



STAFF REPORT ACTION REQUIRED

Road Safety Plan (RSP) 2017-2021

Date:	June 10, 2016
To:	Public Works and Infrastructure Committee
From:	General Manager, Transportation Services
Wards:	All
Reference Number:	P:\2016\Cluster B\TRA\TMC\Pw16002tmc.docx

SUMMARY

The purpose of this report is to set forward a comprehensive Road Safety Plan (RSP) to improve road safety, and to request City Council's endorsement of the plan. This report also responds to a number of City Council and Public Works and Infrastructure Committee motions linked to road safety, including the expansion of the "Watch Your Speed" pilot program in school zones, an investigation of requirements for expanding automated enforcement, a review of posted speed limits, the development of a user-friendly traffic calming guide, and the identification of safety improvements for school children, older pedestrians and persons with disabilities.

The proposed RSP is a comprehensive, collaborative, and data-driven action plan for reducing the number of traffic-related deaths and serious injuries on Toronto's roads over the next 5 years (2017-2021). The comprehensive nature of the plan entails the shared responsibility, involvement, and commitment of all road safety partner agencies in the City, consideration for all types of road users, identification of the City's key safety priorities, and the inclusion of a variety of engineering, education, and enforcement countermeasures.

The RSP emphasizes protection for the most vulnerable road users, such as pedestrians, cyclists, older adults, and school children, and leverages the experiences of other major North American jurisdictions that have embraced the "Vision Zero" philosophy that was first introduced in Europe and is gaining widespread adoption.

RECOMMENDATIONS

The General Manager, Transportation Services recommends that City Council:

1. Endorse in principle the proposed Road Safety Plan (2017-2021).
2. Authorize the General Manager, Transportation Services to expand the "Watch Your Speed" Program to include the use of permanent speed display signs exclusively in school zones.
3. Approve the proposed mandatory requirements and prioritization guidelines for selecting and prioritizing candidate schools for the installation and operation of permanent speed display signs, as outlined in Appendix 8 attached to this report.
4. Authorize the General Manager, Transportation Services, to request the Ontario Ministry of Transportation to allow the City of Toronto to implement a mobile automated speed enforcement pilot project in school zones and construction zones.
5. Authorize the General Manager, Transportation Services, to request the Ontario Ministry of Transportation to allow the City of Toronto to implement "School Safety Zones" which would double fines for speeding and other traffic infractions in school zones.
6. Approve the reduction in the posted speed limit for those street locations identified in Appendix 6, attached to this report.
7. Direct the City Manager to forward a copy of this report, dated June 10, 2016, to the Disability, Access and Inclusion Advisory Committee, Board of Health, and Toronto Police Services Board for information.
8. Direct the City Manager to request the Toronto Police Services Board to request the Chief of Police to submit a report to the Toronto Police Services Board:
 - a) Confirming support for the Vision and Goal of the Road Safety Plan;
 - b) Outlining specific existing, enhanced, and new enforcement measures to be undertaken by the Toronto Police Service in support of the Road Safety Plan; and
 - c) Discussing the required funding and staffing levels required to meet the Vision and Goal of the Road Safety Plan.
9. Authorize and direct the appropriate City Officials to take the necessary action to give effect to Council's decision, including the introduction of in Council of any Bills that may be required.

FINANCIAL IMPACT

The total financial implications for Transportation Services as a result of the proposed five-year RSP (2017-2021) is estimated at \$68.1 million overall, representing \$28.2 million in previously approved funding for existing programs, \$35.4 million of additional Capital funding, and \$4.5 million of additional Operating funding (2017-2021) which after the first year is on average approximately \$1.0 million a year, as described in Appendix 1 and Table 1 below.

Table 1: Road Safety Plan Budget

Year	Capital previously-authorized	Capital Additional	Operating net additional
2017	\$ 7,233,000	\$ 4,531,000	\$ 372,000
2018	\$ 5,233,000	\$ 8,916,000	\$ 994,000
2019	\$ 5,233,000	\$ 7,616,000	\$ 1,014,000
2020	\$ 5,233,000	\$ 7,176,000	\$ 1,034,000
2021	\$ 5,233,000	\$ 7,196,000	\$ 1,054,000
TOTAL	\$ 28,165,000	\$ 35,435,000	\$ 4,468,000

The additional funding requirements are not included in the 2016 Capital Budget and 2017-2025 Capital Plan or the 2016 Operating Budget for Transportation Services. Future capital and operating funding for the five-year RSP (2017-2021) will be considered against other unfunded City priorities in concert with the development of a financing strategy that will include various City sources.

In order to deliver on an increased budget for road safety initiatives, Transportation Services would require increased capacity particularly in the area of capital project delivery. The recommended Road Safety Plan identifies the need for ten new capital-funded staff, with an additional four operational-funded staff.

The Deputy City Manager & Chief Financial Officer has reviewed this report and agrees with the financial impact information.

DECISION HISTORY

At its meeting of August 25, 26, 27 and 28, 2014, City Council directed Transportation Services to purchase, install, operate, and evaluate ten (10) speed measurement and display signs on a permanent basis, as a pilot expansion of the "Watch Your Speed" Program (WYSP) in school zones. Council also directed staff to report back to Public Works and Infrastructure Committee on the effectiveness of the pilot project, and the costs and resources required to operate the pilot project.

<http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2014.MM55.38>

At its meeting of February 10 and 11, 2015, City Council directed the City Solicitor and Transportation Services to report to the Public Works and Infrastructure Committee on

the feasibility and mechanism to double the fine for speeding on residential streets, in school zones, and around playgrounds and daycare centres.

<http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2015.MM3.4>

At its meeting of May 5, 6 and 7, 2015, City Council directed Transportation Services staff to lead a task force, in cooperation with Ministry of Transportation, Ministry of the Attorney General, Toronto Police Service Court Services and Legal staff, to investigate the technical, evidentiary, regulatory and prosecutorial and financial requirements related to expanding automated enforcement for the purposes of reducing speed, stop sign and turn violations at warranted locations. City Council also directed Transportation Services staff and the City Solicitor, in consultation with Toronto Police Service, to report to the Public Works and Infrastructure Committee as a component of the Road Safety Plan for Toronto, the task force results and recommendations related to an automated enforcement pilot project within the City of Toronto.

<http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2015.PW3.17>

At its meeting of May 5, 6 and 7, 2015, City Council requested that, "... the General Manager, Transportation Services to report back to the Public Works and Infrastructure Committee on the following:

- a. what implications the Ministry of Transportation's proposal to amend the current default speed limit, in the Highway Traffic Act, would have on the City of Toronto; and
- b. as part of the Road Safety Plan, on the creation of "school safety zones" which may include elements such as lower speed limits, increased enforcement, higher fines, improved pavement markings, flashing signage, and/or a public awareness campaign, such report to include capital costs, annual operating costs, and legislative changes required to implement creation of such zones."

<http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2015.PW3.3>

At its meeting of June 10, 11 and 12, 2015, City Council directed Transportation Services staff, in consultation with other City Divisions, to report to Public Works and Infrastructure Committee with a comprehensive plan to improve road safety that would include: a review of best practices from comparable jurisdictions; a review of existing City road safety policies, strategies and guidelines; an enhanced analysis of City-wide traffic collision data; specific recommendations to improve road safety for pedestrians and cyclists over the short, medium and long-terms; an implementation plan and funding strategy; a regular reporting mechanism to track progress; the creation of a Road Safety Advisory Group to engage key internal partners and external stakeholders; and the creation of a Road Safety Task Force to be developed and led by Transportation Services. City Council also directed staff to conduct audits of intersections with high pedestrian volumes and to report to Public Works and Infrastructure Committee on the audit results and recommendations for enhancing pedestrian safety and walkability.

