

The City of
Spruce
Grove
Enforcement
Services

2019-
2022

Provided to the City of Spruce Grove's Community Peace Officers, this plan outlines current and past statistics of traffic enforcement, in an effort to prevent and reduce traffic related injuries and deaths.

Traffic
Safety
Plan

INTRODUCTION

The City of Spruce Grove is a thriving city, located 9 km west of Edmonton and adjacent to the Town of Stony Plain. It encompasses an area of approximately 32.2 square kilometers. Through the years, the community has evolved from having a strong agricultural focus to that of a self-contained city, and has experienced rapid growth. In 2001 its population was 15,069, in 2008 it was 19,496 and in 2018 it has grown to 35,766; this equates to a population density of 1104.9 people per square kilometer. The average rate of growth exceeds 5% per year, and represents approximately twice the annual rate of growth compared to that of the Edmonton Metropolitan Region¹.

The city boasts a mix of industry, commerce and community living. The local business environment features everything from national retailers to local companies, who serve a trading populace of approximately 70,000. Spruce Grove not only functions as a service hub for the area, but is also a bedroom community for the greater Edmonton region. Spruce Grove offers a wide variety of residential neighbourhoods connected by walking trails, pathways and are in close proximity to parks, schools and medical centers.

The City of Spruce Grove has approximately 242 kilometers of roads and 70 kilometers of walking trails and pathways. It features 39 parks, 11 sports and recreational areas, 2 dog-off-leash parks, 14 schools and 13 churches. The philosophy of Spruce Grove's development plan is to create broad accessible streets and paths and to utilize technologies to facilitate the smooth flow of people, whether on foot, cycle, vehicle or other modes of transportation. As a consequence of infrastructure design planning, Spruce Grove has 2 defined school zones and 7 defined playground zones.

¹ City of Spruce Grove Recommended Corporate Plan 2019-2021, Page 8

TRAFFIC ENFORCEMENT PROFILE

The City contracts the RCMP to provide municipal police services. The RCMP also provide policing services for the Municipal District of Parkland County, the Town of Stony Plain, and two first nations communities. There is no dedicated RCMP traffic unit for the City of Spruce Grove; traffic enforcement by the RCMP is primarily conducted on a rotational basis by the RCMP Integrated Traffic Unit (ITU) and by local detachment members when time permits.

Traffic Enforcement is augmented with agreements by way of Memorandum of Understandings (MOUs) between the RCMP and the City of Spruce Grove, as well as a tri-municipal MOU between the enforcement services departments of the City of Spruce Grove, Town of Stony Plain and Municipal District of Parkland County. This allows for joint operations and initiatives.

The City of Spruce Grove Enforcement Services employs nine Community Peace Officers (CPO). An Inspector manages Enforcement Services, Safe City and the Automated Traffic Enforcement (ATE) program. Spruce Grove Enforcement Services personnel are divided into two watches, where each team is supervised by a Sergeant. Each watch is comprised of (3) three CPO I officers and (1) one CPO II officer. Only CPO I officers have authority to enforce moving traffic violations.

The CPOs fulfill several important roles within the community. Some of these roles include the enforcement of City bylaws, providing community education, working with and providing assistance to external agencies like the RCMP and Spruce Grove Fire Services. The CPOs enforce statutes beyond municipal bylaw and have authority to enforce numerous Provincial Statutes such as:

- The Traffic Safety Act
- The Environmental Protection and Enhancement Act
- The Gaming Liquor and Cannabis Act
- The Dangerous Dogs Act
- The Innkeepers Act
- The Provincial Offences Procedure Act
- The Petty Trespass Act
- The Trespass to Premises Act
- The Tobacco and Smoking Reduction Act
- The Animal Protection Act
- The Stray Animals Act

The hours of operation for Spruce Grove Enforcement Services are normally between 0600 to 2200 hours daily. These hours are extended based on seasonal needs and availability. Very few calls for services are received beyond these hours and additionally, the types of investigations conducted beyond these hours frequently cross into the realm of Criminal Code offences, which CPOs do not currently have authority to investigate.

In addition to the CPOs, the City employs automated technologies commonly referred to as "photo radar" or "photo enforcement" to assist in the enforcement of speeding, red light infractions, and stop sign violations at various locations throughout the city. This system is reviewed on a regular basis to determine if it is meeting its goals of collision reduction and a reduction in severity of collisions.

ALIGNMENT WITH INTERNATIONAL, NATIONAL AND PROVINCIAL ROAD SAFETY STANDARDS

International

In 2008 a Summary Report, *Towards Zero: Ambitious Safety Targets and the Safe System Approach*, was released by an international group of safety experts representing 21 countries. The report recognized the Safe Systems approach to road safety and safety management.

The Safe Systems approach is based on a philosophy that responsibility is shared between road users, designers, and regulators. It reframes the way in which road safety is viewed and managed. The Safe Systems approach has 4 precepts: a) Safe Road Use; b) Safe Roads and Roadsides; c) Safe Speeds and d) Safe Vehicles. The goal of these tenets are to reduce the energy levels produced in a potential crash to stay below the human tolerance to violent forces. In short, the approach is to decrease serious injury and fatalities on the transport system.

Although a safe system requires alert, compliant, and responsible road users, it also acknowledges that humans are prone to making errors, and advocates for vehicles and roads which are forgiving of human error.

Canada is a signatory to international agreements utilizing the Safe Systems Approach. It includes the International Transport Forum, which is an intergovernmental organization comprised of 57 member countries. It acts as a think tank for transportation policy.

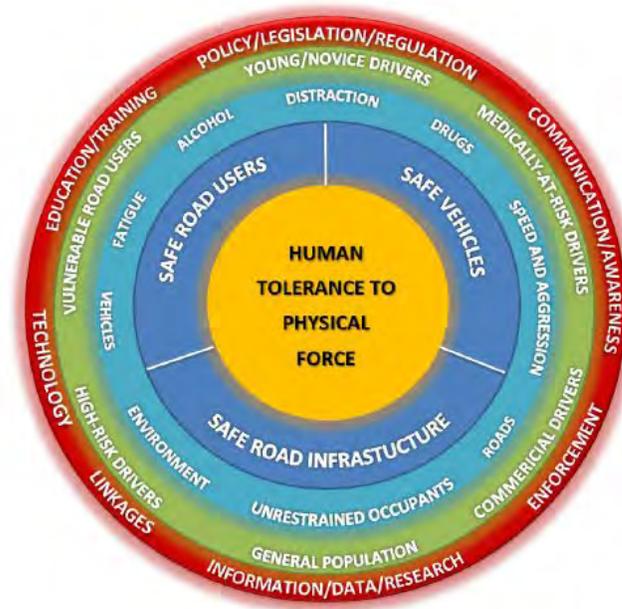


Figure 1.1 .Source: This diagram is Canadian version adapted from the 2009 WHO report on the Global Status on Road Safety which was in turn modified from work commissioned by the Government of Western Australia.]

National

Canada was one of the first countries in the world to adopt a national road safety strategy. 1996 marked the first efforts towards a national road safety strategy adopted by the Council of Ministers Responsible for Transportation and Highway Safety. It resulted in the 2001 *“Road Safety Vision”*. That initiative was able to decrease fatalities and serious injuries for Canadian road users by 10% and 16% respectively².

² CCMT (2015) *“Canada’s Road Safety Strategy 2015”*, Canadian Council of Motor Transport Administrators

Successive national road safety strategies were released and improved upon with the implementation and adoption of the “Road Safety Vision 2010” and Canada’s “Road Safety Strategy 2015”. The approach to road safety in the “Road Safety Strategy 2015” resulted in a shift from having established numerical targets to a more holistic concept of a Safe Systems approach. Canadian jurisdictions were encouraged to develop their own road safety plans and adopt interventions from an inventory of best practices to reduce fatalities and serious injuries. It however was dependent upon community needs, suitability, feasibility, and acceptability.

In January 2016, Canada’s fourth national road safety strategy was released; “Road Safety Strategy 2025 – Towards Zero: Having the safest roads in the world”. This strategy is formulated upon an international best practice first adopted by Sweden in 1997, known as “Vision Zero”. This approach has resulted in one of the lowest traffic related fatality rates in the world. The “Road Safety Strategy 2025” highlights the desire for Canadian jurisdictions to have the best road safety outcomes whether they be provincial or municipal.

Provincial

Alberta’s first Traffic Safety Plan was introduced in 2007. Since its inception the number of collisions, death and injuries to Alberta road users has declined. This initiative was succeeded by Alberta’s “Traffic Safety Plan 2015”. This plan was to build upon the formation of partnerships, and to adopt the Safe Systems approach to improve road safety. The core priorities of the 2015 strategy focused on education and training, communication, community initiatives, enforcement, research, legislation, new technologies, road engineering, and other infrastructure improvement.

Municipal

The City of Spruce Grove, is part of the Capital Region Intersection Safety Partnership (CRISP). CRISP is a multi-stakeholder group which includes in excess of 15 stakeholders. CRISP was formed in 2001, by a group of traffic safety stakeholders who shared a common interest to share resources and expertise, to implement on going collaborative and integrated safety research to reduce the severity and frequency of intersection collisions within the Capital Region.

