

PUBLIC HEARING TO CONSIDER AWARD OF CONTRACT TO REDFLEX FOR AUTOMATED RED LIGHT ENFORCEMENT SYSTEM (Clarise Lew, Police Sergeant, 510-790-6763, clew@ci.fremont.ca.us)

Issue: Red light violations are a serious and costly problem for citizens and the City of Fremont. In 1998, red light violations caused nearly 10 percent of all traffic collisions and nearly 13 percent of injury or fatal traffic collisions investigated by the Fremont Police Department. In 1998, red light violations resulted in 178 collisions in the City of Fremont compared to 135 in 1988, an increase of 32%. Between 1994 and 1998, inclusive, red light violations resulted in 771 traffic collisions in the City of Fremont; 68% of those collisions resulted in injuries or fatalities (see Enclosure 1). Collisions which have resulted from red light violations have cost our community an estimated \$1.5 million each year in wage and productivity losses, medical expenses, administrative expenses, motor vehicle damage, and employer costs (National Safety Council, AEstimating the Cost of Unintentional Injuries, 1997). Red light violations are of significant concern to the citizens of Fremont, as evidenced by the consistent flow of complaints received by the City Council, City Manager and Police Department about such violations.

There are 175 signal-controlled intersections located in the City of Fremont. Considering the volume of vehicular traffic traveling the City of Fremont=s estimated 435 miles of roadway compared to the number of police officers on patrol at any given time, there is relatively little chance that a red light violation will be witnessed by a police officer. Furthermore, red light violations present unique difficulties to conventional police enforcement. In most cases, the police officer must follow a violating vehicle through a red light in order to stop the suspect driver, thereby endangering the police officer as well as other motorists and pedestrians in the intersection.

To help control and reduce red light violations, the staff recommends the installation of an automated red light enforcement system. Such a system involves the placement of cameras at selected intersections to automatically photograph red light violations 24 hours a day. The cameras are directly linked to the signal light electronics as well as the underground detection loops positioned at the approach to each signalized intersection. When a violation occurs, the camera is activated to capture photographic images of the vehicle and driver, the images are reviewed for quality, and a citation is mailed to the registered owner of the violating vehicle.

The staff also recommends the system be installed to monitor ten approaches or directions of travel at nine different intersections, which are listed in this report (Enclosure 2). Intersections and approaches are selected based upon traffic volume and incidence of red light collisions.

1. Fremont Boulevard and Mowry Avenue
2. Fremont Boulevard and Paseo Padre Parkway
3. Mowry Avenue and Paseo Padre Parkway (2 approaches)
4. Fremont Boulevard and Stevenson Boulevard
5. Auto Mall Parkway and Fremont Boulevard
6. Fremont Boulevard and Grimmer Boulevard
7. Blacow Road and Mowry Avenue
8. Decoto Road and Fremont Boulevard
9. Auto Mall Parkway and Grimmer Boulevard

The Police Department has conducted a significant amount of research and recommends we enter into a contract with Redflex Traffic Systems (RTS) for the implementation and maintenance of an automated red light enforcement system.

Staff also recommends the agreement with Redflex be for five years. RTS is the only vendor which offers a system with multiple unique features, including proven digital imaging and encryption technologies, dual high resolution cameras to produce multiple photographic images of the violation, and complete citation issuance and processing services. As part of the agreement, RTS agrees to provide public awareness consulting services, training for Police and court personnel, equipment installation and maintenance, image processing, citation issuance, evidence package preparation, and expert witness testimony, with no up-front costs to the City. Fees collected by RTS will be calculated as a percentage of revenue received by the City from the collection of fines generated by this system.

Although it is impossible to predict the number of violations that will be captured by camera, the number of citations issued, or the amount of fines collected, it is staff's opinion that the system will produce a revenue stream to the City. However, the Police Department wants to remind the community that the goal of the system is not to generate revenue; instead, the goal is to raise public awareness, deter violations, reduce collisions, and increase traffic safety.

BACKGROUND: Automated red light traffic enforcement systems have been in use worldwide for 30 years. Systems in other countries, such as Australia, Canada, and Germany, and some states, such as Arizona, Maryland, New York, and Virginia, have dramatically reduced the number of red light violations and, more importantly, the number of traffic collisions. Victoria, Australia, started using red light cameras in 1983 and experienced a 32 percent decrease in right angle collisions and a 10 percent decrease in injuries. New York City installed cameras at 15 signalized intersections in 1993, decreasing the number of violations at each location by an average of 21 percent. Fairfax, Virginia experienced a 40 percent decline in red light violations after one year of camera enforcement. In less than one year of operation, Howard County, Maryland, reports a 48 percent reduction in red light violations.

