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The Regional Municipality of Durham Information Report

From: Commissioner of Works
Report: 2024-INFO-33
Date: May 17, 2024

Subject:

Durham Vision Zero Status Report

Recommendation:

Receive for information.

Report:

1. Purpose

1.1 The purpose of this report is to provide a status update on the Durham Vision Zero (DVZ) Road Safety Action Plan.

2. Background

2.1 Vision Zero is a road safety program that originated in Sweden and has achieved popularity with many other jurisdictions around the globe. The program has three basic tenets: i) life and health are paramount and cannot be exchanged for any other benefits within society; ii) collisions do not happen by accident, and all collisions are preventable; iii) humans will make mistakes, but road design should accommodate those mistakes in a way that does not lead to a loss of life.

2.2 At the meeting of April 24, 2019, Regional Municipality of Durham (Region) Council endorsed a Vision Zero approach to Road Safety for the Region and recommended that staff report back semi-annually with steps taken towards achieving Vision Zero.

2.3 A previous Vision Zero report was provided as part of the regular Council Information Package on May 28, 2021, [Report #2021-INFO-56](#) highlighting safety improvements underway and summarizing the impacts of COVID 19. An update on Automated Speed Enforcement and Red-Light Camera performance was submitted to Committee of the Whole on June 14, 2023 [Report #2023-COW-25](#).

3. Collision Data

3.1 Injury and death resulting from motor vehicle collisions have declined since the start of the Vision Zero program, and the Region is on track to achieve its interim goal of reducing injuries and fatalities by ten per cent or 155 injury and fatal collisions annually, for the duration of the five-year Vision Zero program. Figure 1 summarizes below available collision data from 2014 to 2023.