CRISP not only sponsors Annual Forums on Road Safety, they also conduct commissioned research studies. Some of the research conducted includes:

2005	Evaluation of Run a Red and Stop Dead” Media Campaign	The project was to decrease the number of red light violations and reduce vehicle speeds at select intersections and to determine the effectiveness of communicating intersection safety messages at high collision intersections.
2005	Traffic Conflict & Driver Violation	A report comparing the traffic conflicts and driver violations at 3 intersections and changes when enforcement, education and engineering changes were applied.
2010	Cost of Collision Study	A study to quantify the costs of collisions to encourage and educate both the public and policy sectors.
2012	Safe Systems	Pilot project with Monash University Accident Research Centre; a study on the engineering application of the safe systems approach at intersections.
2012	Automated Enforcement & Detection of Driver Risk	A study to explore automated traffic enforcement data; a positive relationship was noted between automated enforcement and other traffic related behaviour.

2014	Traffic Safety Culture Report	A survey on how road users perceive themselves, themselves and their actions, the actions of others & the rules of the road.
2016	Traffic Safety Culture Report	Follow-up survey
2018	Cost of Collision Study	Updated study to quantify the costs of collisions to encourage and educate both the public and policy sectors.

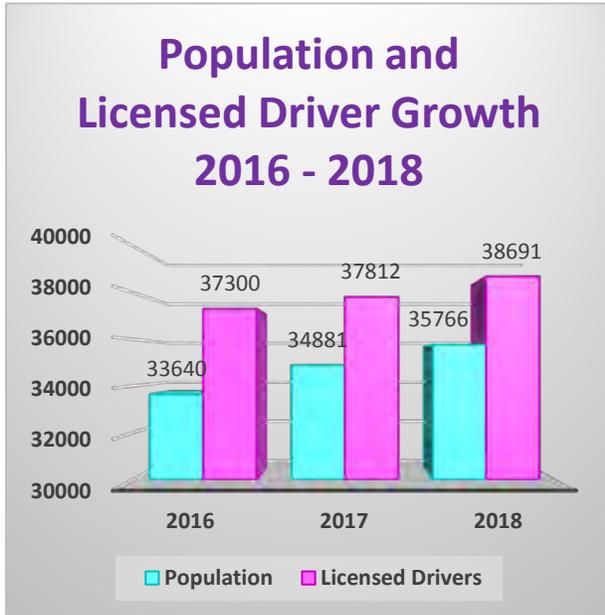
CRISP's four priorities focuses on Speed, Red Light Violations, Pedestrian Safety and High Crash Locations. CRISP utilizes a Safe Systems approach to address traffic safety issues, which is evidence based. It further focuses on the Vision Zero concept of the five E's of traffic safety: Engineering (Building in safety); Education (changing behaviour); Enforcement (automated and manned); Engagement (partnerships); and Evaluation (data analysis).

The formulation of the Spruce Grove Traffic Safety plan is in line with international, national, provincial and other municipal evidence based best practices. It further utilizes the concepts of the Safe Systems approach; "Vision Zero" and the five E's to traffic safety.

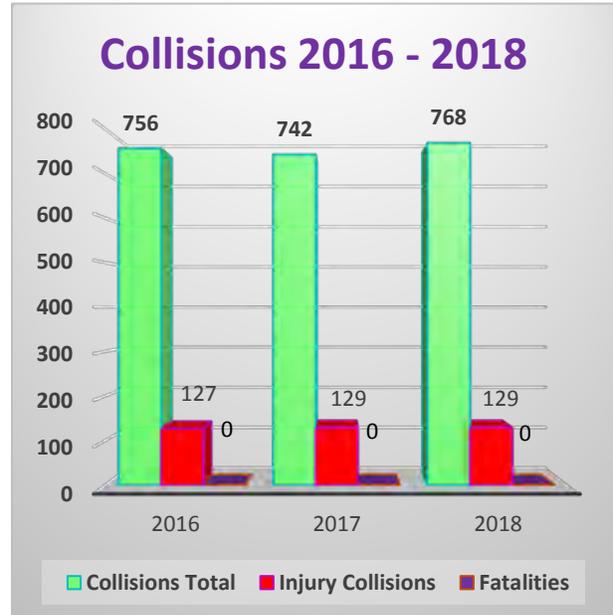
Spruce Grove Traffic Analysis

Collision Data

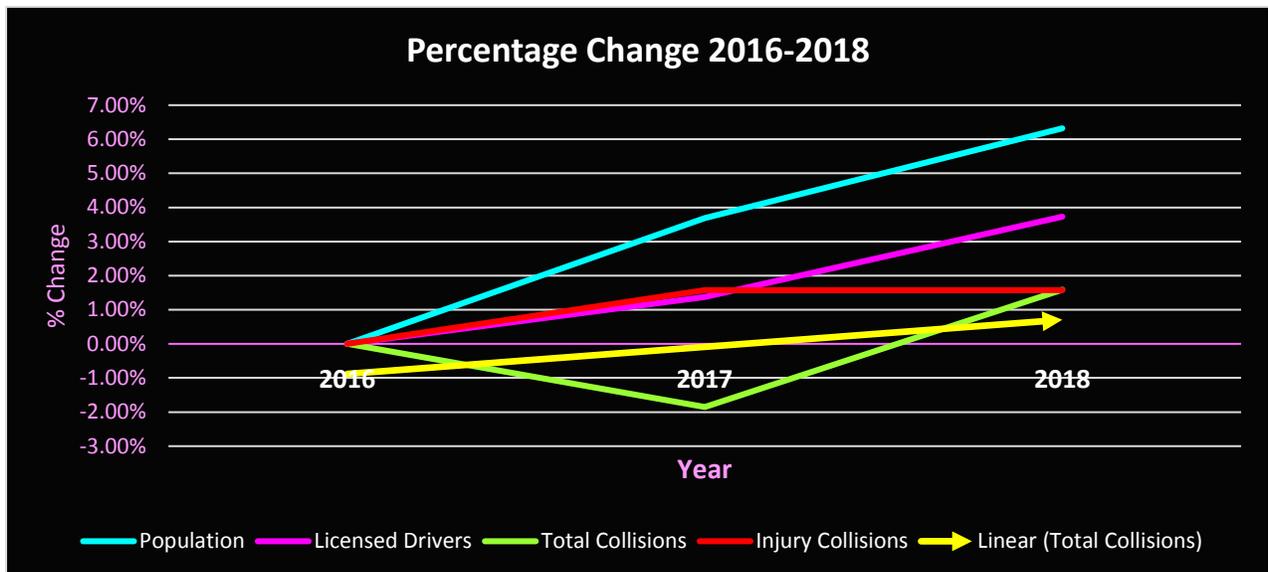
The population of Spruce Grove from 2016 to 2018 continued to increase, as did the number of licensed drivers. When this is compared against the number of total collisions, injury collisions, and fatalities, the trend line is nearly flat. The percent increase in total collisions of 1.6% and number of injury collisions of 1.57% is drastically less than the percent change noted in population increase of 6.32% or the licensed drivers increase of 3.73%.



Change in population & licensed drivers 2016-2018



Total number of collisions, injury collisions & fatalities



Population, Licensed Drivers, Total Collisions and Injury Collision Changes in Spruce Grove between 2016 and 2018 in percentages.

Highway 16A is a multi-lane roadway that transects Spruce Grove and is a major route within the City. The Traffic Safety Plan of 2016 prioritized efforts to reduce collisions on Highway 16A particularly at the intersections of Highway 16A and Jennifer Heil Way/Campsite Road, Highway 16A and Century Road, and Highway 16A and Calahoo Road/Golden Spike Road. In 2016 these intersection were noted to have the greatest number of collisions in the City.

Highway 16A from Pioneer Road to Jennifer Heil Way/Campsite Road was the roadway which accounted for the greatest number of collisions. Data from 2016 to 2018 illustrates the impact initiatives have had on collision reduction on Highway 16A.

Location / Year	2016	2017	2018
Collisions Hwy 16A - Pioneer Road to Jennifer Heil Way/Campsite Road	123 ³	140	96

The Safe Systems approach, and the concept of the five E's approach were successfully applied to Highway 16A in an effort to decrease the number of collisions. Efforts included modifying intersections and signal lights, erecting speed display monitoring signs, conducting both automated traffic enforcement and CPO staffed traffic enforcement operations, which included joint operations with the RCMP. These efforts have resulted in a decrease in collisions at these intersections.

Location	Cross / Intersection	Collisions 2016 ⁶	Collisions 2017	Collisions 2018	Total
Hwy 16A	Jenn Heil Way / Campsite Rd	41	29	25	95
Hwy 16A	Century Rd	35	31	26	92
Hwy 16A	Calahoo Rd	31	23	9	63
Hwy 16A	Nelson Dr / Westgrove Dr	16	18	17	51

City of Spruce Grove intersections with the most collisions from 2016 to 2018 and their ranking.

The RCMP collision files for 2018 were examined in an effort to identify the types and manner of collisions that occurred. Although there are a number of factors that may be attributed to the causes for collisions, some general observations may be made.

Intersection collisions are defined as collisions at intersections whereby the primary cause for the collision may be attributed to a driver cutting across the path of another vehicle, or the collision occurred at an approximate right angle. The driver's behavior of these types of collisions is suggestive of a driver having failed to stop at a traffic control device, attempting to turn or cross when unsafe, as well as other causes.

