



CITY COUNCIL AGENDA ITEM
CITY OF BILLINGS, MONTANA
Monday, April 13, 2009

TITLE: Public Hearing and Approval of Contract with RedFlex for Red Light Cameras
DEPARTMENT: Billings Police Department
PRESENTED BY: Chief Rich St. John

PROBLEM/ISSUE STATEMENT: Red light camera systems are a measure available to traffic engineering, enforcement, and safety professionals, that when properly applied, may be effective in the reduction of certain types of collisions at signalized intersections. Red light camera systems have had the greatest success and highest levels of support in communities where they have been implemented as one element of an overall traffic safety management program. The City of Billings is ready to begin implementation of a red light camera program. Staff recommends that City Council approve the contract with RedFlex for the red light cameras.

ALTERNATIVES ANALYZED:

- Approve contract and proceed with Red Light Camera Project,
- Do not approve contract and do not proceed with Red Light Camera project.

FINANCIAL IMPACT: None. Fees established with vendor pursuant to signing of contract.

RECOMMENDATION

Staff recommends that City Council approve the contract with RedFlex for the red light cameras.

Approved By: City Administrator _____ City Attorney _____

ATTACHMENTS

- A – Contract
- B – Staff Report

Attachment A – Contract (Currently not available)

Memorandum

To: City Council through CA Volek

CC:

From: Chief St. John

Date: 4/8/2009

Re: Council Initiative regarding Red Light Cameras and/or Photo Radar



CONFIDENTIAL

RED LIGHT CAMERA AND/OR PHOTO RADAR PROGRAM IMPLEMENTATION

Red light camera systems and photo radar are two measures available to traffic engineering, enforcement, and safety professionals, that when properly applied, may be effective in the reduction of certain types of collisions at signalized intersections and speeding in general. Red light camera/ photo radar systems have had the greatest success and highest levels of support in communities where they have been implemented as one element of an overall traffic safety management program. There are several key steps to successfully implementing a red light camera/ photo radar system program.

EARLY PLANNING AND STARTUP

The development of a successful red light camera/photo radar program will be based on the systematic analysis of crash data, together with data on citations issued to motorists for red light running, speeding, and inputs from the general public. The objective is to identify locations where red light and speeding violations contribute to crashes.

The key elements recommended for the early planning and startup of a red light camera/photo radar program are as follows:

- * Establish a Steering Committee.
- * Establish Program Objectives.
- * Identify the Legal Requirements.
- * Assess System Procurement Alternatives.
- * Establish Public Awareness and Information Campaign.

Steering Committee of Stakeholder Group Representatives

Any community considering the implementation of a red light camera/photo radar system should first establish a steering committee inclusive of all stakeholders.

The Steering Committee serves to establish broad based program objectives and to monitor program results. The appropriate participants will vary by community and would typically include representatives from the following organizations:

- * State Department of Motor Vehicles.
- * State and local Police and Sheriff's Department.
- * Traffic Engineering Department.
- * Public Works Department.
- * City, County, or State's Attorney's Office.
- * City, County, or State Public Information Office or Community Affairs.
- * Judiciary.
- * Photo Enforcement Services Contractor, if one is hired.
- * Selected Community Representatives.
- * Selected outside Agency Representatives, such as a local Automobile Club.

A high level of quality control and on-going coordination of activities is required for the operation and maintenance of photo enforcement systems. The program also has significant visibility with the community at large and with their elected officials that require coordination to effectively communicate the program's objectives and program results.

Red Light Camera/Photo Radar Program Objectives

The Steering Committee should define as clearly as possible the red light camera/photo radar program objectives. While it is clear that the overall objective of any program is the reduction of collisions at signalized intersections resulting from red light running and issues related to speeding, program objectives should address specific operational needs.

Legal Requirements

Prior to initiating a red light camera/photo radar program, legal aspects and requirements should be identified. Red light camera/photo radar systems pose legal questions and concerns, the answers to which may vary from State to State. In particular, privacy, citation distribution, and types of penalties need to be thoroughly addressed and resolved prior to the startup of a red light camera program. (See Addendum for Billings' legal opinion.)

