

# Automated Traffic Enforcement Operational Effectiveness Review





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## Travelling speed and pedestrian survival



Hit at 40km per hour 25% of pedestrians will die



Hit at 50km per hour 55% of pedestrians will die



Hit at 60km per hour 85% of pedestrians will die



Hit at 70km per hour 95% of pedestrians will die



Hit at 80km per hour 98% of pedestrians will die



Hit at 90km per hour 100% of pedestrians will die

## INTRODUCTION

Automated Traffic Enforcement (ATE) is but one tool in the tool box for creating safer roads. Additional tools include other enforcement means, engineering, public education, and automobile design to name a few.

The first step is engineering. Roads are built safe, but as traffic increases or flows change they are redesigned and are constantly improved. One of the key elements of engineering is setting speed limits and deciding between lights, stop signs, yield signs, or leaving an intersection uncontrolled. These designs are based on motorists and pedestrians obeying legislation which means people have to follow the rules.

The second step is education. There are many sources of education such as insurance companies, automobile manufactures, government agencies, schools, parents, police agencies, and municipalities. This is an area where ATE belongs, “Automatic Traffic Education” versus “Automatic Traffic Enforcement” as it is properly known. ATE is a user pay system of directly targeting violators with information and education about their driving habits. It does not include points that would lead to a suspension, it simply advises the registered owner of the vehicle of what is happening with their vehicle. When parents, friends, spouses, etc. learn how their vehicle is being driven, they can then have the needed conversation with the driver. The person they speak to may even be themselves.

After education is enforcement actions. Enforcement actions may include fines and demerit points which are applied to a driver’s record. Once a driver reaches a certain level of demerits they are notified in writing of their poor driving habits and the potential of a licence suspension. Sometimes the infractions are so serious that a suspension is immediate. Drivers may also face driving prohibitions. These are designed to remove the most dangerous non-compliant drivers from the road. When these prohibitions or suspensions are ignored the police or peace officers will arrest the driver. Courts may assign incarceration to protect the public. As more people drive within the rules these most dangerous drivers “stand out” and are easier to identify on the road.

Finally we have automobile safety standards. When the driving habits exceed the design standards of the road (the rules of the road are not followed), there will be collisions. This is the final engineered protection. The Motor Vehicle Safety Act (Federal) is designed to ensure that vehicles used on Canadian roads are not only safe but also can provide a high level of survival in collisions. This Act not only protects people from themselves, but also the poor driving habits of others. Collision safety features in automobiles are extremely important, but only necessary when the rules of the road are not followed.



## Executive Summary

This Operational Effectiveness Review examined several areas of Automated Traffic Enforcement (ATE) and does make several recommendations. However the main question is; “is ATE effective at reducing collisions and personal injury”? The answer is a resounding yes! Could the system be improved? The answer to this question is also yes.

Speeding and failing to stop severely injures and kills motorists and pedestrians. Just 5 km/h over the speed limit (60 vs 65) can make the difference between a minor injury and death. There is ample research to support this. For that matter alone enforcement of speeding at any level that reduces speeding is a must to any safe community. ATE does this at a far more effective rate than any other form of enforcement.

ATE is regulated by Alberta Justice and Solicitor General (AJSG). In early 2017 AJSG audited ATE in Spruce Grove and identified two recommendations and both have been addressed. ATE is a tool in the police tool box for creating safer roads by targeting violations related to stopping (red lights and stop signs) and speed. The criteria related to where the cameras can be placed and under what circumstances, is governed also by AJSG and none of Spruce Grove’s locations violated these rules.

This report recommends several improvements to the ATE system in use as well as recommending a formal tendering process in 2018, as the current contract expires in 2019. Those improvements include greater public awareness, improved access to data, new site selection criteria be developed, tracking of uniformed enforcement hours versus ATE, and 50/50 ratio of covert versus overt. It must be stressed that these recommendations are offered to improve and enhance a system that has successfully worked to reduce collisions and severity of collisions in Spruce Grove.