Rear End collisions are defined as collisions where the primary impact was from the rear. The driver behavior in these types of collisions is indicative of the operator driving

³ Intersections with less than 10 collisions not reported in 2016

⁶ Intersections with less than 10 collisions not reported in 2016

without due care and attention, driving while distracted, following too close, traveling at excessive speeds, or other causes.

Vulnerable User collisions are defined as collisions where a vehicle impacted a pedestrian, or cyclist. The primary factors that contribute to these collisions include: drivers not stopping at cross walks, pedestrians not checking both ways before crossing, or cyclist errors.

Other Collisions were defined as collisions where an individual lost control of their vehicle and drove off the road, lost control of their vehicle and side swiped a parked vehicle, icy road conditions, or distracted by other factors such as children, bees or other unique factors. In short, where the cause of collision did not fit another category.

Parking Lot/Driveway collisions were defined as collisions that occurred on unnamed or non-recognized roadways. They include retail parking lots, private apartment parking lots, school parking lots or on private driveways where the vehicle did not enter a named roadway.

TYPE	Fatality	Injury	Property Damage Over \$2000	Property Damage Under \$2000
Total	0	129	564	75
Intersection	0	47	126	6
Rear Ended	0	43	106	6
Vulnerable User	0	10	2	1
Other	0	14	123	24
Parking Lot / Driveway	0	15	207	38

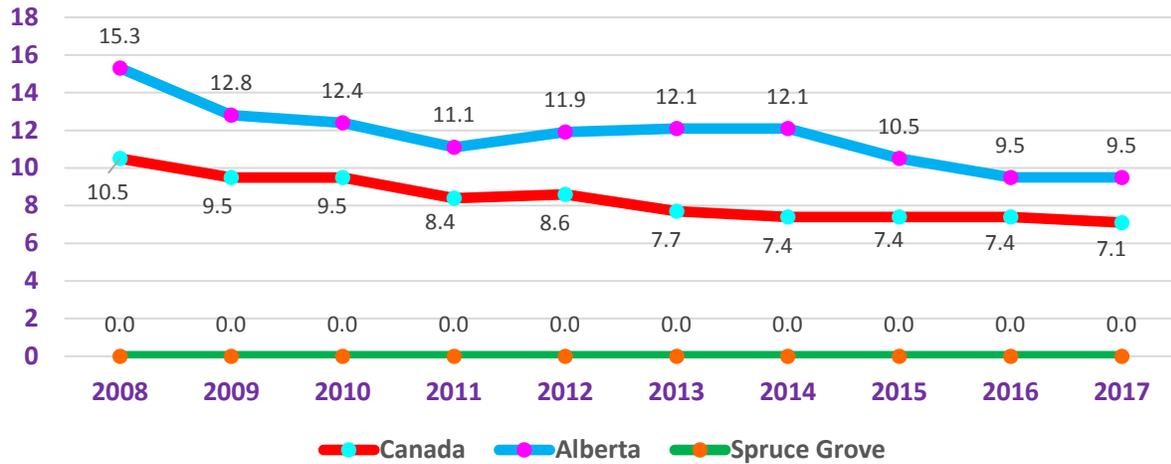
City of Spruce Grove 2018 collisions categorized.

Fatality Reduction

Spruce Grove has worked diligently in reducing fatal and serious injury collisions. National and Provincial changes in traffic safety approaches have reduced casualty rates, or the rate of individuals killed as a result of motor vehicle collisions. The casualty rate for Alberta as a whole has consistently been higher than that of the Canadian average⁵. It is therefore of note, and a testament to the efforts that Spruce Grove has made towards traffic safety, that this city has not recorded a fatality as a result of a motor vehicle collision since 2008. In fact this holds true, through 2018, a 10 year period.

⁵ Canadian Motor Vehicle Collision Statistics, Transport Canada, Government of Canada

Casualty (Fatality) Rates per 100,000 Licensed Drivers



Casualty Rates per 100,000 Licensed Drivers

Recognition Received

The City of Spruce Grove has received recognition for its efforts towards road safety. Allstate Insurance Canada conducts analysis of its company collision claims data in: Alberta, New Brunswick, Nova Scotia, Ontario and Quebec. It releases an annual report “Allstate Canada’s Safe Driving Study”. Allstate has been sharing its collision data with Canadians since 2008. The study ranks Canada’s safest cities for driving and identifies emerging trends. The rankings are based on the collision claims frequency per 100 vehicles.

Spruce Grove has seen a significant change in its rankings. In 2012 it was ranked in 21st position. Since that period of time remarkable results were noted. During the period 2012 to 2014 its rankings jumped 18 positions and it continued to rise.

ALLSTATE SAFE DRIVING STUDY – Safest Cities						
YEAR	2012	2013	2014	2015	2016	2017
RANKING	21	17	3	1	1	2
CLAIM FREQUENCY	5.00	4.23	4.02	3.43	3.60	3.79

Allstate Canada’s Safe Driving Study Claims frequency per 100 vehicles.

In the 2018 report, Allstate conducted a 10 year review of communities which exhibited the greatest decrease in claims frequency.⁶ Spruce Grove was identified as the community which had the greatest improvement, or decrease in claims frequency.

⁶ www.allstate.ca/webpages/docs/custcare/2018-allstate-safe-driving-study-results.pdf

Communities with the Greatest Decrease in Collision Claims Frequency

Community	Province	Decrease in Collision Claims Frequency (2008 vs. 2018)
Spruce Grove	AB	-27%
Lethbridge	AB	-18%
Hanmer	ON	-17%
Sherwood Park	AB	-9%
Brockville	ON	-5%

10th Annual Allstate Canada Safe Driving Study Results

SPEED REDUCTION

One of the primary precepts of the Safe Systems approach to road safety is safe speeds. This is due to the fact that appropriate speeds provide a safety buffer that reduces the likelihood of a crash, and decreases the kinetic energy released on people in a collision. Small differences in speed translate into significant differences in injury outcomes.

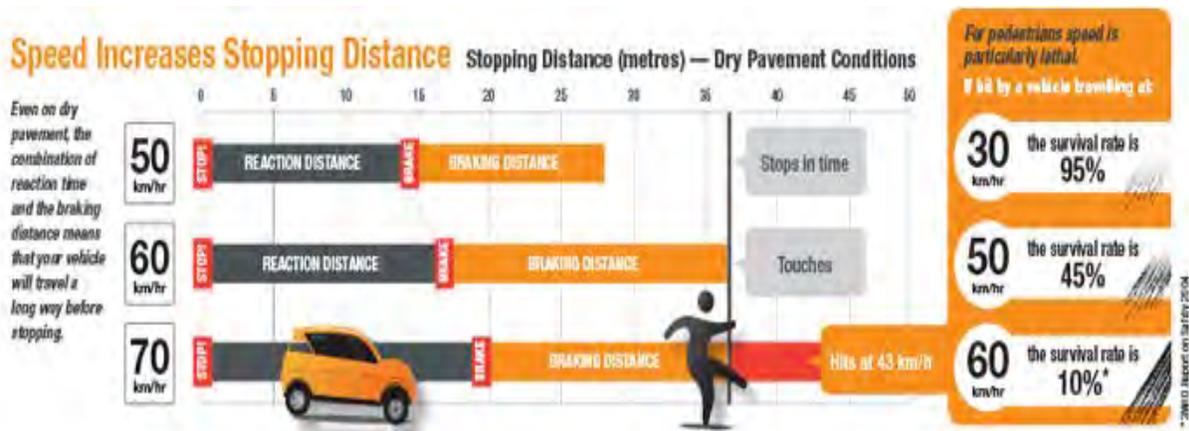
In cities where pedestrians or cyclists mix with vehicles, a difference in speed from 30 km/hr to 50 Km/hr substantially increases the fatality risk.

In 2014, British Columbia, increased speeds on over 1300 km of highway. Two separate studies assessed the impact of these speed increases. The studies revealed an average serious injury crash increase of slightly over 11%. As a consequence over half of the speed limit increases have since been reversed.⁷

Dr. Kloeden with the University of Adelaide released a study where he stated that *“in a 60 km/h speed limit area, the risk of involvement in a casualty crash doubles with each 5 km/h increase in travelling speed above 60 km/h.”*⁸ He recommended that tolerances allowed in the enforcement of the 60 km/hr speed limit be reduced or removed, and the level of enforcement of the 60 km/hr speed limit be increased.