Presently, there are two approaches that have been adopted by States in the deployment and operation of red light camera/photo radar systems:

* **Driver Responsibility.** Where the government entity alleges that a driver has committed a violation and receives a citation, there should be photographic evidence that allows the driver to be identified. This requires that one or more red light camera(s) is/are located so that a frontal view of the vehicle is recorded as it runs the red light. Further, the recorded view should allow the driver and vehicle identities to be clearly determined. If the recorded view of a driver is obstructed or not clear, no citation should be issued. Additionally, a method should be provided through which the registered owner can certify that he or she was not the driver at the time of the violation. A photo radar system functions the same way except that excessive speed trips the camera.

In States where red light camera/photo radar systems are applied as described above, infractions are considered to be moving violations with citations carrying the same penalties as citations issued by law enforcement officers, including "points" and holds on vehicle registration or driver license renewals for unpaid fines.

* **Registered Owner Responsibility.** Where the registered owner is responsible for the citation, only photographic evidence that identifies the vehicle, usually from the rear, and its license number is required. Typically, States where red light camera/photo radar systems have been adopted in this manner have enacted legislation at the State level

that authorizes the use of red light camera systems or permits local agencies to enact local ordinances for use of red light camera systems.

System Procurement Alternatives

There are a number of alternatives available to State and local agencies for the development and operation of red light camera/photo radar programs. A State or local agency may take full responsibility for system operations and citation processing functions or elect to outsource these functions to a private contractor. Where a private contractor is responsible for installation and operation of the red light camera equipment, the State or local agency should establish the necessary procedures so that the agency has complete oversight and day-to-day supervision of the program.

Where a private contractor is responsible for the processing of citations, compensation to private vendors based on the number of citations issued should be avoided. In multiple jurisdictions, the courts have determined that it is inappropriate for the private contractor to be responsible for determining installation locations and operation of the system because of an appearance of a conflict of interest. This conflict of interest should be avoided in all phases of the system installation and operation: startup, design, installation, operation, and maintenance. At all times, the State or local agency should verify and exercise complete oversight of all actions of the private contractor.

Some agencies are compensating their system vendors based on a flat fee per location per time period. Others have installed and operated their own systems. It may also be appropriate to pay a vendor to operate and maintain an agency-designed and -implemented system. Compensation should be based solely on the value of the equipment or the services provided.

Public Awareness and Information Campaign

Education on improving traffic safety is a crucial component for any significant change to occur with traffic control systems. Appropriate educational elements should be applied regardless of the chosen solution. For red light camera programs, often the initial educational program includes issuance of warning citations to likely violators for limited period, and clear public communication of the date on which warning citations will be halted and actual enforcement citations will begin. However, education and media outreach efforts should continue throughout the life of the program to keep the public informed of results and need for safety vigilance. Ongoing awareness of the presence of enforcement measures is important to deterrence and long-term behavior changes.

It is recommended that an information campaign is needed to accomplish three objectives in connection with the implementation of red light camera/photo radar programs. First, public awareness and information should make citizens more aware of their driving habits and safety consequences of running red light and speeding. This should stimulate a voluntary change in behavior at signalized intersections and areas

prone to speeding. Second, communications should be through a variety of media with the public and elected officials to explain program objectives, as well as program results. This is critical to gain public support for program expansion. Lastly, public awareness and information should provide motorists with advance warning that there is increased enforcement. This, by itself, may cause a change in driver behavior, but should describe the effectiveness of the systems. Without an effective educational campaign, motorists may be surprised or confused when they receive a citation. If questions or concerns can be effectively answered through written, telephone, or web-based information, motorists receiving citations will be more supportive of the program and less likely to question the program's overall objectives.

The public awareness and information campaign should encompass the following elements:

- * Clear description of the operation of the red light camera/photo radar equipment in non-technical terms.
- * Clear statement of the program objectives.
- * Description of the advantages of automated enforcement.
- * Explanation of other measures being taken to improve safety at intersections.
- * Description of the use of the red light camera/photo radar program revenues.

