

Ventura County Grand Jury 2008 - 2009



Final Report

Cars on Camera Red Light Camera Enforcement

**Date Issued
June 22, 2009**

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Cars on Camera Red Light Camera Enforcement

Summary

The 2008-2009 Ventura County Grand Jury (Grand Jury) received several public complaints concerning the proper application of automated intersection enforcement cameras by law enforcement agencies within Ventura County (County). As a result of these complaints, the Grand Jury opened an investigation into the use of these cameras, commonly known as “red light camera(s)” (RLC).

The Grand Jury found that the City of Oxnard (Oxnard) and the City of Ventura (Ventura), utilize “red light cameras” to enforce traffic laws within their jurisdictions. Both cities contract with the same vendor, USA Redflex Traffic Systems, Inc. (Redflex), for system installation and support services. Both cities process violations in similar ways and each has seen a decrease in accidents and total red light violations throughout their cities since the deployment of their respective “red light cameras.”

The Grand Jury reviewed documentation which showed that non-enforcement remedies for red light violations, such as adjusting the yellow light intervals, resulted in similar reductions in red light violations and front-into-side traffic collisions.

The Grand Jury concluded that “red light cameras” are effective in enforcing traffic law and in reducing collisions at city intersections. Both cities which employ them have a limited financial interest in the number of tickets issued in that they initially attempt to cover city costs only. Redflex has a financial interest in the number of citations issued since the amount they are compensated is derived from the fines received less City costs.

The Grand Jury also found that the detection of violations varies at different intersections. One location having a high incident of violations was in Ventura, at the intersection of California Street and Thompson Boulevard (California and Thompson). This intersection was found to have a 25% shorter yellow light interval compared with surrounding non-camera enforced intersections. The Grand Jury concluded that this difference is a significant contributor to the issuance of more red light citations at that intersection compared to other intersections in the City.

The Grand Jury recommends that Oxnard and Ventura continue to use “red light cameras” as an enhancement of traditional police enforcement to fulfill their stated intent to increase safety for their citizens.

The Grand Jury also recommends that Ventura increase the yellow light interval at California and Thompson to be at least equal to the surrounding intersections and/or re-engineer the intersection to address the disproportionate number of red light citations issued there.

The Grand Jury also recommends that Oxnard and Ventura investigate traffic engineering measures, in addition to the installation of “red light cameras” to address the safety concerns of red light running.

Background

Driving through a red traffic light is an infraction of the law¹ and is a violation of California Vehicle Code § 21453. Traditionally, enforcement of this code has been by traffic enforcement officers employed by a local police agency.



Typical Red Light Camera installed in Ventura

RLCs have been used in Europe and Australia since the 1970s. RLC systems use cameras² coupled with magnetic sensors in the pavement to record a driver's response to red traffic signals. Current RLCs take sequential digital photos and short videos that record a vehicle's relative position in an intersection. The photos document:

- the time of day
- the speed of the vehicle
- the location of the vehicle at the time the light changed
- the elapsed time between the changing of the light and the vehicle crossing the intersection stop line
- the driver's face
- the vehicle's license plates

The images and data are reviewed by the camera contractor and approved by the local police agency prior to the issuance of a citation. In California,

¹ A violation occurs when a motorist enters an intersection after the signal light has turned red. Motorists inadvertently in an intersection when the signal changes to red (waiting to turn left, for example) are not considered red light runners.

² A red light camera system is connected to the traffic signal and to sensors that monitor traffic flow at the crosswalk or stop line. The system continuously monitors the traffic signal, and the camera is triggered by any vehicle entering the intersection after the light has turned red.

registered vehicle owners are notified only if the driver's image is clearly visible. The notification lists the violation and the penalty being levied. The fine is set by the State of California and currently stands at \$435.

In 1995, the Federal Highway Administration began its "Stop Red-Light Running Program" in response to studies which had identified red light running as a leading cause of traffic accidents and injuries in the United States. This was a multi-faceted program, one element of which was RLCs. Oxnard was an early participant in this effort, instituting a pilot program which included RLCs in 1997. The initial success of Oxnard's pilot project resulted in a published report detailing the results of the program which have been cited extensively in subsequent studies. Ventura followed in 2001, installing RLCs at intersections in various locations within the City limits.

Oxnard and Ventura contract with Redflex, a "red light camera" vendor. This vendor is a multi-national, for-profit corporation, with United States operations headquartered in Scottsdale, Arizona.

Typically, intersections may be entered from a number of different directions. These are known as approaches and not all approaches to an intersection are observed using RLCs. Oxnard and Ventura currently employ RLCs at a combined total of 26 intersections, where cameras either fully or partially observe the approaches to the location.