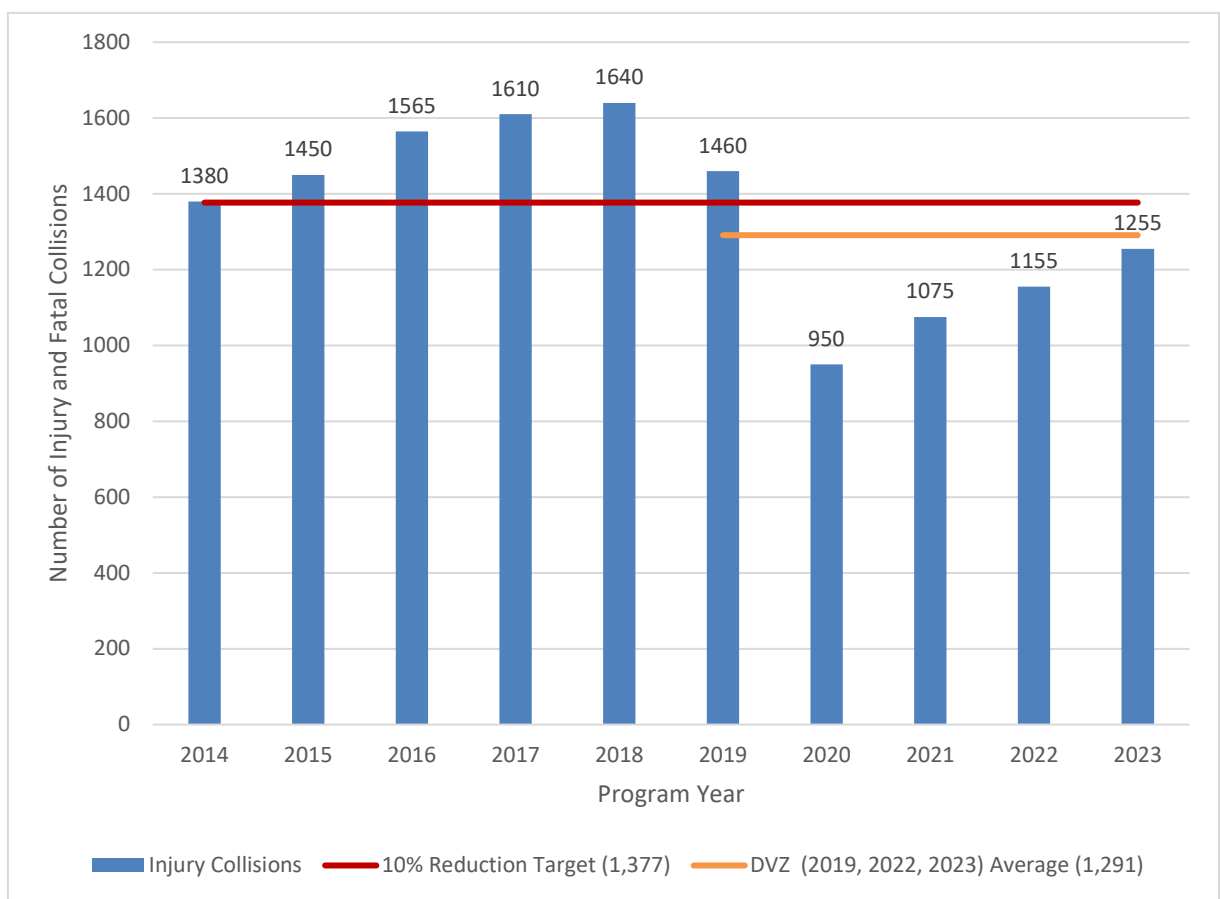


Figure 1 - Injury and Fatal Collisions (2014-2023)

- 3.2 The ten per cent reduction target established for the program is represented by the red line in Figure 1, indicative of 1,377 collisions per year (1,530 less ten per cent). The orange line represents the average number of injuries and fatal collisions (1291) during Durham Vision Zero, including 2019, 2022 and 2023. 2020 and 2021 have not been included in the calculations, as they reflect the COVID-19 pandemic years. The average number of fatal and injuries of 1,291 collisions exceeds the Durham Vision Zero target of 1,377 collisions by six per cent.
- 3.3 The collision data illustrated in Figure 1 exclude injury and fatal collisions that have occurred on roadways operated by the Ministry of Transportation or private property, such as parking lots and trails, outside the Regional or Municipal Road allowance.
- 3.4 Although collisions significantly reduced in 2020 and 2021, it is not appropriate to associate this reduction with any programs implemented through Vision Zero due to the substantial reductions in traffic volume during the COVID-19 pandemic. As volumes and traffic patterns return to pre-pandemic levels, collision levels have increased to some degree, but not to the extent observed prior to the launch of Durham Vision Zero in 2019.
- 3.5 During the pandemic, the number of fatal collisions per year (Regional and Municipal) remained consistent and did not decrease because of fewer vehicles on the road compared to other years. Typically, the Region experiences between 14 and 22 fatal collisions per year. A slight downward trend in fatal collisions is being observed in Durham as shown in Figure 2.

