Review of Considerations and Requirements for Automated Enforcement

Summary:

The purpose of this report is to provide information related to expanding the use of automated enforcement in the City of Toronto, with the intention of reducing speed and other traffic violations.

Aggressive driving is a major contributing factor in 41% of all collisions in the City of Toronto resulting in fatalities or serious injuries and it has been identified and will be addressed within the Road Safety Plan (RSP) with a series of proposed program countermeasures. Automated enforcement of traffic violations is a common approach used as an alternative to manned enforcement around the world. The most common types of enforcement technology are used to enforce speeding and red light running violations. Most recently, a number of major North American jurisdictions have deployed automated enforcement strategies with varying degrees of success including Washington DC, New York City, City of Chicago, City of San Francisco, City of Edmonton and the City of Calgary.

History of Automated Enforcement in Ontario

In August 1994, "photo radar" for speed enforcement was used on provincial highways in Ontario and although preliminary results showed reduced speeding on highways, the program was subsequently cancelled 11 months later in July 1995. To date, the use of "photo radar" has not been authorized on municipal roadways in Ontario. Moving forward, there would be a number of provincial legislative changes required in order to permit municipalities the authority to charge vehicle owners for speeding violations detected by automated enforcement systems. Other forms of automated enforcement such as stop sign and turning violations require video evidence to be processed as opposed to still photographs and will therefore require more significant legislative revisions in order to make these types of automated enforcement legally possible to implement.

Decision History:

At its meeting of May 5-7, 2015, City Council requested that Transportation Services lead a task force to further investigate the technical, evidentiary, regulatory and prosecutorial and financial requirements related to expanding automated enforcement for the purpose of reducing speed, stop sign and turning violations. City Council also directed staff, in consultation with Toronto Police Service, to report to the Public Works and Infrastructure Committee as a component of the Road Safety Plan on the task force results and recommendations related to an automated enforcement pilot in the City of Toronto.
http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2015.PW3.17

Discussion:

In addition to speeding and red light running, automated enforcement has been used for other types of traffic violations including:

- Stop sign violations
- Turning violations
- Railway crossing violations
- School bus violations

Stop Sign Running and Turning Violation Enforcement

The use of these particular automated enforcement strategies are still relatively new and there are currently no reports or studies on its effectiveness. Several smaller municipalities in Alberta and a few jurisdictions in the United States, most prominently Washington D.C. have begun using automated enforcement cameras to detect vehicles who fail to stop at a stop sign and there are several municipalities in the U.K. using automated enforcement for turning violations. These types of automated enforcement require the use of video evidence or multiple cameras in order to process the violations. In consultation with the Ministry of the Attorney General of Ontario, the following issues related to the use of automated enforcement for these types of violations were identified:

- Video evidence may not be admissible in court. As a result, the associated charges can be very easily challenged.
- It is much more difficult to prepare evidence for disclosure. A photograph cannot be mailed to the registered owner of the vehicle with the use of video. Sending a link to a website, which is the disclosure method for municipalities using this technology, creates a social barrier which assumes that everyone can afford and has access to the internet.
- Additional trained Provincial Offences Officers will be required to process the additional citations.
- Additional court room resources are required including staff, space and the availability of a video player in every court room.
- Approval from the Information and Privacy Commissioner of Ontario is required in order to use video for automated enforcement.

In addition to the required provincial legislative changes and the issues identified above, the number of expected violations challenged in court compared to the anticipated number of charges laid would be very high, and as a result, the use of automated enforcement for stop sign and turning violations would not be feasible at this time.

Speed Enforcement

In a report produced by the World Health Organization, speed is identified as a key contributing factor in traffic related injuries, influencing both the risk of a collision as well as the severity of

the injuries that result from collisions. It was noted that in high-income countries, approximately 30% of fatal collisions were related to speeding [1]. Setting and enforcing speed limits is one of the most effective countermeasures for managing and controlling vehicle speed. Automated speed enforcement or "photo radar" is the most commonly used method of automated enforcement in the world, and in addition to traditional enforcement, has proven to reduce speeding and collisions worldwide.

