



City of Richmond

Report to Committee

To: Public Works and Transportation Committee

Date: June 5, 2023

From: Lloyd Bie, P.Eng.
Director, Transportation

File: 10-6450-09-01/2023-
Vol 01

Re: 2023 Road Safety Initiatives Update and Vision Zero Review

Staff Recommendation

That the road safety initiatives, as outlined in the staff report titled "2023 Road Safety Initiatives Update and Vision Zero Review" dated June 5, 2023 from the Director, Transportation, be received for information.

Lloyd Bie, P.Eng.
Director, Transportation
(604-276-4131)

Att. 3

REPORT CONCURRENCE		
ROUTED TO:	CONCURRENCE	CONCURRENCE OF ACTING GENERAL MANAGER
Community Bylaws	<input checked="" type="checkbox"/>	
Fire Rescue	<input checked="" type="checkbox"/>	
RCMP	<input checked="" type="checkbox"/>	
SENIOR STAFF REPORT REVIEW	INITIALS: 	APPROVED BY CAO

Staff Report

Origin

Road safety is a shared responsibility that involves collaboration and engagement with multi-disciplinary partners and all levels of government. The City implements and supports a number of proactive mitigation measures throughout the year to improve road safety outcomes, especially for vulnerable road users such as pedestrians and cyclists. As part of staff's road safety planning and intervention development, the City's Traffic Safety Advisory Committee creates a co-operative partnership between City staff, community groups and other agencies, to enhance traffic, pedestrian and cycling safety in Richmond. This report presents an overview of the on-going and planned road safety initiatives for 2023 and highlights the activities undertaken 2022.

At the Council meeting of March 27, 2023, staff received the following direction:

That the Vision Zero strategies be referred to staff for further analysis.

This report responds to the referral.

This report supports Council's Strategic Plan 2022-2026 Focus Area #2 Strategic and Sustainable Community Growth:

Strategic and sustainable growth that supports long-term community needs and a well-planned and prosperous city.

2.4 Enhance Richmond's robust transportation network by balancing commercial, public, private and active transportation needs.

This report supports Council's Strategic Plan 2022-2026 Focus Area #3 A Safe and Prepared Community:

Community safety and preparedness through effective planning, strategic partnerships and proactive programs.

3.2 Leverage strategic partnerships and community-based approaches for comprehensive safety services.

Analysis

Traffic Safety Advisory Committee

Council endorsed the establishment of the Traffic Safety Advisory Committee (TSAC) in 1997. As part of the planning and review of road safety projects, staff meet quarterly with the Committee to seek input on corrective measures. In collaboration with other agencies, road safety related education campaigns and events are undertaken throughout the year.

TSAC has representatives from the following groups to develop strategies to improve road safety from a multi-disciplinary perspective:

- Insurance Corporation of BC (ICBC)
- Richmond School District 38
- Richmond District Parents Association
- Vancouver Coastal Health
- Richmond RCMP and Richmond Fire-Rescue
- City Transportation and Community Bylaws

The Committee provides feedback on a wide range of traffic safety issues such as school zone and adjacent roadway concerns and neighbourhood traffic calming requests. TSAC will continue to provide input and participate in the on-going and planned road safety initiatives for 2023 as summarized below.

2023 Road Safety Initiatives

Staff and the Committee collaboratively undertake road safety initiatives that can be grouped into three categories (3E's); Engineering, Education and Enforcement to promote safer streets in Richmond with a focus on reducing vehicle speeds.

Engineering Initiatives - Road Design and Operational Enhancements

To design safer streets, high-risk places such as school zones and collision prone areas are assessed for engineering measures to enhance the operational and geometrical attributes of a street.

School Zone Pedestrian and Traffic Safety: Staff will develop physical interventions to address traffic safety-related issues within school zones and adjacent roadways. School zone safety initiatives also include revisions to vehicle parking and circulation layout at schools, supporting the enforcement of school zone traffic violations, and introducing new walkways and crosswalks as well as upgrading crosswalks to improve pedestrian safety. Staff have met with the principals of all 38 public elementary schools in Richmond to discuss their specific concerns. In 2023, staff will continue this process with the high schools. All road works around schools are approved by school administration prior to implementation.

Safety interventions completed/planned in 2023 include:

- Walkway improvements at Talmey Elementary School and Walter Lee School (Figure 1).
- Raised crosswalks to be implemented this summer at Walter Lee, Jessie Wowk and Tomsett Schools.
- A speed reader board will be installed this year at Tomsett Elementary School.
- Continue the in-street delineator sign placement on local streets fronting schools.