<http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2015.PW5.9>

At its meeting of June 29, 2015, the Toronto Board of Health directed the Medical Officer of Health to work with Transportation Services and its Road Safety Advisory Group to identify effective ways to reduce speeds and improve safety on arterial and local roads by reducing posted speed limits, exploring strategies to increase speed limit compliance, enhancing public education about road safety, with a focus on motor vehicle drivers and vulnerable groups including youth and older adults, improving road design to better protect pedestrians and cyclists and identifying opportunities to raise awareness of pedestrian safety in private driveways and parking lots.

<http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2015.HL5.6>

At its meeting of October 7, 2015, Public Works and Infrastructure Committee directed Transportation Services staff to consider the inclusion of motorcyclists as vulnerable road users during the development of the Road User Safety Strategy.

<http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2015.PW8.4>

At its meeting of November 12, 2015, Public Works and Infrastructure Committee, requested the General Manager, Transportation Services to include, as part of the upcoming Toronto Road Safety Plan, an easy-to-use traffic calming manual, including among other things, a discussion of typical traffic calming options, such as speed humps, line markings and signage as well as their impacts, costs and effectiveness and an overview of applicable Council policies and warrants.

<http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2015.PW9.16>

At its meeting of December 9 and 10, 2015, City Council directed Transportation Services staff to report to Public Works and Infrastructure Committee on intersections without automatic pedestrian signals which are close to facilities for older adults and options to increasing safety.

<http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2015.CD8.1>

At its meeting of January 21, 2016, Public Works and Infrastructure Committee directed Transportation Services staff to include, as part of the upcoming Toronto Road Safety Strategic Plan, a Seniors Strategy that identifies specific counter measures aimed at improving the safety of older residents on local and arterial roads and reducing the number of fatalities and serious injuries.

<http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2016.PW10.8>

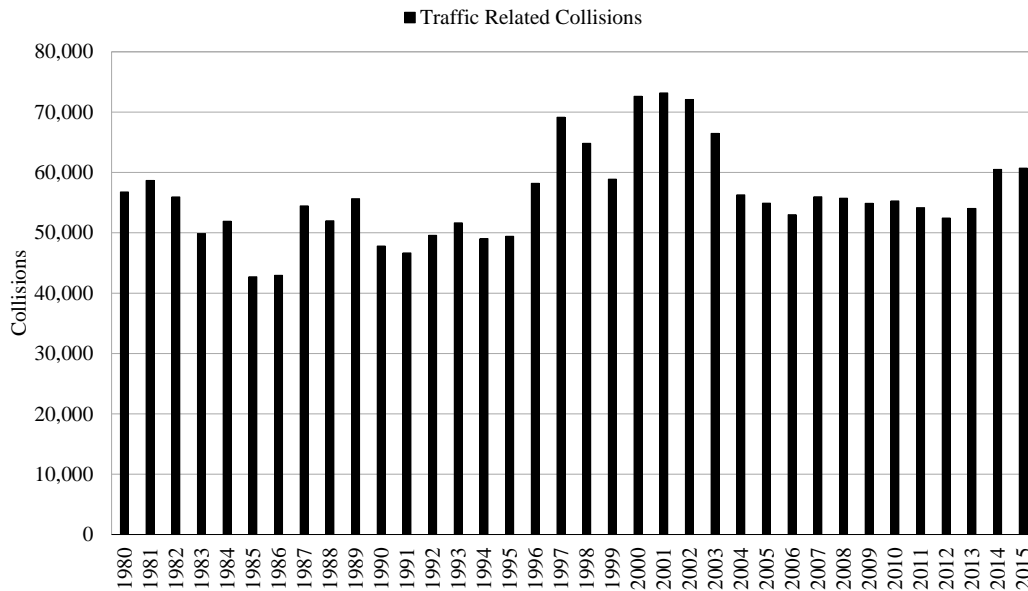
ISSUE BACKGROUND

Current State of Road Safety

As part of its role and mandate to build and maintain a safe and efficient road system for all road users, Transportation Services continuously makes improvements that have proven to be effective in addressing road safety, such as zebra markings at pedestrian crossings and red light running cameras. In addition, there are currently many other organizations and agencies in Toronto also involved in road safety, including Toronto Police Service, Toronto Public Health, Toronto District School Board (TDSB), Toronto Catholic District School Board (TCDSB) and the Canadian Automobile Association (CAA). These agencies have and continue to deliver various road safety programs and initiatives, but often independently or with limited collaboration.

The total number of traffic-related collisions in Toronto has remained fairly steady since 2004, as shown in Figure 1. During this last decade, total collisions fluctuated between 52,000-60,000 per year, averaging 56,000 per year. During this period, vehicle-kilometers travelled is estimated to have increased by approximately 14% and population and employment in Toronto has increased by 8% and 13% respectively, indicating a slight decrease in collision *rates* depending on which normalization metric is used.

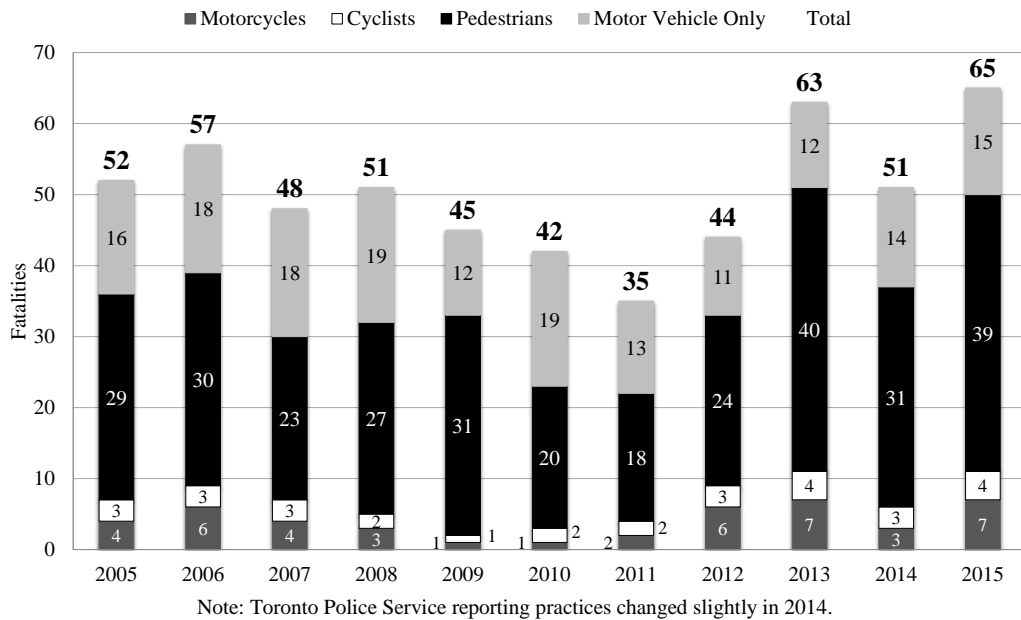
Figure 1: Total Collisions in Toronto, 1980-2015



Note: Toronto Police Service reporting practices changed slightly in 2014

After remaining fairly steady from 2005-2012, with an average of 44 persons killed per year, traffic fatalities have increased over the last 3 years, with 65 traffic-related fatalities in 2015 representing a 10-year high. These trends are shown in Figure 2.

Figure 2: Traffic Fatalities in Toronto, 2005-2015



This recent increase in fatal collisions has resulted in heightened attention by the public, elected officials, and City staff and was a primary driver for the creation of a comprehensive road safety plan. Due to better design and engineering, vehicular occupants are better protected than ever. However, recent increases in the number of fatalities in vulnerable road users has resulted in a greater emphasis on safety measures to protect those outside of vehicles. Vulnerable road users are defined as the road users who are most at risk of being seriously injured or killed when they are involved in a motor-vehicle-related collision. These groups would be pedestrians, cyclists and motorcyclists.