The detection of red light running and subsequent issuance of citations is dependent on several factors. For example, camera placement and environmental conditions such as sun glare or dirty windshields can reduce the ability of police agencies to identify a vehicle and occupant. Improperly timed yellow traffic signaling lights or poorly designed intersections can inadvertently cause normally good drivers to be cited.

Furthermore, the use of camera technology by law enforcement agencies has been controversial among some members of the public. In the case of RLCs, allegations have been made that police agencies view these cameras as a way to maximize income to the city via traffic fines. Opponents of RLCs question the validity of traffic safety claims. They allege that any gain in safety in front-into-side impacts is offset by an increase in rear end accidents due to RLCs. Others claim that RLC vendors have a vested interest in the number of tickets issued and that there are other means to achieve the safety goals of RLCs.

Methodology

The Grand Jury reviewed the use of RLCs in Oxnard and Ventura and sought answers to the allegations listed above. The Grand Jury conducted interviews with police agencies which employ these technologies and performed physical observations at selected intersections. During these physical observations, a three person team of Grand Jurors, using stop watches, timed yellow light intervals at RLC-enforced intersections in both cities. Other non-camera intersections on the same streets were observed and timed as a comparison. The Grand Jury also conducted extensive searches in the public domain for studies of the effectiveness of camera technology and objections to its use.

Findings

City of Oxnard

- F-01.** Oxnard began its RLC enforcement program in 1997.
- F-02.** Oxnard currently utilizes RLCs at eight intersections.
- F-03.** Oxnard Police Department (OPD) officials state that the sole intent of RLC enforcement is to increase public safety by reducing traffic collisions due to the running of red lights.
- F-04.** Oxnard contracts with Redflex to install and maintain RLC systems and to review images and data which identify violations. A five-year contract was approved in September 2008.
- F-05.** In 2001, the San Diego Superior Court ruled that fees paid on a contingent basis, that is, by each citation issued, were not compliant with the law. (CASE NO. 579275D People v. John Allen, et al.)
- F-06.** The contract between Oxnard and Redflex requires a fixed-fee payment for RLC services at designated intersections, regardless of the number of individual violations. Oxnard pays Redflex a flat rate for installation, maintenance, and processing on a per-camera basis, depending on the intersection served. (Att-01)
- F-07.** The contract between Oxnard and Redflex contains a cost neutrality clause intended to ensure that the City will never be required to pay Redflex more than actual receipts from traffic fines.
- F-08.** Schedule D from the RLC contract defines the flow of citation receipts. (Att-01)
- initial receipts generated from citations are paid to cover the City's program operating costs
 - receipts above City cost then flow to cover the fixed-fee, Redflex invoice (in months with low citation receipts, Redflex does not receive its full invoice amount)
 - receipts above Redflex invoice amounts are retained by the City or are used to pay outstanding payments to Redflex held over from low receipt months
- F-09.** In Fiscal Year (FY) 2007-2008, OPD reported net income to the City from RLCs of \$91,284. OPD was unsure whether this amount was before or after the deduction for internal program administration costs, and whether other citation revenue from traditional traffic enforcement was a portion of the amount. This represents 0.2% of the OPD budget in FY 2007-2008, which was \$47,016,336. [Ref-01]
- F-10.** As of May 2009, OPD officials reported an accumulated balance owed to Redflex of \$13,938 due to months with low citation receipts.

- F-11.** Potential violations are reviewed and verified by an OPD officer who has the sole discretion to either reject the violation or pass it forward for the issuance of a citation.
- F-12.** OPD reported that from January 1, 2009 through March 31, 2009, 1,494 red light violations were detected by RLCs. After verification by OPD officers, 1,019 citations were issued, 68% of the total detected.
- F-13.** Yellow light intervals are established by the State of California in compliance with the Federal Highway Administration's *Manual on Uniform Traffic Control Devices, California Supplement, 2003 (MUTCD)*. Intervals are based on approach speed toward an intersection. [Ref-02]

APPROACH SPEED		YELLOW INTERVAL
mph	km/h	Seconds
25 or less	40 or less	3.0
30	48	3.2
35	56	3.6
40	64	3.9
45	72	4.3
50	80	4.7
55	89	5.0
60	97	5.4
65	105	5.8

