$. The San Rafael intersection has two one-way roads so the actual cost is $2 \times \$5,900 = \$11,800$) Mitigating that cost, one must keep in mind that red-light cameras monitor intersections 24/7 - a process that would be impossible for a live officer who shares red-light monitoring with myriad additional duties and commitments.

Another "*big money*" discussion derives from the argument that a right turn infraction (usually committed at low speeds) should not be assessed at the same severity as the fines assessed for speeding across an intersection at or above the posted speed limit. On the surface, that argument might sound compelling, but one must recognize that a mid-intersection collision happens between two or more individuals who are strapped solidly into a steel framework and are further insulated by air bags. With right turn infractions, when a 3,500 pound vehicle comes into contact with humans or animals, the latter always fare badly. Officers interviewed said that from their experiences, the problem is exacerbated by the fact that drivers are usually looking left for oncoming traffic during a right turn and not at the crosswalk they are about to enter.

A number of letters to editors by offenders objected to their large fines by claiming that the law does not require a driver to stop before making a right turn on a red light. According to the California Vehicle Code, that is incorrect. The right turn on red law requires the vehicle to always stop and then proceed only when they will not impede approaching traffic or pedestrians crossing. Additionally, if there are multiple (marked) right turn lanes, only the rightmost lane may turn on red after stopping.

Some lawyers have contested red-light fines by claiming the defendant had slowed down and was making the turn at a safe speed. Aside from the illegality of a "*California Stop*" red-light cameras do not trigger until the vehicle meets or exceeds 15 mph, thus rendering the argument moot. A local pundit stated (tongue in cheek) that the time required to stop before making the right turn provides the driver with more than sufficient time to become reacquainted with an old but frequently neglected friend... the right turn signal! The Marin County Civil Grand Jury supports that comment.

And finally, a national economic analysis showed that red-light cameras saved society \$39,000 to \$50,000 annually at each intersection where they were installed.⁹ That number

⁸ For those wishing to pursue this issue further, you should know that the Judicial Council of California establishes policies for determining uniform bail and penalty schedules. It is their role to achieve state wide uniformity.

may not be monumental but neither is it trivial - especially to those drivers and pedestrians *not* injured as a result of adequate enforcement.

Big Brother?

These days, no government-owned-camera discussion can avoid the specter of "*big brother*" watching us. Because red-light camera citations are sent via U.S. Mail to a person's home and because they detail the vehicle, picture the driver and passenger (*sans* face), and specify the location and time of the event, there is always a very real possibility that the information could be chanced upon by persons other than the driver.

It would be simplistic, but prudent, to suggest that anonymity could be assured by obeying traffic laws and by not being in the wrong location at the wrong time. In this day and age, the ship of personal anonymity has sailed. Who among us does not have one or more items such as a Fast-Track transponder, GPS, Laptop, Smart Phone or iPad? Appropriate software grants each of these items the ability to locate a person at a point in time or even track them in real time.

The "*big brother*" issue is also not unique to red-light cameras. Every traffic ticket details the offender's location and time of the event. The significant difference is that red-light cameras potentially provide a picture of the driver and, by default, anyone in the car with the driver. For that reason, most (and possibly all) municipalities crop the video to show only the driver and block out the face of any passenger on still photos. Some legal experts have expressed discomfort with any tampering of evidence, but most courts deem passenger data is not pertinent to the offense and distortion of the image takes no credibility away from the validity of the evidence.

On the plus side, one might also consider that, in an era of distrust, red-light cameras are racially blind and show no antipathy toward any specific group. And if these arguments aren't sufficient, the final nail in the Big Brother argument's coffin is that the United States Supreme Court has consistently upheld the principle that driving in open view on a public highway negates Fourth Amendment protection of an individual's right to privacy.

Big Safety?

Anecdotally, pedestrians, bicyclists and dog walkers interviewed by the Civil Grand Jury almost universally perceived that red-light cameras at dangerous intersections provide a significant increase in safety for themselves - but even more so for their animals. Traffic officers who patrolled dangerous intersections (especially on motorcycles) stated their appreciation of red-light cameras. They cited examples of dangers incurred chasing red-light runners across busy lanes of traffic or onto congested freeway lanes. These officers have been re-assigned to perform other duties and they were content to know their camera "*reinforcements*" will be on duty 24/7.

Statistically, both local and national safety data tend to lean in favor of red-light cameras. San Rafael registered a 12% decrease in accidents at the red-light camera controlled

⁹ The costs considered include: hospital bills, property damage to vehicles, insurance expenses, value of lost quality of life, and others.

intersection in its first fiscal year of operation.¹⁰ Offsetting the minimal local statistics, national statistics report double that number at 25%.

Although most people accept data from the National Highway Safety Association as impartial, some detractors question the validity of other data sources. Some of the most exhaustive intersection accident statistics available come from the Insurance Institute for Highway Safety (IIHS). Its author and principal investigator is Mr. Wen Hu. Although Mr. Hu is a well-respected investigator, some have charged that his reports are tainted. They argue that Insurance companies derive larger premiums from people with points on their driving record and, therefore, they would tend to encourage anything (like red-light cameras) that generates citations.

Though not directly addressing the validity of this complaint, in California one can always opt to attend a sanctioned driving school to remove points from a driving record.¹¹ Driving schools cost substantially less than the increased premiums incurred by points on a driving record and cost magnitudes less than the lawyer hired to fight a ticket in court. Remedial classes are now on-line and, therefore, much more convenient than in-house training.

