

Staff Report



Development Services Department

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REPORT TO: Community and Infrastructure Services Committee

DATE OF MEETING: April 24, 2023

SUBMITTED BY: Barry Cronkite, Director, 519-741-2200 ext. 7738

PREPARED BY: Faranak Hosseini, Project Manager, Transportation Safety, 519-741-2200 ext. 7665

WARD(S) INVOLVED: All Wards (1-10)

DATE OF REPORT: March 23, 2023

REPORT NO.: DSD-2023-152

SUBJECT: City of Kitchener Vision Zero Strategy – 2022 Update

RECOMMENDATION:

That this report be received, which serves as a progress update on the Vision Zero action items completed in 2022; and further,

That staff be directed to implement the hot spot improvements as outlined in Appendix A (Proposed Hot Spot Improvements) of report DSD-2023-152 to support implementation of the Vision Zero Strategy.

REPORT HIGHLIGHTS:

- The purpose of this report is to provide a comprehensive update on the progress of the City of Kitchener's Vision Zero Strategy. It includes a summary of 2022 accomplishments and a review of planned action items in 2023. This report also includes recommendations for hot spot improvements to reduce the likelihood of serious injury or death at high-risk areas.
- The key finding of this report is that in 2022, The City made progress towards the goal of eliminating serious injury and fatal collisions on Kitchener streets through the implementation of the planned 2022 action items in the five categories of Evaluation, Engineering, Education, Engagement and Enforcement. As approved by Council and described in staff report DSD-2021-210, the Vision Zero Strategy action items are funded through reallocation of existing Formal Traffic Calming budget from the 2022-2026 budget years.
- Community engagement included consultations with advisory committees and the launch of a Vision Zero webpage, dashboard and Engage page to provide tools for residents to offer feedback on street safety. The dashboard is an essential tool to track and communicate progress towards the goal of zero traffic fatalities and serious injuries.
- This report supports the delivery of core services.

*** This information is available in accessible formats upon request. ***
Please call 519-741-2345 or TTY 1-866-969-9994 for assistance.

EXECUTIVE SUMMARY:

The City of Kitchener's Vision Zero Strategy is a four-year street safety plan that aims to eliminate traffic-related serious injuries and fatalities. This plan focuses on evaluating the street network and addressing the key contributing factors to serious injury and fatal collisions by focusing on three emphasis areas including vulnerable street users, high risk locations and high-risk driving. This report provides an update on the progress made towards achieving the goals identified in the Vision Zero Strategy including 2022 accomplishments and planned actions for 2023.

Statistics indicate that there is a declining trend in collisions, although it should be noted that changing travel patterns because of the COVID-19 pandemic may have had an impact on this data. Additionally, the analysis showed that pedestrians and cyclists are disproportionately represented in collisions that result in a serious injury or fatality, with aggressive and inattentive driving being a significant contributing factor to these collisions. To address these issues, initiatives are being implemented to prioritize vulnerable street user's safety, increase traffic calming measures, and educate drivers on safe driving practices. Progress toward these initiatives in 2022 are as follows:

- Evaluation – In partnership with the University of Waterloo, The City adopted a proactive and systematic approach to identify high-risk locations. Through this approach, The City identified 15 high-risk locations including intersections and mid-blocks. The City also acquired a traffic safety module that will analyze data on an annual basis beginning in 2023. Work completed under the evaluation category prioritizes the highest risk locations and demonstrates a shift towards a more proactive and data driven approach to street safety.
- Engineering - Staff conducted a comprehensive analysis on the 14 hot spot locations that pose a higher risk for serious injury and fatal collisions and identified physical measures that can be implemented to enhance safety at each location. The City has also continued to implement 40km/h neighbourhoods, of which approximately 70% of the residential neighbourhoods in Kitchener are complete, with the remaining to be completed in 2023. In addition, The City reviewed the existing pedestrian crossover policies and guidelines as well as the existing accessibility requirements.
- Education - The City launched a high-risk driving education campaign through a collaborative effort between The City, WRPS, Region of Waterloo Public Health, and City of Waterloo. The campaign targets high-risk driving behaviours that contribute to traffic-related serious injuries and fatalities on Kitchener streets.
- Engagement - The City made progress in this category through the launch of the Vision Zero Dashboard, a tool for tracking and communicating progress towards the goal of zero serious injury and fatal collisions. The City also enhanced its Vision Zero webpage and Engage page to provide up-to-date information for public engagement. Additionally, a Vision Zero sub-committee was established to obtain provide community perspective and feedback on street safety policies, programs, and strategies.
- Enforcement - The Selective Traffic Enforcement Program (STEP) was re-established through a collaborative effort with WRPS. This program identifies new areas of concern for targeted enforcement through a more data driven approach.

Staff will continue to focus on action items initiated in 2022 while adding new objectives in accordance with the Vision Zero action plan approved by Council in 2021. Staff will report back to Council in summer 2024 with a progress update on the accomplishments in 2023.

