2024 Automated Traffic Enforcement Annual Report-Calgary Police Service

The Calgary Police Service deploys automated enforcement in a manner consistent with the Provincial Automated Traffic Enforcement (ATE) Technology Guidelines. Currently photo radar and intersection safety cameras that monitor both red light running and speed enforcement are utilized to monitor traffic in the City of Calgary.

Changes to the provincial ATE Guidelines came into effect April 1, 2025 that limit the use of photo radar enforcement to school, playground, and construction zones and intersection safety cameras to red light only enforcement. For the reporting year 2024, selection criteria for locations was based on the 2023 guidelines which were in effect until December 1, 2024 when the new governing guidelines were supplied to municipalities.

One or more of the following criteria must be met before automated enforcement technology is deployed at a specific site:

- Conventional enforcement is unsafe or ineffective
- Areas or intersections with a history of collisions
- Areas or intersections with an identifiable, documented history of speeding
- Intersections with an identifiable, documented history of red light offences
- School and playground zones or areas
- Construction zones
- Areas where the public or a community has expressed concerns related to speeding; automated enforcement may be used to assess these public concerns and conduct enforcement as required.

The Calgary Police Service compiles statistical data on high collision and high volume roadways, deploying automated enforcement technologies accordingly. Photo radar speed enforcement focuses on reducing vehicle speeds and collisions within the City of Calgary. The deployment of automated enforcement is designed to create awareness and enforce the Traffic Safety Act, this assists in creating a safe driving environment. Motorists are more likely to obey the rules of the road if there is a possibility of getting caught. The Calgary Police Service operates within this framework, targeting high speed and high collision locations.

Red light camera and Speed on Green automated enforcement focuses on intersection safety within the City of Calgary. For 2024, the City of Calgary had 57 active cameras that monitor 53 intersections that are equipped to capture red light violations and 54 intersections capable of capturing speed violations. All intersections that are equipped with red light cameras monitor red light offences, with speed offence enforcement being introduced at select intersections in April of 2009. These intersections have photo enforcement signage, placed at all approaches to increase public awareness and safety.

In 2024, several variables were analyzed by the Calgary Police Service - Specialized Traffic Enforcement Unit to determine where automated enforcement technologies should be deployed, focusing on the following:

- Traffic volume
- Number of collisions
- Types of collisions
- Level of seriousness related to injury and fatal collisions
- Community concerns

Background

The Calgary Police Service (CPS) is committed to the prevention of crime and enforcement of laws within the community, which includes traffic safety. Serious injury or death of pedestrians or motorists can be reduced through education, targeted enforcement at high-collision locations, and collaboration with the City of Calgary on engineering, education, engagement, and program evaluation.

Speed is one of the single most important determinants related to road safety, collisions, and the severity of collisions. It not only affects the risk of being involved in a collision in the first place, but also the consequences of that collision. In Calgary, a common issue is driving at speeds too fast for the weather or road conditions. Research shows that fatality risks steeply increase for collisions involving cars and pedestrians when speeds exceed 30 km/hr. For collisions involving two vehicles, fatality risk dramatically increases at speeds greater than 50 km/hr for side collisions and 70 km/hr for frontal collisions[1].