MUTCD Yellow Light Interval Recommendations

- F-14.** OPD officials state that yellow light intervals in Oxnard are determined using 85th percentile speed surveys. An 85th percentile speed survey reflects actual use of roads and tends to result in recorded speeds that exceed the posted maximum speed limit.
- F-15.** Yellow light intervals at nine selected Oxnard intersections controlled by traffic signals were recorded by the Grand Jury to be 0.02 seconds below to 0.35 seconds above the suggested interval as found in the MUTCD for the posted speed limit on each street. (Att-02)
- F-16.** OPD does not approve RLC citations when drivers enter an intersection within 0.03 seconds after the traffic signal turns red.
- F-17.** In 2001, the Insurance Institute for Highway Safety issued a report detailing the results of a study on the effectiveness of RLCs in Oxnard. Significant findings were: [Ref-03]
- 29% overall decrease in traffic collisions
 - 32% reduction in front-into-side traffic collisions at RLC-enforced intersections
 - 68% reduction in front-into-side collisions involving injuries at RLC-enforced intersections
 - 32% reduction in red light violations citywide indicating collateral compliance of traffic laws at non-camera intersections

- F-18.** In 2008, Oxnard evaluated 230 accidents over the prior three years at RLC-enforced intersections. A total of 56 accidents (24%) were given a primary collision factor of a rear-end impact with a portion of these possibly due to RLCs.

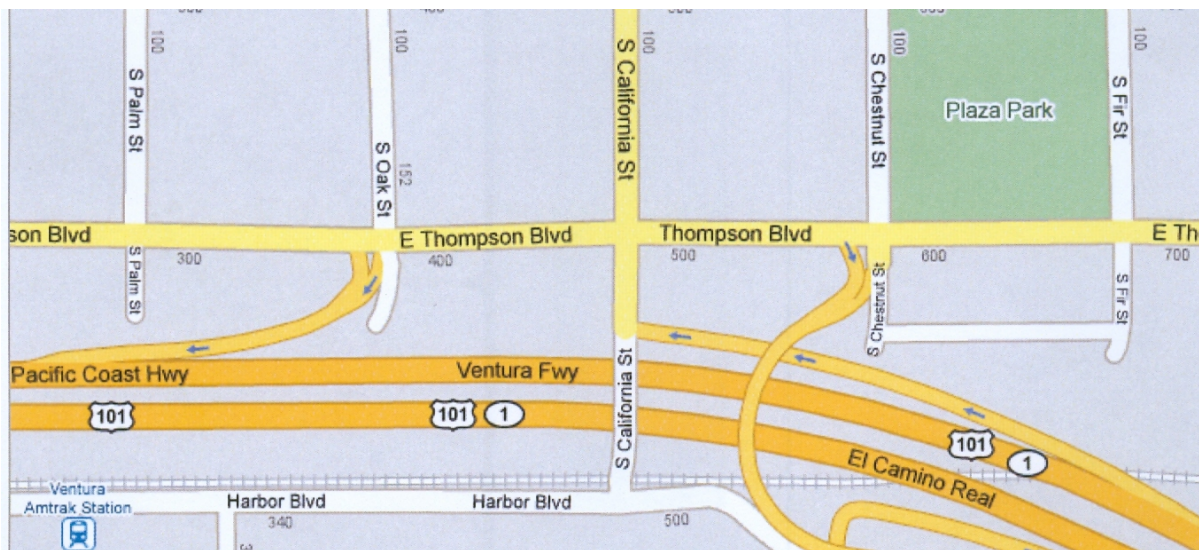
RED LIGHT COLLISIONS: 2005 to October 2008					
Photo Red Light Intersections	Total Collisions	Possibly Photo Red-Related			
	2005-10/2008	2005	2006	2007	10/2008
Wooley & Victoria	22	2	0	2	0
Rose & First	12	N/A	0	0	0
Fifth & Ventura	33	2	2	1	0
Gonzales & Ventura	22	0	0	2	0
Gonzales & Snow	33	0	0	2	0
Victoria & Channel Islands	15	1	0	0	0
Saviors & Channel Islands	37	7	2	2	5
Rose & Gonzales	56	6	6	12	2
TOTALS	230	18	10	21	7

City of Oxnard: Red Light Collisions 2005-2008

City of Ventura

- F-19.** Ventura contracts with Redflex to install and maintain RLC systems and to review images and data which identify violations. A five-year contract was approved in November 2008. (Att-03)
- F-20.** As of 2009, Ventura employs RLCs at 18 intersections.
- F-21.** Ventura Police Department (VPD) officials state that the sole intent of RLC enforcement is to increase public safety by reducing traffic collisions due to the running of red lights.
- F-22.** The contract between Ventura and Redflex requires fixed-fee payment for RLC services at designated intersections, regardless of the number of individual violations. Ventura pays Redflex a flat rate for installation, maintenance, and processing on a per camera basis, depending on the intersection served. (Att-03)
- F-23.** The contract between Ventura and Redflex contains a cost neutrality clause intended to ensure that the City will never be required to pay Redflex more than actual receipts from traffic fines.
- F-24.** Schedule D from the RLC contract defines the flow of citation income (Att-03)
- initial receipts generated from citations are paid to cover the City's program operating costs
 - receipts above city costs then flow to cover the fixed-fee Redflex invoice (in months with low citation receipts, Redflex does not receive its full invoice amount)