Figure 1: Talmey School Walkway

The in-street delineator signs have been successful at alerting drivers of the school zone and increasing safety in neighborhoods. The placement of these signs effectively narrows the travel lane which reduces vehicle speeds as drivers are required to slow down to negotiate the sign.

Twenty of the 38 elementary schools in Richmond now have this treatment. Consistent application of these signs creates a uniform school zone environment in the City, thereby modifying driver behaviour and encouraging drivers to slow down when entering school zone.

Traffic Calming: In response to resident requests or identified speeding issues, staff will perform an assessment, consult with the community, implement and monitor road safety and traffic calming measures where warranted in local neighbourhoods.

In response to resident concerns, to date in 2023, the following speed reduction interventions have been implemented or are currently being reviewed:

- In-street delineator signs have been installed at Dover Crescent at all crosswalk locations.
- A separate staff report titled *Kittiwake Drive - Traffic Calming Pilot Project Update*, recommending a trial of asphalt speed cushions on Kittiwake Drive to address speeding concerns raised by residents is being presented to the June 21, 2023 Public Works and Transportation Committee for consideration.
- Staff have also received a number of complaints regarding the marked crosswalk at No. 2 Road and Kittiwake Drive. While the crossing does not warrant a pedestrian signal based on traffic and pedestrian volumes, staff is reviewing the opportunity to install a raised cross walk at this location.

Road Network Safety Screening Study: In 2019, Council approved improvements to address the top 20 most collision-prone intersections in the City. A status of the Council approved 2023 capital projects include:

- *No. 4 Road and Westminster Highway Intersection Upgrade:* This intersection is ranked #7 of the City's Top 20 collision prone intersections. Upgrades include increasing left-turn capacity along with pedestrian and cycling facility upgrades. This project is currently at detail design phase with completion anticipated in Q3 2024.
- *No. 2 Road and Blundell Road Intersection Upgrade:* This intersection is ranked #10 of the City's Top 20 collision prone intersections. Upgrades include increasing pedestrian refuge areas and modifications to centre median on south approach to increase safety at access points. This project is currently at the design stage and is estimated to be completed in Q4 2025.

Removal of Channelized Right-Turn Islands to Improve Road Safety: In September 2022, Council approved the removal of channelized right-turn islands at several intersections within City jurisdiction. The upgrade to a standard intersection configuration with 90 degree right-turn geometry will slow vehicle speeds and improve safety between motorists and pedestrians/cyclists crossing the intersection.

Detailed design is underway for upgrades to the following intersections:

- Cooney Road/Westminster Highway
- Cooney Road/Granville Avenue
- No. 4 Road/Alderbridge Way
- No. 2 Road/Westminster Highway

Discouraging Vehicle Speeding: Pursue opportunities to curb vehicle speeding in the community. In January 2023, Council endorsed Traffic Bylaw No. 5870 amendments to remove all 60 km/h speed zones.

All roads within City jurisdiction now have a maximum posted speed limit of 50 km/h consistent with the default speed limit in the *BC Motor Vehicle Act*. Discussion at the Public Works and Transportation Committee of May 17, 2023, included review of potential posted speed limit reduction in the Hamilton area. Staff will undertake a traffic study, consult with residents and bring forward recommendations and any bylaw amendments for Council consideration in 2023.

Education Initiatives

Under this initiative, the City supports a variety of road safety campaigns and education to develop knowledge skills that enable pedestrians, cyclists and drivers to use the road safely.

Pedestrian and Traffic Safety Education and Campaigns: Staff will continue to support and participate in on-going multi-agency efforts to increase the level of pedestrian and traffic safety, such as the annual campaigns held by ICBC and Richmond RCMP in various locations. A list of the planned ICBC 2023 road safety campaigns is provided in Attachment 1.

Bicycle Education for Students: Jointly with HUB Cycling and the Richmond School District, the City will facilitate cycling education courses to all Grade 6 and 7 elementary school students over a two-year period (i.e., approximately 19 schools per year). Students will learn the rules and responsibilities of riding on City streets and bike paths and receive hands-on practice with fundamental cycling skills on school grounds and local neighbourhood streets.

E-Scooter and E-Bike Safety Campaign: Staff will continue social media posts to deploy safety and education regarding the use of e-bicycles and e-scooters, focused on raising awareness of the e-scooter pilot project, bylaws and the safe operation of e-scooters.