BACKGROUND:

Vision Zero is a long-term street safety strategy aimed at eliminating all traffic-related serious injuries and fatalities. It is based on the premise that collisions are preventable, and that safety should be prioritized above all else. Vision Zero recognizes that traffic systems are complex and reaching zero traffic serious injuries and fatalities requires a long-term, multi-faceted approach to address the factors that contribute to collisions. Vision Zero also recognizes the necessity of a shift in how the City approaches street safety and the role that everyone plays in ensuring the safety of all street users.

In December 2021, Kitchener Council approved the City of Kitchener's Vision Zero Strategy. The City of Kitchener's current Vision Zero Strategy is a four-year plan aimed at evaluating the street network, identifying the key contributing factors to serious injuries and fatalities, and addressing these factors through a multi-faceted approach which includes evaluation, engineering, education, engagement, and enforcement. While the current Vision Zero strategy is being implemented through 2025, Vision Zero is a long-term strategy that will take time and resources to achieve.

To identify trends and patterns in serious injury and fatal collisions on Kitchener streets, data analysis was conducted to understand the main contributing factors and emphasis areas. It is important to identify emphasis areas because these are the areas where the greatest impact can be made in reducing serious injuries and fatalities. The emphasis areas identified in Kitchener's Vision Zero Strategy are vulnerable street users, high-risk locations, and high-risk driving behaviour. To address these areas, action items are selected based on data analysis, community feedback and best practices. For detailed information on the City of Kitchener's Vision Zero Strategy, please refer to staff report DSD-2021-210 and City of Kitchener Vision Zero Strategy 2022-2025 (Kitchener.ca/VisionZero).

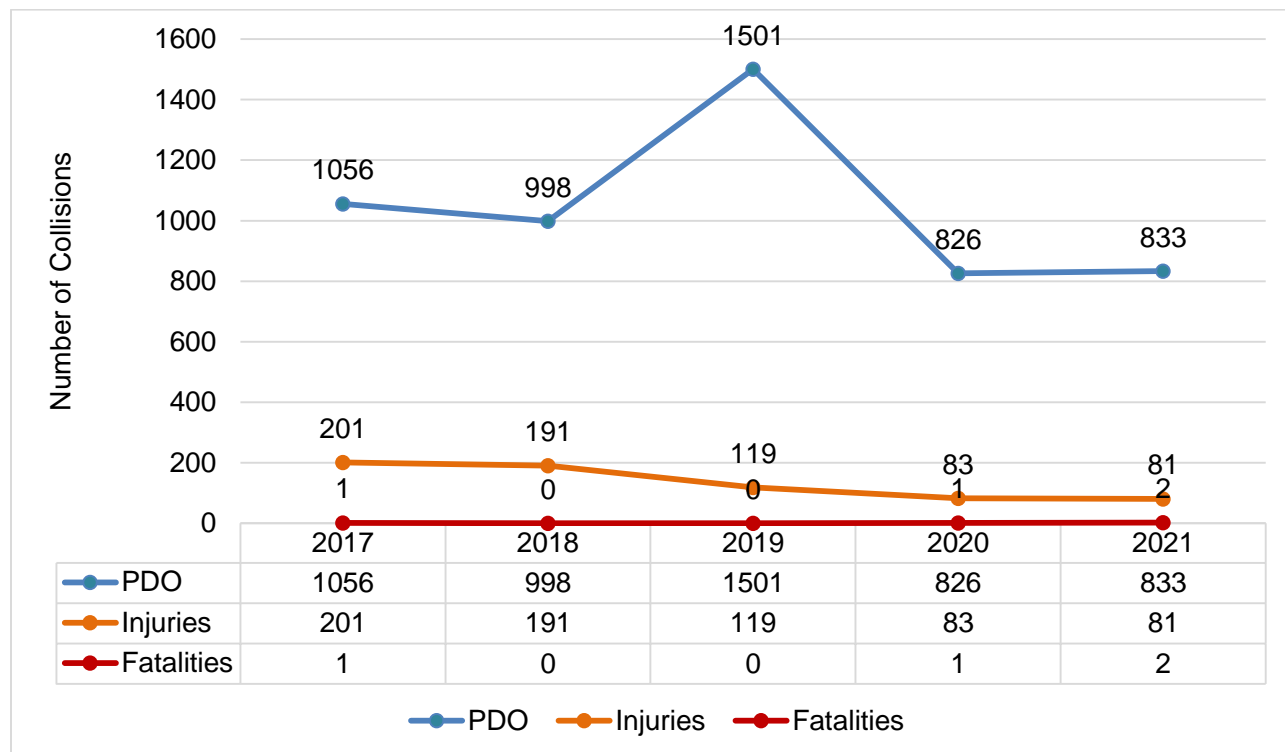
REPORT:

This report provides an update on the progress of the City of Kitchener's Vision Zero Strategy. This includes an overview of the collisions on Kitchener streets over the past five years as well as a summary of the progress made in 2022. This report also summarizes the planned action items for 2023.

