

**TO:** Environment, Transportation & Public Safety Standing Committee  
**FROM:** Jeff Hagan, Transportation Planning Senior Engineer  
**DATE:** July 7, 2022  
**SUBJECT:** Vision Zero Action Plan – Recommended New Initiatives

---

## Introduction

This memo provides a range of initiatives that could be included in the Vision Zero Action Plan. They are grouped into three categories:

- **Already Planned:** these initiatives support Vision Zero goals and are already in process. Some are already approved but not yet implemented; some are in the initial planning stages. Generally, these initiatives could be (or have already been) approved outside of the Vision Zero framework, but should be included in the Vision Zero Action Plan for completeness. In some cases, the initiative could be expanded, enhanced, or accelerated to support Vision Zero goals.
- **New Recommended Initiatives:** these initiatives have not yet been approved, but would comprise fundamental core elements of an action plan that supports Vision Zero goals and the strategic priorities already identified.
- **Initiatives Considered but Not Recommended:** these initiatives were included in submissions to the Vision Zero Task Force and Vision Zero Action Plan, but were not included in the list of recommended initiatives based on feedback received.

The new initiatives are summarized in Table 1.

**Table 1: Summary of Initiatives**

Category	Initiatives
<b>Already Planned</b>	<ul style="list-style-type: none"> <li>• Develop and Implement a Complete Streets Policy</li> <li>• Construct Roadway Capital Projects (for certain corridors)</li> <li>• Obtain Collision Data through Provincial ARIS System</li> <li>• Continue to Implement the Transit Master Plan</li> <li>• Review Yellow and All-Red Intervals for Traffic Signals</li> <li>• Install Retroreflective Backboards for Traffic Signals</li> <li>• Increase Winter Roadway Maintenance</li> <li>• Driver Simulation Training for Commercial Motor Vehicle Operators</li> <li>• Commercial Motor Vehicle Driver Evaluation by Independent Party</li> </ul>
<b>Recommended New Initiatives</b>	<ul style="list-style-type: none"> <li>• Conduct Road Safety Audits of Identified High Injury Corridors</li> <li>• Carry out a Value Engineering &amp; Road Safety Review of Existing Approved Preliminary Designs for Roadway Projects</li> <li>• Establish a Fatal Collision Response Team</li> <li>• Explore Data-Sharing Arrangements Between Agencies</li> <li>• Carry out a Resident Survey</li> <li>• Implement Target Speed Requirements for New Construction and Major Roadway Projects</li> <li>• Implement Speed Limit Reductions – Neighbourhoods</li> <li>• Implement Speed Limit Reductions – Major Streets</li> <li>• Implement Speed Limit Reductions and Increased Fines – Construction Zones</li> <li>• Reduce Progression Speed for Traffic Signal Coordination</li> <li>• Carry out Education Campaigns</li> <li>• Adjust Project Prioritization Criteria in the Active Transportation Master Plan to Place a Greater Emphasis on Safety and Collisions</li> <li>• Include Collision History as a Factor in Prioritizing Capital Projects</li> <li>• Review Official Plan and Zoning By-laws for Vision Zero Opportunities</li> <li>• Review Design Standards and Development Manual for Vision Zero Opportunities</li> <li>• Require Transportation Impact Studies for New Developments to Include a Full Multimodal Review</li> <li>• Develop Safety Performance Functions</li> </ul>

Category	Initiatives
<b>For Discussion</b>	<ul style="list-style-type: none"> <li>• Implement Automated Speed Enforcement</li> <li>• Install Transverse Rumble Strips at Select Locations</li> <li>• Implement a Parking Ticket Forgiveness Program to Target Impaired Driving</li> <li>• Provide Free (or Cost-Included) Transit Service for Alcohol-Oriented Special Events</li> <li>• Support the Development of a “Safe Ride Home” Service</li> <li>• Provide Stop Bars and Crosswalk Markings at Unsignalized Intersections</li> <li>• Provide Ladder Crosswalk Markings at Signalized Intersections</li> <li>• Implement Fully Protected Intersections</li> <li>• Implement Leading Pedestrian Intervals</li> <li>• Install Pedestrian Countdown Signals</li> <li>• Implement Hardened Centrelines at Intersections with High Speed Left Turns</li> <li>• Adopt a “Roundabouts First” Policy or Best Practice for New Intersections and Major Roadway Projects</li> <li>• Adopt a “No Right Turn Channels” Policy or Best Practice for New Intersections and Major Roadway Projects</li> <li>• Implement a Road Diet Program</li> <li>• Carry Out Additional Driver Training for City Employees Based on Highway Traffic Act Offenses</li> <li>• Develop a Comprehensive GIS-based Collision Information System</li> <li>• Develop Safety-Related Vehicle Design Criteria for Future City Vehicle Fleet Purchases &amp; Leases</li> </ul>
<b>Considered but Not Recommended</b>	<ul style="list-style-type: none"> <li>• Install Pavement Edge Rumble Strips at Select Locations</li> <li>• Develop a Cell Phone App to Address Inattentive Driving</li> <li>• Require Helmets for all E-Scooter Riders</li> </ul>

## **New City Initiatives – Already Planned**

### ***Develop and Implement a Complete Streets Policy***

<b>Lead Agency/Department</b>	Transportation Planning
<b>Strategic Priorities Addressed</b>	1A: Vehicle Speeds 1D: Failing to Yield at Intersections 2A: Vulnerable Road Users 3A: High Injury Corridors 3B: Signalized Intersections 3C: Pedestrians Crossing Mid-block 4B: Design Standards and Best Practices

*“Complete Streets are streets that are safe for all users, regardless of age, ability, income, race, ethnicity, or mode of travel. By using a Complete Streets approach to designing road networks, we can create spaces that allow all users to thrive — not only motorists.”*

*- Complete Streets for Canada*

The following strategy and actions from the Active Transportation Master Plan, *Walk Wheel Windsor*, relate to Complete Streets:

- Strategy 2A: Develop Complete Streets
  - Action 2A.1: Develop And Adopt A Complete Streets Policy And Design Guidelines
  - Action 2A.2: Follow Complete Street Design Principles In All New Development And Road Projects

A Windsor Complete Streets Policy is currently under development.

Developing and implementing a Complete Streets Policy will support Vision Zero goals by:

- Identifying target speeds for all street types and implementing features that discourage drivers from travelling faster than the target speed.
- Ensuring that all users are accommodated in the right-of-way appropriately, comfortably and safely.

The Complete Streets Policy is intended as a City-wide policy, but high injury corridors could be prioritized for implementation.

***Construct Roadway Capital Projects (for certain corridors)***

<b>Lead Agency/Department</b>	Transportation Planning
<b>Strategic Priorities Addressed</b>	1A: Vehicle Speeds 1D: Failing to Yield at Intersections 2A: Vulnerable Road Users 3A: High Injury Corridors 3B: Signalized Intersections 3C: Pedestrians Crossing Mid-block

For some high injury corridors, there are capital projects in the current capital budget that will address the current collision patterns:

**Table 2: Current Capital Projects for High Injury Corridors**

<b>High Injury Corridor</b>	<b>Capital Project</b>
Tecumseh Road East (Jefferson to Forest Glade)	Tecumseh Road East Infrastructure Improvements (ECP-005-07)
EC Row Expressway (Howard to Banwell)	EC Row Expressway Environmental Assessment (Transportation Planning Environmental Study Reports – OPS-009-07)

***Obtain Collision Data through Provincial ARIS System***

<b>Lead Agency/Department</b>	Transportation Planning
<b>Strategic Priorities Addressed</b>	4A: Improved Data Sources and Information Sharing

Currently, City staff obtain collision data from the Windsor Police Service’s Collision Reporting Centre contractor. There are issues with this current approach:

- Police resources involved in manually redacting collision reports to remove personally identifying information are considerable. Because of this, the lag between when the collision occurs and when the collision data is provided to City staff is significant: the process typically takes at least several months and often takes more than a year.
- Collision reports prepared by other police agencies are not reflect in the collision data received by City staff. Collisions where another police force responds, even if they occur on Windsor streets, are not reflected in the collision data currently received. This has led to concerns that the collision database may not provide a full picture of the collisions occurring on City streets, particularly at intersections along the City boundary, where OPP or LaSalle Police may be the first police force to respond to some collisions.

