

## **Background**

The Traffic and Asset Management section recently completed a city wide Road Safety Assessment (RSA). The overall objective of the RSA is the development of a coordinated road safety strategy plan that provides direction for future road safety projects and programs with a primary goal of reducing the number and severity of motor vehicle collisions.

As part of the RSA, motor vehicle collisions data was analyzed based on injury and fatal collision occurrence in order to identify potential causes and solutions with respect to road safety strategies. In the analysis, it was identified that red-light running was a contributor to causing serious collisions and it was further identified for targeted safety programs.

Intersection safety is achieved through a combination of engineering, education and enforcement. A Red Light Camera program (RLC) is one of the countermeasures utilized to improve intersection safety by decreasing the incidence of red light running at intersections.

Collisions resulting from red-light running tend to be more severe than other intersection collisions because they usually involve at least one vehicle travelling very quickly. In the most serious red-light running collisions, the vehicles hit each other at right angles. The resulting side-impact collisions cause severe injuries which sometimes lead to death.

RLCs were first introduced in Ontario in 2000 and eight municipalities operate over 190 RLC sites. These would include Toronto, London, Ottawa, Hamilton and the Regions of Peel, Waterloo, York and Halton.

The following summarizes what a RLC program is, how it could be implemented in Greater Sudbury, and outlines the next steps if a RLC program is to be implemented.

## **Analysis**

RLCs are triggered when a vehicle enters an intersection on a red light. Two images of the vehicle are taken and processed. If the images clearly show a red light violation then an infraction notice is mailed to the registered owner of the vehicle. Similar to parking tickets, RLC violations are the responsibility of the vehicle owner, and there are no demerit points involved.

Red-light cameras photograph a vehicle's rear license plate only; not its driver or occupants. The RLC programs in Ontario have consulted the Province's Information and Privacy Commissioner to ensure the cameras do not violate driver privacy.

The effectiveness of red light cameras can be measured in terms of reductions in crash frequency, crash severity, and frequency of red light running violations.

RLCs can reduce the frequency of angle collisions, usually the most severe type of collision, by 25%. However, RLCs can increase the number of rear-end collisions by an

estimated 15%. Typically angle collisions are more severe than rear end collisions, therefore there is an overall net safety improvement and a positive overall safety cost benefit. Public awareness of RLCs also reduces aggressive driver behaviour.

A red light camera before-and-after study released in 2011 found that in 14 U.S. cities with red light cameras, fatalities due to red light running declined by 35%.

Ontario municipalities that have installed RLCs have seen the numbers of red-light running infractions decrease and the number of rear end collisions decrease over time as motorists become accustomed to the RLC's and that these benefits have extended to other intersections that do not have RLCs.

In general, the presence of automated enforcement on a 24/7 basis provides a strong deterrent. For RLCs in particular, public acceptance in municipalities has been high because the act of running a red light is recognized as one which is reckless and can easily have severe consequences.

The financial penalty in the Province of Ontario is the same for a red light running violation issued by a RLC system or by a police officer. Red light camera evidence is also well accepted in Ontario Courts and to date there has been no successful challenge of a red light running violation based on evidence from a red light camera system. The current fine for a red light running violation is \$325. Of this \$325, the municipality retains \$265 while \$60 is sent to the Province through the victim surcharge fine. If the fine goes unpaid, the license plate cannot be renewed. The owner's driver's license is not suspended and no jail term can be imposed for defaulting on the payment of the fine.

## **Potential RLC Locations Within CGS**

Similar to other municipalities in Ontario that have red light programs, CGS commissioned a study to assess the need for implementing a red light program and to identify sites which would benefit the most from the deployment of the RLCs. The study was performed by AECOM and their report is under separate cover. The goal was to identify intersections where an RLC was the best engineering solution to minimize right angle collisions. This strategy is in line with the City's goal to facilitate a safe and efficient road network.

It is recommended that six RLCs be introduced within CGS in those intersections that will have the largest impact on minimizing collisions as well as modifying driver behaviour on red light running.

Of the City's 124 signalized intersections, AECOM identified seven intersections as possible candidates to install a RLC to minimize right angle collisions. After a field review of those intersections, it was determined that four intersections would benefit from other measures, i.e. improved signage, branch removal therefore RLCs were not considered as the best choice. For the remaining three intersections, a RLC is being recommended as the best solution to minimize/improve collision rates. These intersections are:

- Paris Street at Cedar Street
- Regent Street at Algonquin Road
- Municipal Road 80 at Dominion Drive

It is further recommended that field work continue on other intersections within the CGS where collision rates are greater than expected and identify an additional three intersections where a RLC is recommended as the best traffic solution to reduce collisions. Once selected, the recommended six locations will be brought forward to Council for approval.