It should be noted that starting in 2014, the Toronto Police Service made slight amendments to collision reporting practices, in particular ceasing to report collisions involving minor injury and property-damage-only (PDO). For this reason, there may be slight inconsistencies in data between years prior to 2014 and those after. The impact on those numbers presented in this report are assumed to be minor, as practices surrounding serious collisions have generally not changed.

Vision Zero and a Shift to KSI

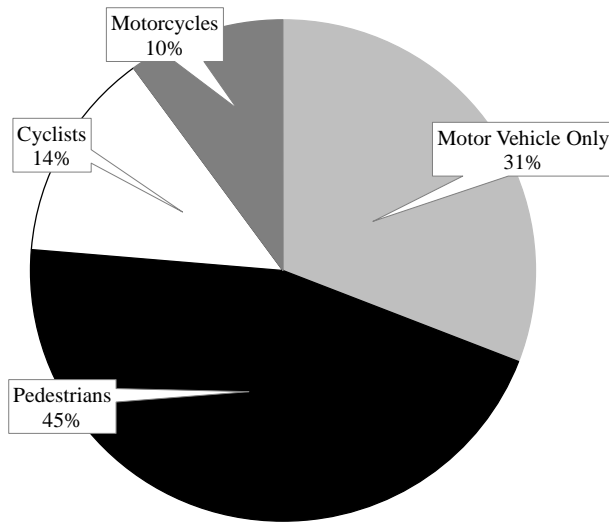
In recent years, many jurisdictions in North America and abroad have begun to better coordinate efforts and resources among agencies and stakeholders under a unified road safety plan, working collaboratively to achieve a shared vision and goal. Many of these cities have joined a movement called Vision Zero, which aims to significantly reduce traffic-related fatalities and serious injuries.

Historically, road safety analyses conducted in North America examined and targeted a reduction in all collisions, including less serious property-damage-only collisions. In contrast, Vision Zero plans focus on reducing collisions resulting in death and serious

injuries (injuries that require admittance to hospital), referred to as "killed and seriously injured" (KSI) collisions. The RSP will target KSI collisions. Staff support the shift to a KSI-based approach because:

- The factors and circumstances that differentiate a fatal collision from a serious injury collision are often marginal;
- It places greater emphasis on vulnerable road users, as is apparent in the over-representation of vulnerable road users in Figure 3; and
- KSI collisions carry the highest overall societal costs.

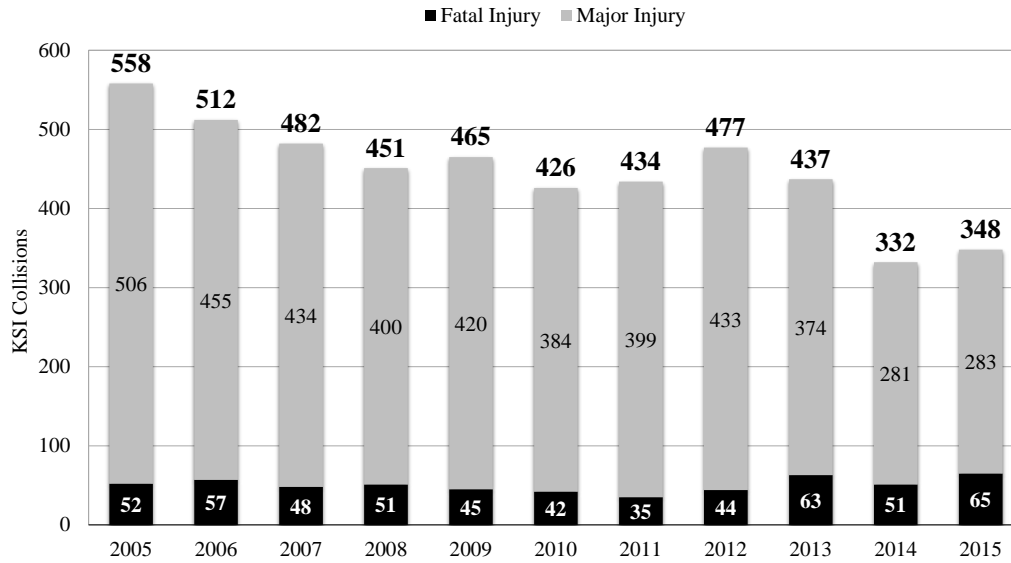
Figure 3: KSI Collisions by Road User, 2011-2015



Note: Toronto Police Service reporting practices changed slightly in 2014.

Figure 4 shows KSI collision trends in the City of Toronto and indicates that these collisions have been declining since 2005,

Figure 4: KSI Collisions in Toronto, 2005-2015



Note: Toronto Police Service reporting practices changed slightly in 2014.

COMMENTS

Overview of the RSP

The RSP is a comprehensive five year (2017-2021) action plan aimed at reducing fatal and serious injury collisions in the City of Toronto. It gives consideration for all road users, but places particular emphasis on vulnerable road users. It also follows a widely accepted, holistic approach to improving road safety which includes engineering, education and enforcement solutions. The plan also fosters a sense of shared responsibility among institutions involved in road safety to improve effectiveness, reduce redundancy and prioritize new investments to improve road safety in Toronto.

The plan was developed in partnership with many agencies that have a role in various aspects of road safety in the City. These agencies have all declared their commitment to sharing responsibility and lending support to the plan, including leading implementation, and knowledge sharing. These RSP partner agencies include Toronto Police Service, Toronto Public Health, the Disability Issues Committee, CARP (formerly the Canadian Association of Retired Persons), CAA, Cycle Toronto, Walk Toronto, TDSB, TCDSB, Sunnybrook Health Sciences Centre and the Toronto Centre for Active Transportation.

The plan includes the following major components:

- Vision and Goal;
- Collision data analysis to target and prioritize areas requiring attention;
- Key safety priorities (referred to as Emphasis Areas);
- New and enhanced countermeasures for addressing each key safety priority;
- Lead and support agencies to implement countermeasures;

- Public engagement; and
- The establishment of an RSP Task Force.

In addition to identifying new countermeasures, the plan also aligns and augments current safety programs and initiatives to better focus efforts and resources to address key priorities.

The development of the RSP included extensive KSI collision data analysis, particularly trending and geospatial analysis. The data analysis supports the on-going evaluation of safety priorities, on-going monitoring of safety trends and issues, and evaluation of the impacts and effectiveness of countermeasures.

This plan also calls for the creation of an RSP Task Force, comprised of representatives from all partner agencies. The task force will meet quarterly to provide updates, review progress, re-assess priorities, plan future actions and discuss and resolve issues. The Traffic Safety Unit in Transportation Services, will organize the task force, and provide oversight for the RSP.

Key Highlights in the Development of the Plan

In 2015, Transportation Services initiated and facilitated the development of the RSP, modelled on the U.S. Department of Transportation Federal Highway Administration (FHWA) guides for road safety plans and approaches adopted by other jurisdictions. The plan was developed collaboratively with partner agencies through a series of workshop meetings conducted between October 2015 and May 2016. In addition, key external stakeholders and advocacy groups provided input on aspects of the plan, such as the emphasis areas and suggested countermeasures, through a roundtable chaired by Councillor Jaye Robinson on January 25, 2016.

A public opinion poll of Toronto residents was also conducted in August, 2015, to determine attitudes and opinions about road safety issues and priorities. The results of the poll showed general agreement between the public's perception about the City's safety priorities and the priorities identified through a review of the KSI collision data. Key findings of the poll can be found in Appendix 2.