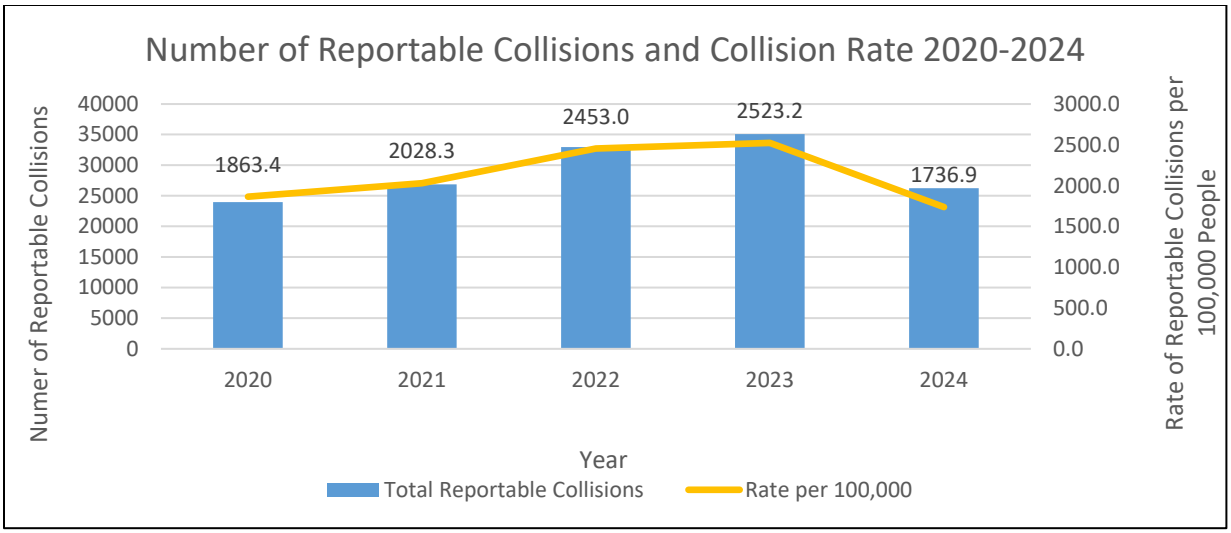
Photo radar enforcement and Speed on Green enforcement, along with traditional manned enforcement by a police officer are complimentary tools in the traffic safety arsenal that support the ultimate goal of road safety by both reducing speeds and the number and severity of crashes. The Residential Traffic Safety Unit is committed to monitoring speed-related concerns in high risk areas such as schools and playground zones and responding to citizens who submit Traffic Service Requests (TSRs) by completing speed studies, deploying targeted enforcement in areas of concern, and communicating directly with residents.

Collision Analysis

Citywide, the number of collisions fell in 2020 and 2021 due to COVID-19 pandemic restrictions which lead to fewer vehicles on the roadways with work from home orders in effect. The collision rate (measured as collisions per one hundred thousand Calgary residents) is still well below 2020 levels, although it has been increasing since 2021. In 2024, we saw the lowest rate of reportable collisions since 2020.

There were a total of 94,856 reportable collisions (which excludes collisions occurring in parking lots and on other private property) in 2021, 2022, and 2023, an average of 31,619 per year. 2024 saw 5,395 less collisions than the three-year average. The impact of pandemic restrictions on the three-year average should be noted, with a significant decrease in vehicle volume on Calgary roadways. The rate of total reportable collisions is also the lowest for 2024 over the last 5 years, even with a significant increase in population.

[1] Source: Towards Zero: Ambitious Road Safety Targets and the Safe System Approach. OECD, 2008



Collisions in Alberta are analyzed according to severity, breaking them down into three categories: fatal, injury, and property damage. 2020 marked a low point for injury and property damage collisions, again likely due to pandemic restrictions. 2023 saw collision volumes rebound, with the trend of increasing collisions holding steady for 2024 as well. The number of fatal collisions in 2024 was higher than the average of 19 fatal collisions for the period of 2021-2023 by 10 fatal collisions, while the number of injury collisions in 2024 was 523 above the average of the three previous years. 5,928 less property damage collisions occurred in 2024 compared to the average of the three previous years.

Collisions by Severity				
Year	Fatal	Injury	Property damage	Total Reportable Collisions
2020	24	1791	22143	23958
2021	14	2108	24726	26848
2022	19	2414	30523	32956
2023	24	2633	32395	35052
2024	29	2908	23287	26224

When it comes to fatalities arising from collisions there has also been an increase in deaths compared to the three-year average of 20 fatalities, with 29 deaths occurring in 2024. 2020 had the most fatalities (28), however 2024 marks a 10 year high for deaths. Injury collisions followed the same trend discussed previously, with a dip in 2020 followed by a rebound. 2024 saw 887 more injuries than the 2021-2023 average.

Fatalities and Injuries from collisions		
Year	Fatalities	Injuries
2020	28	2333
2021	16	2722
2022	19	3107
2023	24	3475
2024	29	3988

Traffic Safety Plan Performance Measures

The Safer Mobility Plan of 2024-2028 is the first unified plan between the Calgary Police Service (CPS) and the City of Calgary (The City). These two organizations are joining forces as core partners working towards safer mobility and reducing harm on our roadways. The new plan is built on past successes and principles of continuous improvement, as we aim to not only capture the momentum of our programs and amplify their impact, but also identify gaps and develop new programs and strategies to address them. The plan will also rely on support through our partnerships and collaboration with other safety partners, communities, and everyone moving around our city.