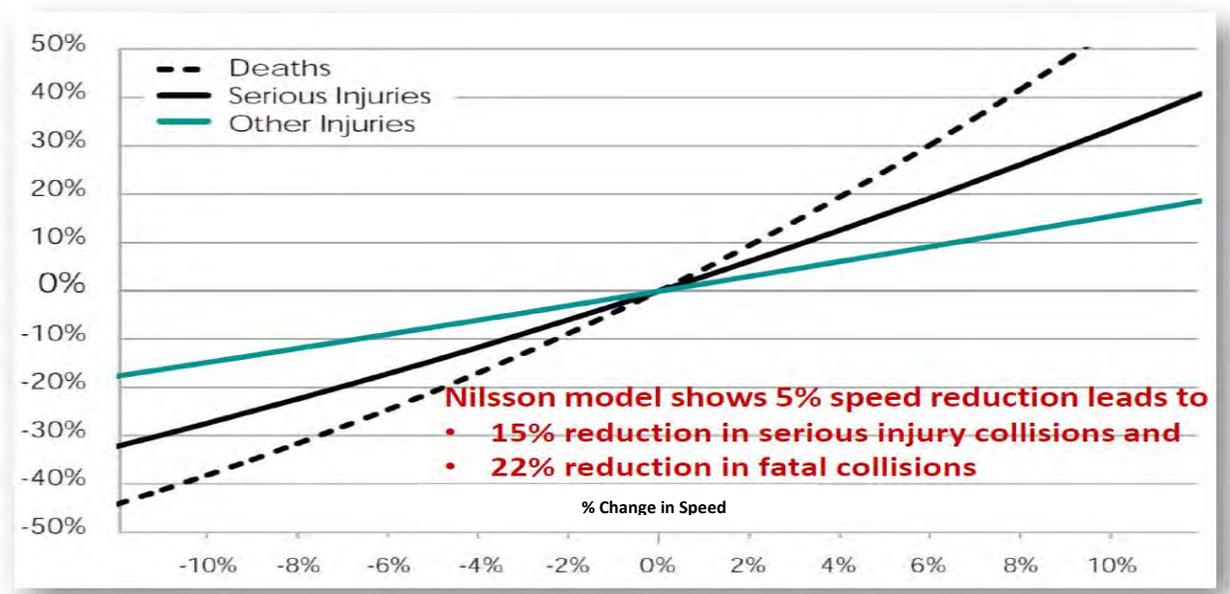
⁷ Transportation Talk – Winter 2018-2019 The Safe Systems Approach for Road Safety – Neil ARASON

⁸ KLOEDEN, CN et al. Traveling Speed and the Risk of Crash Involvement, Vol 1 – Findings, Nov. 1997



⁹Speed Relative to stopping distance graph and resultant injury outcomes.

Around the same time a Swedish researcher, Dr Göran Nilsson also supported findings that a reduction in speed had a marked impact on the reduction of serious injury and fatal collisions, as illustrated in the following diagram:



¹⁰NILSSON's model of speed reduction verses injury collisions.

⁹ CRISP Speeding Costs Us All Brochure – WHO Report to Road Safety 2014

¹⁰ Dr. Karim El-BASYOUNY, "Mobile Photo Enforcement, State of the Practice" University of Alberta 2017

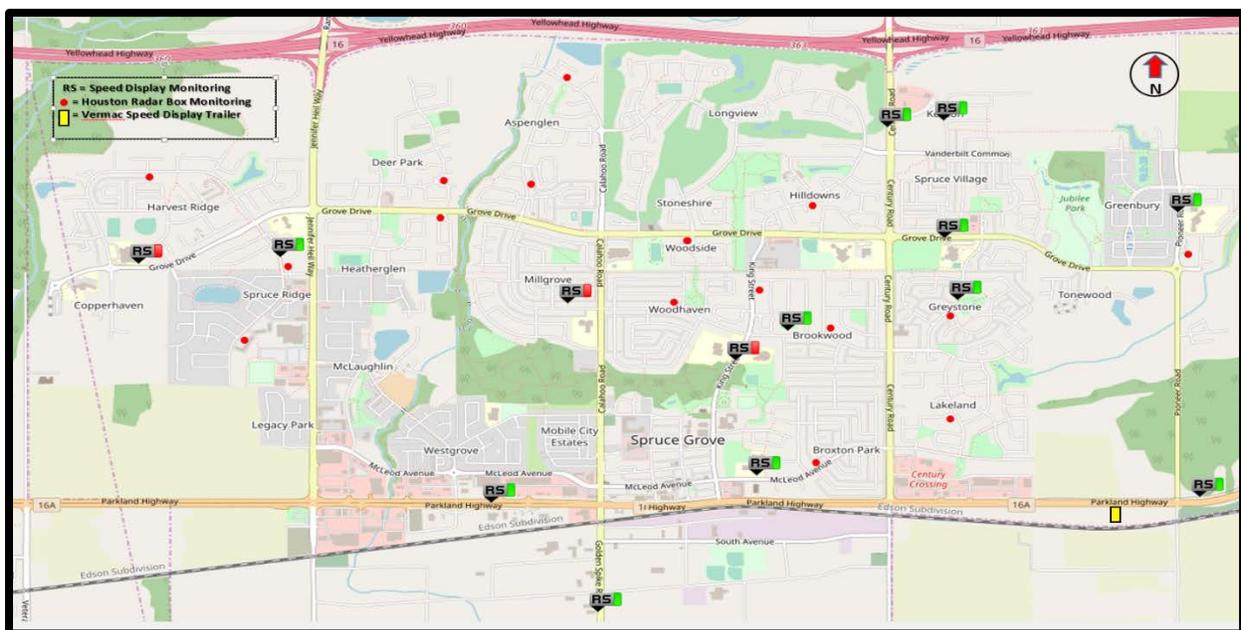
Speed Monitoring

The City of Spruce Grove has employed multiple methods to reduce the speeds within Spruce Grove and thereby to eliminate fatal and reduce serious injury collisions.

One method applied is the use of speed display monitoring signs. These signs track the vehicles speed and displays it back to the driver. This approach creates awareness in the driver of their driving behaviour and their compliance with the assigned speed limit. These devices further record data of the vehicles traveling on the roadway, which can be analyzed according to traffic volume, number of vehicles exceeding the speed limit, peak periods when excess speeds are most prevalent as well as other information. Spruce Grove has deployed 14 Speed Display monitoring signs throughout the city.



Furthermore, the City utilizes a mobile Ver-Mac speed display trailer which can be deployed in areas where driver behaviour speed modification is required, as well as Houston Radar boxes.



Houston Radar boxes are portable boxes that can be affixed to an existing pole near to the roadway being monitored. These devices record: the volume of vehicle traffic, the speed of moving vehicles, peak periods when excess speeds are most prevalent, the average speed travelled, the maximum speed travelled and the 85% percentile of vehicle speeds recorded. Spruce Grove Enforcement Services rotates two (2) Houston Radar devices throughout various areas of the city on a regular basis. A third Houston Radar box is deployed in areas where citizen complaints are received regarding incidents of excessive speed.

The ATE program also utilizes and deploys Houston Radar boxes. They are deployed at assigned ATE sites to analyze data relative to vehicle speeds, volume of traffic and peak periods when vehicles travel in excess of the speed limit at or near those sites.

Automated Traffic Enforcement (ATE)

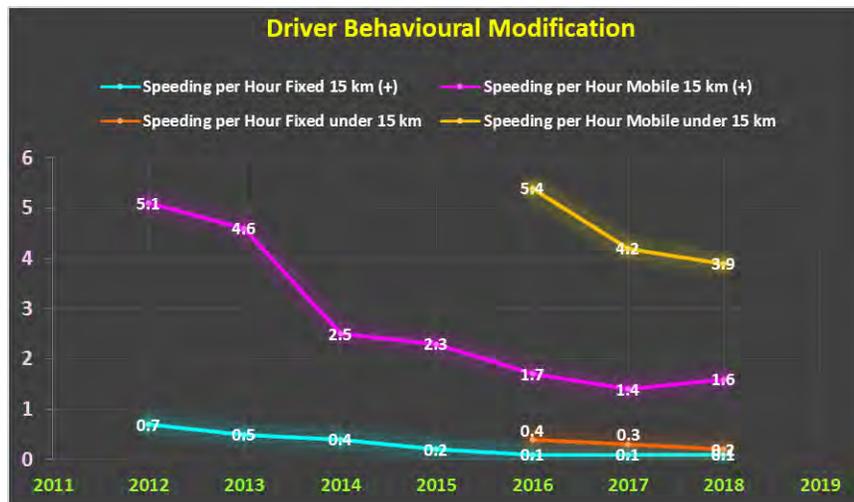
The City of Spruce Grove utilizes Automated Traffic Enforcement (ATE). The ultimate responsibility for the ATE program rests with the police service of jurisdiction, which in Spruce Grove is the RCMP. It is further regulated by the Alberta Justice and Solicitor General (AJSG) department.

In January 2017 the City of Spruce Grove’s ATE program was audited. The AJSG released their findings in March 2017. The audit concluded that *“overall, their (Spruce Grove) ATE program is well run and those involved are knowledgeable and appear both professional and dedicated to ensuring it is run in accordance with the underlying principles of the Provincial ATE program.”*

The audit findings were reviewed by a committee comprised of representatives of the City of Spruce Grove Protective and Enforcement Services, Corporate Communications, Financial Planning, Technical Services and the RCMP. This resulted in a report entitled *“Automated Traffic Enforcement – Operational Effectiveness Review”*. The report was presented to the City’s Mayor and Council in May 2017 which resulted in further recommendations to enhance the ATE program.

In April 2019 the City’s Mayor and council, building upon the AJSG audit and City’s Operational Effectiveness Review, developed the City’s *“Automated Traffic Enforcement Policy”*. This policy outlines a framework and the City’s commitment in ensuring that the operation of ATE not only meet the requirements of the provincial guidelines and principles, but further addresses Spruce Grove’s traffic safety priorities and community needs. One of the components of this policy is to enhance public awareness on how ATE operates. The policy has been posted on the City’s website for the public to view.