Collision Analysis Overview

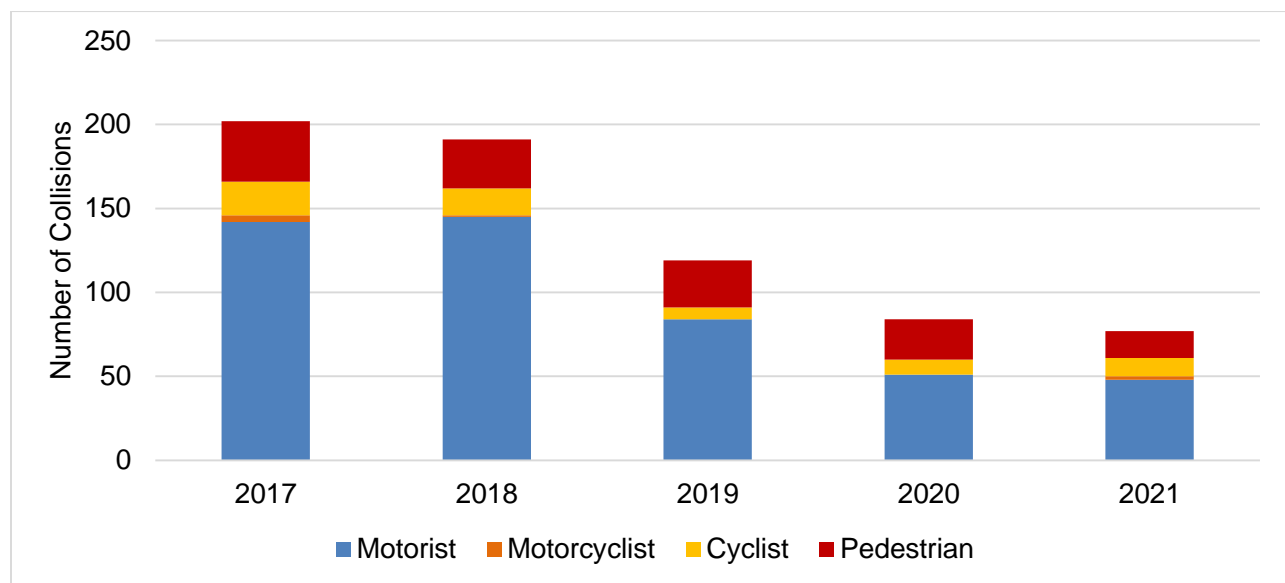
An analysis of historical collision data from 2017-2021 was conducted to identify trends in collisions resulting in injuries and fatalities. This analysis was focused on collisions that have occurred on the streets under the jurisdiction of the City of Kitchener. Of the 2,217 lane-km of roads and streets within the City of Kitchener boundary, 1,569 lane-km are under the jurisdiction of the City of Kitchener, 499 lane-km are under the jurisdiction of the Region of Waterloo, and 149 lane-km are under the jurisdiction of the Ontario Ministry of Transportation. For this review, roads under the jurisdiction of the Region of Waterloo and the Ministry of Transportation have not been included.

Graph 1 illustrates the trend of collisions on Kitchener streets since 2017 which shows a declining trend in the number of property damage only (PDO) and injury collisions. However, it should be noted that 2020 and 2021 collision data may be impacted by changing travel patterns during the COVID-19 pandemic influenced by lockdowns, social distancing, and travel restrictions.



Graph 1 – Trend of collisions (2017-2021)

Graph 2 illustrates the trend of the collisions that have resulted in injuries and fatalities by street user type. Similar to the data in Graph 1, a declining trend is observed for all street user types. However, 2020 and 2021 collision data may be impacted by changing travel patterns during the COVID-19 pandemic.



Graph 2 – Trend of injury and fatal collisions (2017-2021)

Analysis has been conducted on the collisions that have resulted in injuries or fatalities to identify the most common factors in the occurrence of these collisions. The data shows that:

- 30% of the collisions that have resulted in injuries and 50% of the collisions that have resulted in fatalities include a pedestrian or a cyclist while only accounting for 4% of the total collisions. **This reinforces the statement that pedestrians and cyclists are at a disproportionately higher risk of being involved in collisions resulting in serious injuries or fatalities, which continues to highlight the need to prioritize safety measures for vulnerable street users.**
- In 90% of the injury and fatal collisions, the driver was driving aggressively, and in 71% of the injury and fatal collisions the driver was inattentive. Aggressive driving behavior includes speeding, following too closely, passing improperly, failing to yield right of way, and disobeying traffic controls. **This finding shows that aggressive and inattentive driving behaviors are a significant contributing factor in a large majority of injury and fatal collisions. Therefore, mitigating these behaviors should be a priority in reducing the number of injuries and fatalities on Kitchener streets.**
- In 55% of the injury and fatal collisions, the surface was wet because of rainy, snowy, or icy weather conditions. These conditions can reduce visibility, increase stopping distance and make it more challenging for drivers to maintain control of their vehicles. **This suggests that in addition to winter road maintenance, drivers need to exercise extra caution when driving on wet surfaces and adjust their driving behavior according to the weather condition. Initiatives to educate drivers on safe driving practices in weather conditions can help raise awareness about these challenges.**
- In 62% of the injury and fatal collisions among pedestrians, the pedestrian was crossing the street legally and with right of way. **This suggests that street design, infrastructure and driver behavior are not adequate to ensure pedestrian safety, even when pedestrians are following the rules. Designing streets that prioritize pedestrian safety, implementing traffic calming measures, and educating drivers are some of the strategies being implemented to help address this issue.**

2022 Vision Zero Progress

The City has taken steps towards achieving the vision of zero traffic-related serious injuries and fatalities through the implementation of its 2022 action items. These initiatives encompass a range of measures aimed at enhancing street safety and are grouped into five categories, which include Evaluation, Engineering, Education, Engagement and Enforcement. A summary of these action items is provided below.

Evaluation

The evaluation category includes action items related to collecting and analyzing traffic and collision data to assess the safety of the existing street network, identifying safety gaps and opportunities and to track progress towards the goal of eliminating traffic related serious injuries and fatalities. Evaluation is a major step in ensuring that resources are being utilized in effectively and decisions are based on available data. The street safety improvements made in the evaluation category in 2022 are as follows:

Network Screening

Prior to adopting Vision Zero, traffic safety efforts were primarily reactive, relying on historic collision data and complaints from the public. However, with the implementation of the Vision Zero Strategy, The City has shifted to a more proactive approach. A systematic method has been adopted to identify and help predict locations with high collision risk, or "hot spots," using multiple factors such as site characteristics, traffic volumes, speeds, and historical collisions.

Analysis to identify high-risk locations was conducted in 2022 through a partnership with the University of Waterloo. The purpose was to identify locations with a higher risk for collisions resulting in serious injuries or fatalities. After the initial analysis, staff selected 15 of the top high-risk locations for further investigation to identify potential improvements to enhance safety. The analysis of high-risk collision locations included both intersections and mid-blocks.

Due to the complexity of intersections, staff installed lidar devices in partnership with Velodyne Lidar to better understand the safety issues at these locations. The lidar devices use laser technology to measure the distance between objects, providing data on vehicle movements. This technology enabled staff to collect conflict data, including near misses and potential collisions, which are not typically captured in traditional collision data. By analyzing this data in collaboration with the University of Waterloo, staff gained more insight into how to improve safety at these high-risk locations. The list of the high-risk locations along with the proposed improvements are summarized under the Engineering section.

City staff have also acquired a traffic safety module that will automatically analyze data on an annual basis, starting in 2023. This will allow staff to prioritize street safety efforts based on the most up-to-date data available. This shift towards a proactive data-driven decision-making, represents a shift in how traffic safety is approached, and emphasizes the use of data to identify high-risk locations and prioritize safety improvements.

Collision Investigation Program

In partnership with the WRPS and the Region of Waterloo Public Health, staff have established a program that assesses any collision that results in serious injuries and/or fatalities within three months of the time the collision occurs. This program is a valuable tool in helping to identify high-risk infrastructure gaps that require immediate attention.

Engineering

The engineering category includes action items related to the design and physical improvements of the transportation infrastructure to reduce the likelihood of serious injury and fatal collisions. The improvements made in this category in 2022 are described below.

Hot Spot Improvements

15 locations have been identified through data driven analysis that pose a higher risk for collisions resulting in a serious injury or fatality. Staff conducted a review of these locations to identify potential safety improvements. Staff have identified measures that can be implemented to improve safety at each of the hot spot locations. The recommended measures are summarized and included in Appendix A.

40km/h Neighbourhoods

In October 2021, Council approved the implementation of a speed limit reduction from 50km/h to 40km/h, and to 30km/h within school zones and along signed neighbourhood bikeways. The speed limit reduction implementation started in January 2022 and to the date approximately 70% of the City has been converted. The remaining neighbourhoods are expected to be completed by end of 2023.

Pedestrian Crossover Review

As a part of the Vision Zero Strategy, staff have reviewed the existing pedestrian crossover (PXO) guidelines and practices followed by the City of Kitchener. This review was conducted to ensure City of Kitchener is in line with best practices. The main findings of this review are summarized below.