All police forces in Ontario are required to transmit all collision reports to the Province. The Ontario Ministry of Transportation has recently made collision data available to municipalities through its ARIS (Authorized Requestor Information Service) system. City staff are actively pursuing access to collision data through the ARIS system. Anticipated benefits of this new approach:

- Much quicker access to collision data after a collision: the ARIS service standard is to make the collision report available within four weeks of the collision.
- Collision data from all police forces will be available, ensuring that City staff have a full picture of the collisions occurring on City streets.

***Continue to Implement the Transit Master Plan***

<b>Lead Agency/Department</b>	Transit Windsor
<b>Strategic Priorities Addressed</b>	1B: Drug and Alcohol Impairment 1C: Inattentive Driving

The 2019 Transit Master Plan, *More than Transit*, provides a long-term vision to grow and improve transit service in Windsor. Increasing the convenience and appeal of transit as a travel mode is complementary to Vision Zero goals in many ways; in particular, providing an alternative to driving a motor vehicle will help to directly address the safety issues caused by driver impairment and inattentive driving by providing these road users with another travel mode besides driving.

***Review Yellow and All-Red Intervals for Traffic Signals***

<b>Lead Agency/Department</b>	Traffic Operations
<b>Strategic Priorities Addressed</b>	1D: Failing to Yield at Intersections 3A: High Injury Corridors 3B: Signalized Intersections

Increasing the length of yellow and all-red intervals at signals can be an effective collision countermeasure, particularly for right angle collisions. In the short term, Traffic Operations will be carrying out a review of their yellow and all-red interval lengths against Ontario Traffic Manual guidelines to determine if adjustments are needed.

***Install Retroreflective Backboards for Traffic Signals***

<b>Lead Agency/Department</b>	Traffic Operations
<b>Strategic Priorities Addressed</b>	1D: Failing to Yield at Intersections 3B: Signalized Intersections

Retroreflective backboards are included in the US Federal Highway Administration’s (FHWA) list of “Proven Safety Countermeasures;” the FHWA notes that they can reduce total collisions at a signalized intersection by

up to 15%. Retroreflective backboards help to improve driver compliance with traffic signals by making them more conspicuous in both daytime and nighttime conditions, as can be seen in Figure 1.



**Figure 1: Retroreflective Backboards (source: Virginia DOT / FHWA)**

Traffic Operations has installed retroreflective backboards at some intersections as a pilot measure, and will be implementing them City-wide at all traffic signals over time. Currently, the plan is to install retroreflective backboards at new and reconstructed signals.

***Increase Winter Roadway Maintenance***

<b>Lead Agency/Department</b>	Operations
<b>Strategic Priorities Addressed</b>	1D: Failing to Yield at Intersections 2A: Vulnerable Road Users

Operations is currently planning to bring forward a budget issue to the 2023 budget recommending increased levels of winter roadway maintenance (e.g. salting and plowing).

This measure will help to address collisions involving failing to yield at intersections by improving pavement friction under existing conditions, and vulnerable road user collisions by ensuring that painted and buffered bicycle lanes are kept clear during winter conditions.

***Driver Simulation Training for Commercial Motor Vehicle Operators***

<b>Lead Agency/Department</b>	Human Resources
<b>Strategic Priorities Addressed</b>	1A: Vehicle Speeds 1C: Inattentive Driving 1D: Failing to Yield at Intersections 2A: Vulnerable Road Users

This measure, aimed at improving the City’s Commercial Vehicle Operator Registration rating, will involve training the City’s commercial motor vehicle drivers in a simulator. The training will focus on spatial awareness, with the goal of reduced collision rates for City vehicles.

***Commercial Motor Vehicle Driver Evaluation by Independent Party***

<b>Lead Agency/Department</b>	Human Resources
<b>Strategic Priorities Addressed</b>	1A: Vehicle Speeds 1C: Inattentive Driving 1D: Failing to Yield at Intersections 2A: Vulnerable Road Users

This measure, aimed at improving the City’s Commercial Vehicle Operator Registration rating, will involve contracting with an outside, independent service provider to carry out driver evaluation of the City’s commercial motor vehicle drivers.

**New Recommended Initiatives**

***Conduct Road Safety Audits of Identified High Injury Corridors***

<b>Lead Agency/Department</b>	Transportation Planning
<b>Strategic Priorities Addressed</b>	2A: Vulnerable Road Users 3A: High Injury Corridors 3B: Signalized Intersections

Road safety audits for each of the identified high injury corridors will identify road safety issues that are specific to these areas. The key deliverable for each road safety audit will be a report including recommended countermeasures.

The identified high injury corridors are as follows:

- Motor vehicle collisions:
  - E.C. Row Expressway (Howard to Banwell)
  - Wyandotte Street (Pelissier to Gladstone)



- Pedestrian collisions:
  - Tecumseh Road East (Jefferson to Forest Glade Drive)
  - Wyandotte Street (Ouellette to Chilver)
- Cyclist collisions:
  - Wyandotte Street (Pelissier to Parent)

***Carry out a Value Engineering & Road Safety Review of Existing Approved Preliminary Designs for Roadway Projects***

<b>Lead Agency/Department</b>	Transportation Planning Engineering
<b>Strategic Priorities Addressed</b>	1A: Vehicle Speeds 1D: Failing to Yield at Intersections 2A: Vulnerable Road Users 3A: High Injury Corridors 3B: Signalized Intersections 3C: Pedestrians Crossing Mid-block

For major roadway projects, such as widenings and new streets, a preliminary design is selected and developed through the environmental assessment process. These preliminary designs are used as the basis for detailed design and construction.

These preliminary designs are often prepared well in advance of construction, and detailed design and construction of the preliminary design from a single environmental assessment can take multiple phases over several years. Windsor has a number of preliminary designs that have not yet proceeded to detailed design, or with phases that have not proceeded to detailed design.

Aspects of the designs that are expected to be of particular importance to this review:

- Lane widths
- Horizontal and vertical alignment
- Curb radii
- Cycling facilities
- Pedestrian crossings
- Intersection control

***Establish a Fatal Collision Response Team***

<b>Lead Agency/Department</b>	To Be Determined
<b>Strategic Priorities Addressed</b>	4A: Improved Data Sources and Information Sharing

Certain other municipalities have successfully implemented fatal collision response teams to allow for rapid response to fatal collisions. These teams are typically made up of members from:

- Emergency response agencies (e.g. Police, Fire, EMS)
- Medical trauma care providers (e.g. hospitals)
- Agencies responsible for investigating collisions (typically Police)
- Agencies and departments responsible for carrying out road safety audits (typically the municipal Transportation Planning Department)
- Agencies and departments responsible for designing and maintaining transportation infrastructure and implementing transportation policy (e.g. Operations, Engineering, Traffic Operations, Transportation Planning)

In the Council resolution adopting the Vision Zero Policy (CR82/2020), Council requested that Administration provide information related to developing a fatal collision response team.

This initiative would entail setting up a multi-disciplinary, multi-agency fatal collision response team that would be activated as soon as possible after a fatal collision. The purpose of the committee would be to allow (within the limits of applicable legislation) a quick and free exchange of information in order to rapidly identify and address factors that could help to prevent or reduce the severity of future severe collisions.

***Explore Data-Sharing Arrangements Between Agencies***

<b>Lead Agency/Department</b>	To be determined
<b>Strategic Priorities Addressed</b>	2B: Data Gaps – People 4A: Improved Data Sources and Information Sharing

Currently, information related to collisions and road safety is compartmentalized across several agencies:

- Emergency services agencies (Police, Fire, EMS) prepare their own records related to their response to collisions;
- EMS and hospital staff have records on injuries sustained by victims and the treatment they receive;

- Police have primary responsibility for investigating collisions, and carry out detailed investigations and collision reconstructions following severe collisions;
- Police, social services agencies, and medical providers may have records related to prior points of contact and interventions involving the people who were later in fatal and major injury collisions; and
- City departments have traffic data and information about road infrastructure design, as well as information on detailed road safety audits (when carried out).