Walk, roll, drive, or ride: everyone has the right to arrive safely. The Calgary Police Service and the City of Calgary are committed to ensuring road safety for everyone in the community and to work collaboratively with community partners towards a common goal of Vision Zero – Mobility free of fatalities and major injuries. The Safe System Approach recognizes the interdependence of the safe system components: safe roads, safe speeds, safe road users and safe vehicles, and the actions that can be taken to achieve improvements across these components. The goal is to ensure if collisions occur, road users will not be seriously injured or killed. While road users should always try to interact safely, the Safe System Approach emphasizes the transportation system must be designed to accommodate human vulnerability and error.

The Safer Mobility Plan identifies the following targets and performance measures as they relate to traffic safety for 2024:

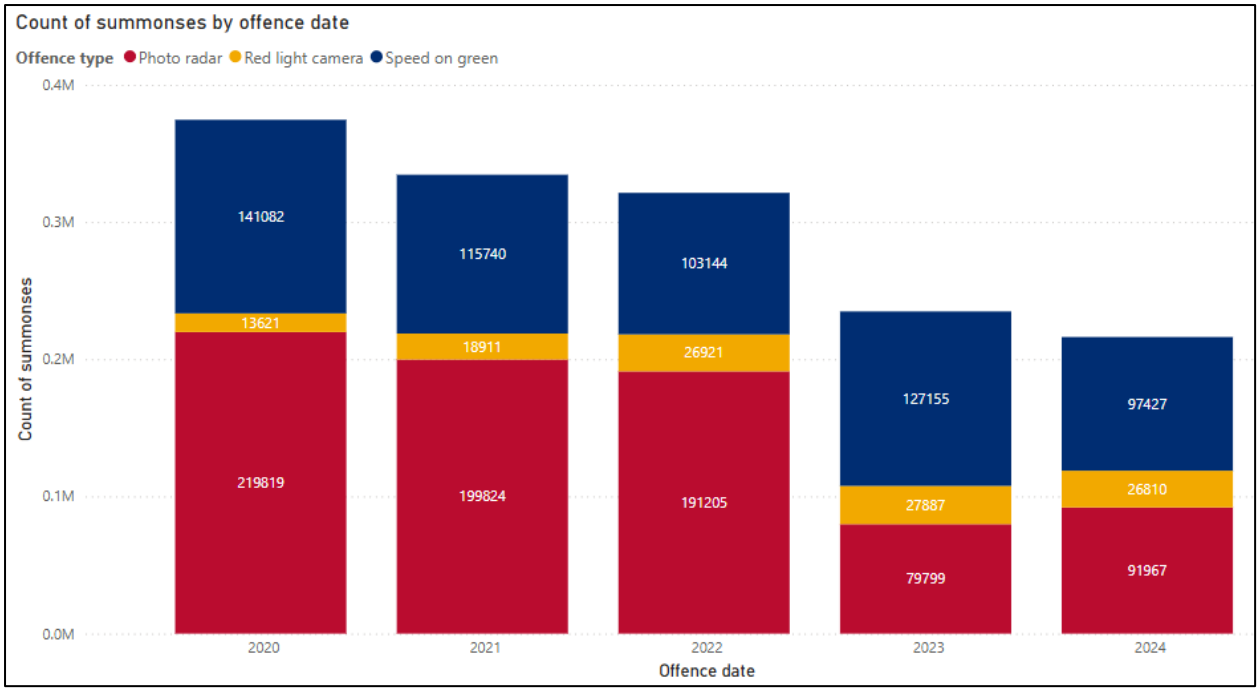
Safer Mobility Plan Performance Measures			
Performance measure	**2024 target**	**2024 value**	**Outcome**
Reportable fatal & major injury collisions	<539	600	Target not met
Total vulnerable road user collisions	<216	214	Target met

Even though the target for reportable fatal and major injury collisions was not met for 2024, the goal of the CPS Traffic Safety Plan remains the creation of a safe and forgiving mobility experience for all road users.