Vision and Goal

One of the key aspects to a successful strategic plan is establishing a clear, shared vision and goal at the outset. The vision and goal keeps the plan focused on a common objective. Both were developed collaboratively and supported by all partner agencies.

The **Vision** represents the ideal outcome and long-term view of road safety for the City:

VISION: The City of Toronto, with the commitment of all partners, aims to eliminate all fatalities and serious injuries on city streets to create a safe and healthy city."

The **Goal** is a realistic and measureable shorter-term target:

GOAL: To reduce the number of fatal and serious injury collisions by 20% by 2026.

Although the RSP is a 5-year implementation plan for 2017-2021, the goal's 10 year timeframe provides an additional 5 years to allow the countermeasures to take effect. It is important to set an aggressive but realistic goal in order to ensure that expectations of the public and partner agencies will be met and that success will translate into further interest and encouragement for continuation of the plan beyond 2026.

It is estimated that approximately 90% of traffic-related collisions involve human error. While occupants of motorized vehicles have an elevated responsibility for driving carefully as motor vehicles are the predominantly cause of KSIs, there is a behavioural aspect of all road users that must be recognized. The RSP, particularly, the education campaigns will target actions individuals can take – as drivers, cyclists or pedestrians – to reduce the risk of KSI collisions.

Emphasis Areas

The key safety priorities for the RSP are referred to as Emphasis Areas. In determining the emphasis areas, the partner agencies took into consideration the following:

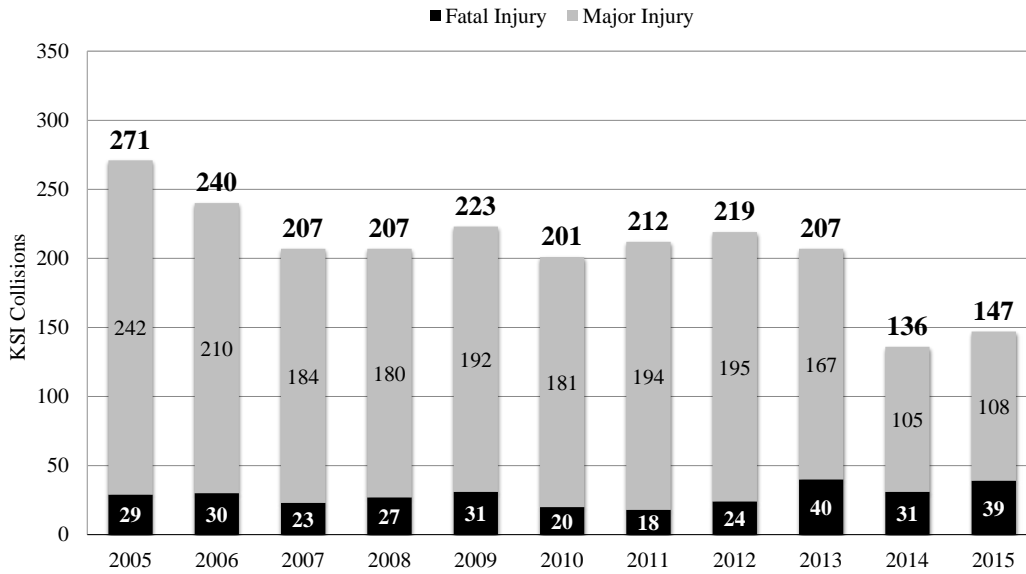
- KSI collision data for the last 11 years (2005-2015), with focus on the most recent five years,
- Public input based on the results of an online opinion poll of Toronto residents conducted in August 2015; and
- City Council directions given to staff over the past several years.

It should be noted that there is overlap in the number of KSI collisions among all the emphasis areas due to the fact that a collision event often involves multiple road users and multiple actions.

After consideration of the above-noted factors, the partner agencies coalesced around the following five emphasis areas for the RSP:

Pedestrians

Figure 5: Pedestrian KSI Collisions in Toronto, 2005-2015

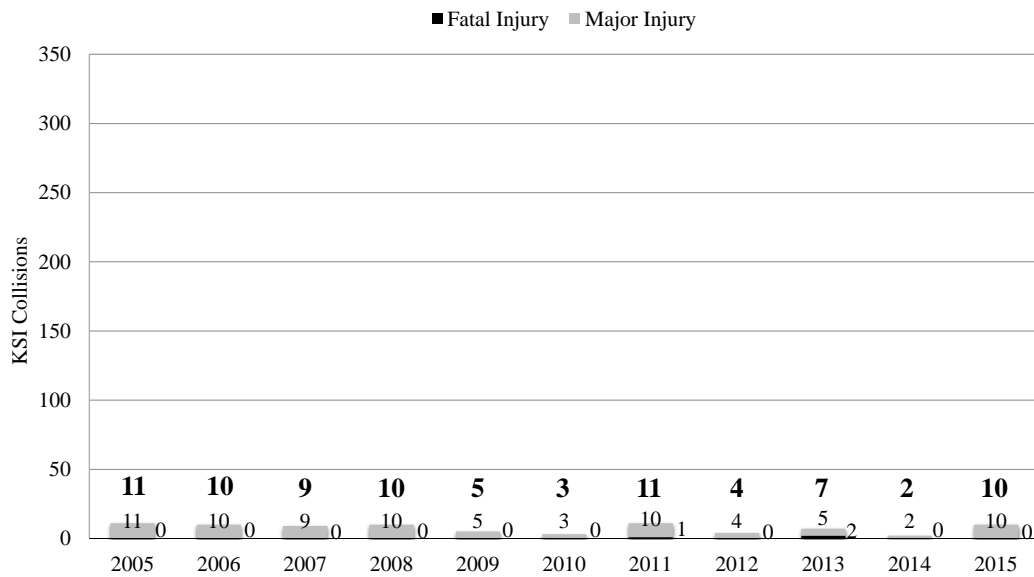


Note: Toronto Police Service reporting practices changed slightly in 2014.

Pedestrian collisions involve any person that is not riding in or on a vehicle. As shown in Figure 5, a total of 921 pedestrian KSI collisions occurred in the recent 5-year period between 2011 and 2015, which accounted for 45% of the total KSI collisions in the City during this period. As a result, pedestrians were the second-most common aspect of KSI collisions. Although there has been a general decline in the number of pedestrian KSI collisions since 2005, pedestrians remain the most frequent road user group to be killed or seriously injured. Pedestrians were also the third-most frequently identified road safety concern in the public opinion poll.

School Children

Figure 6: School Children KSI Collisions in Toronto, 2005-2015

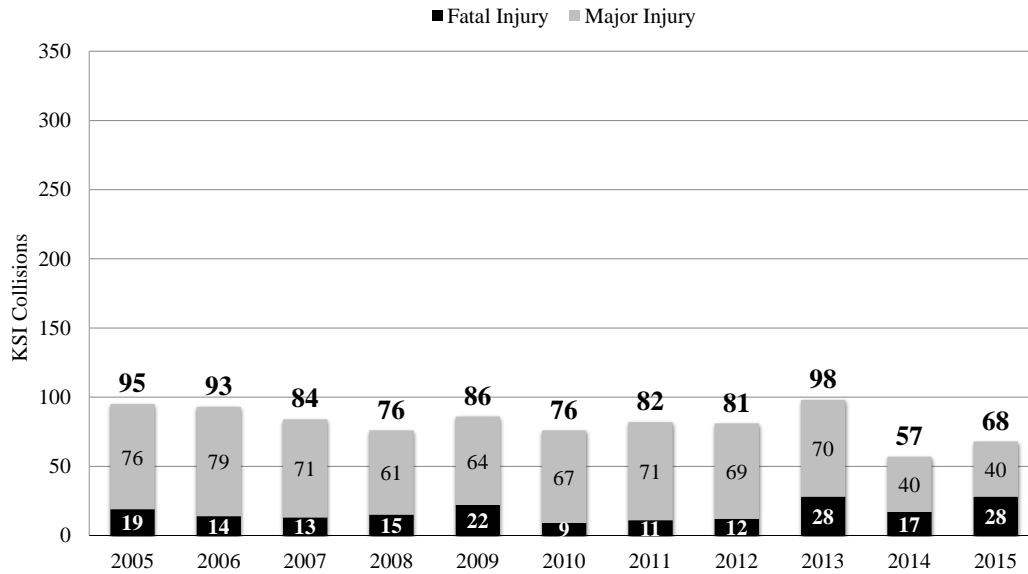


Note: Toronto Police Service reporting practices changed slightly in 2014.