The public awareness and information campaign may be developed using the following methods:

- * Outreach efforts to employers, schools, driver education, local community groups, and all area media.
- * Telephone and web-based information centers that include a hot-line for calls about intersection problems and traffic safety concerns, in addition to handling inquiries regarding the operation of the red light camera/photo radar program.

An important aspect of the public awareness and information campaign is the direction provided for individuals who received citations on how to review their citation and/or view the photographic evidence.

It is also important for the success of the red light camera/photo radar program that traffic court officials, including judges, commissioners, and administrative support personnel, be fully informed about the program scope and operation. Officials who often conduct traffic court hearings may not be fully versed in the operation of the automated equipment. It is important that the appropriate documentation is prepared and submitted in a timely manner in the event an individual contests the citation in court. The increased use of electronic data transfers and viewing may be appropriate to ensure that the court packages are readily available when needed.

Public awareness and educational outreach efforts for employers, schools, driver education programs, and local community groups, as well as the media, are necessary.

Reports of program results, emphasizing the achieved safety benefits, should be available and posted on the program web site and local newspapers. The campaign should employ various communications media designed to reach residents and commuters, including regular surveys to gauge public support and awareness, and should focus on a central message of improving traffic safety. An example of a safety message is to emphasize that red light camera systems can be applied as an effective tool to reduce collisions resulting from red light running.

SYSTEM PLANNING

Proper planning by a State or local agency will establish the foundation for a successful red light camera/photo radar system for detecting and documenting infractions. As appropriate, a State or local agency should solicit assistance from other public agencies where red light camera/photo radar programs have been successfully deployed, as well as from qualified consulting engineers with experience in red light camera/photo radar systems design and operations.

Violations Processing Procedure

The violation processing procedure should address the following aspects of the installation and operation of an automated system, and the processing of the recorded violations and citations issued:

- * Establish the enforcement threshold consistent with traditional enforcement methods.
- * The number of days allowable from the date of the violation occurrence before citations can be mailed, if different from applicable legal requirements.
- * How citations for commercial or rental car vehicles will be addressed.
- * Minimum vehicle speed threshold.
- * Should citation issuance be restricted to specific time periods or days of week only?
- * Maximum number of days before citations are reissued to violators following registered owners disputed responsibility and subsequent violator identification.
- * Clear specification of photographic data requirements for issuing citations, including the red signal indication and the time elapsed since onset of red.

The system design and installation should be consistent with the definition of a violation under the applicable State and/or local laws.

The installation should be consistent with other neighboring intersections under the jurisdiction of the responsible agency, so that vehicle operators are held to a uniform standard throughout the jurisdiction.

Site Selection

Sites selected for the installation of red light camera systems should be based on accurate crash and red light violations data. As discussed earlier, data regarding the total number of crashes may be used, although intersections with high numbers of collisions may not have a high number of crashes related to red light running. Violation data needs to be applied with some caution. Likewise, locations where it is known that there are high numbers of red light violations may not have corresponding high numbers of crashes related to the red light running. Heavily traveled intersections where with heavy left turn movements operated on protected left turn phases are often intersections of this type. Traffic volumes, except when used as a factor to determine the incidence of crashes or violations, are not a suitable measure for selecting locations for the installation of red light camera systems.

The installation of a red light camera system at a signalized intersection identified as having a red light running problem should be done when an engineering study of the intersection determines photo enforcement is an appropriate countermeasure to reduce the incidence of red light running.

Other criteria for red light camera system site selection may include recommendations from law enforcement and traffic safety professionals, citizens' complaints, and input from community groups. These criteria should be considered in conjunction with crash data and violations or citations data.

Undesirable characteristics that will also affect decisions regarding the installation of red light camera systems include:

- * Driveways that restrict camera pole or auxiliary flash placement.
- * Approaches that are more than three lanes wide and double left turn lanes where views are more frequently obstructed.
- * Wide crossing streets where second photographs may not be taken at the predetermined location due to motorists speeding up and slowing down as they traverse the intersection.

