



Alternative formats and communication supports available upon request. Please contact accessibility@brantford.ca or 519-759-4150 for assistance.

Date November 23, 2023 **Report No.** 2023-618
To Chair and Members
Vision Zero Road Safety Committee
From Mark Jacklyn
Director of Operational Services, Public Works Commission

1.0 Type of Report

Consent Item
Item For Consideration

2.0 Topic **Appendix A - Vision Zero Program Update - 2023-618.docx**

3.0 Recommendation

- A. THAT report no. 2023-618 regarding 2023 Vision Zero Program Update BE RECEIVED; and
- B. THAT a capital project to retain a consultant to undertake an evaluation on Automated Speed Enforcement and Administrative Penalty System operations in order to provide recommendations to implement the program in the City of Brantford, BE CONSIDERED in the 2024 capital budget; and
- C. THAT “Lane Designation” BE APPROVED on Icomm Drive at Clarence Street South as outlined in Appendix “A” of this report; and
- D. THAT the necessary by-law BE PRESENTED to City Council for ADOPTION.

4.0 Background

At its meeting held April 27, 2021, City Council approved report no. 2021-275 City of Brantford [Vision Zero Road Safety Plan](#). The plan aims to address a

number of goals and priorities for the City, including promoting safe, healthy, and age-friendly built environments; ensuring all neighbourhoods in the City are safe, vibrant, attractive, and inclusive; and promoting a safe and efficient transportation system that connects Brantford neighbourhoods and neighbouring communities.

The Vision Zero Road Safety Plan focuses on the following three pillars to emphasize road safety:

1. Engineering;
2. Education; and
3. Enforcement.

The plan outlined the following goals to accomplish before the year 2026:

1. Establish an understanding of the costs associated with road collisions in the City for the following areas to help evaluate the progress of road safety initiatives:
 - a. Cost of insurance claims;
 - b. Cost to repair municipal assets (staff operating costs and material costs); and
 - c. Healthcare costs.
2. Partner with community organizations to stress the importance of road safety and reinforce that it is a shared responsibility between the City, community partners, and members of the public:
 - a. Shift the focus of road safety to reframe it as a public health issue;
 - b. Increase understanding in the community about actions different stakeholders can take to contribute to road safety; and
 - c. Focus on educating all road users, including drivers, transit users, pedestrians, and cyclists, about how they can improve road safety in the City.
3. Reduce the number of total road collisions on municipal roads by 10% from the 2019 figures by the end of 2026:
 - a. Reduce the number of total collisions on roadways by 10%;
 - b. Reduce the number of collisions involving cyclists and pedestrians by 25%; and
 - c. Reduce the number of personal injuries resulting from collisions by 25%.
4. Reduce the number of fatalities resulting from collisions to ZERO.

At its meeting held March 28, 2023, City Council approved report no. 2022-558 2021 Collision Statistics. The report summarized the number of injuries and fatalities resulting from collisions in 2021.

5.0 Analysis

The purpose of this report is to provide the Vision Zero Road Safety Committee with an update on various initiatives that were undertaken in 2023 to assist the City in meeting the goals outlined in the Vision Zero Road Safety Plan. The initiatives included:

Traffic Calming

In 2023, six (6) roadways had vertical traffic calming measures installed, as described in Table 1 below.

Table 1 - Vertical Traffic Calming installed in 2023

Roadway	Traffic calming measure
Ava Road	Four (4) Pedestrian Crossovers with raised crosswalks
Catharine Avenue	Two (2) speed cushion locations
Forsythe Avenue	Four (4) speed cushion locations
McGuinness Drive	Two (2) Pedestrian Crossovers with raised crosswalks
Oakhill Drive	Three (3) Pedestrian Crossovers with raised crosswalks
Garden Avenue	One (1) Pedestrian Crossover with raised crosswalk

Traffic studies determined these roadways warranted traffic calming measures. In general, the installation of traffic calming measures can reduce the 85th percentile speed (the speed in which 85 percent of traffic is travelling at or below), by an average of 7km/h.

City Council also approved report no. 2023-422 Scarfe Avenue at Brant Avenue – Directional Closure, for the installation of a directional closure from Scarfe Avenue to Brant Avenue.

Pedestrian Crossovers (“PXO”)

As of October 31, 2023, staff installed a total of forty-four (44) Pedestrian Crossovers, twenty-eight (28) of those were installed in 2023. PXO’s let pedestrians easily and safely cross the road. All drivers, including cyclists, must stop and yield to pedestrians wishing to cross the road, and wait for them to completely reach the other side before driving.

PXO’s continue to be a popular request for installation from residents, for now staff expect to install PXO’s at approximately ten (10) locations per year.