- Staff recommend following the OTM (Ontario Traffic Manual) Book 15 warrant requirements to determine location eligibility. Where pedestrian volume does not meet the minimum OTM requirements, staff suggest using engineering judgment in combination with the connectivity requirement of the OTM to identify location eligibility. This approach considers broader pedestrian connectivity in addition to volumes and allows for a more flexible selection process that considers specific needs of the community.
- To increase compliance, staff recommend using flashing beacons and/or raised crossings for all level 2-D PXOs. Compliance studies conducted by staff show that PXO level 2-D have a higher compliance rate when flashing beacons or raised crossings are present. Locations with flashing beacons and/or raised measures locations achieved a 90% compliance rate. Locations without these measures achieved a 72% compliance rate.
- To prioritize locations eligible for PXOs, staff recommend using a scoring system based on proximity to high pedestrian areas, collision history and speed, and volume of vehicular traffic. Up to three PXOs are recommended to be installed per year at a cost of approximately \$50,000 in total which is proposed to be funded through the Vision Zero Hot Spot Improvement program. The following locations will be studied for PXOs, and the results will be reported back to Council in 2023.
 - Henry Sturm Trail at Belmont Ave W – Ward 9
 - Henry Sturm Trail at Lawrence Ave – Ward 8

Seasonal Traffic Calming

In 2018, Transportation Services launched a Seasonal Traffic Calming program that included installing approximately 40 flexible delineators and 5-speed advisory signs throughout The City. The program has been met with general acceptance from the community and has resulted in many more requests. As a result, there has been annual increases of the seasonal traffic calming program in 2019 and 2021.

For 2023 the Seasonal Traffic Calming program will grow by an additional 10 in-road flex signs per ward. This will result in a total of 23 signs per ward and will include 11 single in-road flex sign locations and four (4) seasonal narrowing locations. Planning and design for the 2023 program has been complete and staff are working on an installation plan which will commence in April 2023.

Education

Educational campaigns are a critical component of a Vision Zero program. The purpose of these campaigns is to raise awareness among street users about safe street behaviors and the importance of following traffic rules. The improvements made in the education category are summarized in this section.

High Risk Driving Education Campaign

Staff have launched an educational campaign focused on high-risk driving behaviors through a collaborative effort between the City of Kitchener, City of Waterloo, WRPS and Region of Waterloo Public Health. The purpose of this campaign is to raise awareness among street users about the dangers of high-risk driving behaviors and to promote safe driving habits. This campaign is a critical component of the City's Vision Zero strategy as data shows that high-risk driving behaviors are major contributors to traffic fatalities and serious injuries in Kitchener.

This education campaign has two phases. The first phase which commenced in January 2023 aims to educate the public Vision Zero concept and the importance of achieving zero traffic fatalities and serious injuries in our community. This phase underscores the fact that traffic collisions are not random occurrences, but rather preventable incidents that can be averted with the adoption of proactive measures and education. The initial phase of the campaign seeks to raise awareness among street users about the pressing need to reduce the incidence of traffic collisions, particularly those that result in fatalities or serious injuries. By emphasizing the preventable nature of these incidents, the campaign aims to foster a sense of shared responsibility among all stakeholders to work towards achieving the Vision Zero goal.

To reach a wide audience, a variety of multimedia strategies are used including social media posts on platforms such as Facebook, Twitter, and Instagram as well as ads on radio, YouTube, Spotify, and Google display. The content of the campaign includes a combination of written messages, voice ads, posters, and videos, which have been carefully developed to maximize their impact and effectiveness. These materials have been designed to deliver a clear and compelling message that emphasizes the importance of adopting safe driving habits to reduce the incidence of traffic collisions.

The second phase of the educational campaign, scheduled to commence in September, will focus on addressing high-risk driver behavior and specific actions such as speeding and aggressive driving. The campaign's second phase will be timed with the beginning of the 2023 school year to help reach a larger audience and further highlight the importance of safe driving habits.

Active Transportation Education Campaign

The City has been actively promoting active transportation through various educational programs such as campaigns, events and materials including bike maps and information on bike parking locations to help navigate cyclists through the safest and most convenient route. The City has also been regularly sending out a monthly e-newsletter to provide updates on on-going cycling projects and new cycling facilities to promote cycling and educate all street users on best practices.

In 2023, staff will further enhance active transportation educational programs by collaborating with The City of Waterloo to launch an educational campaign that focuses on active transportation. The campaign aims to raise awareness and educate street users on the proper use of pedestrian and cycling facilities and how to navigate them safely.

The primary objective of this campaign is to promote street safety, especially for pedestrians and cyclists, and encourage the adoption of sustainable transportation modes. Staff are currently in the planning phase of this campaign and anticipate its launch in the summer of 2023.