As shown in Figure 6, there were 34 KSI collisions involving pedestrians and cyclists between ages 4-19 travelling to and from school from 2011-2015. These collisions occurred during school months, during weekday school hours and within 1 kilometer of a school. Given their lack of experience, skills and physical development, children are often less able to protect themselves from harm. Council has continually indicated through several directions that children travelling to school must remain an emphasis for the plan.

Older Adults

Figure 7: Older Adult KSI Collisions in Toronto, 2005-2015

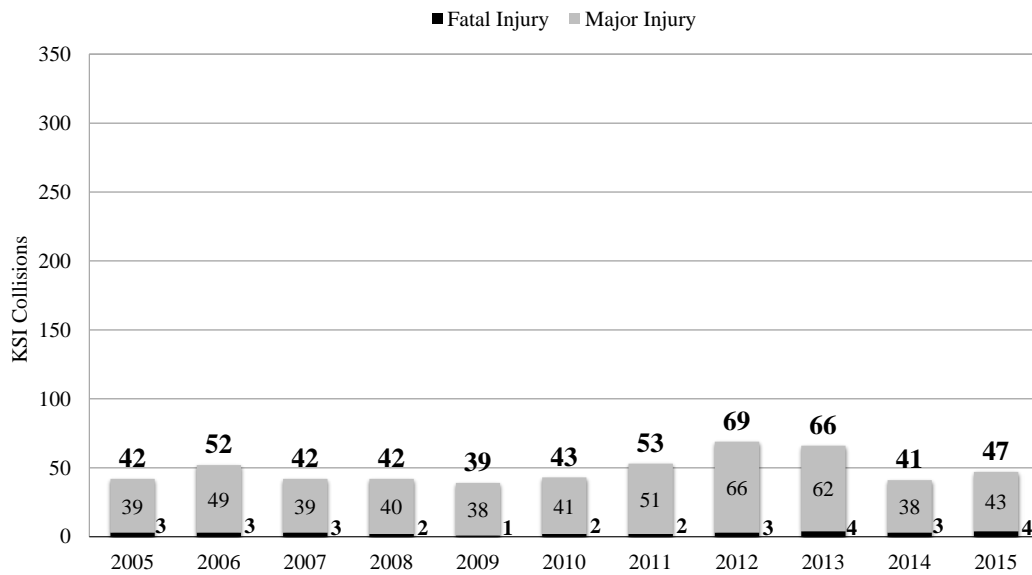


Note: Toronto Police Service reporting practices changed slightly in 2014.

As shown in Figure 7, KSI collisions involving pedestrians over the age of 55 totalled 386 between 2011-2015. While only 26% of the population, pedestrians over 55 years old represented 40% of all pedestrian KSI collisions and 63% of all pedestrian fatal collisions, indicating they are among the most vulnerable and highest risk road user group. Fatalities involving pedestrians over age 55 have trended upward significantly over the past three years. In 2016, older adults have accounted for 82% of the pedestrian fatalities. While older adults were not included in the public opinion poll as a specific safety concern or group, Council has placed priority on addressing safety for older adults through several Council directions.

Cyclists

Figure 8: Cyclist KSI Collisions in Toronto, 2005-2015



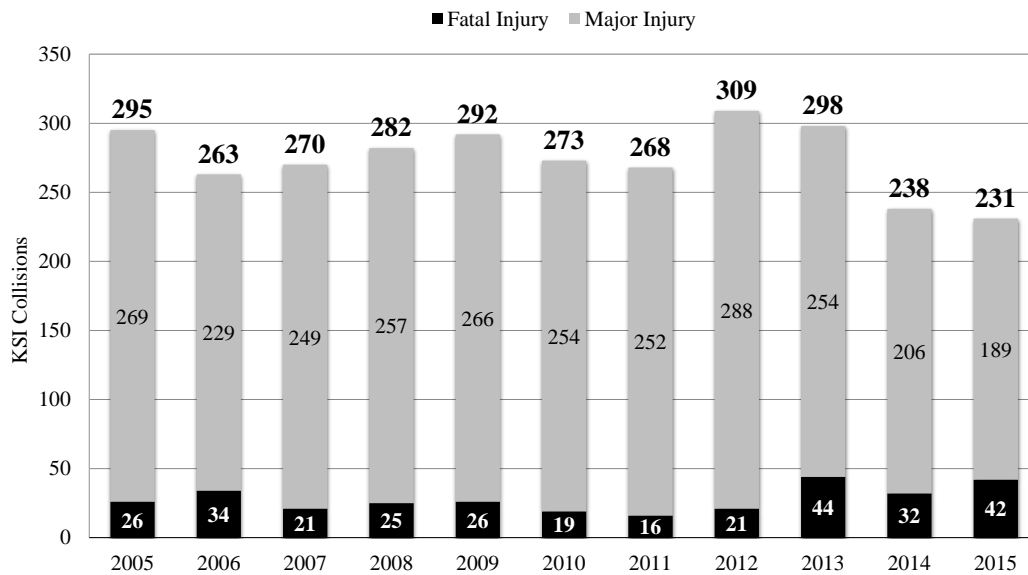
Note: Toronto Police Service reporting practices changed slightly in 2014.

Cyclist collisions involve a motor vehicle striking a person riding a bicycle. As shown in Figure 8, there were 276 cyclist KSI collisions between 2011-2015, which accounted for 14% of all KSI collisions. Over the long-term, cyclist KSI collisions have been fairly stable since 2005 despite increases in cycling mode share (from 1.7% in 2006 to 2.2% in 2011).

However, recent spikes in 2012 and 2013 suggest that further steps could be taken to make to protect cyclists. In the public opinion poll, cyclists were the fourth-most frequently selected road safety concern. City Council has given numerous directions regarding cyclist safety. In addition, the Toronto Board of Health has asked Public Health and Transportation Services staff to identify improvements to increase cyclist safety.

Aggressive Driving & Distraction

Figure 9: Aggressive Driving and Distraction KSI Collisions in Toronto, 2005-2015



Note: Toronto Police Service reporting practices changed slightly in 2014.

Aggressive driving collisions include collisions resulting from the following driver actions: following too close; exceeding the speed limit; speed too fast for conditions; disobeying a traffic control; failing to yield the right-of-way; and improper passing. Distraction collisions are collisions in which a person involved was inattentive, regardless of road user type (pedestrian, cyclist or driver). As shown in Figure 9, a total of 1,344 KSI collisions resulted from aggressive driving and distraction from 2011-2015, which was a factor in 66% of all KSI collisions and represent the most common factor in KSI collisions. Distraction was also the most frequently identified road safety concern in the public opinion poll. Council has directed staff to take various actions which are directed at speeding and other aggressive driving behaviours which indicates that this is a priority for the City.