The effectiveness of ATE in modifying driver behaviour can be assessed from the changes in the number of violations per hour from 2012 to 2018. The Spruce Grove ATE program has been successful in reducing the speeds within the city. The chart below illustrates the violations per hour of individuals travelling in excess of the speed limit captured by both fixed and mobile



speed detection cameras. Not only have the number of violators decreased traveling in excess of 15 km/hr over the speed limit, the number of violators travelling between 10 to 14 km/hr have likewise decreased or plateaued.

Spruce Grove utilizes both fixed, Intersection Safety Device (ISD), and portable mobile cameras as its ATE program. Fixed ISDs are fully automated systems that are mounted above or before intersections. Mobile ATE are vehicle mounted, or portable systems that are controlled by an operator who is either inside a vehicle or located nearby. The fixed ISD system is operational 24 hours per day, whereas the mobile system is temporary and moves from location to location for a period of time. These systems have significantly reduced speed and red light infractions at key intersections within the City of Spruce Grove.

ATE, where successful, should reflect a diminishing return or a decrease in violations. This was indeed observed. Reduction in the frequency of violations were noted in speed and red light violations at fixed intersection safety device camera locations.

FIXED - INTERSECTION SAFETY DEVICES (ISD)																
Spruce Grove Violations per Hour		2016			2016		2017			2017		2018			2018	
Zone	Location	Violations			Hrs	VPH	Violations			Hrs	VPH	Violations			Hrs	VPH
		Speed	Red Light	Stop Sign			Speed	Red Light	Stop Sign			Speed	Red Light	Stop Sign		
90268	Grove Drive EB at/near Century Road	76	1			0	48	1			0	40	0			0
90269	Century Road NB at/near Grove Drive	848	24			0.1	596	21			0.1	6	1			0
90270	Century Road SB at/near Grove Drive	1906	4			0.2	612	9			0.1	1016	9			0.1
90271	Highway 16A WB at/near Jennifer Heil Way	4297	23			0.5	1780	16			0.2	860	0			0.3
90272	Highway 16A EB at/near Campsite Road	6627	68			0.8	2768	30			0.4	2705	20			0.3
90277	Highway 16A WB at or near Century Road	5019	14			0.6	2556	22			0.3	1218	0			0.2
90278	Highway 16A EB at or near Century Road	10016	24			1.2	12963	30			1.5	9558	27			1.4
TOTAL		28789	158			0.5	21323	129			0.4	15403	57			0.3

Reductions were also noted in mobile speed and red light infractions. ATE operational enforcement hours were categorized according the type of infraction being enforced, either speed, red light, or stop sign enforcement. There were a few sites where dual, speed / red light enforcement occurred. The hours at these locations were not separated specific to the type of enforcement conducted. They were combined. Thus, for consistency the hours at these locations were included within the speed only calculations. When one divides the number of violations by the number of ATE operational hours one obtains a violation per hour rate (VPH).

In 2017, there were 24,357 mobile speed violations issued in 3,947.47 hours. This provides a violation per hour rate for 2017 of 6.17 (VPH). In 2018 there were 10,360 violations issued in 1,886.87 hours of mobile speed enforcement. This provides a VPH rate in 2018 of 5.49 VPH. This represents a drop of 11% in violations per hour between 2018 and 2017.

ATE mobile red light enforcement hours in 2018 increased relative to 2017 hours. In 2017, A.T.E. mobile red light enforcement issued 1,427 tickets in 561.02 hours. This provides a violation per hour rate of 2.54 VPH. In 2018, a total of 2,169 tickets were issued within the span of 899.17 mobile operational hours. This equates to a violation rate of 2.41 VPH. This represents a drop of 5.01% in violations per hour between 2018 and 2017.

ATE mobile stop sign enforcement hours decreased in 2018 from 2017. In 2017, ATE mobile stop sign enforcement issued 3,197 violations in 1,492.80 operational hours. In 2018, ATE mobile stop sign enforcement issued 3,237 violations in 1,228.72 operational hours. This provides a violation rate in 2017 of 2.14 VPH, and for 2018 a violation rate of 2.63 VPH. This represents an increase of 22.89% in violations per hour between 2018 and 2017.

Public Perception of Speed and Automated Traffic Enforcement

Spruce Grove, being a partner with the Capital Region Intersection Safety Partnership, (CRISP) commissioned a Traffic Safety Culture Survey in 2016. The 2016 Traffic Safety Culture Survey provides insights on how road users perceive themselves and their actions, the actions of others, and the rules of the road. Road user behaviour is a factor in the vast majority of collisions. Culture can be defined in terms of beliefs, values and norms that guide everyday life. In turn traffic safety culture can be thought of in terms of attitudes and behaviours as they relate to traffic safety. The 2016 Traffic Safety Culture Survey conducted telephone, online, and focus group sessions with community members representing the City of St. Albert, City of Edmonton, City of Leduc, City of Spruce Grove and Sherwood Park.

The operation of ATE is in-line with the perceptions of the survey participants. The following was noted, to the following questions:

- a) On a residential street how many kilometers above the posted speed limit do you, personally feel it is okay to drive?¹¹

Speed over the speed limit	Insight Focus Group	Online Participants Surveyed	Telephone Participants
Over 15km/hr	0.0%	0.3%	0.4%
11-15 km/hr	0.5%	1.2%	0.7%
6 -10 km/hr	7.1%	9.8%	5.0%
1-5 km/hr	26.8%	24.5%	27.7%
0 km/hr	65.5%	64.2%	66.2%

There is very little tolerance for individuals exceeding the speed limit in residential areas. Comments from participants included respect for traffic rules and laws, safety and respect for community. Some of the commentary associated with these responses included:

¹¹ 2016 Traffic Safety Culture Survey; Edmonton and Area Traffic Safety Culture Survey: Summary of Key findings – Page23

- They feel as though speed limits are set not to limit the number of crashes, but instead to limit the severity of the crash if it occurs. If they were involved in a collision or crash, they would want to have the best possible chance to survive or limit injury, and obeying the posted speed limit is a way they can control that chance.
 - Residential streets have too many unforeseeable variables – kids, pets, balls, toys that can instantly come into the “line of fire”.
 - The car is secondary mode of transportation in these areas.
 - Drive slow and save a life.
- b) Near a school, how many kilometers above the posted speed limit do you, personally feel it is okay to drive?¹²
- Respondents clearly felt that speeding near a school zone, or in school areas is not acceptable. While the majority of respondents felt that it is not okay to speed in school and residential streets, there was some variation in perceptions when the subject concerned freeways.
- c) On a freeway, how many kilometers above the posted speed limit do you personally feel it is okay to drive?¹³

Speed over the speed limit	Participants Surveyed Responses
Over 15km/hr	0.2%
11-15 km/hr	0.1%
6 -10 km/hr	2.1%
1-5 km/hr	7.3%
0 km/hr	90.3%

Speed over the speed limit	Insight Focus Group	Online Participants Surveyed	Telephone Participants
Over 15km/hr	3.9%	8.9%	3.2%
11-15 km/hr	16.0%	10.4%	9.8%
6 -10 km/hr	47.2%	43.0%	47.8%
1-5 km/hr	21.7%	18.9%	26.4%
0 km/hr	11.3%	8.8%	12.9%

On average 79.3% of the respondents, stated that travelling above 10 km/hr over the speed limit is unacceptable. The above tables suggest that the population believes in adherence to speed limits.

The utilization of Automated Traffic Enforcement and other technologies were identified by participants of the 2016 Traffic Safety Culture as influential in both reducing speed and altering driving behaviour. The survey also identified speeds which were

¹² 2016 Traffic Safety Culture Survey; Edmonton and Area Traffic Safety Culture Survey: Summary of Key findings – Page 25

¹³ 2016 Traffic Safety Culture Survey; Edmonton and Area Traffic Safety Culture Survey: Summary of Key findings – Page 21

unacceptable in built up areas. This as well as the limited number of complaints received against the ATE program supports the effectiveness and relative acceptance of it.

Traditional (Manned) Enforcement Operations

Traditional enforcement is a corrective method applied after an offence has been committed by imposing a penalty against a violating driver, mostly by means of fines and / or through demerits. Traditional manned enforcement mostly takes place overtly or covertly by police or peace officers confronting violating drivers by stopping them on the spot after a violation along a road. This type of enforcement is effective, but tends to be quite inefficient due to high labour content.¹⁴

To maximize visibility, and enhance resource deployment the Spruce Grove RCMP. Spruce Grove Enforcement Services conducted high visibility joint force operations to augment other applied traffic safety measures. In 2017, sixteen (16) joint forces traffic safety operations were conducted. In 2018, twenty-six (26) joint forces traffic safety operations were conducted.

The following chart illustrates the number of traffic violations notices issued by Spruce Grove Enforcement Services between the years 2016 to 2018, and RCMP for the years 2017 to 2018.

Violation Type	2016 SGES	2017 SGES	2017 RCMP	2018 SGES	2018 RCMP
Total	1248	1863	951	1222	924¹⁵
General Moving Traffic	98	129	309 ¹⁶	80	409 ¹⁷
Distracted Driving	36	62	0	67	0
Speed	695	855	505	414	251
Operator / License / Plate Violations	349	686	84	577	36 ¹⁸
Intersection	49	94	53	59	32
Pedestrian	6	6	0	3	0
School Bus	15	31	0	22	0
Occupant Restraint	13	27	12	25	196

¹⁴ Making Traffic Safer – Speed Reduction Methods to Promote Road Safety and Save Lives”; 2017-03-09

¹⁵ RCMP Total Tickets = 926 however 2 were parking tickets, thus not included.