In most cases, this information is not shared beyond the originating agency; notable exceptions include:

- Windsor Police Services provides the City of Windsor with redacted MVA reports to use as the data source for the City’s collision database, and
- City staff provide speed data to Windsor Police Services as it is collected, and consult with Windsor Police Services when road safety audits identify issues that can be addressed by enforcement.

While some of this lack of sharing of information is due to legal requirements for privacy and confidentiality, there may be some opportunities to share information – particularly anonymized or aggregated data – to inform road safety-related decisions of these agencies while still complying with relevant laws.

This initiative would entail reaching out to the departments and agencies that collect data related to road safety issues and determining information sharing arrangements that would be:

- Compliant with relevant law,
- Useful for informing road safety decisions, and
- Are within the scope of what the agency who is the custodian of the data is willing and able to provide.

***Carry out a Resident Survey***

<b>Lead Agency/Department</b>	Transportation Planning
<b>Strategic Priorities Addressed</b>	2B: Data Gaps – People

While collision data provides a wealth of information that can be used to inform road safety decisions, certain key details are not reflected in collision data, including:

- Locations that road users – particularly vulnerable road users – avoid because of perceived safety issues;
- The *reasons behind* behaviours that lead to increased likelihood or increased severity of collisions, including:
  - Speeding;

- Inattentive driving;
  - Impaired driving; and
  - Failure to use safety equipment (or failure to use it properly) such as helmets, seat belts, and infant car seats.
- Details that are relevant for policy responses to road safety issues, but either are not collected in MVA reports or, due to privacy laws, cannot be obtained without the consent of the involved parties. Including:
    - How do social determinants of health correlate with road safety outcomes in Windsor?
    - What opportunities exist *before* the collision (e.g. previous interactions with law enforcement or social services) to intervene to address risk-taking behaviours that can result in fatal or major injury collisions?

This initiative would entail developing one or more surveys for residents and – to the extent that these individuals can be identified – persons involved in fatal and major injury collisions.

***Implement Target Speed Requirements for New Construction and Major Roadway Projects***

<b>Lead Agency/Department</b>	Transportation Planning
<b>Strategic Priorities Addressed</b>	1A: Vehicle Speeds 2A: Vulnerable Road Users 3A: High Injury Corridors 3B: Signalized Intersections 3C: Pedestrians Crossing Mid-block 4B: Design Standards and Best Practices

Traditionally, streets and highway designs have been based on the concept of **design speed**: all aspects of the design – e.g. sight lines, curve radii, or roadside clear zones – accommodate a vehicle travelling at a speed equal to or greater than then design speed.

Recently, the concept of target speed is coming into broader use as well, though it is not yet incorporated formally into any City of Windsor design standards or best practices. A roadway’s **target speed** is the intended speed for traffic; features of the street – lane widths, “optical width,” curve radii, etc. – are chosen to encourage vehicles to travel no faster than the target speed.

Implementing this recommendation will involve identifying target speeds for each roadway type. This work is planned to be carried out as part of the development of the Complete Streets Policy, but could be accelerated to produce standalone target speed recommendations, which would then be incorporated into the Complete Streets Policy once the policy is completed.

***Implement Speed Limit Reductions - Neighbourhoods***

<b>Lead Agency/Department</b>	Transportation Planning
<b>Strategic Priorities Addressed</b>	1A: Vehicle Speeds 2A: Vulnerable Road Users

Vehicle speed is a key factor in the severity of a collision. At the same time, the effect of speed limit reductions alone on vehicle speeds is usually minor without physical measures (e.g. traffic calming).

This initiative would entail reducing speed limits in neighbourhoods as follows:

**Table 3: Interim and Ultimate Speed Limits – Neighbourhoods**

<b>Street Type</b>	<b>Interim Speed Limit (Without Physical Changes to Roadway)</b>	<b>Ultimate Speed Limit (After Physical Changes to Roadway to Reduce Vehicle Speeds)</b>
Local Residential	40 km/h	Target speed [Note 1]
Class 2 Collector in residential areas	40 km/h	Target speed [Note 1]
Class 1 Collector in residential areas	Review case by case	Target speed [Note 1]

Notes:

- Under the initiative “Implement Target Speed Requirements for New Construction and Major Roadway Projects,” above, target speeds by road type would be determined. Once physical measures are installed on a street to encourage the target speed, the speed limit would be reduced to the target speed for the particular street.

There may be certain cases (e.g. school zones or local street bikeways) where a lower interim speed limit may be appropriate; this recommendation is not intended to prohibit enacting lower speed limits than those given in Table 3 where warranted. Streets with existing speed limits lower than the proposed interim speed limit would not have their speed limit increased.

***Implement Speed Limit Reductions – Major Streets***

<b>Lead Agency/Department</b>	Transportation Planning
<b>Strategic Priorities Addressed</b>	1A: Vehicle Speeds 2A: Vulnerable Road Users 3A: High Injury Corridors 3B: Signalized Intersections 3C: Pedestrians Crossing Mid-block

Most fatal and major injury collisions involving vehicle speed occur on higher-order streets and highways, such as arterials and expressways.

This initiative would entail reducing speed limits on major streets as follows:

**Table 4: Interim and Ultimate Speed Limits – Major Streets**

Street Type	Interim Speed Limit (Without Physical Changes to Roadway)	Ultimate Speed Limit (After Physical Changes to Roadway to Reduce Vehicle Speeds)
Scenic Parkway	40 km/h	Target speed [Note 1]
Local Commercial Industrial	Review case by case	Target speed [Note 1]
Class 1 Collector in non-residential areas	Review case by case	Target speed [Note 1]
Urban Class 2 Arterial	50 km/h	Target speed [Note 1]
Rural Class 2 Arterial	Review case by case	Target speed [Note 1]
Class 1 Arterial	60 km/h	Target speed [Note 1]
Expressway	No change	Target speed [Note 1]

Notes:

- Under the initiative “Implement Target Speed Requirements for New Construction and Major Roadway Projects,” above, target speeds by road type would be determined. Once physical measures are installed on a street to encourage the target speed, the speed limit would be reduced to the target speed for the particular street.

There may be certain cases (e.g. school zones or local street bikeways) where a lower interim speed limit may be appropriate; this recommendation is not intended to prohibit enacting lower speed limits than those give in Table 4 where warranted. Streets with existing speed limits lower than the proposed interim speed limit would not have their speed limit increased.

### ***Implement Speed Limit Reductions and Increased Fines – Construction Zones***

<b>Lead Agency/Department</b>	Traffic Operations
<b>Strategic Priorities Addressed</b>	1A: Vehicle Speeds 2A: Vulnerable Road Users

The Highway Traffic Act and Traffic By-law 9148 allow for temporary reduced speed limits in construction zones, as well as doubling of speeding fines in construction zones. To date, the City of Windsor has only rarely implemented doubled speeding fines or reduced speed limits in construction zones.

This initiative would consist of:

- Installing “fines doubled when workers present” signage for all construction zones as standard practice; and
- Implementing temporary speed limit reductions in construction zones in cases where:
  - The normal design speed of the roadway cannot be maintained during construction,

- There is the potential for conflicts between traffic and construction vehicles, or
- A speed limit reduction would provide benefit for worker safety.

***Reduce Progression Speed for Traffic Signal Coordination***

<b>Lead Agency/Department</b>	Transportation Planning
<b>Strategic Priorities Addressed</b>	1A: Vehicle Speeds 3B: Signalized Intersections

Traffic signals are coordinated along signalized corridors to provide a “green band” to allow vehicles to proceed along a corridor with a minimal amount of stopping.