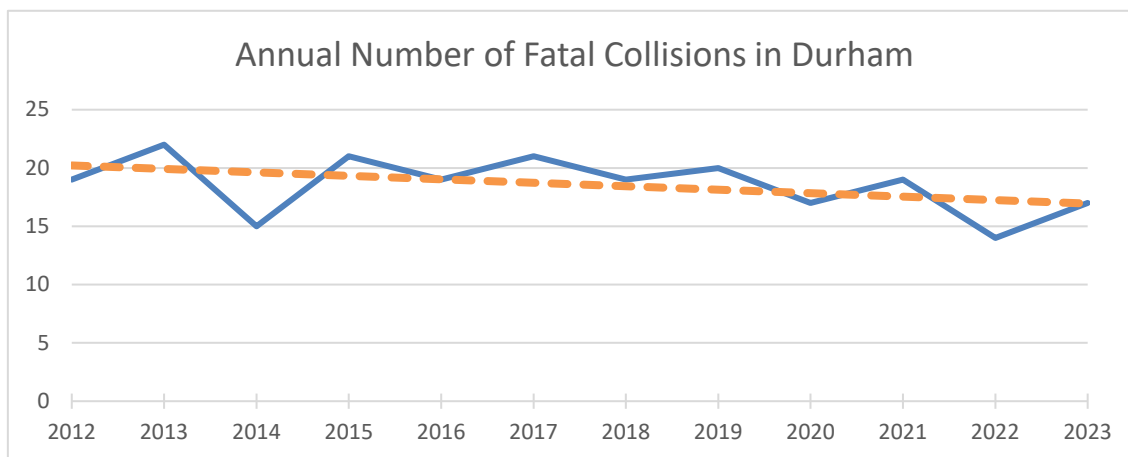


Figure 2 – Annual Number of Fatal Collisions (2012-2023)

4. 2024 Durham Vision Zero Action Plan

4.1 The Regional Municipality of Durham (Region) continues to make great strides in programming and installing safety engineering improvements. Education and enforcement initiatives are regularly deployed by Durham Regional Police Services, Corporate Communications, Health, and other Durham Road Safety partners, which educate the public by releasing safety messaging, running campaigns, safety blitzes, and enforcement initiatives and programs. These countermeasures target the key emphasis areas summarized in the following sections.

a. Intersections

Based on the collision evidence, public opinion and partner agency input, intersections were identified as the largest emphasis area. The number of fatal and injury related collisions occurring at intersections is trending downward, as shown in Figure 3. This downward trend could be a result of countermeasures deployed to target unsafe driving behaviours at intersections, such as, but not limited to, red-light cameras, line marking and signage enhancements, new traffic control signals, roundabouts, and signal timing adjustments.

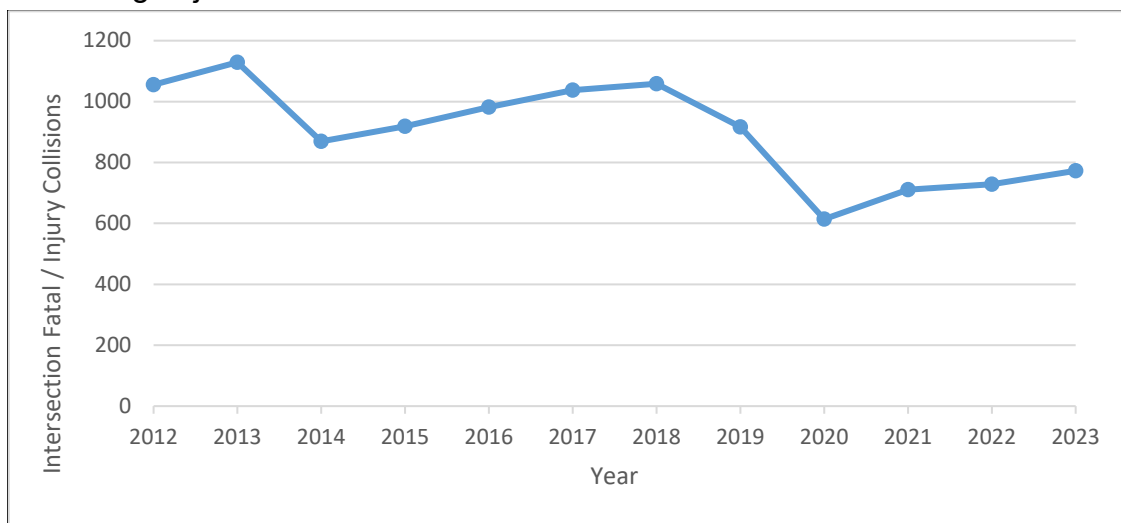
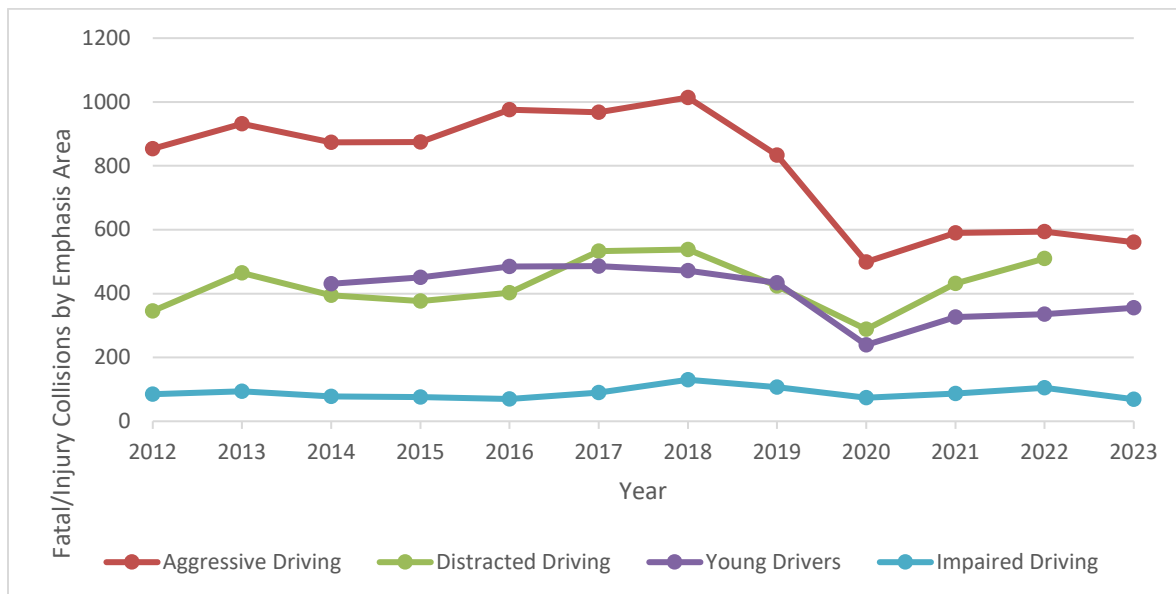