School Children Educational Programs

School Travel Planning of Waterloo Region manages dedicated programs that educate students and families on pedestrian skills and traffic awareness in school zones. These programs cover different types of environments such as crossing in roundabouts and are delivered through various models. The service also supports third-party safety programs such as Walking School Bus, Cycling into the Future, CAA School Safety Patrol program, and Children's Safety Village. Through collaboration with School Travel Planning of Waterloo Region. The enhancement plan includes the following:

- Expand the Sidewalk Smart program: This program prepares children transitioning from primary to junior grades (Grades 3-4) to safely walk to school and other destinations in their community. This program is currently offered to two schools in Kitchener but is proposed to be expanded to 10 schools in a two-year period (2023 and 2024 school years). An additional \$5,000 per year is required to support the expansion, which will be funded through the Vision Zero budget.
- Introduce a pedestrian skill sheet to teach children about pedestrian skills. This will contain valuable information about crossing the street safely, looking both ways, identifying hazards, and making safe decisions when crossing the street or walking on the sidewalk. The sheet can be used by teachers and parents to supplement safety education for children, making it a valuable resource in promoting pedestrian safety.
- Provide a Vision Zero Parents Skill Sheet to remind parents of the best practices for keeping their children safe while commuting to school and covers topics such as safe driving practices in school zones, parking etiquette, and pedestrian safety. The skill sheet is expected to provide parents with a clear understanding of their role in ensuring the safety of children in school zones.
- Reintroduce the Cycling into the Future program to improve cycling skill training. School Travel Planning of Waterloo Region is working on restoring this program. Further updates are expected by end of Summer 2023.

Engagement

Engagement is critical to the success of a Vision Zero program by fostering community ownership and involvement in improving street safety. The 2022 accomplishments in this category are summarized below.

Vision Zero Webpage and Dashboard

The recently launched Vision Zero Dashboard is an essential tool for tracking and communicating progress towards the goal of zero traffic fatalities and zero serious injuries. The platform provides valuable information to residents including collision statistics and progress updates on the action items of the Vision Zero Strategy. The dashboard can be

accessed through [Kitchener.ca/VisionZero](https://kitchener.ca/VisionZero). In future phases, additional elements and features will be added to provide progress updates on all components of the Vision Zero Strategy.

In addition, the City of Kitchener has updated the Vision Zero webpage and the Vision Zero Engage page at [Kitchener.ca/VisionZero](https://kitchener.ca/VisionZero). The platforms provide tools to engage and inform the public about the Vision Zero Strategy and its progress. The Vision Zero webpage is designed to educate the public about the importance of safe transportation practices to achieve zero fatalities and zero serious injuries. The Vision Zero Engage page provides an opportunity for residents to provide feedback and share their ideas for making Kitchener's streets safer for everyone.

Vision Zero Sub-Committee

A sub-committee of the Active Transportation and Trail Advisory Committee was established to provide community perspective on street safety policies, programs, and strategies. This sub-committee serves to advise staff on street safety issues, act as an advocate for street safety in the city and promote public awareness of street safety initiatives and the Vision Zero Strategy.

Enforcement

The purpose of enforcement in Vision Zero is to help ensure that all street users are following traffic rules and to deter unsafe behaviors that could lead to collisions. In collaboration with the WRPS staff have made improvements to help allocate enforcement resources to the highest-risk locations. The accomplishments in this category are summarized below.

Selective Traffic Enforcement Program

Selective Traffic Enforcement Program (STEP) is an enforcement initiative that is designed to systematically identify and target high-risk areas based on traffic data including speed, volume, and collision history. The previous approach to the STEP program relied more heavily on traffic complaints from the public. A more data-driven approach is being now being used to help WRPS target enforcement where the highest risk driving behaviours are occurring based on network screening and empirical data.

To improve collaboration and data sharing, quarterly meetings with WRPS and area municipalities have been re-established to discuss the program's progress and identify new areas of concern for targeted enforcement. STEP members are currently working towards more data driven decision making for enforcement locations by leveraging traffic data and network screening analysis.

Next Steps

Staff will continue to focus on action items initiated in 2022 while adding new objectives in accordance with the Vision Zero action plan approved by Council. The action items are summarized in Appendix B. Staff will report back to Council in summer 2024 with a progress update on the accomplishments in 2023.

STRATEGIC PLAN ALIGNMENT:

This report supports delivery of core services.

FINANCIAL IMPLICATIONS:

As approved by Council and outlined in staff report DSD-2021-210, the Vision Zero Strategy action items will be funded through reallocation of existing budget from the 2022-2026 Formal Traffic Calming Budget.

COMMUNITY ENGAGEMENT:

INFORM – This report has been posted to the City’s website with the agenda in advance of the council / committee meeting.

CONSULT – In 2020, 2021 and 2022 staff met with advisory committees including Mayor's Advisory Council for Kitchener Seniors, Kitchener Active Transportation and Trails Advisory Committee, Kitchener Youth Action Council, Grand River Accessibility Advisory Committee, Safe and Healthy Communities Advisory Committee and Vision Zero Sub-committee. The intent of these meetings was to raise awareness about Vision Zero and to receive feedback on the development of the strategy and community priorities for safety.