Enforcement Initiatives

Active enforcement helps to shape road user behaviour and encourages compliance with the traffic regulations. Studies suggest that increased observance of the road rules is achieved if people believe that not obeying them will result in outcomes such as tickets and fines.

Richmond RCMP continue to conduct speed enforcement on major roads as well as enhanced enforcement at specific locations when requested. From January 1 to May 9, 2023, Richmond RCMP enforcement activities included 567 tickets issued for speeding and 79 tickets issued for excessive speeding (at least 40 km/h over the posted speed limit).

Community Bylaws and Richmond RCMP regularly provide coordinated enforcement in school zones. Other typical on-going measures include the deployment of Speed Watch volunteers.

Intersection Safety Camera Program

The Province's Intersection Safety Camera Program includes nine red light cameras and one speed enforcement camera located in Richmond. The camera located at the intersection of Cambie Road includes automated speed enforcement capabilities. This camera registered 2048 speed violations in 2020, 527 speed violations in 2021 and 671 speed violations in 2022. Data on speed violations from 2023 will be collected to measure the effectiveness of automated enforcement cameras in reducing speed violations.

Staff will continue to work with ICBC and the Province to encourage the implementation of more Intersection Safety Cameras within Richmond.

Highlights of 2022 Road Safety Activities

In 2022, the City responded to traffic safety concerns at a number of schools and from local residents. Attachment 2 provides an overview of the implemented traffic calming measures to address speed-related concerns where warranted and supported. Highlights of other transportation system upgrades to enhance road safety and the 2022 education and enforcement efforts are also summarized.

Review of Vision Zero Strategies

At the Council meeting of March 27, 2023, representatives of the Richmond Poverty Reduction Coalition (RPRC) presented their report on Improving Pedestrian Safety in Richmond through Vision Zero Strategies. Recommendations from the RPRC's study included:

1. Assemble a working group to prepare a Vision Zero proposal with representatives from public health, City departments, law enforcement, and the Richmond School District 38.
2. Increase efforts to enforce the pedestrian's right of way.
3. Promote awareness campaigns that highlight pedestrian vulnerability and inspire ownership of pedestrian safety.
4. Examine opportunities to advocate with ICBC and TransLink for safer and more sustainable policies.

Following the Council meeting, representatives of the Richmond Poverty Reduction Coalition (RPRC) were invited to attend and share the findings of their pedestrian safety project at the March 30, 2023 TSAC meeting. As TSAC includes members from the City, local public health, enforcement and education sectors, this forum is appropriate for discussion of the areas of interest identified by this stakeholder. The programs and activities that the Committee undertakes throughout the year encompass the four recommendations of the RPRC study. RPRC will be invited to all future TSAC meetings to share their perspective on agenda items and to add agenda items for review and discussion.

The following section provides a background on the broader Vision Zero approach to road safety management and how the City's road safety initiatives align and advance Vision Zero strategies.

Overview of Vision Zero

The goal of Vision Zero is to eliminate all motor vehicle related fatalities and serious injuries within a very ambitious timeframe of five to 10 years. A Vision Zero commitment to eliminating traffic deaths means addressing all factors contributing to safe mobility, including the road users, vehicles, speeds, road design, and post-crash care. Vision Zero recognizes a multi-disciplinary approach is required for road safety and involves partnership between all levels of government and participation and input from several road safety stakeholders.

The formation of the City's Traffic Safety Advisory Committee that includes a diverse group of road safety agencies contributing to a safer transportation system in Richmond has been in place for 25 years; well ahead of the Vision Zero recommendation for a multi-disciplinary approach to road safety being adopted in North America in the mid 2010's.

Vision Zero Strategies

Although some of the Vision Zero strategies fall outside of the purview of local government, several of the City's programs and policies directed at increasing road safety align with Vision Zero. In addition to the City's road safety initiatives described in this report, a comprehensive list of the City's transportation-related actions that align and advance the Vision Zero goal are provided in Attachment 3. The key Vision Zero strategies are discussed below.

- **Speed Management**

Vision Zero's focus is primarily on changing driver behaviour by reducing posted speed limits. Reductions in vehicle speeds can have a very significant influence on the severity of crashes and injuries, particularly those involving pedestrians. Research indicates that pedestrians suffer much more serious injuries when struck by high-speed vehicles than when struck by vehicles going 30 km/h or slower. This is consistent with the policy direction for the region as outlined in TransLink's new Transport 2050 plan which advocates for reduced default speed limits for local/urban streets of 30 km/h to 40 km/h. A lower posted speed limit on local residential streets will support making the streets more comfortable for pedestrians and cyclists.