Currently, the coordination is done to minimize delay based on current traffic behaviour. In the case of some corridors with high operating speeds, this practice can mean that the progression speed for the green band is higher than the speed limit.

This initiative would involve setting the progression speed used for signal coordination at the speed limit or lower. The effect of this change would be that drivers travelling significantly faster than the speed limit would tend to encounter more red lights, and drivers travelling at the speed limit would stay in the green band and encounter fewer red lights.

***Carry out Education Campaigns***

<b>Lead Agency/Department</b>	To be determined
<b>Strategic Priorities Addressed</b>	1A: Vehicle Speeds 1B: Drug and Alcohol Impairment 1C: Inattentive Driving 1D: Failing to Yield at Intersections 2A: Vulnerable Road Users

This initiative would entail education and outreach activities as follows:

<b>Target Group</b>	<b>Campaign Content</b>
Drivers	<ul style="list-style-type: none"> <li>• Messaging aimed at risky driver behaviours, including:               <ul style="list-style-type: none"> <li>• Speeding</li> <li>• Drug and alcohol impairment</li> <li>• Inattentive driving and cell phone use</li> <li>• Respecting and watching for vulnerable road users</li> </ul> </li> <li>• Establishing positive driver behaviours and attitudes among new drivers (e.g. National Teen Safe Driver Week events).</li> </ul>

Target Group	Campaign Content
Vulnerable road users	<ul style="list-style-type: none"> <li>• Encouragement of helmet use for cyclists, motorcyclists, and scooter riders.</li> <li>• Cycling skills training.</li> <li>• Informing cyclists as new all ages and abilities routes are built out.</li> <li>• Commemoration of vulnerable road user crash fatalities, such as the Ride of Silence (third Wednesday in May each year).</li> </ul>
Bar and restaurant owners and servers	<ul style="list-style-type: none"> <li>• Messaging aimed at reducing impaired driving.</li> <li>• Information on initiatives aimed at reducing impaired driving (e.g. a safe ride home program, if provided).</li> </ul>
General	<ul style="list-style-type: none"> <li>• Commemoration of road crash fatalities generally, such as an event for the National Day of Remembrance for Road Crash Victims (third Sunday in November each year).</li> <li>• Information to the public to build awareness of the Vision Zero Action Plan, its contents, and the reasons behind Vision Zero initiatives.</li> </ul>

***Adjust Project Prioritization Criteria in the Active Transportation Master Plan to Place a Greater Emphasis on Safety and Collisions***

<b>Lead Agency/Department</b>	Transportation Planning
<b>Strategic Priorities Addressed</b>	2A: Vulnerable Road Users 3A: High Injury Corridors

The prioritization criteria used in *Walk Wheel Windsor*, the Active Transportation Master Plan, are as follows. All criteria are weighted equally:

**Table 5: Pedestrian and Cycling Network Prioritization Criteria – Active Transportation Master Plan**

	Pedestrian Network	Cycling Network
1	Destination Density	Destination Density
2	Pedestrian Mode Share	Cycling Mode Share
3	Pedestrian Potential	Cycling Potential
4	Equity	Equity
5	Pedestrian Generators – Commercial Areas	Cycling Generators – Commercial Areas
6	Pedestrian Generators – Community Facilities	Cycling Generators – Community Facilities
7	Transit	Transit
8	Road Classification	Bicycle Network Classification
9	Network Contribution	Level of Protection



	<b>Pedestrian Network</b>	<b>Cycling Network</b>
10	Network Need	Network Need
<b>11</b>	<b>Pedestrian Collisions</b>	<b>Cyclist Collisions</b>
12	Traffic Volumes	Traffic Volumes
13	Road Rehabilitation	Road Rehabilitation

Currently, the collision criteria are based on total pedestrian or cyclist collisions only. Collisions are not weighted based on severity.

This initiative would entail:

- Increasing the weighting of pedestrian and cyclist collisions relative to other criteria, and
- Increasing the weighting of fatal and major injury collisions within the collision criteria.

***Include Collision History as a Factor in Prioritizing Capital Projects***

<b>Lead Agency/Department</b>	Engineering Operations
<b>Strategic Priorities Addressed</b>	2A: Vulnerable Road Users 3A: High Injury Corridors 3B: Signalized Intersections

While road safety concerns are considered implicitly to some degree in the prioritization process for capital projects, the City of Windsor has no formal process to give collision history a specific weighting when prioritizing capital projects.

This initiative would entail:

- Determining weightings for safety improvement versus other prioritization factors;
- Determining the history of fatal and major injury collisions in the area of each roadway capital project;
- Identifying the likely safety improvement or collision reduction associated with the capital project.
- Applying this safety improvement – along with other factors – to prioritize capital projects for roadway works.

***Review Official Plan and Zoning By-laws for Vision Zero Opportunities***

<b>Lead Agency/Department</b>	Transportation Planning Planning
<b>Strategic Priorities Addressed</b>	4B: Design Standards and Best Practices

A key element of achieving the Vision Zero goal of zero fatal and major injury collisions is speed reduction. Many elements that are addressed by the Official Plan and Zoning By-laws have an impact on vehicle speeds, including:

- “Optical width” of the street between fixed features (e.g. building face, substantial landscaping, fencing) on either side of the street influences the speed at which drivers feel comfortable driving.
- On-street parking: where on-street parking is allowed and actually used, it creates visual “side friction” that helps to encourage drivers to slow down.
- The number of institutional or commercial buildings/driveways along a street segment can suggest to drivers that they are in a pedestrian-oriented zone and cause them to lower their speed.

This initiative would entail developing a set of recommended amendments to the Official Plan and Zoning By-laws intended to encourage lower vehicle speeds. These recommended amendments would be brought forward to Council for approval.

***Review Design Standards and Development Manual for Vision Zero Opportunities***

<b>Lead Agency/Department</b>	Transportation Planning Engineering
<b>Strategic Priorities Addressed</b>	4B: Design Standards and Best Practices

New streets and modifications to existing streets are governed by City design standards, Standard Engineering Drawings, Best Practices, and the Development Manual. This initiative would entail reviewing these existing governing documents to ensure that:

- The required characteristics for each road classification (e.g. curve radii and pavement widths) are in accordance with the street’s target speed.
  - Note: developing target speeds by road classification is recommended as a separate initiative.
- The Complete Streets Policy is reflected in City standards and guidelines affecting City streets, and
- Street design aspects that impact the potential for fatal and major injury collisions (e.g. curb radii at intersections) are in compliance with Vision Zero principles.

This review would also consider whether additional standard drawings, best practices, etc., are required for other Vision Zero Action Plan initiatives.

Portions of this initiative would need to follow other work – for instance, a review for compliance with the Complete Streets Policy could not happen until the Complete Streets Policy is prepared and approved – but some aspects of the initiative may be able to proceed immediately.

***Require Transportation Impact Studies for New Developments to Include a Full Multimodal Review***

<b>Lead Agency/Department</b>	Transportation Planning Engineering
<b>Strategic Priorities Addressed</b>	2A: Vulnerable Road Users

Currently, transportation impact studies (TISes) are required for development applications (e.g. site plans, rezonings, and Official Plan amendments) if they:

- Are large enough to generate 100 peak hour site trips,
- Include a new connection to an arterial road,
- Have the potential to increase collisions at an existing collision “hot spot,” or
- Have the potential to adversely impact an intersection already experiencing capacity issues.

The standard scope for a TIS includes a discussion of impacts and issues for non-auto modes, but does not require a quantitative review for non-auto modes.

When a TIS is required for a development application, this recommendation would entail requiring the applicant’s consultant to carry out a full multimodal transportation review to ensure that:

- The development will not adversely impact non-auto modes, such as walking, biking, and transit; and
- Appropriate infrastructure to support walking, biking and transit needed to support the development is provided as off-site improvements.

Procedures and criteria for this multimodal review would be identified as part of the Complete Streets Policy.