¹⁶ Includes 2 Bylaw Traffic Offences

¹⁷ Includes General Moving and Non-moving violations, Fail to remain at scene, and careless driving.

¹⁸ Includes Drive While Disqualified – No insurance.

How enforcement operations are conducted has an impact on whether the change is specific to a location, or whether the deterrence is broader in scope and of a more general nature. The World Health Organization noted that:

- *“operating highly visible (police or fixed camera) enforcement in the same areas all the time is likely to result in drivers being deterred from committing violations only in those specific areas.*
- *Operating a mix of highly visible and strategically directed police patrols or speed cameras increases public perception that speed enforcement can happen anywhere and at any time. Unpredictability of where and when speed enforcement operations take place will have a more general deterrent effect by encouraging drivers to drive within the speed limit no matter where or when they are travelling.”¹⁹*

Spruce Grove utilizes a mix of traffic safety operation methods to achieve identifiable results. Fixed ISD devices, mobile ATE devices, and strategic traditional high visibility uniformed staff enforcement is achieving behavioural change. These enforcement methods have and continue to create a public perception that enforcement can occur anywhere, and at any time. As a consequence driver behaviour becomes more aligned to remain within the rules of the road and the laws that govern safe driving practices.

School Zone Enforcement

The city of Spruce Grove has (2) identified school zones. These are located along King Street by Brookwood School and along Pioneer Road by the Prescott Learning Centre. The engineering designs for the other schools located within the city have resulted in these locations being designated school areas where the speed limit does not have to be reduced.

These areas are none the less high pedestrian areas. School zone and school areas have a greater concentration of vulnerable road users who are either on foot, on manual propulsion devices, and generally young in age. A paramount factor in these areas is educating all on the observance of proper road safety etiquette. A greater emphasis on high visibility, uniformed patrols and enforcement has been placed in these areas. In 2018 Spruce Grove Enforcement Services refined its data collection process to more accurately capture and track enforcement activities in these areas. There are on average approximately 184 instructional days in a school year.

School	2017	2018
Brookwood School	24	32
Ecole Broxton Park School	3	6
Copperhaven School	----	10
Greystone Centennial Middle School	----	12
Living Waters Christian Academy	----	3
Millgrove School	----	6
Prescott Learning Centre	3	33

¹⁹ W.H.O - Speed Management: a Road Safety Manual, Module 3, what are the tools for managing speed.

Spruce Grove Composite High School	4	14
St. Joseph Catholic School	----	9
St. Marguerite's / St. Thomas Aquinas Catholic Schools	----	2
St. Peter the Apostle Catholic School	----	18
Woodhaven Middle School	----	13
TOTAL	34	158

School Zone Patrols conducted by Spruce Grove Enforcement

Engineering, Construction and Road Changes

Road design can play a major role in reducing serious injury and deaths to people. Roads can function to help manage speeds, reduce task complexity and allow for human error. They guide drivers to do the right thing and reduce the forces on people when a collision occurs. Measures include giving street attributes that correspond with their speed limit, making turning radii shorter, converting two way stop intersections to four-way stop intersections, road signalization and implementing traffic calming measures.

Spruce Grove Enforcement Services works in collaboration with the City of Spruce Grove Engineering, Planning and Development, and Public Works departments to examine road design, configurations and signalization measures to enhance safety. Road changes and signalization changes from 2016 to 2018 inclusive have included the following:

Road Design Changes

Road design changes have been conducted to manage and control the increased traffic volume experienced by the city's population growth, including the redesign of Jennifer Heil Way in the area of McLeod Avenue and at the intersection with Highway 16A in 2016. The changes included the widening of roads and the creation of dedicated turn lanes.

Traffic Calming Measures

Traffic calming measures have included the construction of roundabouts. These intersections assist in reducing speeds and impact forces by reducing right angle collisions. The following has been completed from 2016 – 2018.

- Intersection upgrade - McLeod Avenue / Nelson Drive roundabout – 2016
- Pioneer Road / Grove Drive roundabout – 2018
- Pioneer Road / Fenwyck Boulevard – 2018
- Pioneer Road / future McLeod Avenue / Easton intersection– 2018
- Grove Drive West – West of Copperhaven School – 2018
- Intersection upgrade - Grove Drive West / Copperhaven Drive / Spruce Ridge Drive – 2018.

Road Signalization

Road signalization is an important aspect towards road safety. Road signalization provides routine gaps in traffic that may be used for vehicles to turn onto or cross roadways. Road signalization sequencing and coordinated pairing can impact driver and pedestrian behaviour and the preponderance towards risk taking. Data collected from Houston Radar boxes, speed display monitoring signs and traffic collision data are analyzed and assessed to coordinate road signalization timing, sequencing and upgrades. Some of the assessments have included:

- Diamond Avenue / Golden Spike Road - signal warrant analysis (2016)

- King Street and Mcleod Avenue - signal warrant analysis (2016)
- King Street and Brookwood Drive - signal warrant analysis (2016)
- Highway 16A corridor (east and west) - signal timing adjustment (2018)

Pedestrian Activated Rectangular Rapid Flashing Beacons

Pedestrian visibility at road crossings is critical in collision mitigation. Factors such as pedestrian clothing, time of day and weather conditions impact a driver's ability to see a pedestrian or other vulnerable road user. Pedestrian activated Rectangular Rapid Flashing Beacons (RRFB) enhance safety at roadway crossing locations.

The City of Spruce Grove traffic safety surveillance includes addressing concerns from the public. Traffic surveillance includes receiving user information and feedback. Spruce Grove Enforcement Services and Engineering receive reports from the general public which is assessed. Portable Houston Radar boxes can be deployed in areas where excessive speed may be noted. In other circumstances an engineering traffic study may be conducted. Engineering may initiate a traffic study to assess the concern cited. If the data warrants, changes are implemented. Of particular note between 2016 and 2018 are the installation of Pedestrian Activated RRFBs:

- Grove Drive at Tonewood Boulevard
- Grove Drive at Fieldstone Drive
- All pedestrian activated overhead crosswalks were upgraded to include RRFB on both sides of the roadways.

Speed Reduction Changes

The determination whether a school or playground is defined as a zone, where the speed limit is reduced as opposed to an area where the speed limit is not reduced, is dependent upon an infrastructure and transportation assessment. Alberta Infrastructure and Transportation provides a matrix whereby an appropriate assessment may be conducted based on various criteria. Wherever possible, mitigation measures are explored that would reduce the score so that zones can be avoided. That being said, local conditions are considered to determine the appropriate treatment of these locations.

Prior to 2018 the roadway along Pioneer Road, by the Prescott Learning Centre, was classified as a school area. The school zone matrix score was such whereby the location could be treated either as a school zone or as a school area. In 2018, as a result of concerns and input received from the public this area was changed from being a school area to a speed-reduced school zone.

In 2018, a speed change was also made along Highway 16A, proximal to Pioneer Road. The opening of Pioneer Road and the erection of traffic lights necessitated a speed reduction in this area. In an effort to educate the public of this speed change a speed monitoring display sign, and a Ver-Mac sign were utilized to educate the public of the speed change.

Education / Public Awareness:

The Safe Systems approach encourages an ameliorated understanding of the interactions between key elements of the road system. This includes the interactions between the road

users which may be defined as drivers, passengers, pedestrians, cyclists, young drivers and seniors, with vehicles, roads, roadsides, and speeds traveled.

Education and public awareness range at the macro level from conducting broad based education campaigns, providing evidence based statistics and research, to providing driver feedback information, and high visibility enforcement initiatives. It may also be at the more micro level, designed to address a specific audience, or targeted towards a specifically identified topic or behaviour.

Education can also be directed towards the successful transfer of knowledge from researchers, traffic safety experts, to those who are responsible for policy development, legislation and overall system designs. This supports strategic thinking towards a long term vision that addresses the greater public good, and involves stakeholder engagement.

2016 Educational Initiatives

Macro Education – broad based initiatives

- Back to School – Traffic Safety Media Campaign
- MADD – Red Ribbon Campaign – Impaired Driving and Winter Road Safety
- Preparation of Traffic Safety Brochures
- Identification of Automatic Traffic Enforcement sites posted weekly in the local newspaper
- Youth Initiatives and Education in Life and Driving (YIELD) funding
- Speed Display monitoring signs
- Freeze Out Impaired Driving Campaign

Micro Education – specific audience, specific topic or behaviour

- Driving Laws for new Drivers and Impaired Driving – St. Peter the Apostle High School – young drivers
- Youth Focused – Joint Force Operations Traffic Safety Checkstop – Grove Drive West – RCMP / Spruce Grove Enforcement x 2
- Mini-Monster Bash – Vulnerable Road Users – Halloween costume, road visibility and safe road crossing – Children
- Candy Cane Check Stops, high visibility Joint forces Operation with Emergency Services personnel at multiple locations throughout Spruce Grove and area – Impaired Driving – Safe winter driving
- Enforcement and Partnership with Alberta Transportation in the enforcement of specific road safety initiatives in accordance with the Traffic Safety Calendar

Knowledge Transfer – Professionals

- Traffic Safety Culture Survey Report – CRISP
- Annual Urban Traffic Safety Conference – Edmonton

2017 Educational Initiatives

In 2017 an audit was conducted by Alberta Justice and Solicitor General of the Spruce Grove Automated Traffic Enforcement Program. The details of the Audit were presented to Spruce Grove Mayor and council which was also captured by the local media. A follow-up report was presented to Mayor and Council of actions taken in response to the Alberta Justice and Solicitor

General report. A consequence of these actions resulted in better information and statistical compilation.