The committee that reviewed ATE included: Fire Chief Robert Kosterman, Deputy Fire Chief (Safe City) Tim Vandenbrink, RCMP S/Sgt. Lorne Adamitz, Jennifer Hetherington Manager of Corporate Communications, Joel DeBlock Financial Planning Supervisor, and Darren Flynn Project Lead-Technical Services. In addition to the above meetings were attended with Alberta Justice Solicitor General and three of the review members attended a presentation by Dr. Karim Al-Basyouny, Assistant Professor and Urban Traffic Research Chair, Department of Civil and Environmental Engineering U of A.





## ATE in Spruce Grove

In January of 2009 City council was presented with a safety initiative to improve intersection safety in Spruce Grove. This was a bold undertaking that followed the “Road Safety Vision 2010” to reduce collisions by 20% prior to the end of 2010. This was a lofty goal to be delivered in a very short period of time. The initiative was very time consuming for staff, but the staff involved truly believed in the cause.

The goal to reduce collisions was seen by some as too lofty. Other Canadian municipalities had already been working on this same goal since 2000. However with the use of ATE the goal was met and the program was a success. ATE had proven itself as a valuable educational tool and many of the components put in place at that time were not yet used in any other Alberta jurisdiction.

Collisions, although reduced, were still occurring after 2010. ATE has remained a major tool in the campaign to eliminate collisions and the severity of collisions. ATE is currently used to identify speed, red light, and stop sign violations.

### Speed Reduction.

In the Protective Services 2015 report for years 2012 to 2015, it was identified that the number of speeding violations as monitored by both the fixed and mobile ATE



systems, has steadily been reducing since 2012. The ATE system not only “educates”, but also provides a level of data to monitor the success of these behavioral changing initiatives.

### Relation of Speed to Severity of Injury.

*Using data from actual road crashes, scientists at the University of Adelaide estimated the relative risk of a car becoming involved in a casualty crash—a car crash in which people are killed or hospitalised—for cars travelling at or above 60 km/h. They found that the risk approximately doubled for every 5 km/h above 60 km/h. Thus, a car travelling at 65 km/h was twice as likely to be involved in a casualty crash as one travelling at 60 km/h. For a car travelling at 70 km/h the risk increased fourfold. For speeds below 60 km/h the likelihood of a fatal crash can be expected to be correspondingly reduced. <sup>1</sup>*

<sup>1</sup> <http://www.nova.org.au/technology-future/physics-speeding-cars>

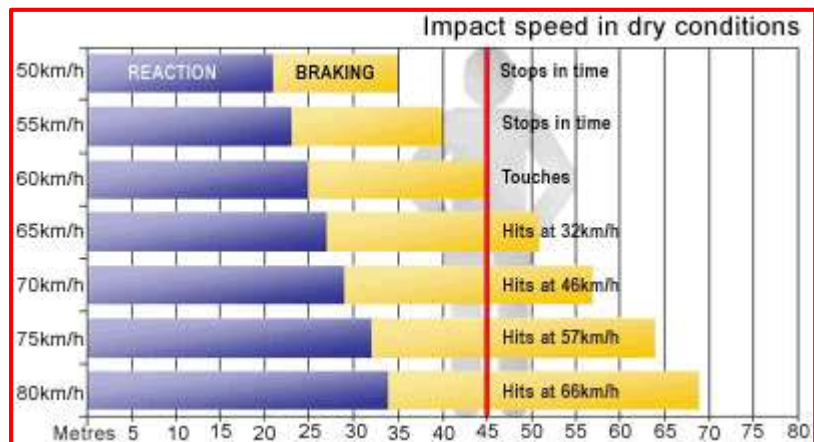
Alberta legislation sets the maximum speed in urban areas at 50 km/h unless posted otherwise. This is important to note because if a motorist does not know the speed limit for any given road in Spruce Grove then the maximum speed they should travel is 50 km/h. Spruce Grove's main roadways are posted at 60 km/h. A vehicle traveling at 60 km/h when the driver sees a pedestrian on the street 45 meters away with reaction time and stopping time may only bump a pedestrian. While a vehicle traveling at 65 km/h may kill that same pedestrian. The effect of speed at just a few kilometres above 60 km/h has been well documented. Speed Kills!