***Develop Safety Performance Functions***

<b>Lead Agency/Department</b>	Transportation Planning
<b>Strategic Priorities Addressed</b>	4A: Improved Data Sources and Information Sharing 4B: Design Standards and Best Practices

A safety performance function is a regression model used to predict the collision frequency for a particular facility type (e.g. signalized intersections) based on a set of variables. They can be developed for total collisions or particular collision categories (e.g. cyclist collisions). Safety performance functions can be used in network screening to identify locations that experience a higher-than-expected number of collisions based on their characteristics. They can also be used to predict the safety impact of future changes (e.g. changes in road network due to infrastructure capital projects, or changes in traffic volumes due to land development) in order to identify and prevent potential safety concerns before construction.

Currently, the City of Windsor does not use safety performance functions; all network screening is carried out based on collision rate.

This initiative would entail:

- Identifying a range of safety performance functions to develop;
- Carry out the statistical analysis needed to generate and calibrate the safety performance functions; and
- On an ongoing basis, use these safety performance functions for safety reviews and network screening.

***Implement Automated Speed Enforcement***

<b>Lead Agency/Department</b>	Traffic Operations
<b>Strategic Priorities Addressed</b>	1A: Vehicle Speeds 2A: Vulnerable Road Users 3A: High Injury Corridors 3C: Pedestrians Crossing Mid-block

The Ontario government recently introduced legislative changes to allow municipalities to implement automated speed enforcement (“photo radar”) in community safety zones and school zones. Council has directed City staff to investigate the feasibility of an automated speed enforcement (ASE) program for Windsor (CR258/2020).

This program would directly address vehicle speeds, which would indirectly address a number of other strategic priorities, particularly vulnerable road users, including pedestrians crossing mid-block.

Most of the high injury corridors meet the criteria in the City’s Community Safety Zone Policy for community safety zones and could be considered for automated speed enforcement. However, technical considerations might make installing speed cameras in some of these areas difficult (e.g. a lack of roadside space to install a pole and camera, or streetscaping obstructing the camera’s field of view).

Key issues to be considered when deciding whether to include this initiative in the Vision Zero Action Plan:

- The experience of other jurisdictions that have implemented automated speed enforcement
- Whether the provincially-mandated processing centre would have capacity to take on a Windsor ASE program, or, alternately, whether it would be feasible for Windsor to set up its own processing centre.

***Install Transverse Rumble Strips at Select Locations***

<b>Lead Agency/Department</b>	Transportation Planning
<b>Strategic Priorities Addressed</b>	1A: Vehicle Speeds 1D: Failing to Yield at Intersections

Transverse rumble strips are grooves cut across the road surface that encourage speed reduction by generating an uncomfortable noise and vibration when vehicles drive over them at high speed. They are typically used in rural contexts for alerting drivers to the need to reduce their speed, typically for a stop-controlled intersection or sharp curve ahead. An example installation is shown in Figure 2.



**Figure 2: Transverse Rumble Strip Example (Source: Neal Hawkins/Iowa DOT)**

Transverse rumble strips are effective at reducing vehicle speeds, but they can create a number of issues:

- Associated noise can create a disturbance for nearby residents.
- They can be difficult for cyclists to traverse.
- Water and ice can pond in the grooves.

- Cutting rumble strips into the road surface can reduce pavement life.

This initiative would entail identifying locations to install transverse rumble strips as a pilot program. The top candidates for this program would be the approaches to rural intersections that have a history of stop sign non-compliance or a collision pattern that suggests that stop sign non-compliance may be occurring.

***Implement a Parking Ticket Forgiveness Program to Target Impaired Driving***

<b>Lead Agency/Department</b>	Transportation Planning
<b>Strategic Priorities Addressed</b>	1B: Drug and Alcohol Impairment

This initiative would entail creating a framework that would allow for a parking ticket to be forgiven if an intoxicated person chose not to drive because they were impaired and instead used another way to get home.

Details of the program that would need to be resolved before implementation:

- How would it be determined that the person was intoxicated and got a safe way home?
- Where and when would the program be offered? What would the limits on the program be?

***Provide Free (or Cost-Included) Transit Service for Alcohol-Oriented Special Events***

<b>Lead Agency/Department</b>	Transit Windsor Special Event Resource Team
<b>Strategic Priorities Addressed</b>	1B: Drug and Alcohol Impairment

Under this initiative, attendees of special events oriented around drinking alcohol would be provided with a ticket or voucher (e.g. their event ticket) which they could use for a transit ride to and from the event at no additional charge to the attendee.

Options for funding this initiative:

- Fees collected from event organizers as a condition of their special event permit, or
- City funding (in whole or in part) as a budget item.

In the case of events that take place in areas not served by Transit Windsor or taking place outside Transit Windsor service hours, the event organizer would be required to make alternate arrangements to ensure that event attendees have travel options other than personal cars, such as:

- Taxi fares included in the event admission charge, or

- Chartered buses or vans to provide shuttle service to and from a transit terminal.

***Support the Development of a “Safe Ride Home” Service***

<b>Lead Agency/Department</b>	To be determined
<b>Strategic Priorities Addressed</b>	1B: Drug and Alcohol Impairment

In certain other municipalities, “safe ride home” services such as Operation Red Nose/Opération Nez rouge help to deter impaired driving by providing a way for people to get themselves and their vehicles home.

Key questions that would need to be addressed before such a program could be offered in Windsor:

- Who would be responsible for operating the program?
  - In most other jurisdictions, these programs are run by not-for-profit organizations and not by municipal governments directly.
- How would the program be funded?
  - In the case of Operation Red Nose/Opération Nez rouge, the program is funded by a combination of corporate sponsorships, government grants, community donations and user donations. No user fee is charged, but service users have the option of making a voluntary donation.
- When and where should the program operate?
  - Operation Red Nose/Opération Nez rouge operates only in the month of December.

This initiative could entail:

- Canvassing existing not-for-profit organizations to determine interest in operating a safe ride home service
- Encouraging new or existing not-for-profit organizations to launch a safe ride home service by establishing a City grant program for this purpose.

***Provide Stop Bars and Crosswalk Markings at Unsignalized Intersections***

<b>Lead Agency/Department</b>	Traffic Operations
<b>Strategic Priorities Addressed</b>	1D: Failing to Yield at Intersections 2A: Vulnerable Road Users 3A: High Injury Corridors

Currently, the City of Windsor does not typically paint stop bars or crosswalks at unsignalized intersections. For the 2022 budget, Council was presented with a budget issue (Issue #2022-0044) that provided options to paint stop bars and crosswalks. In that budget issue, four options were presented:

Option	Annual Cost Increase
1 – All Stop Bars and Crosswalks	\$2,250,000
2 – Collectors and Arterials	\$955,000
3 – Arterials, Scenic Parkway and Multi-Use Trail Crossings Only	\$300,000
4 – Top 30 High Collision Unsignalized Intersections (from 2019 Road Safety Report)	\$25,000

The budget issue was not approved by Council; none of the four options were selected for implementation.

If this initiative is carried forward, it could entail some sort of stop bar and crosswalk pavement marking program; either one of the four options previously identified or an alternate option to implement the pavement markings at a limited number of intersections.

***Provide Ladder Crosswalk Markings at Signalized Intersections***

<b>Lead Agency/Department</b>	Traffic Operations
<b>Strategic Priorities Addressed</b>	1D: Failing to Yield at Intersections 2A: Vulnerable Road Users 3A: High Injury Corridors 3B: Signalized Intersections

High-visibility crosswalk treatments such as ladder crosswalks can help emphasize the potential to drivers of pedestrians at an intersection; this tends to increase driver compliance when yielding to pedestrians.

The Ontario Traffic Manual identifies ladder crosswalks as an optional feature at signalized intersections.

This initiative would entail installing ladder crosswalk markings at a set of signalized intersections to be determined. Pedestrian high injury corridors could be prioritized for ladder crosswalks.