### **Red Light Camera Program Implementation**

Implementation of a RLC program involves many steps and various approval processes which are outlined below:

1. Receive initial approval for the RLC program from City Council.
2. Request membership with the existing Ontario RLC group of municipalities so that Greater Sudbury can benefit from the joint operating costs and administration of the program.
3. Report back to Council as part of 2019 budget with an updated business case and status of the project.
4. Develop an internal team to implement the program that would be led by the Traffic and Asset Management section and include staff from Finance, Police, Communications, Legal and Provincial Court Administration.
5. Adoption by City Council of the RLC locations and apply to have the Highway Traffic Act regulations amended to include these locations. All RLC sites in Ontario must be listed in the Highway Traffic Act.
6. Enter into an agreement with the City of Toronto for the processing of the RLC infractions, after it obtains permission from their Council. Toronto currently processes all RLC infractions in Ontario.
7. Enter into a RLC contract with the current vendor (Traffipax) for RLC leasing, installation, and maintenance and obtain confirmation from the camera vendor on site suitability.
8. Obtain the approval of the Ministry of the Attorney General to join the RLC program.
9. Enter into an agreement with Ministry of Transportation to obtain license plate and ownership information and sharing of data from the RLC program.
10. Development of a red-light running educational campaign to be implemented concurrently with the RLC program.

Based on data gathered from other municipalities, it is anticipated that the above steps would take 24 months to complete the various approvals.

## Financial Implications

As stated, the implementation of an RLC program will involve entering into a contract with the current vendor for leasing and installing RLCs in Ontario. Based on the experience of other municipalities, the estimated costs, both fixed and variable will be approximately \$60,000 per year per camera site. The following is a description of the cost components of a RLC program and the estimated costs based on 6 RLC sites.

<b>Cost Component</b>	<b>Description</b>	<b>Estimated Annual Cost</b>
RLC Contract	The RLC vendor is responsible for the purchase, installation and maintenance of the RLC's. The RLC vendor is responsible for the secure delivery of the digital images from the camera to the City of Toronto processing centre.	\$25,000/site = \$150,000
RLC Processing	Done by the City of Toronto. Toronto's Provincial Offences Officers review each RLC image and make the determination if a red light violation occurred. If a violation occurred, the processing centre mails the violation notice with two images to the registered owner of the vehicle.	Cost is variable based on number of violations. Estimated \$130,000
Vehicle License Information	The vehicle's registered owner's name and address are required which is obtained from the Ontario Ministry of Transportation.	Cost is variable based on number of violations. Estimated \$5,000
Provincial Court Administration	These costs are incurred for processing of the violation payments and the dispute resolution process. Based on the experience of other Ontario municipalities, the number of RLC violation trials is low.	Cost is variable based on number of violations. Estimated \$75,000
Additional City Resources	An additional staff person will be required in the Roads division to manage the program including reports to the Province, evaluating the performance of the program, implementing the education component and developing other intersection safety initiatives.	\$100,000
Education and Awareness	This program will include education and awareness measures to modify driver's behavior.	\$40,000
<b>Estimated Net Annual Cost</b>		<b>\$500,000</b>

A successful conviction of a RLC violation results in a fine of \$325, of which \$60 is designated as the victim surcharge, therefore the city would receive \$265. The analysis below estimates conservatively that if there is one violation per day at each of the 6 sites, the estimated gross revenue would be \$580,000 per year or \$80,000 in net revenue. If there are two violations per day per camera site, estimated net revenue to the municipality would be \$450,000. The analysis is summarized in the following chart.

	<u>1 conviction/site/day</u>	<u>2 convictions/site/day</u>
Revenue	\$580,000	\$1,160,000
Expenses	<u>(\$500,000)</u>	<u>(\$710,000)</u>
Net Revenue	\$80,000	\$450,000

It is recommended that if a RLC program is implemented that any surplus from the RLC program be committed to implement safety measures to improve road safety or to rehabilitate roads with a correlation with road safety (i.e pothole repairs).

Over time, it is anticipated that the number of right angle collisions at these intersections will decrease which has an associated social cost; however, it is also anticipated that the fine revenue will also decrease as there is improved compliance with red lights.

## **Societal Benefits**

It is worth noting that the above business case simply projects the expected fine revenue against the operational costs of the program. A second method to measure the benefits of an RLC program is the societal benefits from expected collision reduction. Societal cost savings result from a reduction in fatalities and injuries, reduced property damage, a reduced burden on the health care system and on emergency services. There would also be a reduction in pain and trauma which cannot be measured.

## **Summary**

Red light running has been identified as the 6<sup>th</sup> highest target area in Ontario for causing injury or fatal collision and it was indentified for targeted safety programs in the City's Road Safety Assessment. RLCs have been proven effective in other Ontario municipalities at reducing the number of red light running and thereby the number of associated collisions.

Staff is proposing to implement six red light cameras, three of which have been identified as part of an AECOM study of city intersections, with three others to be identified through additional field work.

It is anticipated for Greater Sudbury that six RLCs will produce a net positive financial benefit but more importantly, will provide positive societal benefits.

Throughout the balance of 2018, staff is proposing that the City request inclusion in the Ontario RLC consortium of municipalities so that the City can benefit from the joint operating costs and administration of the program. In addition, staff is proposing that authority be granted to begin the process to enter into required agreements with the City of Toronto Processing Centre, the Ministries of Transportation and Attorney General and the current red light camera vendor for leasing, installation and maintenance and to obtain confirmation from the vendor on site suitability.

Staff will report back to Council as part of the 2019 budget process with an updated business case and a status report on the anticipated timeline for RLC implementation.