Based on a number of published reports and case studies, all jurisdictions reported a decrease in collisions resulting in injuries as well as collisions overall, at locations where "photo radar" cameras were deployed. The following are effectiveness results from some the major jurisdictions using "photo radar":

- City of Edmonton – A study conducted in 2014 by the University of Alberta concluded that the use of mobile automated speed enforcement resulted in a 32.1% city-wide reduction in fatal and injury collisions; 27.7% reduction in total collisions; and 26.7 % reduction in speed related collisions [2].

- City of Calgary – Before and after studies at locations with Intersection Safety Cameras (detects both speed and red light running) showed a 7% decrease in total collisions; 4% decrease in injury collisions; and 100% decrease in fatal collisions [3].

- City of Winnipeg – A study in 2011 of automated speed enforcement in school, playground and construction zones indicated a 24% decrease in speed related collisions at intersections equipped with cameras [4].

- Washington D.C. – The Washington D.C. Metropolitan Police Department reported a decrease of 65% in traffic fatalities which they attribute to the use of automated enforcement [5].

- New York City – A study conducted by a public organization found a 13.4% decrease in injury collisions at locations within 500m of an automated speed enforcement camera [6].

- City of Chicago – Chicago's Department of Transportation reported a 31% decline in the number of speeding vehicles [6].

Unlike red light camera systems which have very strict legal and technical requirements, "photo radar" requirements are less stringent. For example, a "photo radar" system does not rely on a traffic signal and photographed images require less detail for the disclosure of evidence. There is also a greater number of vehicles speeding compared to vehicles running red lights, therefore the number of images that require processing will be substantially higher. In order for the City to undertake the automated enforcement of speed, the following concerns would need to be addressed:

- Any type of automated enforcement will need to be regulated by the Ministry of Transportation and reviewed by the Ministry of the Attorney General.
- Additional Provincial Offenses Officers will be required to review and process the increased number of images.
- Court rooms do not have the existing capacity to undertake "photo radar" charges in addition to red light camera charges. Additional court room resources will be required including officers, prosecutors, Justice of the Peace, security, administrative staff, office space etc.
- All equipment/technology used must meet provincial requirements.
- The process will need to be reviewed and approved by the Information and Privacy Commissioner of Ontario.

Notwithstanding the challenges previously identified, the use of automated speed enforcement as a supplement to traditional police enforcement has proven to be a worthwhile and effective countermeasure for the purposes of improving road safety by reducing vehicle speeds in targeted areas such as school zones, constructions zones and high collision locations.

Fixed vs. Mobile Automated Speed Enforcement

Automated speed enforcement units can be fixed or mobile. Fixed cameras are usually mounted on existing infrastructure or share space with red light cameras and are generally used in areas which require constant enforcement such as school zones and senior areas. Mobile cameras are often mounted on vans, can have an operator inside and are able to move to various locations. Mobile cameras can be deployed easily and are able to address a greater number of areas with safety concerns, providing a more generalized deterrent effect. Mobile speed enforcement also provides an added benefit that drivers are less likely to know precisely where and when speed cameras are operating and as a result, are less likely to take alternate routes or slow down as they approach a camera.

Provincial and Legislative Requirements

In order to expand automated enforcement beyond red light cameras, formal support from the Province of Ontario would be required to amend provincial laws to allow municipalities to use automated speed enforcement. As per Council direction, the City approached the province of Ontario on May 26, 2015 requesting a ministry representative to join a committee to review options for expanding automated enforcement technology. The Province responded on September 16, 2015 and indicated in particular, that while they appreciate the City's support for the use of automated enforcement technology; they are not considering the reintroduction of automated speed enforcement or the allowance of other automated enforcement technologies at this time. It is therefore recommended that Transportation Services, along with support from other municipalities in Ontario, continue to advocate the Province of Ontario for the use of automated speed enforcement and the potential benefits associated with such an initiative.