68% of all KSI collisions were at intersections. Intersections was also the second-most selected road safety concern in the public opinion poll. However, intersections are deemed a locational aspect of aggressive driving, distraction, pedestrian and cyclist collisions and therefore are not addressed as a separate emphasis area. Instead, intersections will be addressed in the targeted implementation of countermeasures for the five emphasis areas to locations where the data analysis suggests that needs are greatest.

Existing Road Safety Countermeasures

Over the past two decades, in an effort to continuously improve road safety in Toronto, there have been many initiatives and countermeasures implemented by the various partner agencies that have collectively contributed to the reduction of KSI collisions. A review of existing countermeasures was conducted as part of the development of the plan to identify those that align with the 5 emphasis areas of the RSP and to identify opportunities for enhancement. The complete list of existing countermeasures can be found in Appendix 3 of this report. The review showed that there is an extensive complement of road safety-related engineering, enforcement and education activities targeting the five emphasis areas, including the following:

- **Engineering** – Transportation Services has implemented numerous engineering and technological improvements to address safety for all road users. Among the recent, current initiatives are:
 - Geometric safety improvement program that proactively identifies and implements safety enhancements (such as bulb-outs, reduced lane widths, reduced curb radii, etc.) in planned Capital Works Program projects;
 - Transportation Safety and Local Improvements Program (TSLIP) which implements minor road and intersection design changes to address safety and operational issues;
 - Accessible pedestrian signals (APS) that uses audible tones to guide pedestrians with low or no vision and deafblind pedestrians across signalized intersections;
 - Traffic calming program which implements mitigating measures such as speed humps, to address aggressive driving on local streets;
 - "Missing Links" program that constructs new sidewalks on streets undergoing reconstruction that do not currently have sidewalks;
- **Education** – Transportation Services and a number of its partner agencies are responsible for delivering various education and awareness programs targeting different road users. Among these are:

Toronto Police Service

- "March Break March Safe" and "Back to School" safety campaigns targeting unsafe drivers in school zones and educating drivers, parents and students about road safety;
- Bringing an Awareness of Senior Safety Issues to the Community (B.A.S.S.I.C.) outreach initiative and YouTube pedestrian safety videos for older adults which educates older adults about road safety issues.

Transportation Services

- "Stay Alert – Stay Safe" campaign which promotes awareness and shared respect among pedestrians, drivers and cyclists;
- "Stay Safe, Stay Back" campaign which promotes safer interaction between cyclists and large trucks;

- "Steer It, Clear It" campaign which encourages broken down vehicles or vehicles that have been in a minor collision on the City's freeways to remove their vehicle from the road as quickly as possible to reduce the chance of secondary collisions;
- Cycling helmet safety educational videos;
- Pedestrian countdown signals safety video;
- "Please Slow Down" campaign which provides residents free lawn signs to encourage drivers to slow down on residential roads.

Canadian Automobile Association

- School Safety Patrol Program aimed at protecting and educating elementary school children on safe practices for crossing streets.

Toronto Public Health

- Cycling & Pedestrian Safety classroom curriculum to support schools involved in active transportation, that raises awareness of safety issues and provides knowledge and skill building activities for young vulnerable road users;
- Bicycle helmet initiative for schools that includes activities promoting helmet use and wheel safety (with Toronto Police Service, school boards and Toronto Sick Kids Hospital).

Toronto Transit Commission

- Safe Service Action Plan which includes a number of actions aimed at improving user safety while on the TTC system;
- "Stay Focused, Stay Safe" campaign which addresses various pedestrian safety issues such as jaywalking and night time visibility.

Cycle Toronto

- Toronto Cyclists Handbook which teaches inexperienced cyclists about traffic laws and safe cycling habits;
 - "Get Lit!" program which educates cyclists on importance of staying visible when cycling in darkness and provides free bike lights.
- **Enforcement** – In addition to the red light camera automated enforcement program operated by the City, which enforces driver compliance to traffic signals at key signalized intersections, Toronto Police Service also delivers many other enforcement programs. These include:
 - "That Text Could End It All" campaign which involves using a hearse to pull over distracted drivers to highlight the dangers of distracted driving;
 - Aggressive Driving campaign which targets speeding, Highway Traffic Act violations, commercial vehicles and distracted driving;
 - "Step Up Be Safe" education and enforcement campaign which coincides with Daylight Savings Time and focuses on motorists, cyclists and pedestrians who commit offences near pedestrian crossovers (PXOs),

crosswalks, intersections, school zones and crossing areas frequented by older adults;

- Reduced Impaired Driving Everywhere (RIDE) year-round impaired driving enforcement program which involves conducting spot-checks to deter drinking and driving;
- "Right 2 Bike" bike lane enforcement blitz.

New and Enhanced Countermeasures for the RSP

Through a series of RSP workshop meetings and meetings within their own organizations, the partnering agencies identified existing countermeasures worthy of enhancement and new engineering, education and enforcement countermeasures for addressing each of the five (5) emphasis areas. The new and enhanced countermeasures identified are those that have demonstrated to be effective at, or have a greater likelihood of contributing to, the reduction of KSI collision frequency or severity. Enhancements of existing countermeasures mainly include providing additional funding and resources to expand existing programs, as well as, supporting existing programs by using better data analysis to target areas of need.

All new and enhanced countermeasures for the RSP are sorted by emphasis area below. Many countermeasures address more than one emphasis area and in those cases, the intervention is listed under the emphasis area that would benefit the most. These are referred to as primary emphasis areas in the table in Appendix 4. All other emphasis areas that a countermeasure addresses are referred to as secondary in the table.

(i) New Pedestrian Countermeasures:

Pedestrian Safety Corridors

A central element of the road safety plan for pedestrians is the creation of pedestrian safety corridors. The locations for these corridors have been identified based on occurrences of pedestrian KSIs from 2010-2014. While not carrying any legal definition, and recognizing that they will likely change over time, a suite of countermeasures will be investigated to reduce risks to vulnerable road users.

Such countermeasures may include, but would not be limited to:

- Targeted speed limit reductions, coupled with corridor signal re-timings to improve traffic flow at safe and context-appropriate speeds;
- Off-peak, speed management signal timing plans;
- Enhanced pedestrian crosswalk markings;
- Consideration of Leading Pedestrian Intervals;
- Consideration of "No Right Turn on Red".

Targeted Speed Limit Reductions on Arterials

On June 29, 2015, the Toronto Board of Health directed the Medical Officer of Health to work with Transportation Services to identify effective ways to reduce

speeds and improve safety for vulnerable road users on arterial and local roads. One recommendation was to reduce posted speed limits on Toronto streets.

The rationale for lowering speed limits includes:

- Improved safety for vulnerable road users, as severity of injuries are generally reduced at lower speeds;
- Improved visibility and reduces stopping distance for motorists;
- Safer and more uniform traffic flow through the reduction in the variation among vehicular speeds;
- A more comfortable pedestrian and cycling environment, thereby encouraging more active transportation.

Transportation Services has always faced the challenging task of balancing transportation safety and mobility. Evidence supports that vulnerable road users are more likely to survive at lower collision speeds. As the majority of pedestrian KSIs are on arterial roads, there is a strong rationale that targeted speed limits reductions – based on data – could and should reduce the risk posed to vulnerable road users.

In addition, to improve uniformity, an additional 18 road segments are proposed for reduced speed limits, simply to bring them into consistency with adjacent sections of the same road.

A map depicting pedestrian KSI collisions and road segments for proposed speed limit reductions can be found in Appendix 5. A complete list of road sections where speed limit changes are being proposed is contained in Appendix 6.