## Tolerances

Legally there are no tolerances when it comes to speeding or stopping. Tolerances that may exist via policy must be approved by the police of jurisdiction, which in the case of Spruce Grove is the RCMP, and for legal reasons may not be disclosed. The Solicitor General's Office will not take a position on tolerances, to do so would establish a new maximum speed above what road designers have established.

The courts may review any ticket issued for reasonableness given all the circumstances around the ticket. This makes the use of tolerances a fluid process where different tolerances may exist for different road conditions and hazards present. Again these tolerances if in place, are at the sole discretion of the RCMP and may be challenged within the courts.

When one discusses tolerances it is often in relation to speed. What if we asked the question differently? What amount of injury to a pedestrian, including a child, is acceptable? Permanent lifetime disability, broken legs and ribs with a punctured lung, or maybe just broken bones, which of these are an acceptable tolerance?



## Audits

Spruce Grove is regularly audited for its ATE program. AJSG is the governing body responsible for ATE and has already completed the City's audit for 2017. The 2017 audit contained two recommendations and three opportunities for improvement.

Recommendations were:

1. “That the police of jurisdiction become familiar with its responsibilities as outlined in the *Automated Traffic Enforcement Guidelines* and the *Automated Traffic Enforcement Training Guidelines*.”

This recommendation is understandable as the RCMP detachment had a change of command just prior to the audit and also the constable who liaised with ATE retired at the same time. The RCMP have attended training sessions with AJSG and this recommendation has been met.

2. “That the police of jurisdiction concludes the approval process for all ATE location’s site assessments.”

The RCMP have reviewed all records and cannot find any that were not approved by them prior to use. It is believed that this is a standard recommendation in all audits. However the RCMP are re-reviewing all sites.

Opportunities for improvement included:

1. “It is suggested that the City and the RCMP work together to lower dependency of ATE as traffic enforcement for speed, red light/stop sign infractions sits at 90%”

There are several reasons for the decrease in traditional enforcement in these areas including staff shortages, reprioritizing of officers (example arson patrols). There is also the question of time versus tickets. This report contains a recommendation in this area.

2. “That the municipality create a policy regarding the receipt of public complaints brought against the City’s ATE Program. In addition, the City is encouraged to maintain statistics on the annual number of public complaints received specific to its specific ATE Program (not against an operator).

This is being worked on and a Standard Operating Policy will be put in place to specifically deal with ATE complaints as well as a singular tracking system within the City’s records management system.

3. “That the police service of jurisdiction maintains conventional traffic violation statistics so that annual comparisons may be made between the issuance of ATE violation tickets and conventional violations tickets issued.”

The City is currently working with the RCMP who are very receptive to making improvements in both RCMP and City systems to ensure compliance.

## Legal Authority

ATE is regulated by Alberta Justice and the Solicitor General via the Automated Traffic Enforcement Technology Guidelines. Although this documents title includes the word “guidelines”, this document is in fact legislated via the Police Act.

This document is a public document and may be found at [https://www.solgps.alberta.ca/programs\\_and\\_services/public\\_security/law\\_enforcement\\_oversight/Publications/ATE%20Technology%20Guidelines%20Guidelines%20\(Sept%202014\).pdf](https://www.solgps.alberta.ca/programs_and_services/public_security/law_enforcement_oversight/Publications/ATE%20Technology%20Guidelines%20Guidelines%20(Sept%202014).pdf)

The document states: “Police services in Alberta not only have the primary responsibility for traffic safety enforcement but also have the expertise to determine where automated traffic enforcement technology can best be deployed to compliment (sic) existing traffic safety initiatives.” In Spruce Grove the police service has been satisfied that the expertise exists within the city to not only implement ATE, but also to determine its most effective usage. Although the police have authorized ATE usage by the City’s Safe City department that does not mean they have relinquished their legal responsibility. Under “C. Guidelines” one finds the following statement.