When red light camera systems are in operation, law enforcement officials should place an emphasis on routine enforcement of traffic laws and regulations that require visible and unobstructed display of license plates.

Site selection for photo radar will have the same considerations as red light cameras if the system will be stationary. However, there are photo radar systems that are portable and can be placed and moved randomly. By utilizing a photo radar system which can

capture up to three photographs per second, speed enforcement efforts can concentrate on locations where either roadway dynamics or vehicle volumes make traditional patrol methods either unsafe or inefficient.

Warning Signs

Signs warning motorists that red light cameras/photo radar systems are being used are typically required by law or ordinance but, whether required or not, should be posted as part of the driver awareness and education process. These warning signs may be placed in the following locations at photo-enforced intersections:

- * In advance of photo-enforced intersections or streets.
- * At photo-enforced intersections, typically on the far side traffic signal pole.
- * On all approaches into an area where red light camera systems are used for red light running.

Warning signs placed on all approaches into an area, while used to satisfy legal requirements in some jurisdictions, are appropriate as supplemental warning signs but not as the primary warning for motorists. Advance warning signs should be installed at photo-enforced intersections.

All advance warning signs should be clearly visible and compliant with all applicable requirements.

Traffic Signal Yellow Times

Yellow times should be established in accordance with applicable guidelines and any informational reports on methods for calculating yellow time intervals.

Changes in the yellow times after red light camera systems are in place and operational will affect the number of photographed violations, increasing the number of violations when yellow times are shortened and reducing the number of violations when yellow times are lengthened. Where changes in the yellow times at intersections with red light camera systems are required as the result of updated speed surveys or other factors, the changes should be clearly described in public information announcements. Providing warning notices for a reasonable amount of time after the change is particularly important for violations recorded at intersections where the yellow interval has been shortened.

System Selection and Technologies

The most widely used systems employ film-based cameras and inductive loop vehicle detection technologies. However, other automated technologies have become available over the past five years, most notably technologies that employ digital camera equipment where photographic data, including streamed video clips, may be immediately downloaded for processing using leased telephone line or microwave communications. Additionally, automated systems that use video-based and radar

vehicle detection methods, as well as systems that employ overhead camera placements and floodlighting equipment as an alternative to the curb-based placements, are used by many State and local agencies. Photo radar can be packaged in a number of ways. The unit can be installed on a tripod, in a non-moving vehicle, or in a cabinet that is attached to a pole and can be moved from site to site.

A red light camera/photo radar system consists of the following on-the-street components:

- * Camera Units.
- * Intersection Lighting.
- * Camera Housing and Supporting Structure.
- * Vehicle Detection.
- * Communications.
- * Warning Signs.

Each of these components is reviewed in the following sections.

Camera Unit

There are three general types of cameras units used to automatically record red light violations. The types of camera units used in red light camera systems include:

- * 35mm Conventional Film Units.
- * Digital Still Picture Units.
- * Digital Video Units.

Camera Unit: Pros: Cons

35 mm

Pros: Best resolution

Cons: Collection and development of film

Digital Still

Pros: Digital format, Ease of use, No film collection or development

Cons: Needs communication links between cameras and processing center,
Comparatively poor resolution

Digital Video

Pros: Provide video clips of alleged violations, Provides circumstances in which violations occur

Cons: Impression of surveillance, Needs communication links between cameras and processing center

Intersection Lighting

Additional intersection lighting is required in conjunction with the operation of the camera units. The additional lighting will need to be installed in accordance with the equipment manufacturer's specifications, as well as with State or local ordinances that govern the amount of lighting that is permitted in the driver's field of view.

For camera units that record violations with one or two photographs or digital images, flash units synchronized with the camera shutter provide additional lighting at the intersection at time of exposure so vehicle license plate and drivers, if local or State law allow, can be more clearly photographed. Typically, one flash unit is installed as an integral part of the camera housing. Additional flash units may be installed at intersections where there are more than two lanes being monitored or to maximize the amount of backlighting in the vehicle interior as it traverses the intersection.

For camera units that record a video clip for each violation, continuous additional lighting will be considered. This may be provided by curb or overhead mounted lighting equipment, as specified by the equipment manufacturer.