Another philosophical safety argument is that some drivers will choose to avoid red-light monitored intersections, thus distributing potential accidents across other intersections. If this happens, then valid safety statistics would necessarily have to include adding accident rates on all the potential routes around the camera intersection to the camera monitored intersection accident rate. The issue is valid but the geometry of a city and number of alternate routes can make second-guessing where the new traffic might be re-distributing itself difficult, if not impossible. Another valid, though not necessarily rigorous response, is that any traffic engineer will affirm that re-distributing traffic over multiple paths is always safer than jamming vehicles into over-crowded main routes.

Another phenomenon worthy of mention actually has a name. It is called the "*halo effect*." It refers to the decrease in red-light infractions caused when people forget which intersections have cameras so they tend to obey the rules more stringently at all intersections. This lends credibility to San Rafael's stated goal to "*modify driver behavior*."

It was previously mentioned that San Rafael increased their yellow light duration by half a second. Critics have proposed that the increased safety in camera-monitored intersections is due to that increased duration. If that is true, we could eliminate the cameras altogether, increase all yellow lights by half a second and the accident rate would diminish in all red-light intersections. Sadly, this is not the silver bullet. Extending the yellow clearance time interval also decreases the capacity of the intersection, thus increasing overall delay of traffic. This dominoes into motorists intentionally violating the red-lights in frustration. But worse than that, drivers would acclimate over time to the increased yellow light duration and tend to "*gun it*" instead of stopping on yellows.

From the investigation, it was apparent that the two most vocal groups opposing red-light cameras are offenders themselves or lawyers who specialize in fighting red-light camera

¹⁰ Although the percentage is high, it should be noted that the calculation came from a base of 48 versus 43 accidents in the first year of operation.

¹¹ California law only allows a driver to remove one citation (point) in any eighteen month period.

citations. Legal appeals generally address technical and/or constitutional issues but seldom address issues of safety.

Some of the most common legal arguments against red-light cameras include, but are not limited to the following:

- By the time a person is properly cited for a violation,¹² it may no longer be possible to analyze the crime scene or even recall details of the event itself for purposes of establishing a defense. Signs may have changed, mobile units are no longer in the same place, etc.
- Live officers make value judgments about citations but cameras treat all violations as absolute.
- Camera evidence denies the offender the right to face and cross-examine his/her accuser.

The Civil Grand Jury is not in a position to comment on issues that are presently in litigation in our courts except to say that the red-light camera issue is not without precedent. These types of issues accompany all technological advances. Not that long ago fingerprints and DNA matching were considered black magic. Whenever technology advances, it is the job of the populace to deluge the courts with legal challenges. It is the courts' job to wrestle with technological changes and then ultimately set precedent.

One last but oft-stated argument is the opinion that red-light cameras cause an increase in rear-end collisions. To date, San Rafael has not seen any increase in this type of accident. National studies¹³ support the conclusion that there *is* a slight increase in rear-end collisions, but it is not significant when compared to the number and severity of intersection accidents. The most comprehensive study on this topic is several years old, but it is regarded to be consistent with today's figures.¹⁴

That study found:

- A 25% decrease in total right-angle crashes
- A 16% decrease in injury right-angle crashes, and
- A 15% increase in total rear-end crashes.

¹² In San Rafael, the very worst case condition could extend up to a maximum of 23 days from the date of violation.

¹³ FHWA HRT-05-048, April 2005.

¹⁴ In this study, data was taken from seven jurisdictions (Baltimore; Charlotte; El Cajon, CA; Howard County, MD; Montgomery County, MD; San Diego; San Francisco) with data compiled from 132 intersections.

FINDINGS

- F1:** National statistics validate the use of red-light cameras as a valuable tool but not a total solution for stopping red-light runners.
- F2:** Statistics corroborate the contention that red-light cameras result in behavioral modification - thus decreasing accidents at other red-light intersections.
- F3:** Contrary to claims by opponents:
- Extensive efforts have been made in San Rafael to time the cameras so they would only catch blatant offenders.
 - Signage and grace periods in San Rafael are well within State guidelines.
 - The contract with Redflex Inc. assures constant monitoring and calibration of the cameras.
 - San Rafael's fixed-fee contract with Redflex has been deemed legal by the State Courts.
 - Redflex does *not* receive any payment above the fixed-fee.
 - Privacy complaints have been negated by California Supreme Court legal findings.
- F4:** Citation documentation is evaluated by Redflex and local police before any citation is issued.
- F5:** There are a number of shortcomings with cameras that don't exist with live officers, but those are offset by round-the-clock operation which far exceeds the time any officer has to monitor the same intersections.
- F6:** Added governmental assessments increase ticket costs to an amount 2.5 times larger than the actual penalty fee, but this penalty is the same whether the ticket is camera generated or handwritten by a live officer.
- F7:** Cameras are incapable of racial profiling and therefore not subject to lawsuits alleging racial bias.
- F8:** With few exceptions, the long term impact of red-light cameras has been a decrease in citations issued as well as a measurable decrease in intersection accidents.
- F9:** Unlike a live officer, cameras record events but they cannot react to infractions or actually stop any other crime from being committed.

Reports issued by the Civil Grand Jury do not identify individuals interviewed. Penal Code Section 929 requires that reports of the Grand Jury not contain the name of any person, or facts leading to the identity of any person who provides information to the Civil Grand Jury. The California State Legislature has stated that it intends the provisions of Penal Code Section 929 prohibiting disclosure of witness identities to encourage full candor in testimony in Civil Grand Jury investigations by protecting the privacy and confidentiality of those who participate in any Civil Grand Jury investigation.