In 2022, staff launched the Vision Zero Dashboard to track and communicate progress towards the goal of zero traffic fatalities and major injuries. The dashboard can be accessed through Kitchener.ca/VisionZero. Additional features will be added to the dashboard in future phases. The City also updated its Vision Zero webpage and Engage page, to engage and inform the public about the Vision Zero Strategy.

PREVIOUS REPORTS/AUTHORITIES:

- DSD-2021-210 Vision Zero Strategy
- DSD-20-035 Vision Zero Review

APPROVED BY: Justin Readman, General Manager
Development Services Department

ATTACHMENTS:

- Attachment A – Proposed Hot Spot Improvements
- Attachment B – 2023 Action Items

APPENDIX A – Proposed Hot Spot Improvements

#	Location	Proposed Measures	Expected Outcome	Next Steps	Est Cost
1	Activa Ave between David Bergey Dr and Blush Clover Cres (Ward 5)	- Install two speed cushions at the following locations: Activa Ave between Copper Leaf St and Cotton Grass St, Activa Ave between Berry Moss St, and Max Becker Dr	- Reduction in operating speed on Activa Ave within the school zones	2023 installation	\$15,000
2	Old Zeller Dr between Fairway Rd N and Zeller Dr (Ward 2)	- Install three speed humps at the following locations: Old Zeller Dr between Fairway Rd N and Grand Flats Trail, Old Zeller Dr between Watervale Dr and Eden Oak Trail, and Old Zeller Dr between Eden Oak Trail and Valebrook St	- Reduction in operating speeds on Old Zeller Dr	2023 installation	\$15,000
3	Robert Ferrie Dr between Thomas Slee Dr and Doon S Dr (Ward 4)	- Install two speed cushions at the following locations: Robert Ferrie Dr between Mossgrove Dr and Marigold Ct, and Robert Ferrie Dr between Topper Wood Cres and Doon South Dr	- Reduction in operating speeds on Robert Ferrie Dr	2023 installation	\$15,000
4	Thomas Slee Dr between Robert Ferrie Dr and Doon South Dr (Ward 4)	- Install three speed humps at the following locations: Thomas Slee Dr between Terrington Cres and Terrington Cres, and Thomas Slee Dr between George Ayres Dr and Doon South Dr	- Reduction in operating speeds on Thomas Slee Dr	2023 installation	\$15,000
5	Shirley Ave between Bingemans Centre Dr and Riverbend Dr (Ward 1)	- Install a pedestrian refuge island in the two-way-left-turn lane at 68 Shirley Ave at the GRT bus stop location (location selected based on consultation with GRT)	- Improvement in visibility of pedestrians and the crossing location to drivers - Shorter crossing distance for pedestrians by breaking up the crossing into two smaller segments	2023 installation	\$15,000
6	Bingemans Centre Dr between Shirley Ave and Shirley Dr (Ward 1)	- Install a pedestrian refuge island in the two-way-left-turn lane at 400 Bingemans Dr at the GRT bus stop location (location selected based on consultation with GRT)	- Improvement in visibility of pedestrians and the crossing location to drivers - Shorter crossing distance for pedestrians by breaking up the crossing into two smaller segments	2023 installation	\$15,000
7	Wabanaki Dr between Kevco Pl and Manitou Dr (Ward 3)	- Install a pedestrian refuge island on Wabanaki at the trail crossing (approx. 220m from the intersection of Manitou Dr and Wabanaki Dr) - Install a boulevard multi-use trail from Wilson Ave to Manitou Dr (this work will be funded through sidewalk infill capital budget)	- Improve visibility of pedestrians and the crossing location to drivers - Shorten the crossing distance for pedestrians and provide a refuge island for trail users - Provide a dedicated facility for pedestrians and cyclists	2023 installation	\$15,000 (refuge island)