- receipts above fixed Redflex invoice amounts are retained by the City or are used to pay outstanding payments to Redflex held over from low receipt months
- F-25.** In FY 2007-2008, VPD reported no net income to the City from RLC enforcement above cost recovery.
- F-26.** Potential violations are reviewed and verified by a VPD officer who has the sole discretion to either reject the violation or pass it forward for the issuance of a citation.
- F-27.** In a City Administrative Report dated March 4, 2009, Ventura reported:
- a decrease in traffic collisions at intersections citywide; in 2000, there were 132 collisions at intersections and in 2007 there were a total of 40
 - Ventura's RLC-enforced intersections saw a decrease in collisions from ten incidents to one in the same time period
 - 14,459 red light citations were issued in 2002; in 2007, there were 9,816 citations, a 32% decrease in the number of ticketed red light violations citywide
- F-28.** VPD stated that the intersection at California and Thompson was equipped with RLCs in 2007 in response to accident and violation studies at the intersection.



Intersection at California and Thompson, City of Ventura

- F-29.** Ventura city officials state that current vehicle volume at north-bound California and Thompson is 10,000 vehicles per day. Vehicle volume at west-bound Main Street at Mills Road is 62,000 vehicles per day.

F-30. In the period from December 1, 2008 until February 28, 2009, VPD reported:

- 4,328 violations detected by RLCs; after verification by VPD officers, 2,148 citations were issued, amounting to 49% of the total detected
- RLC enforcement at California and Thompson detected 1,391 violations; after verification by VPD officers, 825 citations (59%) were issued
- RLC enforcement at Main Street and Mills Road detected 64 violations; after verification by VPD officers, 49 citations (77%) were issued
- the average number of citations issued at all RLC-enforced intersections in Ventura was 78, exclusive of California and Thompson

Intersection	Detected Violations	Citations Issued	%	Traffic Volume	Tickets/100 Cars
California and Thompson	1,391	825	59.3%	10,000	8.25
Mills and Main	64	49	76.6%	62,000	0.079

F-31. Ventura policy states that yellow light intervals in Ventura are determined using 85th percentile speed surveys. An 85th percentile speed survey reflects actual speeds used on roads and tends to result in recorded speeds that exceed the posted maximum speed limit.

F-32. Ventura officials state that yellow light intervals are set using the suggested interval found in the MUTCD table 4D-102 based on the 85th percentile speed of the street. (See also F-13) [Ref-02]

F-33. Exclusive of California and Thompson, yellow light intervals at twelve selected Ventura intersections controlled by traffic signals were observed by the Grand Jury to be at least 0.13 seconds higher than the MUTCD minimum for the posted speed limit on each street. (Att-04)

F-34. The yellow light phasing at California and Thompson was found by the Grand Jury to be 3.00 seconds, the MUTCD minimum for streets posted at 25 MPH speed limit. (Att-04)

F-35. California Street has three traffic signal-controlled intersections. The Grand Jury observed that the yellow light interval at the north and south approaches to California and Thompson had the shortest duration, one full second shorter than other yellow light intervals at intersections on the same street having the same posted speed limit. (Att-04)

F-36. When traveling east or west bound on Thompson Boulevard, the surrounding traffic signals have recorded yellow light intervals of at least 0.38 seconds higher than the MUTCD minimum for the posted speed limit.

- F-37.** The Federal Highway Administration states, "Therefore, the likelihood of a motorist running a red light increases as the yellow interval is shortened. Lengthening the yellow interval, within appropriate guidelines, has been shown to significantly reduce the number of inadvertent red light violations." [Ref-03]
- F-38.** The Federal Highway Administration and the Institute of Transportation Engineers also state that the solution to the red light running problem requires a combination of measures including education, enforcement, and engineering. [Ref-04]
- F-39.** The City of Santa Clarita has posted signs which alert the public near RLC-enforced intersections containing the dollar amount of the fine for red light violations.



Minimum Fine signage in the City of Santa Clarita

- F-40.** Signage alerting drivers of RLC enforcement in Oxnard and Ventura complies with the minimum signage required as found in the MUTCD. The signage, however, does not indicate the amount of the fines imposed for red light violations.