*Regardless of which option is selected or in place, responsibility for the operation of the Automated Traffic Enforcement Program shall rest with the police service of jurisdiction, which will provide direction in the following areas by:*

- *Ensuring enforcement is conducted in accordance with local Traffic Safety Plans*
- *Directing at which sites automated traffic enforcement technology is to be used, and*
- *Setting periods of operation and duration of enforcement*

This is one of the most important clauses within this document. It is the reason why, even though the authority to have an ATE program has been delegated to the City, the RCMP participate in every ATE audit, review and have final say on every ATE location used, and the RCMP sit as a member of the Safe City Team.

## Site Selection

This is an area where the ATE program in Spruce Grove could improve. A recommendation to that effect is included in the recommendations of this review. All sites currently used have been approved by the RCMP and as part of this review the RCMP reapproved all locations. Although these locations meet all the criteria set out in the legislation there is no clear documented process for how the sites are suggested. The sites are suggested based on feedback from fire response records, complaints received from the general public, individual officer observations, and data review.

However, as stated above there is a lack of documented reasons why these sites are initially suggested and prioritized.

## **Operator Requirements**

Currently the operators of the ATE system are all appointed as Community Peace Officers under the City of Spruce Grove's "authorization to employ peace officers". This authorization is issued by the Ministry of Justice and Solicitor General. Each application is individually reviewed and submitted by the City. The application is then reviewed by the ministry and approved or denied. Only operators with this authorization are used by the City. These operators are then used by a service contractor to provide ATE services within Spruce Grove.

The operators must also adhere to strict training standards that are confirmed every time a ticket is challenged in the courts. As part of the normal prosecutor review of the charge, the operators' credentials are reviewed by the prosecutor and then subject to defence challenge in court.

The last note on operators is complaint review. As these operators are in fact peace officers appointed under the City's authorization, any complaint regarding an officer's conduct in regards to the "Code of Conduct" as established by city council is investigated and reviewed as per the City's "Community Peace Officer Public Complaints Process". This process includes a review of the investigation and outcomes by Alberta Justice and Solicitor General. AJSG may take over the investigation, reopen the investigation, or after review, accept the findings. The complainant also has the right to appeal the outcome. In that case a review will be done by Alberta Justice and Solicitor General's Office.

## **Public Awareness**

A key element of a successful program includes public awareness. Although Spruce Grove has been and is in full compliance of the requirements for public awareness this is an area that could be improved. One would be hard pressed to find anyone who drives in Spruce Grove that is not aware of ATE or that it is used in Spruce Grove.

In addition to ample signage Spruce Grove uses its website, and the local newspaper to advise motorists of ATE approved locations. The ongoing effect on behaviour at these locations is not regularly released to the public and media. Some members of the public only focus on the revenue it generates referring to ATE as a "cash cow" instead of the user pay safety education system that it is.

## **Monitoring and Data**

Monitoring and data storage is done in accordance with legislation and confirmed during annual audits. Spruce Grove uses various methods including ATE to collect data that can be used for planning road changes, and modifying education and enforcement campaigns. The data collected has not been specifically targeted to meet the requirements of engineering but instead has been targeted at the requirements of Alberta Justice and Solicitor General.

Data and monitoring collection can be improved, as such a data collection recommendation is included in this report.

## **Cost of System**

Currently the system operates at no cost to the City. It is contracted to a service provider who pays all the costs associated with the system, including capital costs, data transfer costs, labour costs, office costs, accounting costs, etc.

The current contractor was chosen after a request for proposals was issued. The selected bidders had to make several presentations related to not only cost but also the intrusiveness of the system. Finance, Planning and Infrastructure, Protective Services and the General Manager of Community and Protective Services all participated in the selection of the service provider. In addition to the RFP, Protective Services also analysed the cost of bringing ATE “in house” to be operated directly by Safe City. The most cost effective option was the current provider.