Camera Housing and Supporting Structure

The types of camera housing and supporting structures will depend on the type of red light camera system being installed.

Curb-mounted red light camera systems, the most common type currently being employed by State and local agencies, need a camera housing enclosure that is mounted on a pole. The camera unit housing should be weather and damage resistant, and contain a locking mechanism to protect the system from vandalism. Additional poles may be employed for auxiliary flash lighting units. For digital camera systems, a separate enclosure for the data storage and communications equipment is also required at the intersection.

The poles for curb-mounted red light camera systems should be tall enough to provide the necessary angle of view to clearly record violations at the intersection. There are at least two types of poles currently in use. The first, a hinged pole, lowers the camera housing on a hinge located in the center of the pole. A second type, a solid pole, utilizes a motorized "elevator" to raise and lower the camera housing.

Overhead-mounted red light camera systems normally require curb-mounted poles with cantilever arms extending over the traffic lanes. Camera and flash units are mounted on the cantilever arms as required for system operation. Red light camera systems of this type provide an increased field of view that is especially advantageous for red light camera systems on wider arterial streets as well as enhanced lighting for enhanced photographic data quality.

Some jurisdictions have found that they can afford only a limited number of red light

camera systems. By installing red light camera housings at problem intersections, and periodically moving the actual cameras from housing to housing, gives motorists the impression that cameras are omnipresent and reduces red light violations throughout the community.

Vehicle Detection

Vehicle detectors are used to trigger the camera to record a vehicle running a red light. Different vehicle detection technologies are available for this purpose.

Most red light camera systems employ pairs of inductive loops installed near the intersection at a location suitable for showing that a violation has occurred. It is critical for the system design and operation that the inductive loops be installed in the appropriate locations, consistent with the agency's definition of a violation. Red light camera systems may also employ piezo-elements, video-based equipment, or radar devices for vehicle detection and tracking, as an alternative to, or in conjunction with, inductive loop detectors.

The placement of the vehicle detectors is critical to the integrity of the red light camera system and the citations developed from the photographic data.

For red light camera systems that document violations with two photographs, the first photograph should be taken to show the motor vehicle that will be running the red light, at a location immediately before it enters the intersection against a red traffic signal indication. The vehicle detection equipment should be configured to detect the presence of the vehicle at the desired location and to initiate the first photograph being taken with the vehicle at that location. If the vehicle is detected after it has already entered the intersection, it cannot be determined with certainty from the photographs that the vehicle entered the intersection illegally and consequently, a citation should not be issued. The second photograph is taken after the vehicle has entered the intersection, at a time interval after the first photograph calculated to provide the best view of the vehicle and its license plate, and where required, the driver's face.

For red light camera systems that document violations with video clips that show the vehicle running the red light continuously starting at a location before the vehicle enters the intersection against the red traffic signal indication, vehicle detection should be configured so that the video clip recording is initiated at an appropriate location.

The placement of inductive loop detectors immediately in advance of the intersection stop line for vehicle detection may require that existing stop line loop detectors used for the traffic signal operations need to be abandoned, relocated, or replaced with another type of vehicle detection system, such as video-based detection. Generally, a solution that accommodates vehicle detection requirements for both traffic signal operations and the red light camera system can be developed although there may be some additional costs for vehicle detection associated with the installation of the red light camera system equipment under these circumstances.

Vehicle Detection – Photo Radar

The equipment combines two well-known technologies, photography and radar. The equipment is able to track multiple targets simultaneously. When a car passes through the radar field, the unit's electronics calculate its speed and sends a signal to the camera, which then snaps a picture of the violator's license plate and in some cases, the driver.

Communications

For digital camera units, a communications link with adequate bandwidth should be provided from the intersection to a location where the violations data is processed. The required communications may be implemented using State and local agency fiber optics, leased high-capacity telephone lines, or microwave technologies.

No communications outside of the intersection are required for 35mm conventional film camera units.

Communications links are normally required to support certain functions related to citation data processing, including access to vehicle registration and driver's license databases, data transfers to and from traffic court data processing systems, and on-line inquiries or payments from persons receiving citations.