It should be noted that the speed limit changes may impact TTC travel times along several of these corridors (particularly King Street, Queen Street, Dundas Street, College Avenue, Spadina Avenue, Bathurst Street, and Bay Street) which may potentially result in additional operating costs. It is expected that peak period travel times will not be impacted significantly, as transit vehicles – which stop frequently for boarding and alighting – travel above 40 kph for only short durations. In off-peak hours, when transit vehicles experience less congestion and may not stop at every stop, the impact could be more pronounced. To mitigate against impacts to travel times for TTC and vehicles, it is being proposed that the changes in speed limits be coupled with corridor signal timing reviews. Based on results from retiming on other corridors, we should see improvements in travel times along the corridor in the range of 3-7%. This may be sufficient to offset any additional travel time associated with a lower speed limit.

If approved, staff will prepare separate reports with appropriate by-law amendments to City Council as the roll-out of the new speed limit signage proceeds.

Pedestrian Street Lighting Improvements

With the assistance of Toronto Hydro, street lighting will be reviewed at targeted locations including intersections with high pedestrian/cyclist traffic, collision-prone locations and intersections around schools and facilities for older adults for opportunities to improve street lighting.

Automated Pedestrian Detection

Automated pedestrian detectors are used to compliment pushbutton detectors, optimize intersection operations and improve safety by reducing conflicts between vehicles and pedestrians and by reducing the risk of a pedestrian being unable to clear an intersection while crossing during shorter vehicle-only traffic signal cycles. These technologies can also be an effective tool in collecting pedestrian data. A study will be conducted on the feasibility and effectiveness of automated pedestrian detectors and, if deemed feasible, detectors will be implemented at signalized intersections in high pedestrian volume areas.

Pavement Marking Improvements

Pavement marking specification and standards will be reviewed with consideration for modifying stop bar/setback distances, crosswalk widths and the implementation of zebra markings at pedestrian safety corridors, all way stops and unsignalized intersections around schools, and around facilities for older adults. Additional and improved pavement markings will provide better guidance to drivers of potential safety hazards and improved visibility of vulnerable road users.

Accessibility Improvements

The City has developed and is implementing standards for its public spaces such as sidewalks, walkways, stairs, signalized intersections and curb ramps to better address the needs of persons with disabilities. A review will be conducted to proactively identify locations such as intersections and mid-block crossings, where these standards can be applied to improve accessibility for people with disabilities.

Pedestrian Education and Awareness Initiatives

New or enhanced educational materials will be developed to further awareness of the safety risks and leading causes of collisions involving pedestrians. A communications strategy will be developed in support of new and existing pedestrian safety campaigns using these newly developed materials that would be made available through targeted efforts such as: a dedicated RSP website, social media, print media articles, online videos, and bus shelter/TTC advertising. The messaging and means of distribution will be targeted towards specific age groups and road users, depending on the campaign.

Enhanced Pedestrian Safety Enforcement Strategies

Using a data-driven approach, targeted locations will be selected for police enforcement with a focus on motorists, cyclists and pedestrians who commit

offences near PXOs, crosswalks, intersections, school zones and crossing areas frequented by older adults. In addition to current enforcement campaigns, additional enforcement support will also be provided for newly designated pedestrian safety corridors, new pedestrian crossing facilities, new leading pedestrian interval installations, new right-turn-on-red restrictions and other pedestrian countermeasures. Police enforcement of traffic laws increase safety by promoting compliance and deterring dangerous road user behaviour through fines and demerit point deductions.

Enhanced Existing Pedestrian Countermeasures:

Advanced Green for Pedestrians (Leading Pedestrian Intervals)

Leading Pedestrian Intervals is a feature at traffic signals which displays the pedestrian "Walk" signal a few seconds earlier than the green signal for vehicles, giving pedestrians a head start into the intersection. A program will be developed to expand implementation of leading pedestrian intervals beyond the current 9 signalized intersections to 20 additional intersections per year, focusing on locations with high pedestrian demand, school zones and areas with high older adult trip generation rates. Leading pedestrian intervals increase driver visibility to pedestrians and can reduce the likelihood of left turn collisions with pedestrians at signalized intersections.

New Corner Radius Design

The curb radii guideline offers several design templates and look-up tables based on factors such as design and control vehicle types (e.g., trucks, buses, etc.), turning truck volume, road classification, vehicle speeds and vehicle envelope clearance buffers. A new program with dedicated budget will be developed which would involve identifying and prioritizing intersections and co-ordinating construction at 2 intersections per year. Smaller corner radii results in shorter pedestrian crossing distances and times, thereby reducing pedestrian exposure to vehicular traffic and safety risk. Smaller radii also deters drivers from making right turns at higher speeds.

No Right-Turn-On-Red Prohibition

No right-turn-on-red prohibitions will be implemented at key high pedestrian volume locations where right turns on red have been a contributing factor to KSIs. These prohibitions protect pedestrians at intersections by restricting vehicles facing a red signal from turning right across the path of pedestrians having the right-of-way with a walk signal.

Accessible Pedestrian Signals (APS)

APS are devices which use audible tones to advise pedestrians with low or no vision and deafblind pedestrians, when they have the right-of-way to cross a signalized intersection and in which direction they may cross. The City currently has over 700 intersections equipped with APS. APS will be expanded to 5

additional intersections per year and a retrofit program will be implemented to include tactile plates, ramps etc.

Missing Links Sidewalk Program

The existing Missing Links sidewalk program will be expanded and staff will develop a policy regarding construction of new sidewalks at road reconstruction projects on streets with no sidewalks or sidewalks on one side only, particularly in school zones and areas with high older adult trip generation rates.

(ii) New School Children Countermeasures:

Automated Enforcement – Advocacy and Pilot

On May 5th, 2015, City Council requested staff to contact the Province of Ontario and request their participation in a task force to be led by the City of Toronto to investigate the technical, evidentiary, regulatory and prosecutorial and financial requirements related to expanding automated enforcement of speeding, stop sign running and turning violations within the City of Toronto. City Council also requested staff to report on the task force results as a component of the Road Safety Plan.

In September, 2015, the Minister of Transportation of Ontario (MTO) responded to the City's request, indicating that MTO is not considering the reintroduction of automated speed enforcement or the allowance of other automated enforcement technologies at this time and declined participation in the task force. However, in a subsequent meeting with the Premier of Ontario in February, 2016, the Mayor of Toronto requested the Province to reconsider their position and was advised that they are open to discussion so long as municipalities initiate a formal request.

Further to City Council's request, staff undertook a preliminary review of the technical, evidentiary, regulatory and prosecutorial and financial requirements of automated enforcement related to speeding, stop sign running and turn violations, which can be found in Appendix 7. Some of the key highlights are:

- There is very little literature available on automated enforcement of stop sign and turning violations and the effectiveness of these particular strategies;
- There were a number of issues identified in association with using automated enforcement technology for stop sign running or turning violations making the charges less defensible in court. As a result, there is a high possibility that automated enforcement of stop sign and turning violations may not be financially self-sufficient and would therefore require subsidy;
- By comparison, there are less issues associated with automated speed enforcement, such that it may prove economically feasible in the long-term to reduce speeds in targeted areas such as school and construction zones;
- Automated speed enforcement was found to be an effective strategy in a number of other jurisdictions in reducing vehicle speeds, reducing collisions resulting in fatalities or serious injuries and reducing the overall number of collisions;

- Deployment of speed enforcement equipment can be mobile so as to address a greater number of areas of safety concern and provide a wider-ranging deterrence effect. Mobile operations also provides an added benefit that drivers are less likely to know where and when speed cameras are operating and as a result, are less likely to take alternate routes or comply only at individual known sites.

The Province of Ontario previously operated a photograph-based automated speed enforcement program on provincial highways in 1984, which was subsequently cancelled in 1985. As a result, the Province has past experience with the technical, legislative, evidentiary and prosecutorial requirements for "photo radar". Coupled with the fact that automated speed enforcement has been used extensively and effectively elsewhere, the Province is more likely support this type of automated enforcement than others. Staff will continue to discuss these other emerging types of automated enforcement with the Province, but recommend focusing on "photo radar" in the immediate future.