Conclusions

- C-01.** RLCs are effective in enforcing traffic laws related to the running of red lights at intersections and in reducing the number of red light violations in Oxnard and Ventura. (F-12, F-17, F-27)
- C-02.** RLC enforcement has been effective in reducing the total number of traffic collisions at RLC-enforced intersections, even considering a possible increase in rear-end accidents. (F-03, F-17, F-18, F-21, F-27)
- C-03.** Although there is a possibility of net income from RLC-enforced intersections, the revenue to Oxnard and Ventura has been, at best, a very minor percentage of total police budgets. (F-06 through F-10, F-23 through F-25)
- C-04.** Oxnard and Ventura have contract provisions which require cost neutrality and fixed fee payments to Redflex regardless of the number of tickets issued. These provisions reduce the incentive on the part of

the Cities to artificially increase citations beyond covering initial City cost to administer the program. (F-06 through F-08, F-22 through F-24)

- C-05.** Redflex has an interest in the number of citations issued at an intersection, since it receives proceeds only after intersections have produced sufficient violation receipts to cover city costs. (F-06 through F-08, F-22 through F-24)
- C-06.** Redflex's control of receipts is limited, since both cities' police departments retain sole discretion on the number of violations which are reviewed and approved prior to a citation being issued. (F-11, F-12, F-26, F-30)
- C-07.** Shorter yellow light intervals and intersection traffic design play a role in the increase in red light violations at RLC-enforced intersections. At least one intersection in Ventura, California and Thompson, disadvantages drivers by using yellow light intervals that are shorter than adjacent intersections. (F-28 through F-38)
- C-08.** The addition of the current minimum dollar amount of a violation on signs alerting the public of RLC-enforced intersections would help educate the public on the penalties for violations and further increase safety at intersections. (F-38 through F-40)

Recommendations

- R-01.** The City of Ventura should increase the yellow light interval at California and Thompson to be at least equal to that of the surrounding intersections. (C-07)
- R-02.** The City of Ventura should re-engineer the intersection at California and Thompson addressing public safety concerns and the disproportionate number of RLC citations issued at that location. (C-07)
- R-03.** The Cities of Oxnard and Ventura should emphasize traffic engineering as a means to mitigate the public safety concerns of red light violations, in addition to the installation of automated RLC enforcement. (C-07, C-08)
- R-04.** The Cities of Oxnard and Ventura should continue to address public safety concerns with the use of RLCs as an enhancement to traditional enforcement of red light violations by uniformed police officers. (C-01, C-02)
- R-05.** The Cities of Oxnard and Ventura should add the minimum dollar amount of the fine to signage alerting the public at RLC-enforced intersections. (C-08)

Responses

Responses Required From:

City Council, City of Ventura (R-01 through R-05)
City Council, City of Oxnard (R-03 through R-05)

References

- Ref-01.** City of Oxnard Website: General Fund Expenditures
<http://citymanager.cityofoxnard.org>
- Ref-02.** Federal Highway Administration, *Manual on Uniform Traffic Control Devices*, California Supplement, 2003
- Ref-03.** Federal Highway Administration, *Guidance for Using Red Light Cameras*, 2003
- Ref-04.** Federal Highway Administration and Institute of Transportation Engineers, *Making Intersections Safer: a Toolbox of Engineering Countermeasures to Reduce Red-Light Running*, 2003

Attachments

- Att-01** "Exhibit D" Compensation & Pricing, Contract between City of Oxnard and Redflex Traffic Systems, Inc., pages 25, 26
- Att-02** Grand Jury-Observed Yellow Light Intervals: Oxnard and Ventura
- Att-03** "Exhibit D" Compensation & Pricing, Contract between City of Ventura and Redflex Traffic Systems, Inc., pages 4 through 6
- Att-04** Grand Jury-Observed Yellow Light Intervals: City of Ventura, Intersection at California and Thompson

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Attachment-01

**“Exhibit D” Compensation & Pricing, Contract between City of Oxnard
and Redflex Traffic Systems, Inc., pages 25, 26**

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EXHIBIT "D"

COMPENSATION & PRICING

Fixed Fee

Commencing on the execution of this agreement Customer shall be obligated to pay Redflex a fixed fee for each Existing Designated Intersection:

Tier 1: Fixed Fee of \$1,000 per month for the following approaches:

Gonzales Road and Ventura Road
Rose and Gonzales (2 approaches)
Ventura Road and Fifth Westbound
Victoria and Channel Islands
Victoria and W. Wooley Road

Note: Where improvements or additional lanes (right turns) are added the intersection will automatically revert to Tier 2 Fixed Fee.