Section 21455.5 of the Vehicle Code became effective in January 1996. This statute authorized the use of automated red light enforcement systems in California. Since 1996, a number of cities in California have installed automated red light enforcement systems, including San Francisco, San Diego, El Cajon, and Oxnard. San Francisco and Oxnard experienced a 42 percent decrease in red light violations, including a similar decline at intersections not equipped with cameras. Oxnard reports a 24 percent decrease in collisions involving red light violations. San Francisco and San Diego are currently expanding their operations to increase the number of intersections that will have red light camera enforcement. Other cities, such as Garden Grove, Irvine, Los Angeles, Pasadena, and Sacramento are in the process of establishing new programs.

~~An automated enforcement system (Continued) unblinking red light enforcement 24~~
hours a day. These systems involve the installation of cameras at selected intersections to automatically photograph red light violations. The cameras are directly linked to the signal light electronics and the underground detection loops on the approach to the intersection. The system continuously monitors the signal, and the camera is activated only when the system detects a vehicle passing over the sensors above a minimum speed and a specified time after the signal has turned red. The camera captures images of the vehicle within the intersection, the driver's face, and the vehicle license plate. A high-speed electronic flash enables the system to capture clear images in virtually any lighting or weather condition.

The camera records the date, time, speed of the vehicle, and other information pertinent and needed for issuance of a citation. The camera images are then reviewed for quality by a Fremont police officer. Experience shows that a low percentage of the violations will not be prosecutable, due to extenuating circumstances or poor image quality. If the image passes the scrutiny of the officer and RTS, then a citation is mailed to the registered owner of the violating vehicle. If the registered owner was not the driver at the time the camera captured the violation, then he or she is given the opportunity to nominate the actual driver of the vehicle at the time of the violation. A police officer then compares the photographic image of the violator to the driver license photograph of the nominated driver, and a citation is subsequently mailed to that driver.

Research shows strong public support for the use of red light cameras. National surveys sponsored by the Insurance Institute for Highway Safety reveal that 66 percent of people polled favor the use of red light cameras, compared with 28 percent who oppose the use of this technology. Stronger public support is found in communities where the cameras are in use; systems in Oxnard, California, and Fairfax, Virginia, are supported by 80 percent of residents polled.

In addition to allowing for the prosecution of violators who would not otherwise be caught by conventional police enforcement, the system also serves as a deterrent to potential violators who stop simply for fear of receiving a citation. This deterrent effect has been shown to have a Aspillover consequence to intersections not equipped with cameras. Research has shown that a reduction in red light violations will generally result in a decrease in traffic collisions at signal controlled intersections.

Since 1996, there have been many changes to red light enforcement, including significant legislative change and the development of newer and more reliable technologies. Of significant financial impact was the passage of AB 1191, the Shelley Bill, which mandated a base fine for a red light violation of \$100, thereby increasing the total fine amount to \$271, of which the City receives \$133.57.

Staff has researched the market and recommends that the City of Fremont enter into service contract with Redflex Traffic Systems (RTS) for the implementation and maintenance of an automated red light enforcement system. Staff also recommends that the contract be for a period of five years. RTS utilizes high-definition digital cameras built specifically by Redflex precisely for automated traffic enforcement. There are numerous advantages to using digital technology over conventional Awet film processes. These include the ability to have remote access to the camera sites via modem for service checks, some repair work, and downloading of images and data. This capability allows for daily, low-cost retrieval of encrypted violation evidence and timely issuance of citations. The system offered by RTS also utilizes dual cameras to capture both the front and the rear views of the offending vehicle. An additional camera to the rear of the vehicle provides compelling evidence, as the vehicle is shown over the limit line with the red signal light clearly depicted. Furthermore, although front license plates are required in California, many vehicle owners nevertheless do not have a front license plate installed. By capturing an image of the rear of the vehicle, the system relies on the presence of the rear license plate rather than the front license plate. The photographic images are then incorporated onto the citation to be mailed to and viewed by the registered owner of the violating vehicle (Enclosure 3). Inclusion of the images are intended to reduce the number of Anot guilty pleas, encourage payment of the fine, or to assist the registered owner to nominate the actual driver.

In addition, RTS will provide the following services:

- 3 Site preparation, consulting engineering, and construction installation in coordination with the City traffic engineers.
- 3 Supply, install, and maintain ten dual digital traffic camera systems for red light violation enforcement at nine intersections.
- 3 Consulting services for an extensive public awareness campaign to include public service announcements, artwork for utility bill inserts, media releases, and signage at the entrances to the City.
- 3 Support for Police Department for notice review, approvals, and image viewing facility.
- 3 Training for Police Department and court personnel.
- 3 Monthly reporting to the Police Department.
- 3 A toll free line for public queries to frequently asked questions.

RTS will work in conjunction with the City of Fremont and the Fremont-Newark-Union City Superior Court to develop a comprehensive and efficient system for prosecution and fine collection. Communication with Court administrators, including the local Traffic Commissioner, has shown the Court=s acceptance of automated red light enforcement.