ENGINEERING DESIGN OF RED LIGHT CAMERA SYSTEMS

The red light camera system installation plans should be prepared and signed by an appropriately licensed engineer. Installation plans should be prepared in accordance with the system manufacturer's standard plans and technical specifications, and with State and local agency standard plans and specifications for public works and traffic engineering improvements. The plans should address the placement of the red light camera system equipment and related components, including:

- * Camera equipment.
- * Camera housing and supporting structure.
- * Intersection lighting.
- * Vehicle detection system.
- * Communications.
- * Pullboxes, conduit runs, and conductor schedule.
- * Electrical service.
- * Warning signs.

There are currently no standard plans and specifications for the acquisition and installation of red light camera systems, except for the plans and specifications provided by the manufacturers and standard plans and specifications that have been developed by State and local agencies for their own use and application. The U.S. Department of Transportation (USDOT), through a cooperative agreement with the International Association of Chiefs of Police (IACP), are developing red light camera systems performance specifications and testing laboratories to ensure the accuracy and reliability of these systems.

The installation plans should be processed through the appropriate State or local agency plan review and permitting procedures.

RED LIGHT CAMERA SYSTEM INSTALLATION

Where a contractor does the installation work, the normal construction inspection procedures employed by the State or local agency should be carried out for the installation of the red light camera equipment. Proper installation includes:

- * Installation consistent with the equipment manufacturer's guidelines and State or local agency specifications.
- * Inspection of all installation work by State and local agency officials and, where necessary, by the project engineer.
- * Testing of the red light camera equipment prior to its cutover for unattended operation.
- * The preparation of as-built drawings that reflect actual construction conditions.

Installations should be thoroughly inspected before testing begins. A comprehensive testing program should then be conducted using both simulated and actual traffic before the system is placed into unattended operation. No warning letters or citations should be issued until it is determined that the system is working accurately and reliably.

OPERATION AND MAINTENANCE

As with any integrated system, every element of a red light camera/photo radar system should function properly for the system to produce the desired results. In addition to proper design and installation, procedures to ensure the proper operation and maintenance of the system should be developed and implemented by the State and

local agency.

Proper operation should be consistent with the manufacturer's instructions and the documented operational procedures that have been developed, reviewed, and approved by all parties involved. Periodic checks and audits to verify that it continues to operate properly should also be conducted.

Proper maintenance should include both preventive and corrective maintenance. Preventive maintenance should be performed on a regular basis. Tests of operational performance should be conducted regularly, and actual operational results examined constantly in order to identify any variation from specified performance. If any flaw in the system operation or performance is detected, the issuance of citations should be immediately stopped and any citations previously issued with the possibility of flawed operation or performance should be withdrawn.

Red light camera/photo radar system operations and maintenance should include the following tasks and functions:

- * Collect images of recorded violations and related violations data from photo-enforced intersections.
- * Inspect camera and vehicle detection system operations.
- * Perform preventative maintenance and cleaning.
- * Identify defective equipment and make repairs or replace the equipment.
- * Store recorded violations data.
- * Review recorded violations data to identify violations.
- * Identify vehicle-registered owner.
- * Prepare draft citations for review and approval.
- * Prepare and mail citations to vehicle registered owners.
- * Answer telephone inquiries.
- * Schedule violator appointments.
- * Process vehicle registered owner certifications regarding driver identity at the time of the violation.
- * Provide court-requested information and support court hearings.
- * Prepare monthly progress reports.

Citation Data Processing

The procedures and methods employed for system operations should be designed to ensure the preservation of the chain of custody of evidence for each recorded violation so that backup data and documentation can be easily retrieved when needed. The procedures and methods used for system operations should be comprehensive, clearly documented in writing, and followed without exception.

Citation data processing should be carried out in a secured facility using a data processing system with appropriate security features and firewalls. All personnel, especially those with access to motor vehicle registration and driver's license

databases, should be cleared with appropriate background checks.