The current contract expires September 2019. Any change of contractor or service provider option should be made at least one year in advance of the contract expiry date. A recommendation for this section can be found in the recommendations.

## **Uniformed Enforcement versus ATE**

The question of uniformed enforcement versus ATE is one that is often asked. First, one should break ATE into two separate categories; staffed and non-staffed.

Non-staffed ATE is the permanently located Red Light/Speed on Green systems that are attached to individual intersections and a single direction. Each one of these systems operates 24/7 and have proven very successful in slowing traffic down by eliminating the practice of speeding up to “beat the light” and also ensuring vehicles stop at red lights. A random review of these locations over the last three years found the location with the highest number of violations had four infractions in a thirty day period. That’s four occasions in a month, with 24/7 monitoring, someone failed to stop at the red light. The cost of this same enforcement with uniformed officers would be a minimum of five fulltime officers per location. Uniformed equivalency is cost prohibitive.

Staffed ATE are the locations where mobile units park with a peace officer/operator present in the vehicle watching traffic and directly targeting violators. This system is able to process violators much faster than uniformed enforcement but more importantly operates in a much safer fashion. That said, total traffic enforcement hours by RCMP and Enforcement Services within Spruce Grove should approximately be equal to total staffed ATE hours. This provides a good balance.

### **Covert versus Overt**

No single area of ATE seems to get as much attention as the use of covert versus overt operations. The intent of overt is to raise awareness that ATE is in use while covert is intended to change behaviours because one never knows where it is located or if it is in use.

The most frequent complaints regarding overt is the vehicle is parked along the roadway or on the boulevard in a manner that is not permitted by other motorists, or it is obstructing signage including speed limit signs. We have no record of any incident occurring due to the location of the vehicles. Furthermore, blocked signage is not a valid argument as the maximum speed limit in any urban area is 50 km/h, unless posted otherwise. Therefore if one cannot see the 60 km/h sign they should not be exceeding 50 km/h.

Covert usage is typically behind an obstruction such as trees or a hidden camera system. In either case, an operator is present and watching in addition to the camera. Both of these covert systems are considered staffed. The biggest complaint is that this system is “sneaky”. There is value to these systems as first, they respect the concerns raised in overt and second, they encourage drivers to change behaviors all the time versus just when they see the ATE vehicle.

At a 2017 meeting with the AJSG and RCMP from across the province it was recommended that the split between overt and covert be 50/50.

### **Public Opinion**

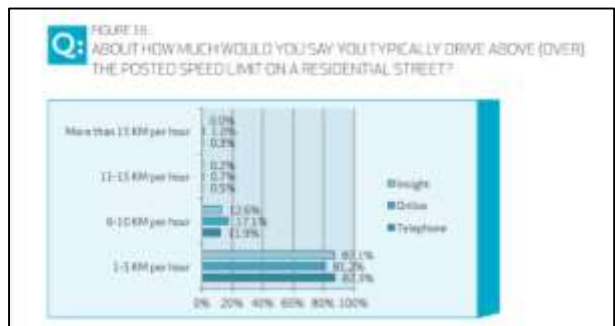
Often people are drawn to social media posts as a measure of public opinion. Although there have been studies of the use of social media there is no consensus on whether or not this is an accurate gauge of public opinion. However the consensus is, for a true measure of public opinion one needs to rely on scientific surveys or polls. *The Edmonton and Area Traffic Safety Culture Survey (2016)* is one such proper survey or poll. It noted some interesting findings related to ATE.

When asked:

- On a residential street how many kilometres above the posted speed limit do you personally feel it is okay to drive?
  - 66.2% of telephone respondents stated 0, another 27.7% stated 5 or less.
- On a freeway, how many kilometers above the posted speed limit do you personally feel it is okay to drive?
  - 74.2% of telephone respondents stated less than 11 km/h.
- When respondents were asked what would make them more likely to follow the speed limit?
  - 61.4% said causing a collision.
  - 67% said more police
  - 60.2% said Photo Radar



These results show the majority of public are aware of the impacts of speeding on safety. For example 93.9% of telephone respondents felt that just 6 km/h over residential speed limits was too much. When the question was changed to freeways the response was 74.2% stating that 11 km/h over the posted limit was too much.