A joint initiative commenced with Spruce Grove Geographical Information Systems, Spruce Grove Enforcement Services and Spruce Grove Communications to prepare multi-layered maps which would identify the following: Speed limits on roadway systems, location of collisions, location and type of automated enforcement sites, hours of enforcement operations per site, violations per hour per site, traffic volume along with other information. This information was intended to allow the public to view this information on the City's digital platforms thereby creating a greater transparency of traffic enforcement / traffic safety and automated traffic enforcement utilization. This initiative is still moving forward and now forms part of a request for proposal process which is to be completed by December 31, 2019.

Macro Education – broad based initiatives

- Radio Public Service Announcement – Traffic Safety
- City Pulse Magazine Article – Distracted Driving
- City Pulse Magazine Article – Winter Readiness
- MADD – Red Ribbon Campaign – Impaired Driving and Winter Road Safety
- Identification of Automatic Traffic Enforcement sites posted weekly in the local newspaper
- Look Before Crossing – Halloween – Public Service Announcement
- Listing of all Automated Traffic Enforcement sites on the City's digital platform
- Purchase of five Speed Display Monitoring Signs
- Radio Public Service Announcements – Holiday Road Safety
- Radio Public Service Announcements – New Year Road Safety

Micro Education - specific audience, specific topic or behaviour

- New Drivers – Distracted / Impaired Driving Presentation – St. Thomas Aquinas School
- New Drivers – Distracted / Impaired Driving Presentation – St. Peter the Apostle High School
- New Drivers – Distracted / Impaired Driving Presentation – Spruce Grove Composite High School
- New Drivers – Distracted / Impaired Driving / Winter Safety – St. Thomas Aquinas School x 3
- Distracted Driving / Substance Abuse and Impaired Driving – Prescott Learning Centre
- Bike Rodeo – Bicycle and Road Safety – Vulnerable Road Users – Elementary Schools x 2
- Regional Conference – Student leaders from area schools attended a regional distracted driving conference in Leduc
- Jacy GOOD – Presentation – Distracted driving – St. Peter the Apostle School.
- Mini-Monster Bash – Vulnerable road users – Halloween costume, road visibility and safe road crossing. – Children
- Liquor Bag Safety Messages – Liquor Stores – Children and Adults – Holiday road safety, impaired driving
- Youth Focused – Option 4 Program – Joint force operation (JFO) Traffic Safety Checkstop – Grove Drive West – RCMP / Spruce Grove Enforcement

- Operation Red Nose – High visibility – Checkstops – Winter and holiday road safety conducted throughout various areas in Spruce Grove x 4
- Candy Cane Check Stops, high visibility joint forces operation with emergency services personnel at multiple locations throughout Spruce Grove and area – Impaired driving – Safe winter driving
- Coffee with a C.O.P. at McDonald's to discuss various traffic safety and other enforcement issues x 4
- Spruce Grove Enforcement Services Partnership with Alberta Transportation in the enforcement of specific road safety initiatives in accordance with the Traffic Safety Calendar
- Responding to public enquiries, questions from the general public via Spruce Grove Communications digital media platform
- Tracking and responding to all Automated Traffic Enforcement complaints and enquiries.



Knowledge Transfer – Professionals

- International - Urban Traffic Safety Conference – Banff
- Urban Traffic Safety Research Practices – Mobile Photo Enforcement – State of the Practice – Regional Conference – Morinville

2018 Educational Initiatives

In 2018 legislative changes at the federal level were anticipated to impact traffic safety. In October 2018, the federal government decriminalized the possession of small amounts of cannabis. The public demanded information on how this change would impact traffic safety. As a consequence a conference was held which included experts from the medical, enforcement and social services sector to educate the public on potential safety initiatives, measures and outcomes.

Macro Education –broad based initiative

- MADD – Red Ribbon Campaign – Impaired driving and winter road safety
- Identification of Automatic Traffic Enforcement sites posted weekly in the local newspaper
- Listing of all Automated Traffic Enforcement sites on the City's digital platform.
- Radio Public Service Announcements – Holiday road safety
- Deployment of five Speed Display Monitoring Signs

Micro Education - specific audience, specific topic or behaviour

- Tri-Municipal Drug Strategy Council – Cannabis Summit – facts from medical professionals regarding use of cannabis, and enforcement professionals respecting road safety
- Option 4 – Program – Joint initiative with Alberta Health Services– Child restraint safety

- Pedestrian Safety – “Point, Pause, Proceed” – vulnerable road users – Ecole Broxton Park School – Children
- Pedestrian Safety – Bus Safety – Joint initiative between RCMP / Spruce Grove Enforcement Services – prior to fall school commencement – vulnerable road users – Children
- Bike safety / road safety – vulnerable road users x 2 – Children
- Youth Focused – Option 4 Program – Education presentation in lieu of fine, Joint Force Operation Traffic Safety Checkstop – Grove Drive West – RCMP / Spruce Grove Enforcement x 4
- Operation Red Nose – High Visibility – Checkstops – Winter and Holiday Road Safety throughout various areas in Spruce Grove x 3
- Candy Cane Check Stops, high visibility joint forces operations with emergency services personnel at multiple locations throughout Spruce Grove and area – Impaired driving – Safe winter driving
- Coffee with a COP at McDonald's to discuss various traffic safety and other enforcement issues x 4
- Spruce Grove Enforcement Services in Partnership with Alberta Transportation in the enforcement of specific road safety initiatives in accordance with the Traffic Safety Calendar
- Responding to public enquiries, questions from the general public via Spruce Grove Communications digital media platform
- Tracking and responding to all Automated Traffic Enforcement complaints and enquiries
- Community Events x 4 where traffic safety education was discussed



Knowledge Transfer – Professionals

- Crime Prevention Through Environmental Design – Traffic Calming – Level I – training provided to staff from various City of Spruce Grove department and other agencies
- Urban Traffic Safety Conference – Edmonton
- Cost Of Collision Report 2018 - CRISP

2019 – 2022

Traffic Safety Plan Strategic Initiatives

The City of Spruce Grove is committed to ensuring it has one of the safest road systems in the province for all road users. Emphasis on the Safe Systems approach and its focus towards Vision Zero has yielded positive results in enhancing road safety.

Since 2016 the City of Spruce Grove has made numerous refinements towards better data collection. It has undergone a number of external and internal reviews which have also been adopted by its Automated Traffic Enforcement program. These reviews have confirmed the City is compliant with provincial legislation and standards, however there is always room for improvement. This includes greater transparency with respect to the City's vision of traffic safety. The 2019 - 2022 Traffic Safety Plan is one example whereby improvements in data collection, and its analysis better illustrates the foundation for the formulation of its road safety strategy. It also serves to better educate and inform the public on the rationale of its approach.

The 2019 – 2022 Traffic Safety Plan is predicated upon the philosophies established by the Safe Systems approach, where responsibility for road safety is shared between road users, designers and regulators. It is also rooted in the Vision Zero perspective utilizing the 5 E's approach of Evaluation, Enforcement, Engagement, Engineering and Education. It is through this lens this Traffic Safety Plan has been created.

EVALUATION

Refinements in data collection and tracking have allowed for a more detailed analysis of traffic safety statistics. This includes an analysis of traffic speed and volume data derived from Houston Radar box devices, speed monitoring display signs and ATE violations, along with plotting the locations of each collision within the city and recording traffic complaints received from citizens and taking perception data from traffic safety culture surveys conducted into consideration. This is how priorities have been established.

Spruce Grove Arterial Roads

The overall total collisions between 2016 and 2018 have remained relatively consistent despite the increase in Spruce Grove's population with 756, 742, and 768 collisions respectively. The roadways which have the greatest number of collisions are the arterial roads of Highway 16A, Jennifer Heil Way, Grove Drive, Century Road, and Calahoo Road. These roadways by design further have the greatest volume of traffic. The following chart illustrates the number of intersections each roadway has where the number of collisions rank within the Top 15 intersections with collisions. The number of collisions on the noted roadways as a whole is also noted.

Roadway	# Intersections in Top 15 list of Collisions			Total Collisions			
	YEAR	2016 ²⁰	2017	2018	2016	2017	2018
Highway 16 A		4	6	4	123	140	96
Jennifer Heil Way		4	5	5	87	96	100
Grove Drive		3	3	3	49	69	92
Century Road		3	4	4	63	59	82
Calahoo Road		2	3	3	42	56	42

Number of intersections in the Top 15 list of collisions and total number of collisions for that road segment

Houston Radar box speed data and speed monitoring display sign data have identified areas where the 85% percentile data indicates high incidents of speeding. These locations are located on Grove Drive West proximal to Spring Gate, Grove Drive proximal to Grove Seniors Village, and Grove Drive proximal to Woodside Crescent.