Internal quality control is essential and should be achieved by the use of two separate internal reviews of each violation, periodic audits by independent law enforcement or engineering staff, and other procedures. Procedures, especially important to ensure quality control, should be developed for each of the following areas:

- * Guidelines to be applied for issuing a citation. In other words, a very specific definition is needed to identify what constitutes a red light running violation.
- * Citation review and approval requirements, including provisions for the procedure to be used when the time to review is shortened, traffic officers are not available to conduct the reviews, or the number of citations is larger than usual.
- * Quality assurance audits, to be conducted by trained traffic officers for randomly selected sample of recorded violations on a periodic basis.

Only a qualified law enforcement officer should be authorized to issue a citation. Citations should not be created prior to review of appropriate evidentiary material by the officer. Under no circumstances should a citation be issued when the officer expresses any lack of confidence that a properly documented and provable violation has occurred.

System Maintenance

Periodic inspections and preventative maintenance should be required to ensure that the equipment is functioning properly. Service and inspection logs should be maintained to document the inspections and preventative maintenance activities. The service and inspection logs may be required at court hearings to confirm that the red light camera equipment was functioning properly at the time that the violations were recorded.

As part of the periodic preventative maintenance, the camera unit and housing should be thoroughly cleaned and the camera unit activated in its "test" mode and confirmed to be operating correctly. The condition of the camera housing and mounting structure, camera unit, vehicle detection system, and warning signs should be inspected and the conditions noted in the service and inspection logs.

On-Going System Assessment

Continual analysis of violation and crash data, with community input, is an important element of a successful red light camera/photo radar program. Adequate funding should be provided to assure the necessary data analysis, problem identification, and problem diagnostic review work tasks are undertaken.

Automated enforcement efforts should be monitored, with adequate pre- and post-installation study periods, in order to measure the program's effectiveness. Timely collection and reporting of crash data is an important part of the monitoring process, as

are control sites with no photo enforcement so the effects of camera enforcement can be distinguished from other external effects.

The steering committee should meet on a regular basis. Regular agenda items should be to review the data of violations and citations issued with a discussion of any changes or trends noted. Input from the State or local agency's traffic engineering department and street maintenance department should include regular updates on planned traffic signal modifications or street improvements construction that could impact the operation of the system. Discussion should be encouraged on whether program objectives are being met through the deployment of automated systems or whether alternative measures should be applied. The group should have input to the regular prioritization of intersections targeted for safety-related improvements.

A monitoring program based on the timely collection and reporting of crash data is needed. These crash data should include control sites with no photo enforcement so that the effects of camera enforcement can be distinguished from other external effects. Responsibilities for the collection and reporting of crash data need to be established and clearly defined. Traffic safety professionals need to review intersection safety issues and conduct diagnostic reviews of intersections identified from the crash data tabulations as warranting safety-related improvements.

Regular reports on the public awareness and information campaign should be prepared and reviewed. Public use of the web site and telephone information systems should be monitored.

ON-GOING PUBLIC INFORMATION AND EDUCATION

An on-going public information and education campaign is needed to assure the motoring public that the red light camera/photo radar program is being operated in the most effective, efficient, and fair manner possible. Public information and education efforts begin before installation, but do not end when the system is fully operational.

The on-going educational program should be designed to combat red light running and speeding, in general, as well as to provide information related to the operation of the camera equipment. Where possible, the on-going public information and education program should be developed and delivered in a way so as to address any specific populations or conditions that have been identified as contributing extensively to the traffic problem.

The on-going public information and education program should use various media, including the print and broadcast media, to communicate the problem, the program and the results. The agency should monitor the effectiveness of the educational program in order to achieve maximum effectiveness and public support for the red light camera

program.

PROGRAM COSTS:

There are several companies that offer red light camera/photo radar systems. Agencies currently using this technology generally lease the equipment from a vendor. Costs will vary depending on the number of systems put in place, the type of system used, and the negotiated contract. Some private vendors earn a commission for each citation processed while others charge a flat fee. Listed below are some cost considerations:

- Engineering - Approximately \$10,000 - \$15,000 per direction per intersection camera.
- Lease of equipment. Approximately \$2,000 per month for one photo radar van.
- Administrative cost of administering the program.
- Cost of officer to operate photo radar van.
- Cost of officer and equipment to review each photo to ensure that a violation has occurred and the vehicle is properly identified.
- Cost of City's administrative hearing to include officer's presentation.