Figure 3 – Intersection Injury and Fatal Collisions (2012-2023)

b. Aggressive Driving

Collisions resulting from speeding, driving too fast for conditions, following too close, disobeying traffic control, and failing to yield the right-of-way are considered aggressive driving. As shown in Figure 4, the number of fatal and injury collisions resulting from aggressive driving from 2018 onwards has decreased. The decrease in aggressive driving may be attributed to

countermeasures such as automated speed enforcement, radar feedback boards and police enforcement. High speeds, however, continue to be a major contributing factor to collisions, particularly those resulting in injury or death.



Note: Data unavailable for 2012-2013 with respect to young drivers and in 2023 for distracted driving

Figure 4 - Injury and Fatal Collisions (2012-2023) by Emphasis Area

c. Distracted Driving and Young Drivers

Collisions involving a distracted driver have not significantly changed year over year apart from 2020. The number of injuries and fatal collisions involving a young driver (aged 16 to 25) has decreased since Durham Vision Zero was launched in 2019. Education and enforcement campaigns, such as, distracted driving enforcement initiatives, and safety messaging geared to young drivers have benefitted these two areas of emphasis.

d. Impaired Driving

The number of injuries and fatal collisions resulting from impaired driving has not changed significantly overall since 2012, hovering around 100 collisions per year, contrary to other jurisdictions seeing an increase because of the legalization of cannabis in October 2018. This is evident of the numerous enforcement and education campaigns by Durham Regional Police Services, Corporate Communications, and the Road Safety Partners.

e. Pedestrians and Cyclists

Figure 5 shows the collision trends related to injury and fatal collisions involving pedestrians or cyclists for the past 12 years. Pedestrian related collisions have trended upward since the pandemic, returning to pre-pandemic levels. The number of collisions involving cyclists has remained relatively constant at around 70 collisions per year.