Automated Traffic Enforcement Violations

In 2024

- Total automated enforcement summonses decreased by 8.4% compared to 2023.
- Red light summonses decreased by 4.5% compared to 2023.
- Speed on green summonses decreased by 23.7% compared to 2023.
- Photo radar summonses increased 14.7% compared to 2023.



For the purpose of this report, the incidence of collisions was analyzed for the top 20 photo radar deployment locations and the first 63 red light camera intersections.

Photo Radar Analysis

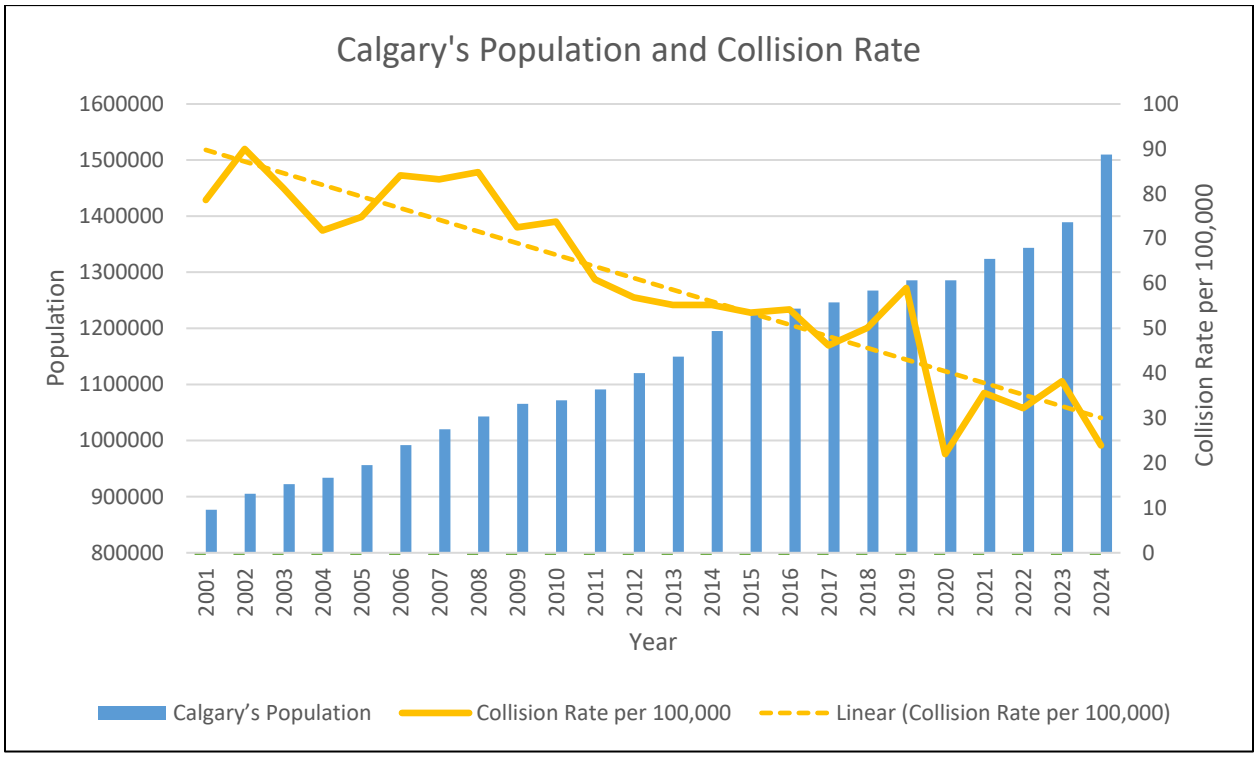
In 2024, there were 361 collisions at intersections[2] nearest to the Top 20 Photo Radar locations; of which 34 were injury collisions (9.4%), with no fatal collision during that time. Between January 2001 and December 2024, there were 15,738 collisions at these intersections of which 1,507 (9.6%) were injury collisions and 20 (0.13%) were fatal collisions.

The total number of collisions at these intersections has decreased by 48% between 2001 and 2024 (from 689 to 361). The number of injury collisions at all of the Top Photo Radar locations has declined 67.9% over the same time period (from 106 to 34). The collision rate per 100,000 people in Calgary[3] has been declining for the past ten years, which also corresponds with a slight decrease in the aggregate number of collisions at the Top 20 Photo Radar locations.