Tier 2: Fixed Fee of \$4,900 per month for the following approaches

Gonzales Road and Snow Avenue, Westbound
Rose and First, Northbound
Saviers and Channel Island (2 approaches)
Ventura Road and Fifth, Eastbound

Tier 3: New approaches:

At the expiration of the Warning Period for each Designated Intersection Approach, Customer shall be obligated to pay Redflex a fixed fee of \$6070.00 per month for each Designated Intersection Approach ("Fixed Fee") as full remuneration for performing all of the services contemplated in this Agreement.

Photo Railway Crossing Photo Enforcement (optional)

The Customer will be liable to pay Redflex a flat fee of \$6,070 per system per month for Photo Railway Crossing Enforcement Systems

Operating Cost Deduction

The Customer's program operating costs have been established at \$500 per calendar month, per System (i.e. the present operating costs of 11 systems is \$5,500). The Customer will retain the first \$500 revenue per system each month before payments of invoices are made to Redflex. For Example:

EXHIBIT "D"

COMPENSATION & PRICING, cont'd

Revenue to City for month - \$30,500
Deduct Operating Cost - \$5,500 (11 systems at \$500 per system)
Balance - \$25,000

Redflex Invoice for month - \$30,500
Payment to Redflex - \$25,000

Remainder of outstanding balance carried forward under Cost Neutrality provisions.

Cost Neutrality

Cost neutrality is assured to Customer - Customer will never be required to pay Redflex more than actual cash received.

The Customer agrees to pay Redflex within thirty (30) days after the invoice is received. Customer shall be obligated to pay the cumulative balance invoiced by Redflex, in accordance with terms set forth above, to the extent of **gross cash received by the Customer from automated red light violations, less Operating Cost as outlined above. In the event that a balance remains unpaid due to a deficit in gross cash received by the Customer compared to invoiced amounts, Customer will provide to Redflex with each monthly payment, an accounting of such gross receipts supporting the amount withheld.**

1. Payment will only be made by Customer up to the amount of cash received by Customer through the collection of red light and/or Railway Crossing citation up to the amount currently due.
2. Customer to open special revenue account and payments to Redflex will come only from the available balance in that account up to the amount currently due, including any unpaid prior invoiced amounts.
3. Cost neutrality will be reconciled and any necessary adjustments made at the end of the contract.
4. Cost neutrality is guaranteed except as follows:
 - If police fail to approve violations by the due date
 - If systems are de-activated due to Customer requirement
 - If collections are not reasonably pursued
 - If extreme circumstances beyond the control of Redflex cause the shortage

Attachment-02

Grand Jury-Observed Yellow Light Intervals: Oxnard and Ventura

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	Approach to	Watch #1	Watch #2	Watch #3	Time	MUTCD	Notes
Group #1							
Rose at Gonzales	South Bound	4.47	4.35	4.34	4.39	4.3	45 MPH Posted
	South Left Arrow	4.25	4.35	4.20	4.27		
	South Right Arrow	2.87	3.00	3.03	2.97		
Lockwood at Rose	South Bound	4.56	4.63	4.55	4.58	4.3	1st Traffic Light North
			2.90	3.10	3.64		
Chavez at Rose	North	4.31	4.29	4.25	4.28	4.3	1st Traffic Light South
Group #2							
Gonzales at Ventura Bl	East Bound	4.68	4.60	4.66	4.65	4.3	45 MPH Posted
	East Left Arrow	3.00	3.03	3.00	3.01		
Lantana at Gonzales	West Bound	4.56	4.54	4.48	4.53	4.3	1st Traffic Light East
Gallatin at Gonzales	East Bound	4.40	4.56	4.40	4.45	4.3	1st Traffic Light West
Group #3							
Gonzales at Snow	West Bound	4.62	4.63	4.53	4.59	4.3	45 MPH Posted
	West Left Arrow	2.87	3.00	2.94	2.94		
Gonzales at Entrada	East Bound	4.56	4.50	4.58	4.55	4.3	1st Traffic Light West
	East Left Arrow	2.66	3.86	3.19	3.53		#1 not counted
Snow at Gonzales	South Bound	3.06	2.91		2.99	3.0	25 MPH Posted
Group #4							
Mills At Telegraph	North Bound	3.85	3.71	3.88	3.81	3.6	35 MPH Posted
	North Left Arrow	3.50	3.47	3.52	3.50		
	North Right Arrow	3.41	3.47	3.47	3.45		