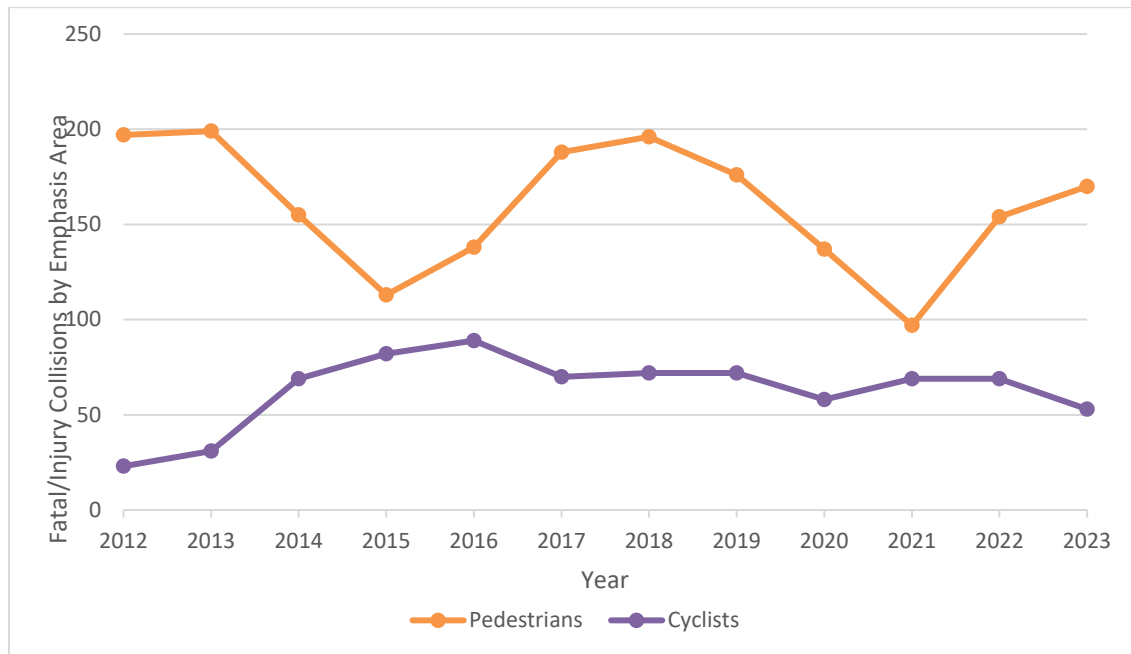


Figure 5 – Pedestrian & Cyclist Related Injury and Fatal Collisions (2012-2023)

f. Commercial Vehicles

From 2019 to 2023, There have been 257 collisions involving a commercial vehicle. This is lower than the 5-year increments prior to 2019, which recorded 270 collisions involving a commercial motor vehicle. Commercial vehicle initiatives in various locations in Durham are coordinated with DRPS and other agencies to inspect and remove unsafe vehicles from the road.