Although there has been some variation over the years, the collision rate based on the number of registered vehicles in Calgary has experienced a significant decline from 2001 to 2024. There has been a decrease in the rate of collisions per 100,000 people from a peak of 84.8 collisions per 100,000 people in 2008 to 23.9 collisions per 100,000 people in 2024. This decrease in the rate of collisions relative to registered vehicles indicates that photo radar is indeed a factor in the enhancement of traffic safety on Calgary roadways.

[2] The data referred to in this report represents collisions that occurred in intersections nearest to the Top 20 Photo Radar locations and was retrieved from Power BI data source E-Collisions 20250210.

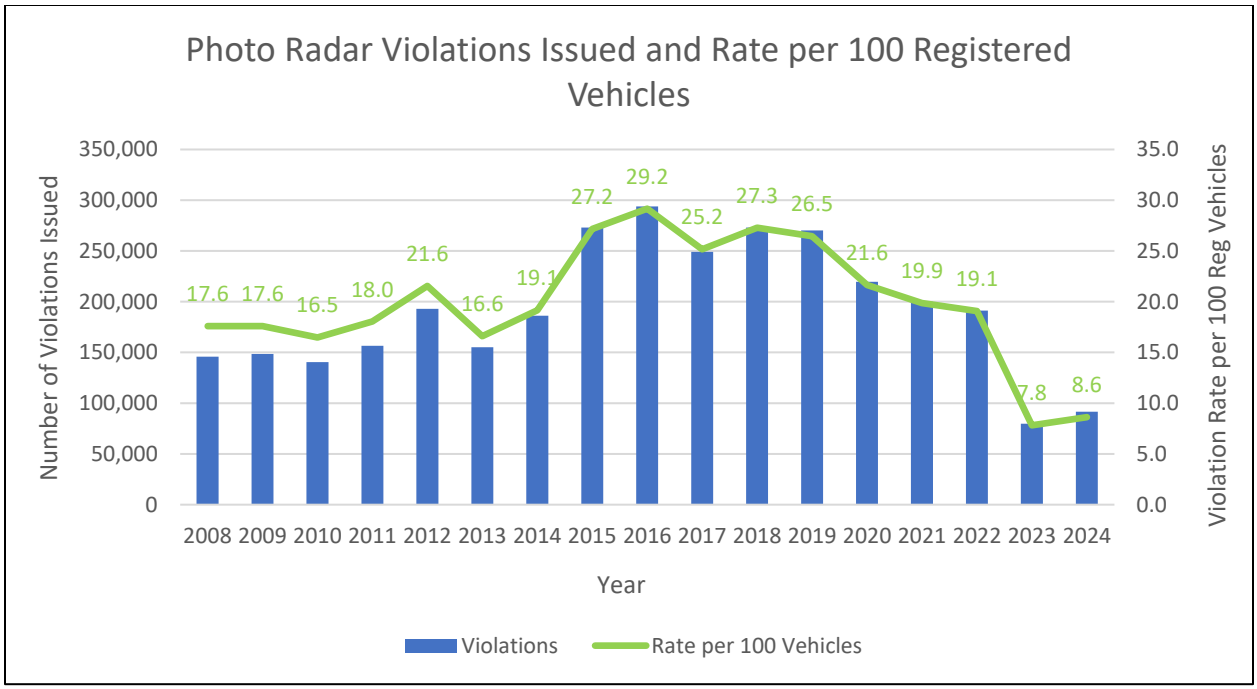
Photo radar deployment is directly affected by several factors, such as increases in population and traffic volumes in Calgary. In 2024 there were over 1,061,861[4] motorized vehicles registered in Calgary, compared to 1,020,752 in 2023. The change in vehicle registrations in Calgary does not include additional vehicular traffic from outlying communities. Calgary's population[5] has also increased by 72% since 2001.



In 2024 there were over 420 photo radar deployment locations throughout Calgary. In 2024, the average violation rate (number of violations per 100 registered vehicles) for deployments in the subject locations was 8.6/100. This marks a slight increase in violation rates from 2023 from 7.8 to 8.6 violations issued per 100,000 registered vehicles in Calgary. 2020 showed a steep decline in violation rates due to the COVID-19 pandemic where stay at home orders twice during the calendar year kept vehicles off the roadways. This trend continued into 2022 with waves 2, 3, and 4 of the pandemic keeping many vehicles off the roadways. Fluorescent vehicle wrap was introduced to photo radar vehicles in December of 2022 to comply with provincial guidelines resulting in a sharp decline in violations issued for the year, bringing the violation rate per 100 registered vehicles to its lowest point since 2010.