Selection of intersections staff recommends be equipped with red light cameras is based upon traffic volume and the incidence of red light collisions. The traffic volume ranking of each intersection was determined by City of Fremont Transportation Engineering in their APriority list for temporary stop sign installations in the event of widespread power outage, issued on April 30, 1998. All traffic collisions reported to the Police Department are recorded and compiled by the Statewide Integrated Traffic Records System. Staff used statistics from this system to identify the intersections with the highest number of traffic collisions caused by red light violations between 1994 and 1998.

Of the 175 signal-controlled intersections in the City of Fremont, the State of California maintains 43. At the request of Transportation Engineering staff, the automated red light enforcement system equipment will not be installed at any signal light maintained by the State because of the additional permits and processes mandated by CalTrans.

Staff used the following criteria for intersection selection:

1. The intersection is within the top 5 high-volume intersections in the City, or
2. There were at least 10 traffic collisions at the intersection during the past five years, and the intersection is within the top 20 high-volume intersections in the City (minimum of 50,000 vehicles per day).

For virtually every intersection identified by staff for red light camera enforcement, the parties at fault in collisions committed red light violations disproportionately more frequently in one or two directions of travel. For this reason, staff is recommending the red light cameras be installed to monitor those directions of travel. Using these recommendations, there will be 2 intersections (two approaches) monitored in the north end of the City, five intersections (six approaches) monitored in the central area of the City, and two intersections (two approaches) monitored in the south end of the City.

~~Financial Impact: The most significant (continuous) cost of an automated red light enforcement system is for the installation of equipment. RTS has agreed to assume the burden of those costs and provide all services at no up-front cost to the City. However,~~

if the City terminates this contract for its convenience within the first 18 months of the contract, the City will be obligated to pay an equitable cost recovery on a percentage basis for RTS= capital investment. This obligation will not apply if RTS defaults, if RTS determines the program is a failure and chooses to abandon or if the legislature or the judiciary revoke the authority for the program. The City will be required to provide Police, Engineering, and City Attorney staff time for the implementation and maintenance of the system. The City would need to agree to provide a clerical position. This position would be shared between the Police Department and the Alameda County Superior Court, for the purposes of supporting the automated red light enforcement system. The cost of this position, including salary and benefits, would be approximately \$50,000 to the annual budget of the Police Department.

During the first 30 days of operation, warning notices will be issued to violators, as currently required by law. Once the warning notice period is over and citations are issued, the \$271 fine per citation will be collected from the violator by the Alameda County Superior Court. The Court, in turn, pays the City its \$133.57 share of the fine revenue. Fees collected by RTS will be calculated as a percentage of revenue received by the City from the collection of fines from the system. The percentage paid is based upon the cumulative number of citations paid per year and can range as high as 80 percent. While this figure may seem high, the goal of the system is not to generate revenue; instead the goal is to raise public awareness, deter violations, reduce collisions, and increase traffic safety. The revenue generated from this program is estimated to be sufficient to support the costs associated with RTS as well as the clerical position, which will be needed to support this effort. It is also important to remember that the Police Department will continue the traditional methods of red light enforcement and the RTS operation is an addition to our efforts.

It is impossible at this point for staff to accurately predict the number of violations that will be captured by the cameras. The same is true with number of citations that will be issued, or the amount of fines collected. However, conservative projections indicate that the revenue to the City will be in excess of \$3 million for the five-year contract period. These projections assume that 25 violations occur each day at each approach upon implementation of the system, violations subsequently decrease by 25% after the first year and 40% after the second year, citations are issued to 40 percent of violators, and 70 percent of violators pay the fine. Undetermined savings are conceivable in the form of reduced deaths, injuries, and property damage; increased safety and productivity of police officers; and improved customer satisfaction.

Alternatives:

1. Do not implement an automated red light enforcement system in the City of Fremont. This alternative is not recommended, as red light violations would continue and constant, consistent enforcement would be difficult with limited resources available to the Police Department; deaths, injuries, and property damage caused by collisions would not be reduced; and officer safety and productivity would not be enhanced.
2. Enter into contract with a company other than Redflex Traffic Systems. This alternative is not recommended, as RTS offers several unique features not available with other companies. The system offered by RTS provides state-of-the-art technology, effective design, and efficient citation processing operations, all at no up-front cost and little risk to the City.
3. Hire additional traffic officers. This alternative would involve the cost of the officers= salary, benefits, equipment, training, and vehicles,

approximately \$100,000 annually per officer. Since these officers could not be dedicated solely to red light enforcement, this alternative would be less effective in specifically addressing the problem of red light violations and collisions than an automated red light enforcement system. The danger aspect created when an officer must follow a violating vehicle through a red light in order to apprehend a violator would still exist.

ENCLOSURES:

- 3 Red light collision graph.
- 3 Map of intersections proposed for automated red light enforcement system camera placement.
- 3 Sample violation notice.

RECOMMENDATIONS:

1. Approve the use of an automated red light enforcement system in the City of Fremont.
2. Award a five-year service contract to Redflex.