**Figure 3: Ladder Crosswalks (Source: City of Hamilton)**

***Implement Fully Protected Intersections***

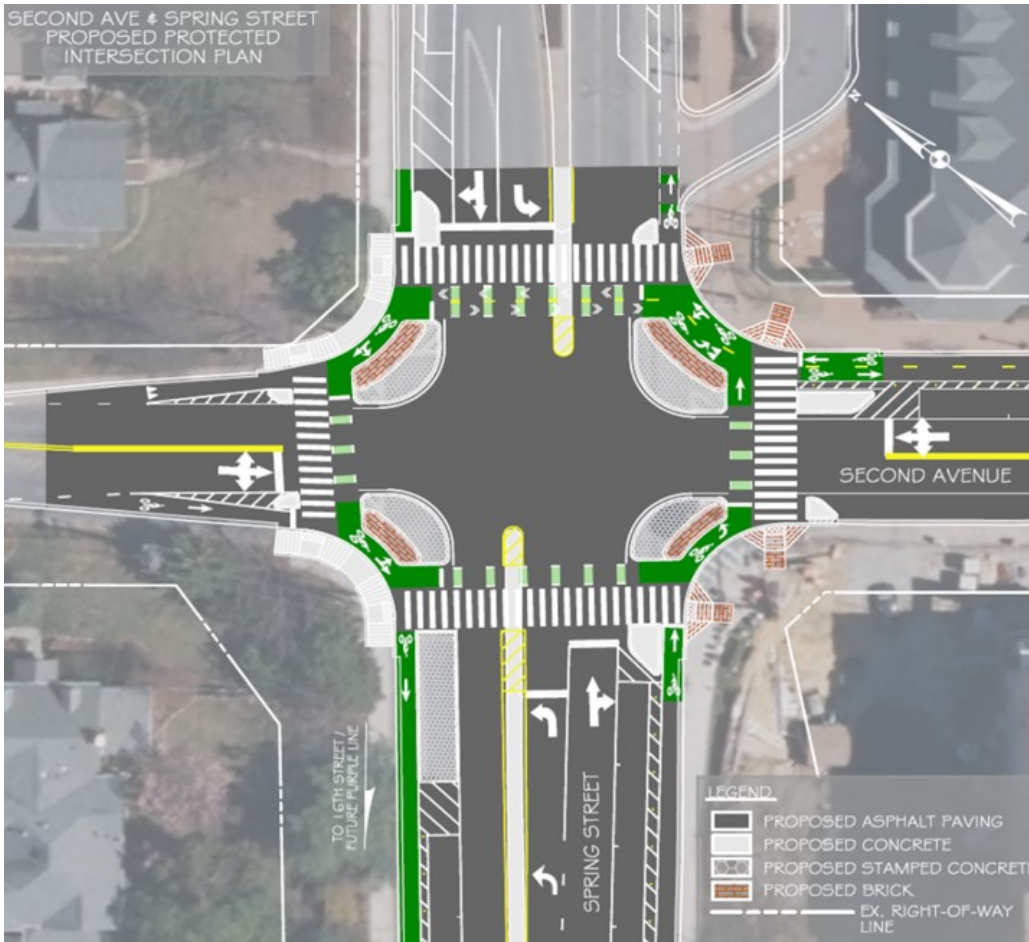
<b>Lead Agency/Department</b>	Transportation Planning
<b>Strategic Priorities Addressed</b>	1D: Failing to Yield at Intersections 2A: Vulnerable Road Users 3A: High Injury Corridors 3B: Signalized Intersections

*Protected intersections have been implemented across North America as cities have expanded their protected bikeway networks. Also known as setback or offset intersections, this design keeps bicycles physically separate from motor vehicles up until the intersection, providing a high degree of comfort and safety for people of all ages and abilities. This design can reduce the likelihood of high-speed vehicle turns, improve sightlines, and dramatically reduce the distance and time during which people on bikes are exposed to conflicts. For example, in San Francisco, a protected intersection design resulted in 98% of drivers yielding to people on bikes, and 100% yielding to people walking. A study in New York found that protected intersections had fewer vehicle-bike conflicts than even a dedicated turn lane with a dedicated bike signal phase.*

*(Source: NACTO)*

An example of a protected intersection is provided in Figure 4.

This initiative would entail considering protected intersections in future environmental assessments for roadway projects as appropriate, with the aim of implementing protected intersections at a set of locations.



**Figure 4: Protected Intersection (Source: Montgomery County Division of Transportation Engineering / Kittelson Associates)**

***Implement Leading Pedestrian Intervals***

<b>Lead Agency/Department</b>	Traffic Operations
<b>Strategic Priorities Addressed</b>	1D: Failing to Yield at Intersections 2A: Vulnerable Road Users 3A: High Injury Corridors 3B: Signalized Intersections

With a leading pedestrian interval, the walk signal is activated while the intersection remains in “all red” for vehicles, typically for 3 to 7 seconds. This allows the pedestrians to have a head start on vehicles, putting the pedestrians in a more visible position in the crosswalk before vehicles are released.

In other jurisdictions, leading pedestrian intervals have been found to reduce pedestrian collisions at treated intersections by up to 60%. Nevertheless, there are potential issues related to leading pedestrian intervals:

- Driver unfamiliarity with leading pedestrian intervals – particularly the long “all red” period for vehicles – may lead to misunderstandings of the purpose for the change as well as problems with driver compliance.
- At some intersections, holding vehicles for an additional 3 to 7 seconds per phase would create significant capacity issues, which could result in safety issues in some circumstances (e.g. increased queue spillback leading to increased rear end collisions).

This initiative would entail:

- Identifying candidate intersections,
- Implementing leading pedestrian intervals, and
- An education and outreach program to ensure that drivers and pedestrians are aware of the reasons for the change.

***Install Pedestrian Countdown Signals***

<b>Lead Agency/Department</b>	Traffic Operations
<b>Strategic Priorities Addressed</b>	2A: Vulnerable Road Users 3B: Signalized Intersections

Pedestrian countdown displays have been found to provide a safety benefit, particularly in reducing pedestrian collisions. Pedestrian countdown displays are recognized by the Ontario Traffic Manual as optional.

There are issues with their use in some situations, however: most pedestrian countdown displays currently on the market do not communicate with the traffic signal controller, and instead base the countdown time shown on the length of the green interval from the *previous* cycle. Because of this, pedestrian countdown displays work best in cases where phase lengths are steady from cycle to cycle. In cases when phase lengths change significantly from one cycle to the next, the countdown display can show an incorrect time remaining, potentially creating confusion and discomfort for pedestrians.

This initiative would entail identifying intersections where pedestrian countdown displays could be installed, either:

- Locations that already operate with steady phase lengths from cycle to cycle, or
- Locations where the traffic signal timings and phasings could be adapted to suit the limitations of pedestrian countdown displays currently on the market.

***Implement Hardened Centrelines at Intersections with High Speed Left Turns***

<b>Lead Agency/Department</b>	Transportation Planning
<b>Strategic Priorities Addressed</b>	1D: Failing to Yield at Intersections 2A: Vulnerable Road Users 3A: High Injury Corridors 3B: Signalized Intersections

Centreline hardening involves using features – typically rubber humps or bollards – at major intersections to discourage taking left turns at high speed. These measures improve pedestrian safety by:

- Reducing collision severity by forcing left turning vehicles to travel at lower speeds, and
- Improving pedestrian visibility to drivers by forcing vehicles to approach the crosswalk at a right angle.