Further information on PXO’s can be found on the [PXO web-page](#) on the City’s website.

In 2023, staff installed ten (10) raised crosswalks at PXO locations. Raised crosswalks provide two functions, they elevate pedestrians, increasing their visibility to drivers approaching, and the raised crosswalk requires motorists to reduce their speed similar to locations with speed cushions or speed humps.

Neighbourhood Traffic Safety Plans

City Council approved three Neighbourhood Traffic Safety Plans “(NTSP)” In 2023, with a fourth report expected to be presented to City Council in Q2 2024. NTSP’s are developed through concerns raised by residents and an extensive technical review completed by staff. The plans are developed to improve neighbourhood livability and safety within the neighbourhood. The proposed plan is then presented to area residents for a final review. The proposed changes and any additional suggestions would be reviewed, and if possible, included in the final plan that is presented to City Council for approval. The neighbourhood traffic safety plans are outlined below:

- Ashgrove Neighbourhood Traffic Review report no. 2023-341
- Shellard Neighbourhood Traffic Review report no. 2023-477
- Terrace Hill Neighbourhood Traffic Review report no. 2023-547
- West Brant Neighbourhood Traffic Review report expected Q2 2024

These traffic safety plans were developed by staff using industry best practices and input from area residents. The plans are expected to be implemented over the next few years pending approval of 2024 and 2025 Capital Budgets.

Active Transportation

The City established the Active Transportation Working Group in 2023, which consists of: City Staff, Brant County Health Unit, Wilfrid Laurier University, Conestoga College, School Board Transportation Services, Ministry of Transportation and local stakeholders. The working group typically meets every second month, with a focus on planning, designing and the development of active transportation in the City.

Bike to School week took place May 29 through June 1, 2023, to kick off Bike Month. Bike Month is celebrated annually in June in communities across the Province to promote cycling as an economical, healthy, convenient, and environmentally sound form of transportation. Eight (8) schools participated this year, a decrease from nine (9) in 2022. The number of students biking to school raised throughout the week, with the average daily number of school trips reaching 398.5 in 2023, an increase from 332 trips in 2022.

At its meeting held October 24, 2023, City Council approved report no. 2023-83 [Active Transportation Master Plan](#) “(ATMP)” which provides staff with direction to implement the active transportation network across the city over the next ten to

fifteen years. The ATMP is a detailed implementation plan based off of public consultation, industry standards and specific criteria that will assist the City to implement active transportation initiatives on a ranking priority basis.

Staff also completed two on-road protected bike lanes along Henry Street and Oakhill Drive in 2023.

Community Safety Zones “(CSZ)”

The City implemented twenty-six (26) CSZ’s in 2023. Sixteen (16) designated school zones and ten (10) segments of roadway which were identified through an in-depth analysis of safety and operational (collisions and speeding) data. The intent of CSZ’s is to provide road users with visual awareness that they should be diligent in their attentiveness to roadway safety when traveling in or through these areas. The doubling of traffic offence fines assists in reinforcing the importance of safety and to modify driver behaviour. CSZ’s are marked with signs at the beginning and end of the areas denoting the legal limits and are in effect twenty-four hours of the day. CSZ’s are also a requirement for the use of Automated Speed Enforcement “(ASE)”, which is currently being reviewed by staff.

Automated Speed Enforcement (ASE)

Identified as a recommendation through the City of Brantford-County of Brant Joint-shared services committee and previously reported on and approved by City Council through, Report No. 2021-742, Automated Speed Enforcement Update and Report No. 2022-422, Provincial Offences Act Camera Based Offences and Administrative Penalty System, staff are preparing for the implementation of ASE.

Staff established an ASE working group in 2023, which consists of: City staff, County of Brant, and Brantford Police Services. Legal Services is currently reviewing by-laws and Administrative Penalty System software. It is expected their review will be completed in Q2 2024.

Traffic Services staff continue to explore various ASE Operations. Staff recommends the City retain a consultant to undertake an evaluation of the various operational options and cost benefit analysis with the goal to implement ASE in 2025. The cost to complete this review is recommended to be funded from the Road Safety Initiatives reserve (RF0575).

Traffic Signal System Upgrades

Staff installed enhanced detection with video connectivity at fifteen (15) intersections. This technology allows staff to monitor conditions and implement traffic signal timing changes during times of congestion, road closures, special

events and to implement emergency detour routing. The program saves a considerable amount of staff time and enhances the current level of service along the City's roadways. Staff plans to implement devices on most of the City's 130 signalized intersections over the next ten years. Staff is waiting approval of a Federal grant that would cover 40% of the project costs, up to a maximum of approximately \$500,000. Staff submitted a capital project for consideration as part of the 2024 capital budget deliberations.