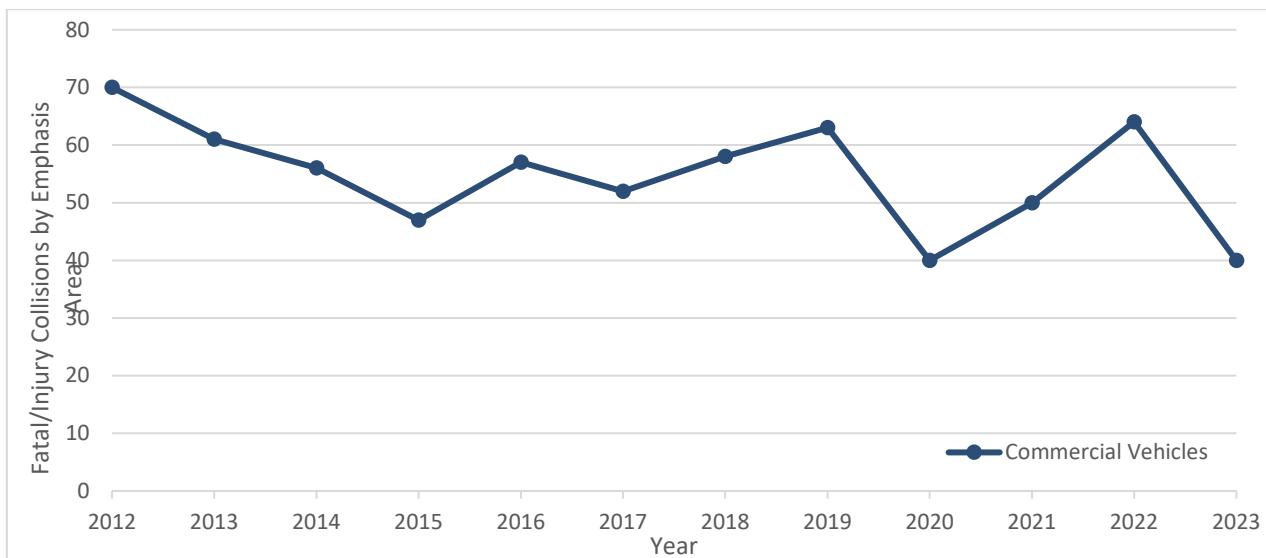


Figure 6 – Commercial Vehicle Injury and Fatal Collisions (2012-2023)

- 4.2 To strategically improve traffic safety in these emphasis areas, the Region has taken the Vision Zero approach to implement engineering, education, and enforcement countermeasures to reduce injury and death on the Region's transportation system. A summary of safety countermeasures implemented in 2022 and 2023 is provided in Attachment #1.
- 4.3 Two key components of the Vision Zero action plan were the implementation of Automated Speed Enforcement and Red-Light Cameras in the Region. Twelve (12) Red-Light Camera locations were commissioned near the end of 2020. Eight (8) fixed Automated Speed Enforcement (ASE) units are now operational, and six (6) mobile cameras are being rotated through 36 community safety zones/school zones across the Region. Another two (2) fixed ASE cameras are in the procurement process and are expected to be activated in Spring 2024.
- 4.4 While the ASE data showed that overall speeding incidents at ASE locations decreased because of this program, Vision Zero principles advocate achieving lower speeds or compliance with posted speed limits through road and intersection design.
- 4.5 Red-Light running incidents at the twelve red-light camera locations showed a seasonal pattern with lows in winter and highs in summer. This suggests that red-light running behaviour is positively associated with warm weather, better driving environments, and higher operating speeds. On a positive note, there has not been a fatal collision at any of the Region's red-light camera locations since the program became operational.

4.6 The 2024 Durham Vision Zero program will continue to deploy countermeasures as we've done in prior years. Some key engineering initiatives underway this year include:

- No right turns on red restrictions at intersections where sightline restrictions or unexpected conflict exists.
- Installation of area-wide posted 40 km/h zones in Cannington, Beaverton, and Sunderland.
- Access management restrictions where a high number of conflicts are occurring.
- In Service Road Safety Reviews on Regional Road 3 (Enniskillen), Reg. Hwy 2 from Hwy 418 to Rundle Road, Regional Road 55 (Townline Road) from Nash Rd. to Reg. Hwy 2.
- New all-way stops proposed at Simcoe St./Harbour Rd., Reg. Rd. 50/Reg. Rd. 51 (Gamebridge), Reg. Rd. 39/Reg. Rd. 13 (Zephyr) and Reg. Rd. 11/Reg. Rd. 30.
- Several pedestrian-controlled devices are proposed, including pedestrian crossovers in channelized right turn lanes.
- Construction of a partial multi-lane roundabout at Reg. Rd. 57 and Reg. Rd. 4 is to start this year.
- Positive offset left turn lanes are being advanced at the detailed design phase to improve sight lines for left-turning vehicles at major intersections.
- Corridor study of Finch Avenue from Altona Road to Brock Road.
- Assessment of the results of the Roadside Protection Audit to ensure the Capital Program prioritizes replacement of the locations with the highest risk.
- Programming of deficiencies identified from the At-Grade Railway Safety Audit completed at all Regional at-grade railway crossings.
- Continue the installation of traffic signal timing improvements such as leading pedestrian intervals and protected left-turn phasing to improve pedestrian safety and reduce conflicts.