Along many of the above noted roadways one also finds school zone or areas. The schools located along Grove Drive are: Copperhaven School, St. Peter the Apostle Catholic High School, Living Waters Christian Academy, Spruce Grove Composite High School, St. Thomas Aquinas Catholic School, St. Marguerite's Catholic School, and Greystone Centennial Middle School. Living Waters Christian Academy borders Jennifer Heil Way; Spruce Grove Composite High School borders Calahoo Road; St. Marguerite's Catholic School and Greystone Centennial Middle School borders Century Road; Millgrove School borders Calahoo Road.

It is for these reasons that the arterial roads of Highway 16A, Jennifer Heil Way, Grove Drive, Century Road, and Calahoo Road are prioritized in the 2019-2022 Traffic Safety Plan.

Goals:

- *Reduce the number of collisions along arterial roadways.*
- *Reduce the 85% percentile speed by Grove Drive West proximal to Spring Gate; Grove Drive by Grove Seniors Village and Grove Drive Proximal to Woodside Crescent.*
- *Continue to enhance data collection for enhanced analysis and review.*

ENFORCEMENT

Enforcement is a corrective method applied after an offence has been committed by imposing a penalty against a violator. This is achieved by both staffed enforcement and by remote automated enforcement. There is a balance that is required to ensure enforcement is conducted in a prioritized manner taking into consideration efficiency and effectiveness with the number of resources available. In general terms staffed enforcement where an officer stops a driver road side is effective, but tends to be inefficient due to, amongst other things, the time period an officer deals with the violator, and the potential the officer identifies other non-traffic related violations.

²⁰ Only intersections in excess of 10 collisions were captured during this year.

Automated Enforcement is both efficient and effective. The ideal enforcement method is to operate a mix of highly visible and strategic patrols along with automated camera technology. In this manner it creates the perception that enforcement can occur anywhere at any time.

Arterial Roads have been identified as a priority. These are high volume routes, with the greatest number of collisions. As a consequence it is in these areas where both Automated Traffic Enforcement augmented by high visibility staffed enforcement will be conducted.

Residential, School and Playground Areas

In 2016 CRISP conducted a Traffic Safety Culture Survey. The survey recorded the public's perceptions respecting tolerances for traffic safety offences. Residential areas, school zones/areas and playground zones/areas were identified as those locations where there was little public tolerances for traffic violations. As a consequence these areas will be high priority locations for manned enforcement activities.

Alberta Traffic Safety Calendar

The Alberta Traffic Safety Calendar was developed by Alberta Transportation's Office of Traffic Safety. It utilized provincial collision information, stakeholder input and public perception data to identify priority issues for traffic enforcement. The calendar can be used for both targeted enforcement priorities as well for educational initiatives. Enforcement initiatives conducted within the City of Spruce Grove will be aligned with the Alberta Traffic Safety Calendar.

Goals:

- *Conduct a minimum of 25 high visibility joint forces enforcement operations, per year along arterial routes.*
- *Prioritize Automated Traffic Enforcement Operations along arterial roadways for both speed and red light infractions.*
- *Conduct a minimum of 180 high visibility school zone and area patrols.*
- *Prioritize manned enforcement activities in residential areas, playground and construction areas.*
- *Align other traffic enforcement initiatives with the Alberta Traffic Safety Calendar.*

ENGAGEMENT

Engagement is an important element in developing a Traffic Safety Plan. No one department, community, organization, region or province has the solutions to all road safety issues. It is important to learn from what others are doing. This includes learning about local, regional and provincial best practices as well as what research and results are being achieved at the national and international level. Likewise to facilitate meaningful change and leverage resource it is important to engage the public.

Spruce Grove is a partner within CRISP. Through this partnership the City remains current on developing traffic safety initiatives, best practices and emerging research at the provincial, national and international level.

The City of Spruce Grove's Safe City group is a stakeholder consortium that is comprised of representatives from various city departments including: Public Works, Planning and Development, Engineering, Communications, Family and Community Support Services, and

Protective Services. It also includes representatives of the RCMP. Traffic Safety has been one of the focus areas of the Safe City group. Starting in 2020 Traffic Safety will be moved from Safe City to a newly formed Traffic Safety Committee.

The RCMP has the primary responsibility for traffic safety and ATE. In order to be effective, it is critical that it receives input and support from external stakeholders. The provincial audit of the ATE program cited public transparency and education as being vital. As a result and incorporated with “*Automated Traffic Enforcement Policy*”, CP-1041-19 there will be a greater emphasis on engagement in the 2019 – 2022 Traffic Safety Plan.

Goals:

- *Continue participation in the CRISP.*
- *Review and examine the Safe City Terms of Reference.*
- *Develop the City of Spruce Grove Automated Traffic Enforcement Policy.*
- *Create and establish a Traffic Safety Committee.*

ENGINEERING

The Safe Systems approach to traffic safety aims to proactively limit the occurrence of collisions where serious harm or death can occur, or at least keep the impact of such collisions below that threshold. Interactions between complimentary measures which reduce the combined collision energy transfers, provide cumulative benefits beyond the impact of a singular measure in isolation. In isolation, road user behaviour, traffic environment, speed management, vehicle driver assistance systems, vehicle injury mitigation systems, and road design may all have some positive effect in reducing collision severity. The effects are compounded and maximized if these elements are viewed as part of an overall system. Optimization occurs if consideration is given on how each component impacts the other, or how its interrelation is considered cumulatively throughout the system. An example to illustrate this is the design of an intersection’s geometry. The intersection can be designed in such a fashion so as to reduce right angle collisions and the energy transfer of such a collision upon impact. This along with the maximization of the vehicles occupant protection design can significantly reduce the severity of the collision. There is a synergistic relationship between the two.

Engineering plays an important aspect in collision and injury mitigation. A review of the collision data for 2018 indicates that there were 15.5% more intersection collisions (179) than rear end collisions (155). Road design standards frequently rely on drivers making the right decisions relative to the speeds they are travelling. One such example would be gap-acceptance decisions at intersections. Road systems are also designed in anticipation of user volume. Increase in population further puts pressures on these systems. Although some engineering elements lie in the realm of the private sector, such as vehicle design, other elements such as road design and operations lie predominantly in the public sector domain. As a consequence it is not only important to design roads utilizing best traffic safety and engineering practices, it is further important to periodically review existing infrastructure.

Goals:

- *Conduct a review of all crossings and apply correct engineering treatments. This includes an analysis of:*
 - *Traffic volume and speed*
 - *Pedestrian volumes*

- *Condition assessment*
- *Revise City of Spruce Grove Municipal Development Standards*
- *Installation of new Traffic Signal Lights at:*
 - *Jennifer Heil Way and Deer Park Drive collector route.*
- *Construction and utilization of roundabouts at the following locations:*
 - *Pioneer Road and Westwind Drive*
 - *Tonewood Blvd and Grove Meadows Drive*

EDUCATION

One of the core tenets of road safety is to create an understanding in the road user that every decision that they make can negatively or positively affect their safety and that of others. Public awareness and road safety education programs raise safety awareness and influence a change in behavior. A road user, is not simply a driver of a motor vehicle, but include all those that utilize the roadway. This includes pedestrians, cyclists, those on scooters, motorized chairs, and motorcycle riders.

Vulnerable road users are those individuals who are at greater risk of sustaining injury should they be involved in a collision. The very young and the elderly are at greater risk of being injured, if involved in a collision.

Public awareness and educational campaigns may be broad based disseminating information to a large audience. It may be at a more micro level, designed to address a specific audience or targeted to address a specific behavior. Education is also the transfer of knowledge from experts, or research authorities to those who are responsible for policy development and road design. Spruce Grove is committed to providing information at all these levels.

Goals:

General / Macro Level

- *Monitor and continue to evaluate the number of speed display monitoring signs. Where appropriate relocate, or acquire more speed display monitoring signs where required.*
- *Develop and implement an interactive mapping program which allows the public to view approved automated traffic enforcement locations, number of collisions, violations per site and other statistics.*
- *Post in the local newspaper and city social media platforms the automated enforcement locations to be enforced on a monthly basis and the rationale for the site.*
- *Participate in the MADD (Mothers Against Drunk Drivers) Red Ribbon Campaign.*
- *Circulate traffic safety tips, and awareness messages in the City Pulse Magazine on an annual basis.*
- *Utilize the local radio station to circulate Public Service Announcements on various road safety topics, such as Halloween, or Holiday Road Safety.*

Micro / Audience Specific Level

- *Conduct Bike Rodeos – Bicycle and Road Safety Courses with primary school children.*
- *Conduct patrols and distribute bicycle safety bells for young cyclists.*
- *Conduct Pause, Point, Proceed sessions with Pre-school and Kindergarten Children.*
- *Conduct patrols and distribute high visibility reflective tags and / or zipper pulls to be attached to clothing.*

- *Conduct Candy Cane joint force Checkstops on a yearly bases to address impaired driving over the winter holidays.*
- *Meet with the general public on a quarterly basis (“Coffee with a COP”) to discuss traffic safety issues.*
- *Conduct Option 4 operations - education in lieu of fines on specific traffic safety issues.*

Knowledge Transfer / Professionals

- *City Council to create and establish a Traffic Safety Committee, which includes members of the public, educate and inform them of the Safe Systems Approach to traffic safety.*
- *Attend Urban Traffic Safety Conferences.*
- *Identify City of Spruce Grove department personnel to attend the Crime Prevention Through Urban Design – Level II training (includes traffic calming initiatives).*
- *Through CRISP, conduct a Traffic Safety Culture Survey on a biennial basis and circulate results.*

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