Staff also undertook twenty-seven (27) traffic signal timing reviews and completed the evaluation of two (2) corridors to improve the overall level of service and safety. These reviews resulted in adjustments to signal timings at signalized intersections and helped identify new locations for left turn phases and improvements at pedestrian crossings.

Accessible Pedestrian Signals "(APS)" Buttons

Ontario Regulation 413/12 Accessibility for Ontarians with Disabilities Act (AODA) dictates that all new or rebuilt signalized intersections or pedestrian crossings must be fitted with APS buttons in or after 2016 with the goal of a fully accessible Ontario by 2025.

Staff installed an additional fifteen (15) devices at intersections and pedestrian crossovers in 2023, bringing the total number of intersections to ninety-six (96) or 60%. Staff will continue to install buttons at signalized intersections in order to meet the goal of a fully accessible Ontario.

Intersection Pedestrian Countdown Timers and Walk Times

Staff installed an additional twenty-two (22) pedestrian countdown timers in 2023, bringing the total number of intersections to 102.

Pedestrian Countdown signals consist of standard walk / don't walk flashing hand signal indications, with the addition of a countdown feature that shows pedestrians how much crossing time remains. Pedestrian countdown timers have been proven to improve pedestrian signal understanding, and benefit vulnerable road users such as; seniors, children and those who utilize accessibility devices.

Amber and all-red clearance phases are programmed based on the posted speed limit and intersection width as recommended in Ontario Traffic Manual book 12. Starting in 2022, the City started to retime all the pedestrian flashing "don't walk" intervals at 1.0 m/s walking speed as opposed to the traditional 1.2m/s. This change provides a longer flashing "don't walk" interval and improves pedestrian safety of vulnerable road users.

Air Quality and Noise Sensor Monitoring

The City partnered with Liveable Cities for the deployment of devices installed on streetlights for the purposes of measuring air quality (one device) and noise levels (two devices).

Staff used the devices to monitor air quality conditions during the height of the 2023 forest fire season, detecting a notable rise in particulate matter. There are two specific types of particulate matter with the primary focus being on PM 2.5. Between May 20, 2023 and June 3, 2023, the average PM 2.5 was 3.75 micrometers "(um)". Between June 3, 2023 and June 7, 2023, the average PM 2.5 increased to 7.38um. According to the World Health Organization "(WHO)", the readings were below the guidelines for 24-hour exposure of 15um, In general, the air quality in the City is within acceptable limits set by WHO.

Between May 1, 2023 and July 9, 2023, staff conducted a noise study on Elgin Street using the devices. The study findings revealed that the average decibel level recorded during this period was 55.71 dB(A). According to the WHO guidelines, the noise threshold for areas with heavy traffic / industrial area is set at 70 dB(A). Considering this, the recorded noise levels fall below the limits recommended by WHO, indicating no additional investigation or corrective measures are necessary.

Given the positive results of the pilot project, staff was approached by Innovative Solutions Canada and Environmental & Climate Change Canada, to take part in a second pilot project in 2024. Twenty air quality devices will be installed, at no cost to the City, to take part in Canada's largest air quality sensing project.

Road Safety Initiatives

Staff retained a consultant in Q4 2022 to undertake a safety review at the Clarence Street at Colborne Street intersection. Utilizing artificial intelligence video technology, the consultant reviewed the data and recommended the following seven (7) collision counter measures:

1. Implement lead pedestrian intervals to give pedestrians the opportunity to enter the crosswalk at the intersection before vehicles are given a green indication. Pedestrians can better establish their presence in the crosswalk before vehicles make their turn;
2. Add painted ladder type crosswalks;
3. Improve the signage layout for vehicles accessing the southbound approach of the intersection;
4. Repaint the stop bars, crosswalk lines and lane lanes;
5. Install a curb extension, using knockdown sticks, on north east corner of the intersection, for pedestrian safety by narrowing the crossing width of the roadway;

6. Install an auxiliary signal head on the northbound approach to increase visibility of the traffic signal displays; and
7. Review streetlights to ensure appropriate lighting levels.

Staff reviewed the recommendations and implemented them over the past year. Staff will continue to monitor the intersection over the next three years to assess the impacts of the safety measures installed.

Clarence Street South at Icomm Drive / Greenwich Street

In response to the 2021 annual collision report that identified a high number of collisions at the Clarence Street at Icomm Drive and Greenwich Street intersection, staff conducted a safety review in Q2 2023. The studies identified the following conflicts:

- Left turn vehicles failing to yield to pedestrians;
- Left turn vehicles failing to yield to opposing through vehicles;
- Pedestrian crossing without the right-of-way or crossing without activating the pedestrian push-buttons; and
- Westbound right turn vehicles disobeying “No Right Turn on Red” restriction.