However, until a lower speed limit is formalized at a regional level, this is best implemented on a case by case basis when residents feel that a 50 km/h speed limit is too fast. The challenge with implementing reduced speed zones to date has been the lack of support from a majority of residents for such. Even in cases where a traffic study indicates vehicles operating at 30 km/h on average, resident survey to formalize the lower speed zone has yielded less than majority support for the addition of 30 km/h speed limit signs.

A City-wide blanket lower speed limit for local streets could address this challenge, however, would require associated traffic calming measures, increased enforcement levels and could create confusion among drivers crossing municipal boundaries.

This approach could also be considered excessive, as a review of historic crash data shows that local residential streets represent five per cent of the vehicle collisions in the City. The current approach to targeting road safety interventions on local roads where safety concerns are identified is appropriate given the number of collisions on these types of roadways.

Staff have commenced review of lowering the speed limit in the Hamilton area neighbourhood. A staff report with recommendations and associated bylaw amendments is anticipated to be brought forward for Council consideration in Q4 2023.

- **Safe Street Design**

In 2019, Council endorsed the report titled "Review of Collision Prone Intersections", which identified and recommended improvements to address the top 20 most collision-prone intersections in the City.

This screening of the City’s road network study that undertook an in-depth data-driven technical analysis to identify locations with the highest risk of collisions is also consistent with the strategies of Vision Zero. The City’s study also goes above and beyond Vision Zero as the program includes mitigation measures along with a concrete action plan for new and dedicated City funding towards the implementation of the safety improvements identified in the study.

- **Monitoring and Evaluation**

Staff monitor and evaluate the effectiveness of specific safety features implemented through before and after studies. On a system wide basis, historic ICBC crash data (available 2017 to 2021), the number of intersections per year experiencing 25 or greater collisions continues to decrease in the City (Figure 2).

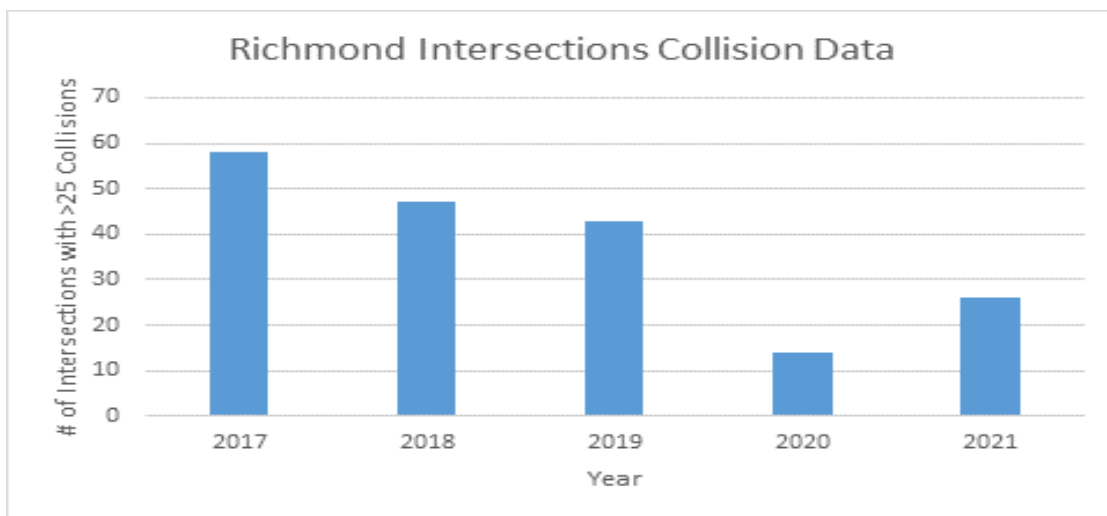


Figure 2: Number of Intersections with Greater than 25 Collisions

Setting a timeline to achieve zero traffic deaths and serious injuries is also a part of a Vision Zero commitment.

Review of cities that have adopted Vision Zero does not indicate that any have been able to eliminate all traffic related fatalities and injuries through adoption. The City's current road safety approach to develop a customizable set of solutions through data-gathering, local partnerships, community education, enforcement and re-engineering when necessary maximizes investment by implementing safety interventions where they are needed.

Staff will continue to explore opportunities to enhance and expand safety outcomes and discourage vehicle speeding which is consistent with the Vision Zero philosophy.