Implementation Plan

Assuming the Province of Ontario allows the reintroduction of automated speed enforcement, the following steps would need to be taken in order to implement a "photo radar" program in the City of Toronto:

- Create and issue for tender a Request for Proposal (RFP) for the installation, maintenance and support of automated speed enforcement equipment and technology (1 – 1.5 years).
- Hire and train additional staff (1 year).
- Acquire or build a processing centre facility (0.5 – 2 years).
- Expand Court Services to include additional court rooms, officers, prosecutors, Justice of the Peace, administrative staff etc. (1 – 2 years).
- Create and review process for program operation (0.5 year).
- Legal review of program (0.5 year).
- Create warrants and guidelines for the selection of targeted enforcement sites (0.5 year).
- Conduct traffic studies of potential enforcement sites (0.5 year)

If approval is granted from the Ministry of Transportation to reintroduce automated speed enforcement and given that some of the above steps can be undertaken concurrently, the estimated timeline to implement the program would be approximately 2-3 years.

Financial Impacts:

There is not enough information at this time to assess the costs related to an automated speed enforcement program given the involvement and requirements of the provincial government and the expected increase in demand for Court Services. The projected costs that would be associated with an automated speed enforcement program are not parallel in comparison to the City's current red light camera program. A higher number of violations are expected in relation to the red light camera program and in order to facilitate the larger number of images that require processing, additional staff will need to be appointed, hired and trained. Furthermore, additional court resources will be required including court room space, prosecutors, Justice of the Peace, administrative staff etc. to accommodate the anticipated increase in the number of trials.

Conclusions:

- There is very little literature available on automated enforcement of stop sign and turning violations and the effectiveness of these particular strategies. In consultation with the Ministry of the Attorney General of Ontario, a number of difficulties associated with using these types of automated enforcement were identified which would make it very easy to challenge in court. Therefore, there is a high possibility that automated enforcement of stop sign and turning violations may not be economically feasible.

- Although automated speed enforcement presents similar challenges as stop sign and turning violations with respect to support from the Ministry of Transportation of Ontario, "photo radar" was found to be an effective countermeasure for improving road safety in targeted areas such as school zones and construction zones.

- Automated speed enforcement was found to be an effective strategy in a number of other jurisdictions in reducing vehicle speeds, reducing collisions resulting in fatalities or serious injuries and reducing the overall number of collisions.

- Mobile speed enforcement can be deployed to address a greater number of areas with safety concerns and provide a more general deterrent effect. It also provides an added benefit that drivers are less likely to know precisely where and when speed cameras are operating and as a result, are less likely to take alternate routes or slow down as they approach a camera.

- In order to move forward with the expansion of automated speed enforcement, formal support from the Province of Ontario would be required to amend provincial laws to allow municipalities to use automated speed enforcement. Given the Province's past experience with "photo radar" and its effectiveness in other jurisdictions, the Province is more likely to support this type of automated enforcement rather than other types such as stop sign violations and turn prohibitions. However, staff will continue to pursue these other emerging types of automated enforcement technologies with the Province, but recommend focusing on automated speed enforcement in the immediate future.

- As part of the RSP, Transportation Services will continue to work with other Ontario municipalities to advocate the Province for support in reintroducing automated speed enforcement. The automated enforcement of speed limits can increase compliance with posted speed limits through fines and may reduce the risk of fatal and serious injury resulting from a collision.

- Transportation Services recommends that approval be sought from the Province to pilot the use of "photo radar" in school zones and construction zones. Considerations for pilot locations will be given to school zones with confirmed speeding issues and long-term construction zones. In addition, mobile "photo radar" devices rather than stationary installations could be used to rotate the pilot to various locations at the City's discretion and allow staff to evaluate performance and effectiveness in different scenarios and conditions.

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