	Approach to	Watch #1	Watch #2	Watch #3	Time	MUTCD	Notes
Mills at Costal View	North Bound	4.00	3.97	3.97	3.98	3.6	1st Traffic Light South
Loma Vista At Mills	West Left Arrow	2.99	3.06	2.98	3.01	N/A	35 MPH Posted
Group #5							
Victoria at Moon	South Bound	4.31	4.19	4.15	4.22	3.9	40 MPH N of Moon
	South Left Arrow	3.54	3.50	4.00	3.68	3.6	35 MPH S of Moon
Victoria at Cirvocet	South Bound	4.06	4.07	3.96	4.03	3.9	1st Traffic Light North
	South Left Arrow	2.97	3.00	3.00	2.99		
Victoria at Ventura	South Bound	4.75	4.88	4.56	4.73	3.6	1st Traffic Light South
	South Left Arrow	3.87	4.03	4.05	3.98		
Group #6							
Telegraph at Victoria	East Bound	5.03	5.00	5.17	5.07	3.9	40 MPH Posted
	East Left Arrow	3.34	3.53	3.10	3.32		
Telegraph at Saratoga	East Bound	4.87	4.72	4.69	4.76	3.9	1st Traffic Light West
Telegraph at Lark	West Bound	5.01	4.91	4.80	4.91	3.9	1st Traffic Light East
	West Let Arrow	2.87	3.03	2.90	2.93		
Group #7							
California at Thompson	North Bound	2.97	3.07	2.94	2.99	3.0	25 MPH Posted
	North Left Arrow	3.03	2.97	2.95	2.98		
California at Santa Clara	South Bound	4.00	3.94	4.03	3.99	3.0	1st Traffic Light North
California at Main	South Bound	3.90	3.85	3.84	3.86	3.0	2nd Traffic Light North

Attachment-03

**“Exhibit D” Compensation & Pricing, Contract between City of Ventura
and Redflex Traffic Systems, Inc., pages 4 through 6**

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EXHIBIT "D"
COMPENSATION & PRICING

TERMS

Fixed Fee

Commencing on the execution of the fourth amendment to the agreement Customer shall be obligated to pay Redflex a fixed fee for each Existing Designated Intersection:

Tier 1: Fixed Fee of \$1,800 per month for each of the following eighteen (18) approaches:

Johnson and Bristol, Westbound
Main and Lemon Grove, Eastbound
Main and Mills, Southbound
Mills and Dean, Southbound
Mills and Telegraph, Northbound
Thompson and Seaward, Northbound
Victoria and Moon, Southbound
Victoria and Olivas Park, Northbound
Victoria and Ralston, Northbound
Victoria and Telegraph, Northbound
Victoria and Telephone, Southbound
Victoria and Valentine, Northbound
California Street and Thompson Blvd, Northbound
Victoria and Telephone, Eastbound
Telegraph and Day, Westbound
Main and 101, Westbound
Johnson and Northbank, Southbound
Foothill and Victoria, Westbound

Note: Where improvements or additional lanes (right turns) are added the intersection will automatically revert to Tier 2 Fixed Fee.

Tier 2: New Approaches:

At the expiration of the Warning Period for each Designated Intersection Approach, Customer shall be obligated to pay Redflex a fixed fee of \$6500.00 per month for each Designated Intersection Approach ("Fixed Fee") as full remuneration for performing all of the services contemplated in this Agreement.

Customer Operating Costs

Any gross cash receipts received by the Customer from Ventura County through the collection of red light citations shall first be applied to the Customer's monthly program operating costs ("Customer Operating Costs") which has been established at \$17,500 per month. In order to ensure cost neutrality to the Customer, Customer will only be obliged to pay Redflex from the gross cash receipts received from Ventura County after first deducting Customer Operating Costs. In the event that balance remains unpaid due to a deficit in gross cash received by the Customer compared to the invoiced amount, Customer will provide Redflex, with payments, an accounting of such amounts supporting non payment of full invoiced amount and balance remaining.

Example:

Month 1

Gross Revenue to City for month	\$44,500
Less Operating Cost	\$17,500
Balance	\$27,000
Redflex Invoice for month	\$32,400
Payment to Redflex	\$27,000

Check to Redflex for \$27,000 with accounting as above. Remaining balance of \$5,400 carried forward under Cost Neutrality provisions

Month 2

Gross Revenue to City for month	\$56,000
Less Customer Operating Cost	\$17,500
Balance	\$38,500
Redflex Invoice month 2	\$32,400
Balance unpaid month 1	\$5,400
Total Outstanding	\$37,800
Payment to Redflex	\$37,800

Check to Redflex for \$37,800 with accounting as above. No Remaining balance of to carry forward this month under Cost Neutrality provisions.