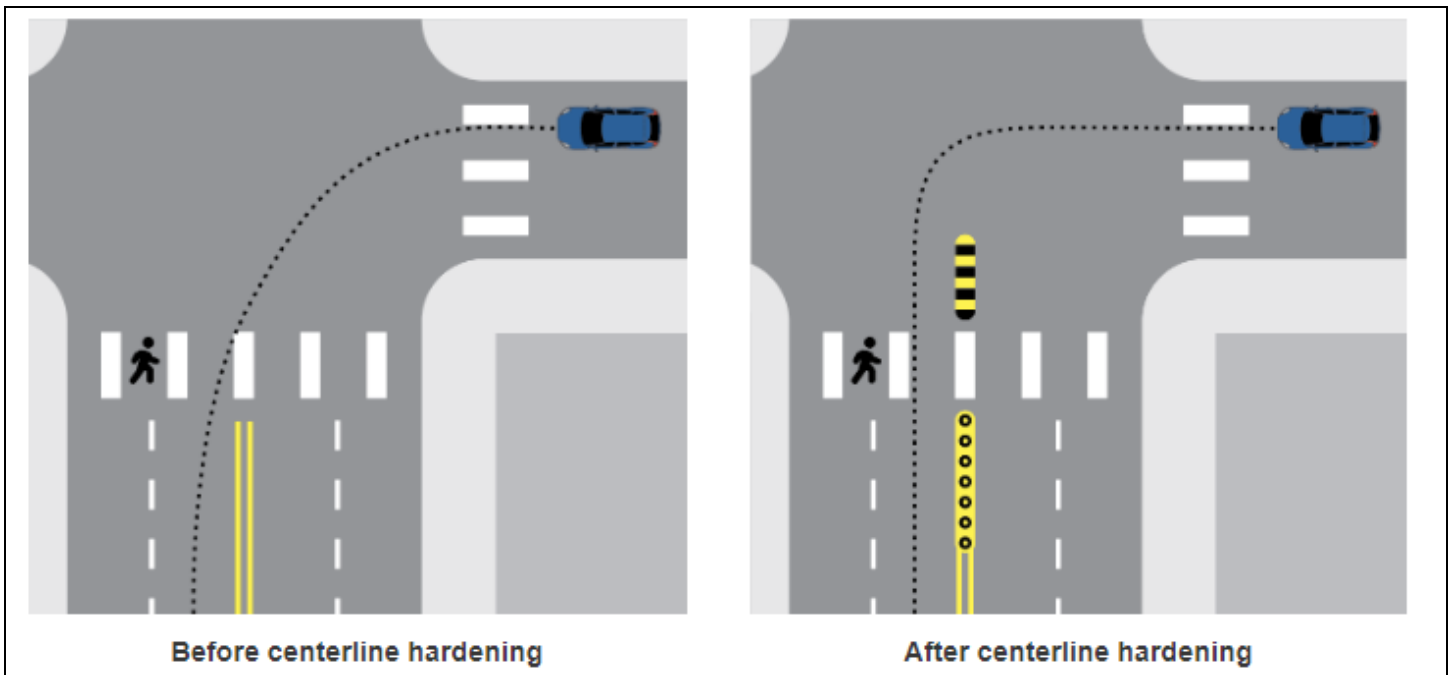


Figure 5: Centreline Hardening Example (source: Insurance Institute for Highway Safety)

***Adopt a “Roundabouts First” Policy or Best Practice for New Intersections and Major Roadway Projects***

<b>Lead Agency/Department</b>	Engineering
<b>Strategic Priorities Addressed</b>	1D: Failing to Yield at Intersections 3A: High Injury Corridors 3B: Signalized Intersections 4B: Design Standards and Best Practices

Roundabouts are effective at reducing the severity of intersection collisions, since they virtually eliminate right angle (“T-bone”) and turning collisions, two types of collisions with high injury potential.

Other jurisdictions, particularly the Region of Waterloo, have adopted policies that identify roundabouts as the preferred intersection control type. In that jurisdiction, before other intersection control types are considered, a screening is carried out to confirm that a roundabout is not appropriate.

This initiative would entail adopting a similar policy for Windsor.

Potential issues with this initiative:

- Navigating a roundabout, particularly a multi-lane roundabout, can be uncomfortable for pedestrians and cyclists.
- Visually impaired pedestrians can have more difficulty judging gaps in traffic at a roundabout than at a traffic signal.
- Roundabouts can have negative impacts on their surroundings:
  - Typically, roundabouts need more right-of-way space at the intersection than is needed for a similar signalized intersection.
  - Typically, access controls (e.g. restrictions on driveways) are needed for a longer distance from the intersection for a roundabout than for a signalized intersection.

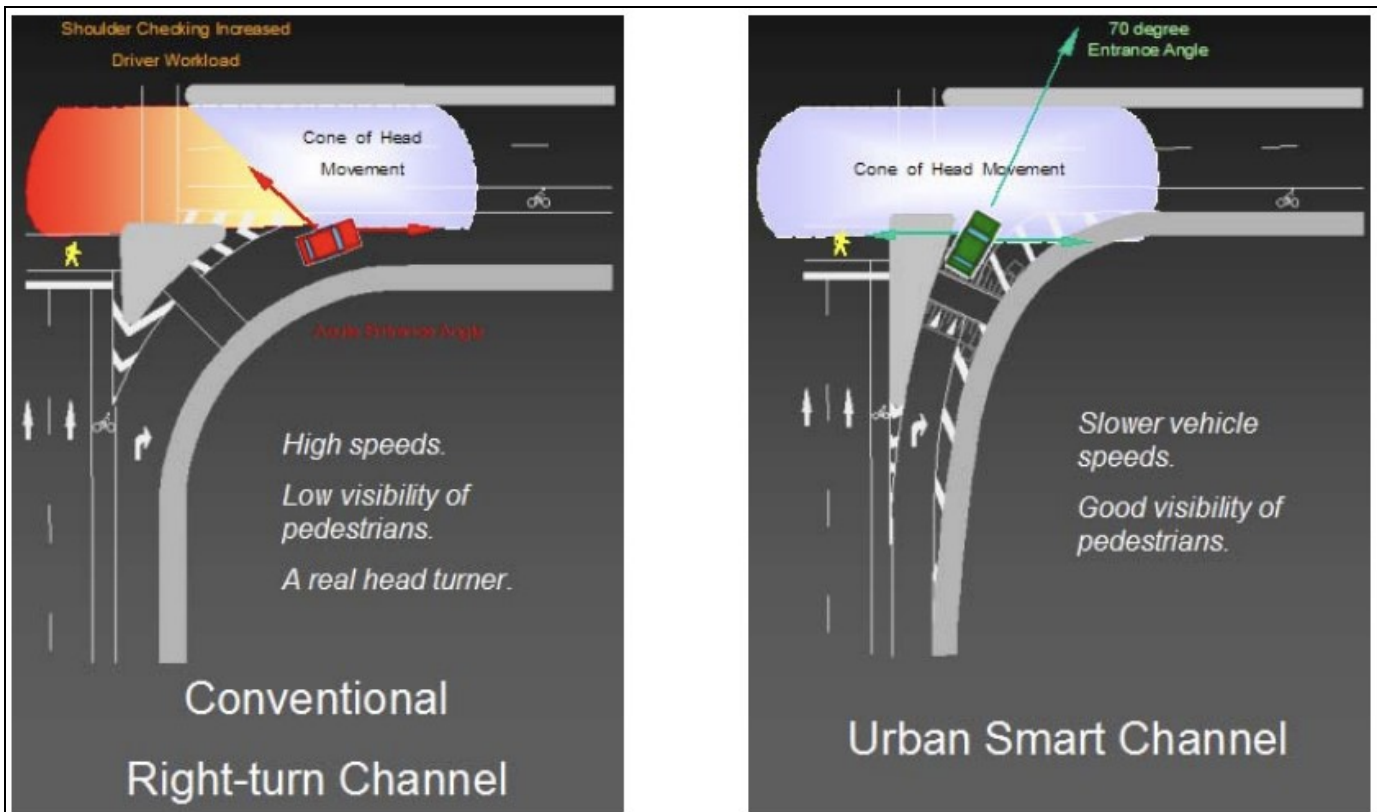
***Adopt a “No Right Turn Channels” Policy or Best Practice for New Intersections and Major Roadway Projects***

<b>Lead Agency/Department</b>	Engineering
<b>Strategic Priorities Addressed</b>	1A: Vehicle Speeds 1D: Failing to Yield at Intersections 2A: Vulnerable Road Users 3B: Signalized Intersections 4B: Design Standards and Best Practices

Conventional right turn channels can contribute to high vehicle turning speeds and poor visibility of pedestrians, creating the potential for severe collisions.