[4] As per Alberta Vehicle Geographical Statistics (AB Transportation)

[5] Due to the COVID-19 pandemic the City of Calgary cancelled the 2020 civic census. For the purpose of reporting the 2019 population number will be used for 2020. The civic census has now been permanently cancelled and city population values moving forward will be reported from the City of Calgary Corporate Economics Data Repository.

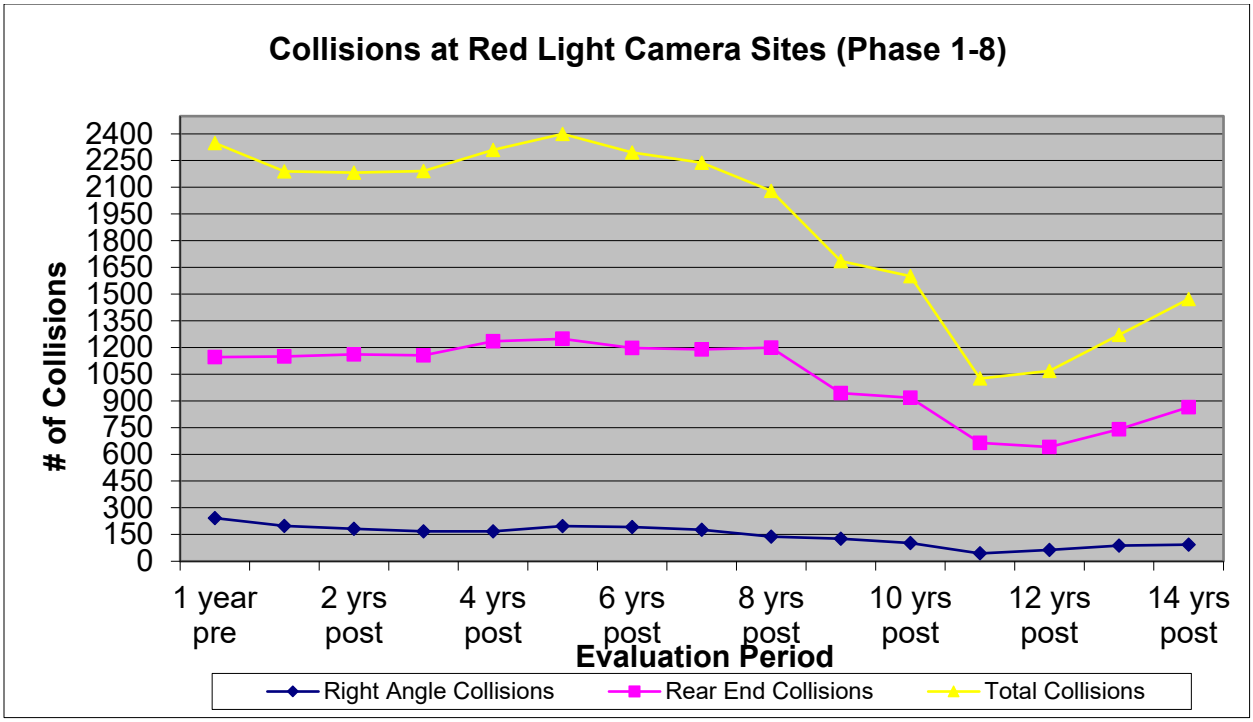


Red Light Camera Analysis
At the first 64 red light camera locations in Calgary (Phases 1-11) during the one-year pre implementation and one-year post implementation period, we see the following:

- Total collisions at the first eleven phases decreased by 7.1%
- Injury collisions have decreased by 6.2%
- Fatal collisions have decreased by 100%
- Pedestrian collisions have increased by 23.5%
- Right angle collisions have decreased by 15.6%
- Right angle injury collisions have decreased by 31.1%
- Right angle fatal collisions have decreased by 100%
- Rear end collisions have decreased by 6.7%
- Rear end injury collisions have increased by 8.7%

During the one-year pre implementation and fourteen-year post implementation period for phase 1-8, we see the following:

- Total collisions at the first eight phases decreased by 37.2%
- Injury collisions have decreased by 70.9%
- Fatal collisions have decreased by 100%
- Pedestrian collisions have decreased by 76.5%
- Right angle collisions have decreased by 61.6%
- Right angle injury collisions have decreased by 79.4%
- Right angle fatal collisions have decreased by 100%
- Rear end collisions have decreased by 24.5%
- Rear end injury collisions have decreased by 64.9%



Overall, the total number of collisions at red light camera intersections appears to be decreasing slightly every year, with a corresponding decrease in the number of injury and fatality collisions, as well as a decrease in right angle and right angle injury collisions. The decrease in more severe collisions that involve injuries and fatalities demonstrate that Calgarians are becoming more familiar with red light cameras and are adjusting their driving behavior to reflect this fact.

Speed on Green

Intersection safety cameras also have the capability to record the speed of vehicles traveling through intersections utilizing sensors embedded in the roadway in combination with a precise time distance calculation to determine speed. The Calgary Police Service implemented the program known as “Speed on Green” at intersections where red light cameras already existed in April of 2009. If a motorist is speeding through an intersection equipped with an intersection safety camera, a summons may be issued for speeding. The goal of this program is to improve the safety of Calgary’s roadways by reducing not only speed, but the number and severity of collisions at intersections.

The Speed on Green initiative in Calgary was launched in March of 2009 with an awareness campaign which included media releases, billboard advertising on Calgary Transit buses, and warning notices mailed out to offenders for speed violations over a 1 month period. On April 1st, 2009, violation tickets were issued at the first 4 Speed on Green intersections.

During the first sixteen years of the Speed on Green program, 60 existing red light camera intersections were equipped to capture speeding violations, with 5 sites removed since 2009 due to road design changes or insufficient collisions to support the ongoing use of an intersection safety camera. In 2024, 209 million vehicles traveled through a Speed on Green

site. On average 19 million vehicles pass through the Speed on Green equipped intersections each month and approximately 0.05% of these vehicles receive a violation ticket for speeding. The average speed of the vehicles receiving violation tickets is 18 km/h above the posted limit. Violation speeds of over 100 km/h above the posted speed limit have been observed since the inception of the Speed on Green program.

Four key factors are examined to determine the effect of Calgary's Speed on Green program, relative to reducing collisions and speed at intersections:

- Have the number of collisions decreased at intersections equipped with cameras?
- Has the severity of collisions at intersections decreased?
- Has the average speed of vehicles traveling through the intersection decreased during the program?
- Have the number of summonses issued for speeding at intersection camera locations decreased since implementation of the program?

Since the implementation of the program in 2009 there has been a decrease of 61.9% in total collisions at Speed on Green sites and a decrease of 59.4% in the more serious injury and fatal collisions at Speed on Green sites when compared to the pre-implementation year, 2008. To date while we have seen a slight reduction of 6 km/h from 2009 to 2024 in the average speed of vehicles traveling through the intersections, it has been noted that the average speed of all vehicles traveling through Speed on Green capable intersections is in fact below the posted speed limit, indicating that only a small minority of drivers are committing speed offences in Calgary.

Changes to the provincial ATE Guidelines came into effect April 1, 2025 that limit the use of intersection safety cameras to red light only enforcement. For the reporting year 2024, Speed on Green was active at all locations until it shut down as of December 1, 2024 with the release of the new draft 2024 guidelines.

Residential Traffic Safety Unit & Traffic Service Request Program

The Residential Traffic Safety Unit (RTSU) was created in late 2016 to target high-risk areas such as schools, playground zones and other pedestrian oriented locations. In addition, the unit responds to Traffic Safety Requests (TSRs), shares enforcement data with City partners, supports further interventions if needed, and actively educates the public on residential traffic safety issues.

The RTSU has been striving to provide an increased level of customer service. Citizens who submit TSRs are usually contacted by an officer to review their request and detail what actions were taken as a result. The citizen feedback from TSRs is then used to inform the unit's operational response, citywide. Working together with our City of Calgary partners has been mutually beneficial, as we have found opportunities to tackle issues together in a timely fashion to better serve citizens. There can often be overlap in issues brought forward by citizens via the 311 or the TSR systems. Working as a team allows the group to come up with the best possible solution, which may include enforcement, traffic calming, or changes to roads, signage, lighting, transit solutions, or a combination of the above.