			separated from arterial roadway traffic		
8	Driftwood Dr at Forest Heights Community Trail (Ward 7)	- Install two raised crosswalks at the following locations: Driftwood Dr and Forest Heights Community Trail (north of Royal Orchard Dr), and Driftwood Dr and Forest Heights Community Trail (south of Rolling Meadows Dr)	- Reduction in operating speeds on Driftwood - Improve safety for trail users crossing Driftwood Dr	2023 installation	\$30,000
9	Royal Orchard Dr at Forest Heights Community Trail (Ward 7)	- Install one raised crosswalk at this location	- Reduction in operating speeds on Royal Orchard Dr - Improve safety for trail users crossing Royal Orchard Dr	2023 installation	\$15,000
10	Lawrence Ave at Henry Sturm Trail (Ward 8)	- Install a raised flush crosswalk at this location (This location has also been selected for a PXO study, as highlighted in the pedestrian crossover review section of this report)	- Improve visibility of pedestrians and the crossing location to drivers - Improve safety for trail users crossing Lawrence Ave	2023 installation	\$15,000
11	West Ave at Henry Sturm Trail PXO (Ward 8)	- Install flashing beacons to enhance the existing Type D PXO	- Improve visibility of pedestrians and the crossing location to drivers - Improve safety for trail users crossing West Ave by raising driver awareness a PXO is present.	2023 installation	\$20,000
12	Intersection of Spadina Rd E and Queens Boulevard (Ward 9)	- Move the school crosswalk to Queen's Blvd north of Spadina Rd E and add a ladder crosswalk to the crossing - Add pedestrian crosswalk pavement markings on Spadina Rd W - Extend the curbs on both sides to tighten the corner radius for the new school crosswalk location	- Reduction in conflicts between left turning vehicles from Spadina Rd E into Queen's Blvd and pedestrians crossing Queen's Blvd on the south side of Spadina Rd E - Reduction in speed of vehicles turning at the new school crosswalk location	2023 installation	\$30,000
13	Intersection of Wabanaki Dr and Wilson Ave (Ward 3)	- Install a traffic signal at this intersection (The new layout of the intersection will be determined through collaboration with the Region of Waterloo)	- Reduction in conflicts at this intersection by providing designated time and clear guidance on when each user can move through the intersection	2023/24 installation	\$20,000 (not including signal cost)
14	Intersection of Strasburg Rd and Old Country Dr (Ward 6)	- Reconfigure and simplify the all-way-stop control intersection by removing the left turning lanes OR - Install a signal at this intersection (the new layout of the intersection will be determined through collaboration with the Region of Waterloo)	All-way-stop option - Reduction in conflicts at this intersection by simplifying the intersection configuration - Decrease in crossing distance for pedestrians on Strasburg Rd Signal option: - Reduction in conflicts at this intersection by providing designated time and clear	2023/24 installation	\$20,000 (not including signal cost)

			guidance on when each group can move through the intersection		
15	Intersection of Charles St E and Sydney St S (Ward 9)	<ul style="list-style-type: none"> - Convert to a three-lane cross section between Ottawa and Preston - Install crossing facility for pedestrians crossing Charles Street - Public engagement to be held in 2023 regarding the proposed cross section changes and report back to Council in 2024 Vision Zero update 	<ul style="list-style-type: none"> - Reduction in conflicts between vehicles travelling on Charles and vehicles crossing or turning onto Charles from Sydney St. - Decrease in conflicts between vehicles and pedestrians crossing Charles St at Sydney St 	2024 installation	TBD

APPENDIX B – 2023 Action Items

Category	Action Item Title	Status	Launch Year	Key Stakeholders
Evaluation	Collision Network Screening and Hot Spot Identification	Ongoing since 2022	2022-2025	COK Transportation UW Transportation Group
Evaluation	Severe Injury and Fatal Collision Investigation Program	Ongoing since 2022	2022-2025	COK Transportation WRPS ROW Public Health Services
Engineering	Neighbourhood Speed Limit Review	Ongoing since 2022	2022-2024	COK Transportation
Engineering	Hot Spot Improvements	Ongoing since 2022	2022-2025	COK Transportation
Engineering	Formal Traffic Calming Policy Update	New	2023	COK Transportation
Engineering	Seasonal Traffic Calming Policy Update	New	2023	COK Transportation
Engineering	Fleet Safety Improvements	New	2022	COK Fleet
Education	High Risk Driving Educational Campaign	Ongoing since 2022	2022-2025	COK Communications COK Transportation ROW Public Health City of Waterloo
Education	Active Transportation Educational Campaigns and Events	Ongoing since 2022	2022-2025	COK Communications, COK Transportation City of Waterloo
Education	Active School Travel Educational Programs	Ongoing since 2022	2022-2025	COK Communications, COK Transportation, ROW School Travel Planning
Education	Educational Programs for Fleet Drivers	New	2023-2025	COK Fleet, COK Communications
Engagement	Vision Zero Sub-Committee	Ongoing since 2022	2022-2025	COK Transportation
Engagement	Public Awareness and Engagement	Ongoing since 2022	2022-2025	COK Communications, COK Transportation
Engagement	Vision Zero Day	New	2023-2025	COK Communications, COK Transportation
Engagement	Community Partnerships	New	2023-2025	COK Transportation ROW School Travel Planning
Engagement	Advocacy and Engagement with Provincial and Federal Agencies	New	2023-2025	COK Transportation, Mayor's Office, Council
Enforcement	Targeted Enforcement (STEP Program)	Ongoing since 2022	2022-2025	WRPS, COK Transportation
Enforcement	WRPS Traffic Management Plan	New	2022-2025	WRPS, COK Transportation
Enforcement	Automated Speed Enforcement (explore the expansion of the program)	New	2023	ROW Transportation, COK Transportation