It is interesting that only 0.8% of telephone respondents stated that in the last 30 days they drove more than 10 km/h over the posted speed limit in a residential area.

## Court Rulings

As part of this effectiveness review a request was made to review the past ATE ticket outcomes and their ensuing court cases. Essentially this required a review of every charge that went to court. This is seen as a measure of the accuracy and legitimacy of the system in use by Spruce Grove. The outcomes received were so positive with regards to the ATE system that a request was made to look at them again to ensure accuracy. They were identified as accurate.

The last 59,969 issued tickets were reviewed and of those 503 were set for trial representing 0.84% of tickets. The breakdown of outcomes of these 503 tickets.



- 21 are currently adjourned for new trial date.
- 135 were convicted in absence.
- 11 were dismissed before trial.
- 20 were found guilty in trial.
- 133 changed their plea to guilty before trial.
- 124 fully paid their fine before trial.
- 57 were withdrawn prior to trial.
- 1 was found not guilty.
- 1 trail was deleted by court house.

Explanations of terms:

- Adjourned means the matter has not been resolved and the matter is still before the court.
- Convicted in Absence means that a trial was held without the accused present. The crown must still present its evidence, and the commissioner rules on that evidence.
- Dismissed means a commissioner reviewed the file and decided not to take the matter to trial. This is usually done when there is a lack of evidence.
- Guilty plea means the accused decided to change their plea to guilty before the start of the trial. This is usually an indication of a pleas bargain.
- Paid their fine means that before the trial the charged party simply decided to pay their fine. As they have not yet been found guilty there is no fine registered against them at this point and the reasons for their decision to pay the fine are unknown.
- Withdrawn means that the prosecutor dropped the charges. There can be several reasons for this: circumstances of the matter, lack of evidence, personal workload, stolen license plate, etc.
- Found not guilty means that there was a trial, all evidence was presented, and the crown failed to prove guilt.
- Deleted by Court House means the court house removed reference to this matter.

## **RECOMMENDATIONS:**

### **Audits**

Although Spruce Grove passed its 2017 audit there were two recommendations and three “opportunities for improvement” identified. It is recommended that all five of these items be actioned and most had been completed at the time of this report.

### **Public Awareness**

In the area of public awareness it is recommended that the city explore developing a web based system where each ATE location is not only identified, but statistics related to the use of the location are available for public viewing. This would help to educate the public to the reasons why the site is used and the effect or behavioural change that is experienced at each location.

### **Monitoring and Data**

It is recommended that Safe City meet with Engineering and identify the exact traffic data that Engineering requires from the system. Once this is identified, work towards contract modifications to ensure said data is provided.

### **Cost of System**

It is recommended that in the 2018-2020 Corporate Plan an initiative be added for a contracted cost analysis of bringing ATE in house be completed prior to summer 2018. This would then provide an in house option to be compared with any RFP options received in the fall of 2018.

### **Site Selection**

It is recommended that a formal review process be created for the selection of sites to be submitted to the RCMP for approval. This should include a scoring system based on frequency of collisions, severity of incidents, and number of violations.

### **Uniformed Enforcement versus ATE**

In order to ensure that equal hours of staffed ATE are relative to uniformed enforcement, uniformed enforcement should be tracked and recorded. A monthly report of these hours should be provided to the Protective Services Team for review.

## **Covert versus Overt**

As covert is less intrusive to the roadway, does not distract drivers like the overt system, and is more likely to change drivers' behaviours it is recommended that the use of covert be expanded and a measure of 50/50 be used between covert and overt operations. If the covert is being used more the overt should become even more obvious. The 50/50 ratio between these two statistics should be monitored for effectiveness.