To address the vehicle and pedestrian conflicts, staff will be implementing the following measures:

- Installation of a LED illuminated “No Left Turn” sign, to be active during railway signal pre-emption events to allow for signal head change to can accommodate a southbound protected left turn phase;
- Retime the traffic control signal to provide longer pedestrian clearance time;
- Implementation of northbound, southbound and westbound protected left turn phases;
- Review street lighting levels to determine if improvements are required;
- Paint ladder type crosswalks to increase the visibility of pedestrians;
- Relocated pedestrian push buttons to separate poles that are closer to pedestrian desire lines; and
- Install a designated right turn lane on the west leg of the intersection, in the eastbound curb lane. Staff will install Lane Designation signage to permit the right turn movement that is contrary to the normal unsigned rules of the road. Lane designation signs are considered regulatory signs under the Ontario Highway Traffic Act. When Lane Designation signs are installed they are required to be by-lawed by the municipality. The recommended amendment to Traffic by-law 37-83 Schedule “5” pertaining to “Lane Designation” is attached as Appendix “A” to this report.

Red Light Camera

The City began Red Light Camera operations in March 2023. All six (6) locations were fully operational in May 2023. Below is a breakdown of violations up to August 31, 2023:

Table 2 - Red Light Camera Violations

Location	March	April	May	June	July	August
Veterans Memorial Parkway at Blackburn Drive	18	29	34	43	50	38
Wayne Gretzky Parkway at Henry Street	19	43	27	30	33	68
Clarence Street at Dalhousie Street	Not applicable	Not applicable	14	120	105	89
Clarence Street at Icomm Drive/Greenwich Street	89	86	91	86	80	83
Wayne Gretzky Parkway at Morton Avenue	77	114	89	79	112	213
Market Street at Wellington Street	17	8	15	2	Not applicable	1
Total per month	220	280	270	360	380	492
Average tickets per camera per day	1.4	1.8	1.5	2	2.5	2.6

As of August 31, 2023, 2002 violations have been issued.
Engineering Services and Planning and Development Services

In addition to the ongoing work by Operational Services staff, Engineering Services and Planning Services staff are also implementing measures as part of their capital and development projects. The infrastructure implemented through these projects include; pedestrian crossovers, raised crosswalks, traffic calming, cycling infrastructure, road diets, intersection enhancements, roundabouts, traffic signals enhancements and ladder crosswalks.

6.0 Financial Implications

Staff will submit a capital project for consideration as part of the 2024 capital budget deliberations to retain a consultant in Q2 2024 to undertake an evaluation of the various operational options and cost benefit analysis to implement ASE. Its anticipated funding, at an estimated cost of \$60,000, be provided from the Road Safety Initiatives reserve (RF0575).

It is important to note that enhancements, such as those noted in this report, have a future impact on maintenance costs associated with them.

7.0 Climate and Environmental Implications

The implementation of the various traffic calming measures and traffic controls implemented throughout the City of Brantford, have the ability to improve fuel consumption and reduce vehicles speeds, and therefore reduce overall GHG emissions.

8.0 Conclusion

City Council has made a significant commitment to improve roadway safety for all road users over the past several years. This support for roadway safety has allowed staff to undertake and implement a number of measures to improve road safety and operations. These initiatives align with the three pillars of the Vision Zero Road Safety Plan: Engineering, Education and Enforcement.



Mark Jacklyn
Director of Operational Services, Public Works Commission

Prepared By:
David Ferguson, C.E.T., Manager of Traffic Services

Attachments:

Appendix "A" – Vision Zero Program Update – Traffic by-law amendments

In adopting this report, is a by-law or agreement required? If so, it should be referenced in the recommendation section.

By-law required yes no

Agreement(s) or other documents to be signed by Mayor and/or City Clerk yes no

Is the necessary by-law or agreement being sent concurrently to Council? yes no

Appendix “A”

1. Vision Zero Program Update – Traffic Control

- a) RECOMMEND that Schedule “5” of Traffic by-law 37-83 which pertains to “Lane Designation” BE AMENDED to provide the following:

<u>Column 1</u> <u>Street</u>	<u>Column 2</u> <u>Location</u>	<u>Column 3</u> <u>Lane</u>	<u>Column 4</u> <u>Direction</u>
Icomm Drive	From Clarence Street South to a point 90 metres west thereof	One	Easterly: Right turn only