Through the TSR database, citizens can request the deployment of photo radar to a roadway of concern. In 2010, the TSR database was temporarily disabled to accommodate a system

redesign that would build in greater efficiency, ease of use, and statistical capabilities. The new database went live on March 1st, 2011.

In the spring of 2013, the web link for the TSR program on the Calgary Police Service website was moved from the Traffic page directly to the front page of the CPS website resulting in a dramatic increase in TSR concerns received from communities and citizens for traffic related issues. During 2014 the TSR website was revamped to offer better data capture using the CopLogic system so that the program could respond to more traffic service requests in a more timely manner.

Type of Request	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Speed	299	206	125	0	145	86	225	602	473	503
Playground	126	113	83	0	61	63	165	274	194	273
School Zone	54	25	13	0	28	26	62	156	125	123
Other	0	0	0	0	0	0	0	0	0	0
TOTAL Requests	**479**	**344**	**221**	**N/A**	**234**	**175**	**452**	**1,032**	**792**	**899**

With the creation and subsequent expansion of the Residential Traffic Safety Unit, the number of TSRs that can be addressed has increased significantly. The Residential Traffic Safety Unit completed 1,663 TSR's in 2024, an increase of 1% from 1,648 TSR's in 2023. Additionally, for the previous two years, 2023 and 2024 respectively, RTSU has completed over 90% of the TSRs that have been received by the service, addressing traffic safety concerns from the community, while simultaneously freeing up frontline police members to focus on other service priorities.

Type of Request	2017	2018	2019	2020	2021	2022	2023	2024
Crosswalk	1	0	0	1	2	0	3	0
Intersections	131	108	87	142	139	155	166	186
Motorcycles	22	21	12	76	61	30	25	70
Pedestrians	106	96	100	65	83	91	126	104
Playground Zone	208	201	179	229	169	210	181	167
School Zone	123	113	89	116	182	120	192	178
Special Request	127	96	116	133	132	156	126	152
Speed	515	498	506	822	780	622	714	663
Trucks General	31	61	20	24	50	26	30	31
Turns	90	83	51	51	48	68	80	106
All Other	4	0	1	5	8	4	5	6
TOTAL Requests	**1,358**	**1,277**	**1,161**	**1,664**	**1,654**	**1,482**	**1,648**	**1,663**

ATE Fine Revenue and Investment

Fine revenue collected from ATE is used to offset overall expenses in CPS. Fine revenue from Red Light Cameras specifically is transferred to a reserve used to maintain Red Light Cameras and associated signage.

The total dollar amount of ATE violation tickets was $21.2M in 2024. Approximately 70% of this eventually makes its way into CPS budgets.

The following are funded from the operating budget of CPS's Traffic Section and occur throughout the year:

- Road safety campaigns
- Collaborative initiatives with municipalities regarding photo radar signage
- Communication with the public regarding changes to ATE
- Site assessments to address high collision/high speed locations
- Changes to equipment and technology at ATE sites
- Continued testing and inspection of ATE
- Data analysis to identity gaps in information and areas requiring improvement

Conclusion

Since its introduction to Calgary, photo radar deployment data has varied year to year and is subject to both manpower and equipment changes. The effectiveness of photo radar has not varied, having contributed to a marked reduction in the number of speeding drivers and injury collisions at the deployment sites.

The use of intersection safety cameras that monitor red light running offences have contributed to a marked decrease in right angle collisions at intersections. Intersections equipped with these cameras have continued to improve the safety of Calgary's roads by decreasing the number of injury and fatal collisions at intersections. The use of the intersection safety cameras for speed enforcement has also added another layer of injury prevention through the use of enforcement and education to help decrease vehicle speeds and speed related collisions at intersections.

The presence of automated enforcement in Calgary has contributed to a decline in the number of collisions at photo radar and red light camera deployment locations. Photo radar has also contributed to a decrease in the severity of injuries. The decreases in speed, number of collisions, and the increases in the volume of vehicles on Calgary's roadways are critical factors in determining the automated enforcement program's effectiveness. The data collected by the Calgary Police Service supports the claim that automated enforcement technologies have contributed to an increase in traffic safety within the City of Calgary.