Financial Impact

None.

Conclusion

The ongoing and planned road safety initiatives for 2023 will continue efforts to further encourage safer use of the transportation network for vehicles, pedestrian and cyclists in Richmond. These will include implementing a range of proven safety mitigation measures encompassing engineering, education and enforcement activities.

The Traffic Safety Advisory Committee, a multi-agency forum, dedicated to enhancing pedestrian and traffic safety within Richmond will provide input on and support of various traffic safety improvements and programs.

The City's road safety projects, programs and policies are aligned with the recommended strategies of the Vision Zero safety movement. The City's annual road safety initiatives advance the Vision Zero goal by reducing the frequency of collisions through the implementation of a wide range of speeding countermeasures directed at making travelling around Richmond more safe and comfortable.

As the Richmond School District is an essential partner in the delivery of the school zone traffic safety program, staff will forward a copy of this staff report to the Richmond Council-School Board Liaison Committee for information.

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- Att. 1: 2023 ICBC Road Safety Campaign Calendar
2: 2022 Overview of Road Safety Highlights
3: Examples of City's Transportation-related Actions that Align with Vision Zero



2023 ICBC Road Safety Campaign Calendar

MARCH		APRIL	MAY		JULY	SEPTEMBER		OCTOBER		DECEMBER	
Enhanced Enforcement Period BCACP	Distracted Drivers Campaign	Occupant Restraint Campaign	Auto Crime	High Risk Driving	Motorcycles	Summer Impaired Driving Campaign (Alcohol/Drug)	Distracted Driving Campaign	Back to School*	Occupant Restraint Campaign	Drive Relative to Conditions Campaign (Speed/Pedestrian)	Winter Impaired Driving Campaign (Alcohol/Drug)
Road Safety Issue ICBC	Distractions	Occupant Restraint	Auto Crime	High Risk Driving	Motorcycles	Summer Impaired (alcohol/drug)	Distractions	Back to School*	Shift into Winter (Pedestrian Safety)	Drive Relative to Conditions (Speed/Peds)	Winter Impaired (alcohol/drug)
Campaign Messages	<p>Distracted driving now causes more fatal crashes in BC than impaired driving.</p> <p>Even short glances away from the road increases your risk of crashing. Leave your phone alone while driving.</p>	<p>Wearing your seatbelt is one of the best ways to protect yourself from being injured or killed in a crash. It's also the law.</p> <p>A ticket will cost you \$167 – so remember to buckle up.</p>	<p>Any unsecured vehicle is a target for auto crime, with older vehicles having the highest risk. Use an immobilizer or steering wheel lock, and make sure you lock your doors to reduce your risk.</p>	<p>Speed is the number one contributing factor for car crash fatalities, ahead of distracted or impaired driving.</p> <p>When you slow down you see more of the road. Reducing your speed gives you more time to react.</p> <p>Bike to Work Week: Whether you're a driver or a cyclist, we all have a role to play in sharing the road safely.</p>	<p>As a driver, you can only see motorcycles when you really look for them. Especially at intersections, and when changing lanes, stay alert and yield right-of-way appropriately.</p> <p>Motorcycle riders and their passengers should wear "all the gear, all the time".</p>	<p>When you drink and drive, you not only risk your life but those of others on the road.</p> <p>If your summer activities involve alcohol, you need to plan ahead to get home safely. If you've been drinking, don't drive. Use a designated driver, call a taxi or rideshare, or take transit.</p>	<p>Distracted driving causes more fatal crashes in B.C. than impaired driving.</p> <p>Even short glances away from the road increases your risk of crashing. Leave your phone alone while driving.</p>	<p>We're encouraging parents to review the rules of the road with their children and go over their daily route to and from school.</p> <p>Drivers should be completely focused on the road and watching for children, especially in or around school zones.</p>	<p>Wearing your seatbelt is one of the best ways to protect yourself from being injured or even killed in a crash. It's also the law.</p> <p>A ticket will cost you \$167 – so remember to buckle up.</p>	<p>More police will be enforcing safe driving for everyone, specifically targeting speeders.</p> <p>When you slow down you see more of the road. Reducing your speed gives you more time to react.</p> <p>You see pedestrians when you really look for them.</p>	<p>When you drink and drive, you not only risk your life but those of others on the road.</p> <p>If your holiday festivities involve alcohol, plan ahead for a safe ride home: arrange a designated driver, call a taxi or rideshare, take transit, or use Operation Red Nose if services are available in your community.</p>
Target Audience	BC drivers	BC drivers	Auto Thieves	BC drivers, Motorcyclists, Pedestrians, cyclists	BC drivers	BC drivers 19-45 years of age	BC drivers	All car occupants	BC drivers	BC drivers	BC drivers 19-45 years of age