5. Durham Vision Zero Reserve Fund

5.1 The Durham Vision Zero reserve fund, established in 2020 to accelerate safety programs, will continue to fund several countermeasures this year and in 2025. Separate funding has been approved for specific initiatives such as, automated speed enforcement, red light cameras, and safety engineering studies. Table 1 summarizes how these funds will be allocated for the next three years.

Table 1: 2024 DVZ Reserve Funding Allocation

Countermeasure	2024 Budget Allocation	2025 Proposed Budget Allocation	2026 Proposed Budget Allocation
Uninterruptable Power Supplies	100,000	100,000	
Line Marking Improvements	200,000	200,000	
Controlled Pedestrian Crossing Devices	200,000	100,000	
Cycling Infrastructure	50,000		
Other Safety Measures	100,000	100,000	379,000
Total Funding Allocation	650,000	500,000	379,000

5.2 Annual funding outside the DVZ reserve fund allows the Region to implement several countermeasures in all areas (engineering, education, and enforcement) to be implemented in the Region's efforts to further reduce fatal and injury collisions.

6. Relationship to Strategic Plan

6.1 This report aligns with/addresses the following strategic goals and priorities in the Durham Region Strategic Plan:

- a. Goal 2.2 Enhance community safety and well-being.
- b. Goal 3.3 Enhance communication and transportation networks to better connect people and move goods more effectively.
- c. Goal 5.1 Optimize resources and partnerships to deliver exceptional quality services and value.
- d. Goal 5.2 Collaborate for a seamless service experience.
- e. Goal 5.3 Demonstrate commitment to continuous quality improvement and communicating results.

7. Previous Reports

7.1 On June 28, 2023, Regional Council adopted [Report #2023-COW-25](#), to seek authorization to adjust the POA revenue sharing agreement for RLC and ASE programs and to report back on the new Administrative Monetary Penalties (AMP) program.

- 7.2 On May 28, 2021, Regional Council received [Report #2021-INFO-56](#) for information. This report provided the previous update on Vision Zero program results.
- 7.3 On April 24, 2019, Regional Council approved [Report #2019-W-27](#), for the establishing of the Region's Vision Zero program.

8. Conclusion

- 8.1 Going forward, Durham Vision Zero will strive to maintain this level of success and work towards a new five-year chapter, piloting new innovative safety treatments and focusing efforts on locations where improvements are needed.
- 8.2 The Durham Vision Zero program has been a success to date, contributing to a reduction in injuries and fatalities on the Regional Road system over the first few years of the program. Continued investment in road safety initiatives is expected to yield further positive results, saving lives and reducing injuries, working towards the vision of zero injuries and fatalities on the Regions roadways.
- 8.3 For additional information, please contact Steven Kemp, Manager, Traffic Engineering and Operations at 905-668-7711 ext. 4701.

9. Attachment

Attachment #1 – Summary of Safety Countermeasures Implemented in 2022 and 2023

Respectfully submitted,

Original signed by:

Ramesh Jagannathan, MBA, M. Eng., P. Eng., PTOE
Commissioner of Works

Road Safety Initiatives Implemented in 2022 and 2023

Road Safety Initiatives (also referred to as Road Safety Countermeasures) are generally divided into three categories – sometimes referred to as the three Es; Engineering (changes to the physical environment), Education (influencing road user behavior through information sharing); and Enforcement (influencing road user behavior through penalties). A summary of Road Safety Countermeasures implemented through the Durham Vision Zero program to date is provided as follows:

Engineering Countermeasures

Engineering Countermeasures include any modification to the physical environment intended to either change driver behaviour, reduce the consequences of driver error, or reduce the likelihood of collisions occurring. Engineering countermeasures implemented to date include:

- Red Light Cameras (RLC) at 12 intersections.
- Automated Speed Enforcement (ASE) was deployed using six mobile units on a rotational basis and eight fixed cameras.
- Line marking enhancements at several locations.
- Roadside protection improvements to replace 3-cable guiderail with steel beam guiderail at several locations.
- Cycling initiatives to install cross rides, signs, delineate bike lanes and expand data collection program.
- Community safety zone policy update and installed 13 new community safety zones (total 36).
- Converting two-way stop-controlled intersections to all-way stop controlled intersections at locations such as: Townline Rd at Olive Ave, River St at Church St and Myrtle Rd/Ashburn Rd.
- Expanded our inventory of speed tracking devices by purchasing six side fire radar devices (2022).
- Replaced older speed radar feedback boards by purchasing 20 new signs which will allow us to continue to rotate signs throughout Durham (2023).
- Controlled pedestrian crossovers (PXOs), intersection pedestrian signals (IPS) and mid-block pedestrian signals (MPS) were installed: MPS on Reg. Rd. 1 at Fields of Uxbridge, IPS on Regional Rd 58 (Manning Rd)/Hazelwood Dr., MPS on Regional Rd 16 (Ritson)/Kedron Public School, IPS on Reg. Hwy 47 (Toronto St) at Church St, PXO Regional Rd 2 (Simcoe St)/Paxton St, and a PXO Reg. Rd 23 (Mara Rd)/King St.

Road Safety Initiatives Implemented in 2022 and 2023

- Several traffic control signals were also installed at Regional, MTO and Local intersections.
- Protected-only left turn operations at Thickson Rd/Consumers Dr (Whitby), Highway 7/Island Road (Scugog), Brock St./Toronto St (Uxbridge), Liverpool/Bayly (Pickering) and Stevenson Rd/Laval St (Oshawa).
- Expanded the leading pedestrian interval program by installing LPI's at 9 intersections in 2022 and 12 intersections in 2023.
- The Regions third roundabout in Municipality of Clarington at RR 57 and RR 3 was completed in Fall 2023.

Education Countermeasures

In partnership with others, key road safety education campaigns were launched including, the following:

- Several social media messages are deployed with the #visionzero monthly addressing items such as pedestrian/cyclist safety, anti-aggressive driving, roundabouts, construction zones, teen driver safety, daylight savings, winter driving reminders etc.
- Be Alert! Be seen! – a pedestrian safety campaign that targeted the GO Transit stations and UOIT campus. MTO, DRPS, Metrolinx and Durham Vision Zero collaborated to raise awareness of pedestrian collisions associated with daylight savings time change.
- PARTY (Prevent Alcohol & Risk-Related Trauma in Youth) Program – a one day injury awareness and prevention program for youth (age 15 and up).

Enforcement Countermeasures

Enforcement Countermeasures include both traditional police and automated enforcement. They focus on achieving better compliance with existing rules of the road, with the secondary aim of educating drivers about the consequences of their actions. Implemented enforcement countermeasures include:

- Automated enforcement programs including red light camera and automated speed enforcement operations.
- Distracted driving campaign targets drivers stopped at intersections observed using their cell phones.
- Durham Vision Zero anti-aggressive driving public awareness campaign.

Road Safety Initiatives Implemented in 2022 and 2023

- ERASE (Eliminate Racing Activity on Streets Everywhere) – Police Services joint initiative to combat street racing.
- Project Red Ribbon Festive Ride Program – attended launch event in support of reducing impaired driving.
- Distracted Walking Program implemented by DRPS Auxiliary Unit to educate student on the dangers of texting and walking.
- Commercial Motor Vehicle Safety Blitzes are a collaborative effort between DRPS, several other Police Services and MTO to inspect, lay charges and remove non-compliant commercial vehicles.
- ‘In the zone’ traffic safety blitz around neighborhood schools in Durham.