Addendum:

Issues pertaining to using photo radar and photo traffic light enforcement

Photographic traffic signal enforcement systems are digital cameras mounted above the corners of an intersection pointing in all four directions of traffic. There are several companies that operate these cameras under contract with the municipalities. The cameras are connected by computer to both the traffic signal and to underground electrical wires that activate the cameras when a driver runs a red light. The systems use a passive sensor that switches on the cameras only when a vehicle enters the intersection after the light has turned red. When a vehicle runs a red light, the computer triggers the camera to take two overhead pictures to document the violation: a picture of the vehicle entering the intersection after the light turns red and another picture of the vehicle moving through the intersection while the light is red. A separate camera takes a photograph of the vehicle's license plate. After taking the pictures, the computer superimposes data on the image to include the time and date of the infraction, location of the intersection, speed of the car, and elapsed time between when the light turned red and when the car entered the intersection. Different vendors may have variations of this process.

In 1993 - 94, the City of Billings considered the use of photo radar enforcement for speeding infractions. In response to a request by the City Attorney of Billings, the

Montana Attorney General opined that “the City of Billings, under its self-government charter, is not precluded by statute from enacting a photo-radar ordinance providing either accountability on the part of the registered owner for illegal speeding by any person operating the vehicle with the owner’s permission, or for a permissive inference that the registered owner was the speeding violator.” There are currently no Montana cities using photo radar enforcement. There are multiple concerns cited by the other cities who have considered photo traffic enforcement:

- The offense would have to be established as an absolute liability offense making the registered owner absolutely liable with no potential for incarceration; because the registered owner would not necessarily be driving the vehicle.
- Offenses could most likely not be reported to the state of Montana as habitual offender offenses; because the registered owner might not be the driver. There could be multiple registered owners of the vehicle which could make it even more challenging.
- There was some concern about the extra work for law enforcement in determining who was in control of leased motor vehicles or rental vehicles, or business vehicles registered to a company rather than an individual.
- There was some concern about an increase in motor vehicle accidents as a result of motorists slamming on their brakes to stop for a changing light and getting rear ended by the motorist following them. There have been conflicting studies over the increase or decrease of rear end accidents after a photo red light enforcement system is put into use.
- There are concerns about the monetary fees or percentage take or something along those lines associated with paying the company. The company is in it to make money, and typically shares in the revenue with the municipality. Also, issuance of criminal citations by a private company is prohibited under Montana Law. The violations would necessarily have to be municipal infractions if a private vendor were going to be issuing the tickets.

The Montana AG opinion did not address red-light cameras but only speeding; however, the rationale supporting the use of photo radar would also be applicable to self-government powers wanting to implement a similar ordinance for photographic traffic signal enforcement. The Attorney General did not address the issues of sharing fines, issuing the citations under Montana criminal procedural statutes, or other constitutional issues. Making a violation of the ordinance or state law a municipal infraction would eliminate the issues related to the criminal procedure statutes and would be consistent with most of the models around the country. The model used by Garland Texas seems to provide the best model to follow if we wanted to initiate a photo traffic enforcement program. The essence of this model is that infraction is civil rather than criminal. The city, not the vendor, issues the citation after weeding out the

infractions where there is inconclusive evidence or legitimate reason for the violation, such as a funeral procession. The citation is issued to the registered owner of the vehicle. The owner can pay the fine, contest the infraction, or provide evidence that someone else was driving. If someone other than the owner was driving, a citation would then be issued to the driver. Signs placing drivers on notice are placed at ingresses to the City rather than at each intersection.

The City may additionally need to obtain permission from the State of Montana to erect the poles and cameras since the poles will most likely be erected upon State or federally funded intersections and right of ways. Once permission is granted, then an RFP for the program can be advertised and proposals received.