This initiative would entail adopting a policy or best practice against right turn channels for new construction. For road reconstructions and other major roadway projects, the preference would be to remove existing right turn channels where possible.

In situations where the right turn channel island is required (e.g. when there would be no suitable place for traffic signal poles without the island), a “smart” right turn channel would be acceptable, as shown in Figure 6.



**Figure 6: Conventional Right Turn Channel vs. "Smart" Right Turn Channel (source: City of Ottawa)**

***Implement a Road Diet Program***

<b>Lead Agency/Department</b>	Engineering Transportation Planning
<b>Strategic Priorities Addressed</b>	1A: Vehicle Speeds 2A: Vulnerable Road Users 3A: High Injury Corridors 3B: Signalized Intersections 3C: Pedestrians Crossing Mid-block

A road diet is the reallocation of roadway space to better serve road users, particularly for roads that have significant amounts of excess capacity.

A typical road diet is a “4 to 3” conversion, where a 4-lane undivided street (with 2 lanes in each direction and turns from shared lanes) is restriped so that there is a single lane in each direction and a two-way left turn lane. A recent example of a “4 to 3” conversion in Windsor is Eugenie Street; the layout before and after the road diet can be seen in Figure 7. Depending on turning volumes, a “4 to 3” road diet can often result in negligible decrease in capacity, since providing a two-way left turn lane allows through traffic to flow unimpeded by vehicles stopped waiting for a gap to turn.



**Figure 7: Road Diet Example: Eugenie Street**

Road diets may also involve reducing the number of excess lanes on a street by physically reducing the pavement width. In these types of road diets, other benefits (e.g. a reduction in paved area resulting in lower flooding risk) can be achieved.

Road diets are effective at reducing speeding, which in turn tends to decrease collision severity, especially for vulnerable road users. The reallocation of roadway width can provide space for measures to improve conditions for vulnerable users, such as bikeway infrastructure or bump-outs or pedestrian refuges to reduce crossing widths. Some road diet types are effective at improving sight lines at signalized intersections.

This initiative would entail identifying candidate locations and then implementing road diets.

**Carry Out Additional Driver Training for City Employees Based on Highway Traffic Act Offenses**

<b>Lead Agency/Department</b>	Human Resources
<b>Strategic Priorities Addressed</b>	1A: Vehicle Speeds 1B: Drug and Alcohol Impairment 1C: Inattentive Driving 1D: Failing to Yield at Intersections 2A: Vulnerable Road Users

Currently, the Human Resources Department is exploring the possibility of using the driver abstract review process to identify drivers who have Highway Traffic Act violations like speeding or careless driving and provide them with supplemental training.

Additional work is still required to determine the exact form that this program would take.

**Develop a Comprehensive GIS-based Collision Information System**

<b>Lead Agency/Department</b>	Geomatics Transportation Planning
<b>Strategic Priorities Addressed</b>	4A: Improved Data Sources and Information Sharing

*A geographic information system (GIS) is a system that creates, manages, analyzes, and maps all types of data. GIS connects data to a map, integrating location data (where things are) with all types of descriptive information (what things are like there). This provides a foundation for mapping and analysis that is used in science and almost every industry. GIS helps users understand patterns, relationships, and geographic context. The benefits include improved communication and efficiency as well as better management and decision making.*

*(Source: ESRI.com)*

The City of Windsor uses GIS extensively and has a significant amount of data in GIS form.

Currently, the Windsor Collision Database is a standalone database, not connected to other data sources. This initiative would entail translating data from the collision database into a GIS, which would allow more efficient analysis of collision data to identify collision “hot spots” and City-wide trends.

Having a GIS-based collision information system would also allow for comparisons with other mapped data, which would enable analyses that City staff have not been able to do to date, such as identifying correlations between road safety outcome and neighbourhood characteristics (e.g. social determinants of health), which could inform future road safety policies or outreach programs.



***Develop Safety-Related Vehicle Design Criteria for Future City Vehicle Fleet Purchases***

<b>Lead Agency/Department</b>	Fleet Transit Windsor Windsor Fire Rescue Service Purchasing
<b>Strategic Priorities Addressed</b>	1D: Failing to Yield at Intersections 2A: Vulnerable Road Users

As the operator of a significant fleet of vehicles, the City of Windsor has the opportunity to directly reduce the likelihood of its own vehicles being involved in a fatal or major injury collision by developing and implementing safety-related criteria for use when purchasing vehicles. In doing so, Windsor may be able to indirectly influence other fleet operators – e.g. other major Windsor employers or other municipalities – to adopt similar measures and provide an indirect safety benefit beyond its own vehicle fleet.

The Fleet Review Committee (a staff committee chaired by the Executive Director of Operations, with representatives from several City departments) reviews and approves standard vehicle features for various vehicle categories in the City fleet, from compact cars to large trucks.

The current list of vehicle standard features includes some safety-related items (e.g. ABS brakes), but does not include measures such as:

- Air bags
- Vehicle features that reduce the likelihood of severe injury in a pedestrian collision
- Collision warning or lane departure warning systems
- Back-up cameras (all vehicles) or 360 degree camera systems (large trucks)

This initiative would entail recommending that the Fleet Review Committee:

- Explore additional safety-related features that could be added to the current list of vehicle standard features, and
- Consider the development of lists of additional safety-related features that could be used, as appropriate, in requests for proposals. This would allow vendors to receive preferential consideration for bids that would provide greater than the minimum level of safety.

Special considerations with this initiative:

- By Council-approved charter, vehicle standard features must be approved by the Fleet Review Committee, which has the authority to approve or deny new standard features.

- Requiring additional safety features has the potential to increase the cost of vehicle purchases. This increase in cost may be in excess of the value of the desired safety feature itself, since vehicle options are often bundled in option packages.

## **Initiatives Considered But Not Recommended**

### ***Install Pavement Edge Rumble Strips at Select Locations***

<b>Lead Agency/Department</b>	N/A – not recommended
<b>Strategic Priorities Addressed</b>	1A: Vehicle Speeds

Pavement edge rumble strips are lines of grooves along the edge of the travelled portion of the roadway that discourage roadway departure collisions by alerting drivers when they go onto the shoulder of the road. An example is shown in Figure 8.



**Figure 8: Pavement Edge Rumble Strip Example (Source: FHWA)**

Pavement edge rumble strips can create some of the same issues as transverse rumble strips:

- They can be difficult for cyclists to traverse.
- Water and ice can pond in the grooves.
- Cutting rumble strips into the road surface can reduce pavement life.

Noise tends to be less of an issue for pavement edge rumble strips than for transverse rumble strips, since transverse rumble strips are not driven over during normal operation of the roadway.

This initiative would entail identifying locations to install pavement edge rumble strips as a pilot program. The top candidates for this program would be locations with high speeds, paved shoulders, and a history of roadway departure collisions.

***Develop a Cell Phone App to Address Inattentive Driving***

<b>Lead Agency/Department</b>	To be determined
<b>Strategic Priorities Addressed</b>	1C: Inattentive Driving

This initiative would entail developing a mobile app that could address inattentive driving by one or more methods, such as:

- Locking out the mobile device while the vehicle is in motion
- Monitoring device use while in motion and providing positive feedback to well-behaved drivers

Since there are existing apps that perform similar functions, further investigation to determine the need for a “made in Windsor” app should be done before proceeding on this initiative.

***Require Helmets for all E-Scooter Riders***

<b>Lead Agency/Department</b>	Transportation Planning
<b>Strategic Priorities Addressed</b>	2A: Vulnerable Road Users

When the e-scooter pilot was approved by Council in 2019, Council was provided with the option to require helmets for all e-scooter riders, which it ultimately chose not to implement.

This initiative would entail reversing that previous decision and amending Traffic By-law 9148 to require helmets for all e-scooter riders. Issues with this initiative:

- It would involve reversing a recent decision of Council, and
- It has the potential for major impacts on the operations of BIRD Canada or other future scooter share service providers.