2022 Overview of Road Safety Highlights

Safety Initiatives	Intervention	Location/Description
Engineering	In-Street Markers in School Zones	<ul style="list-style-type: none"> • Henry Anderson Elementary School • William Bridge Elementary School • Samuel Brighthouse Elementary School • Thomas Kidd Elementary School • William Cook Elementary School • Spul'u'Kwuks Elementary School • Howard DeBeck Elementary School • John T. Errington Elementary School • École Élémentaire James Gilmore Elementary School
	Traffic Calming	<ul style="list-style-type: none"> • Temporary installation of speed cushions on Kittiwake Drive in October 2022. • New traffic circle was installed at Barnard Drive and Robson Court in spring 2022. • 4th Avenue / Manoah Steves Elementary School.
	Traffic and Signal Operations	<ul style="list-style-type: none"> • Installation of two new traffic signals: Shell Road/Williams Road and Cook Road/midblock between No. 3 Road and Buswell Street. • Traffic cameras added at six signalized intersections. • Installation of a new pedestrian signal at Westminster Highway and Westminster Highway North. • Four new pedestrian actuated special crosswalks. • 20 signalized intersections were improved to include overhead illuminated (LED) street name signs to enhance intersection visibility. • New Audible Pedestrian Signal (APS) intersections and/or push buttons installed at 33 intersections.
	Speed Reader Boards	<ul style="list-style-type: none"> • 22760 block of Westminster Highway. • Westminster Highway near the Hamilton Transit Centre.
Education Initiatives	Pedestrian Safety	<ul style="list-style-type: none"> • In November 2022 Richmond RCMP officers and community police volunteers conducted a total of four pedestrian safety education and enforcement campaigns that involved the distribution of reflectors and proactive engagement with pedestrians. Locations focused on Canada Line Stations (Richmond-Brighthouse and Lansdowne) and the Minoru Centre for Active Living.
	Cycling Safety	<ul style="list-style-type: none"> • Bike to School Education for Students: a total of 1,627 students from 19 elementary schools received hands-on practice with fundamental cycling skills on school grounds and local neighbourhood streets.
	E-Bicycle and E-Scooter Safety	<ul style="list-style-type: none"> • An information handout to convey the rules and regulations of e-scooters in the city was developed by the Richmond Block Watch office. These were distributed on shared pathways, at road side and at community events in 2022.
Enforcement Initiatives	Distracted Driving	<ul style="list-style-type: none"> • Richmond RCMP officers and community police volunteers conducted "Cell Watch" deployment in March, September and October 2022. Approximately 2590 motorists were checked, 50 warning letters and 27 violation tickets were issued.
	Speed Management	<ul style="list-style-type: none"> • Richmond RCMP enforcement activities in 2022 included 1467 tickets issued for speeding and 130 tickets issued for excessive speeding.

Examples of City's Transportation-related Actions that Align with Vision Zero

- Annual Arterial Crosswalk Improvement Program to upgrade existing marked crosswalks on arterial roads to special crosswalks.
- Annual Accessible Pedestrian Signals (APS) Program to upgrade all City-owned special crosswalks, pedestrians signals and full traffic signals with APS features.
- Other annual capital programs to enhance road safety:
 - Neighbourhood Walkway Program: construction of new and/or enhancement of existing neighbourhood walkways/sidewalks.
 - Active Transportation Improvement Program: implementing cycling and rolling (e.g., wheelchairs and scooters) improvements.
 - Arterial Roadway Improvement Program: implementing pedestrian and traffic safety improvements along arterial roads and at arterial road intersections.
 - Traffic Calming Program: the implementation of traffic control measures to address concerns regarding through (short-cutting) traffic and excessive speed on the City's public roads.
- On-going partnership with ICBC:
 - Road Safety Improvement Program: cost-share funding.
 - Network Screening Study: identification of high crash locations and road safety countermeasures.
- On-going partnership with Richmond RCMP (Traffic Section): identification of roadways for increased enforcement.
- Cycling Education Courses: annual funding of courses for elementary school students and local residents.
- Follow the Province's Community Road Safety and Vision Zero Toolkit that provides road safety designs and strategies that local governments can implement to improve road safety.