Cost Neutrality

1. Cost neutrality is assured to Customer - Customer will never be required to pay Redflex more than actual cash received from automated red light violations.
2. The Customer agrees to pay Redflex within thirty (30) days after the invoice is received. Customer shall be obligated to pay the cumulative balance invoiced by Redflex, in accordance with terms set forth above, to the extent of gross cash

A06-00080

received by the Customer from automated red light violations. In the event that a balance remains unpaid due to a deficit in gross cash received by the Customer compared to invoiced amounts, Customer will provide to Redflex with each monthly payment, an accounting of such gross receipts supporting the amount withheld.

3. Payment will only be made by Customer up to the amount of cash received by Customer through the collection of red light citations (from automated red light violations) up to the amount currently due.

4. Cost neutrality will be reconciled and any necessary adjustments made at the end of the contract. In the event that the contract ends or is terminated and an invoiced balance is still owed to Redflex, all subsequent receipts from automated red light violations for a period of 12 months from date of termination will be applied to such balance and paid to Redflex, which shall fully satisfy Customer's payment obligations under the contract.

5. Cost neutrality is guaranteed except as follows:

- If police fail to approve violations by the due date, in good faith and due diligence.
- If systems are de-activated due to Customer requirement.
- If collections are not reasonably pursued, unless despite attempts by the city to encourage collections by the courts the courts fail to pursue collections.
- The city fails to enforce right turn violations (from automated red light violations), in good faith and due diligence, if and when systems are configured for this purpose as mutually agreed between Redflex and the City.

BUSINESS ASSUMPTIONS FOR ALL PRICING OPTIONS:

1. Redflex construction will be able to utilize existing conduit for installation where space is available. Cost for additional conduit shall be the sole responsibility of Redflex.
2. Each year, commencing May 1, 2009, and every year thereafter, the Fixed Fee and customer's Operating Cost will increase by the Consumer price Index ("CPI") as published by the Bureau of Labor Statistics for the United States Department of Labor, or 4%, whichever is greater. If the PI is discontinued or revised during the term, such other government intends or computation with which it is replaced shall be used in order to obtain substantially the same result as would be obtained if the CPI had not be discontinued or revised. Any increase in the Fixed Fee and Customer Operating Cost shall be limited by this paragraph.
3. Redflex will not charge the customer for any time the system is not operational (defined as a material malfunction causing no violations to be captured) in excess of

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Attachment-04

**Grand Jury-Observed Yellow Light Intervals: City of Ventura
Intersection at California and Thompson**

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Location	Approach to	Watch #1	Watch #2	Watch #3	Time	MUTCD	Notes
10:45 AM 4-24-09	Observation						
Intersection #1							
Thompson at Chestnut	West Bound #1	3.97	3.97	3.97	3.97	3.6	35 MPH Posted
	West Bound #2	4.12	4.16	4.20	4.16		1st Traffic Light East
Intersection #2							
Thompson at Kalorama	West Bound #1	3.85	4.03	3.84	3.91	3.6	2nd Traffic Light East
	West Bound #2	3.97	4.06	4.03	4.02		35 MPH Posted
Intersection #3							
Thompson at Oak	East Bound #1	4.00	3.97	3.87	3.95	3.2	1st Traffic Light West
	East Bound #2	4.06	3.94	3.96	3.99		30 MPH posted
Intersection #4							
Thompson at Figueroa	East Bound #1	4.10	3.90	3.97	3.99	3.2	2nd Traffic Light West
	East Bound #2	4.03	3.93	3.91	3.96		30 MPH posted
Intersection #5							
California at Santa Clara	South Bound #1	3.87	4.00	3.91	3.93	3.0	1st Traffic Light North
	South Bound #2	4.03	3.94	3.90	3.96		25 MPH
Intersection #6							
California at Main	South Bound #1	4.09	3.91	4.06	4.02	3.0	2nd Traffic Light North
	South Bound #2	4.19	4.00	3.85	4.01		25 MPH
Intersection #7							
California at Thompson	North Bound #1	3.00	3.00	3.03	3.01	3.0	25 MPH
	North Bound #2	3.09	2.97	2.93	3.00		
	North Left Arrow #1	2.97	3.07	3.05	3.03		
	North Left Arrow #2	3.09	3.04	3.07	3.07		
California at Thompson	South Bound #1	3.03	2.96	3.06	3.02	3.0	25 MPH
	South Bound #2	3.02	3.00	2.94	2.99		
	South Left Arrow #1	3.12	2.94	3.00	3.02		
	South Left Arrow #2	3.07	3.07	2.84	2.99		

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