In order to move forward with automated speed enforcement, formal support from the Province of Ontario would be required to amend provincial laws to allow municipalities to use automated speed enforcement. As part of the RSP, Transportation Services will continue to work with other Ontario municipalities to advocate the Province for support in reintroducing automated speed enforcement.

In the interim, Transportation Services recommends that approval be sought from the Province to pilot the use of mobile automated speed enforcement in school zones and construction zones. Considerations for pilot locations will be given to school zones with confirmed speeding issues and school children KSI collisions and long-term construction zones. Mobile automated speed enforcement devices, rather than stationary installations, could be used to rotate the pilot to various locations at the City's discretion and allow staff to evaluate performance and effectiveness in different scenarios and conditions.

Creation of "School Safety Zones"

A study will be conducted on the requirements of creating and clearly defining "school safety zones" which will include such elements as lower speed limits, increased enforcement, higher fines, improved pavement markings, flashing signage and/or public awareness campaigns. In order to increase fines, the City would need to seek and obtain approval from the Province for amendments to the HTA. The combined use of these measures will enhance safety for school children by reducing the likelihood of aggressive driving and promoting driver recognition of "school safety zones" as sensitive areas that require greater attention and respect for traffic laws.

School Zone Reviews and Enhancements

Based on data analysis, proactive and targeted school zone safety reviews would be conducted which would also consider on-road and on-site pick-up/drop-off

traffic management programs at schools. The reviews and corrective actions will reduce risk around schools by ensuring that the proper traffic control devices are in place and in good condition.

Enhanced Existing School Children Countermeasures:

School "Watch Your Speed" Program

At its meeting of August 25, 2014, City Council directed staff to purchase, install, operate and evaluate 10 speed display signs on a permanent basis, as a pilot expansion of the "Watch Your Speed" Program (WYSP) in school zones.

Staff collected and monitored speed data at each location throughout the course of the 1-year pilot program to compare speeds pre-activation and post-activation. The metrics compared were operating speed, volume over the speed limit and volume greater than 10 km/h over the speed limit.

The 4 locations with the highest operating speeds were selected for an evaluation of the impact of police enforcement on the effectiveness of the signs. Police enforced speed limits over a 3 month period at 2 locations and speed data was compared with 2 locations where police enforcement was withheld over the same period.

At locations where the pilot operated for more than 4 months, the results showed a reduction in operating speeds, volume of traffic travelling over the speed limit and volume of traffic travelling more than 10 km/h over the speed limit. These effects were consistent at all locations and over a long-term basis.

Key findings after 11 months of operation include:

- Decrease in operating speeds, ranging from 1 km/h to 9 km/h;
- Decrease in the number of vehicles travelling over the speed limit, ranging from 2.6% to 33.8%;
- Decrease in the number of vehicles speeding excessively (greater than 10 km/h over the speed limit), ranging from 0.5% to 18.1%;
- Increase in the number of vehicles travelling near the speed limit;
- Speed reduction effects were more pronounced at locations with higher initial operating speeds;
- There did not appear to be additional long-term benefit from police enforcement.

Given the success of the pilot program in reducing excessive speeds, staff recommends the expansion of the WYSP to include the use of permanent speed display signs exclusively in school zones and that this program be included in the RSP. Staff also recommends the adoption of the mandatory requirements and guidelines found in Appendix 8, for assessing and prioritizing candidate schools. The RSP includes capital and operating budget to continue the program to install

signs at 10 schools per year over the next five years, at schools which satisfy the mandatory requirements and in accordance with the prioritization guidelines.

School Crossing Guard Program

The adult school crossing guard program will be expanded to additional schools based on collision data. Staff will work with Toronto Police Service to review existing warrants and consider using volunteers, high school students, etc. Adult school crossing guards donning protective personal equipment and a stop paddle provide additional protection for children crossing streets by reinforcing the right-of-way for pedestrians and increasing their visibility through the crosswalk. Toronto Police Service manages the adult school crossing guard program and will lead the expansion of the program, in coordination with Transportation Services, as part of their role in the RSP.

School Travel Planning (STP) and Active and Safe Routes to School

This community-based initiative that promotes active transportation for the daily commute to school will be expanded. Active transportation can improve health, safety and the environment. These initiatives, which brings together community stakeholders at each school to identify travel issues faced by staff and students and possible solutions, are currently being piloted at some Toronto schools. In addition to supporting these initiatives, enhanced curriculum support and in-school safety education/training focusing on distraction, intersections, crossing at mid-block, rules of the road and right-of-way, will be developed and made available to schools to add to their curriculum. Increasing active transportation in school travel can reduce vehicular traffic congestion and safety risk around schools during arrival and departure times. The costs associated with providing support for school travel plans are included in Transportation Services' current operating budget.

School Children Education and Awareness Initiatives

New, or enhancements to existing, education materials and messaging will be developed focusing on school zone related safety risks and basic skills and safe behaviours for school-aged vulnerable road users. The materials, messaging and means of communication will be targeted towards children, such as colouring books, artwork contests, free bicycle bells, reflective slap bracelets and zipper pulls with printed safety messaging.

Enhanced School Zone Enforcement Strategies

School zones will be targeted using a data driven approach for police enforcement with a focus on offences related to PXOs, school zone speed limits, signalized and stop controlled intersections, school crossing guards, stopped school buses and parking regulations in front of schools during school start and dismissal times. In addition to the current Back-To-School campaign, additional enforcement support will also be provided for school children countermeasures such as newly designated school safety zones, new pedestrian crossing and cycling facilities around schools and School WYSP locations.

(iii) New Older Adult Countermeasures:

Increase Older Adult Crossing Times

A program will be developed to implement modified walk speeds and re-time traffic signals near facilities for older adults and schools to allow more time for older adults and children to cross signalized intersections. Alternative actuation methods for older adults will also be piloted. Longer walk signal times and automated pedestrian detection reduces the risk of an older adult pedestrian being unable to finish crossing an intersection during a traffic signal cycle.

Support New Senior Citizens Strategy

A program will be developed dedicated to implementing the new safety improvements identified in the upcoming update to the Senior Citizens Strategy, which is currently under development.

Enhanced Existing Older Adult Countermeasures:

New Mid-Block Pedestrian Crossings

The current pedestrian crossing warrants will be revised to include criteria for maximum distance between adjacent traffic signals and a review of collision history. A program will be developed to identify potential locations based on the revised warrants and install 5 new mid-block pedestrian crossings per year. The selection of locations for installation will place emphasis on collision prone locations, school zones and areas of high older adult trip generation rates. Controlled pedestrian crossings, such as mid-block pedestrian signals and PXOs, require traffic to stop when activated and provides greater protection for vulnerable road users at mid-blocks than uncontrolled crossings.

Reduced Crossing Distance

A program will be developed for implementing curb extensions, also known as neckdowns, to reduce crossing distances on local and collector roads near schools and areas frequented by older adults. This provides additional visibility and protection for older adults and/or children in addition to slowing traffic.

Education and Awareness Initiatives for Older Adults

New, or enhancements to existing, public education and training materials will be developed dedicated to building skills, educating and raising awareness of safety risks and leading causes of collisions for older adults. This includes planning and co-ordinating a communications strategy in support of new and existing safety campaigns which is effective for older adults including printed brochures and posters and bus and shelter posters for public transit users. This strategy will also include teaching and presentation materials for public health nurses that visit older adult facilities.

Enhanced Enforcement Strategies

Through a data-driven approach locations near facilities for older adults and areas frequented by older adults will be identified for targeted police enforcement of dangerous driving activities, such as speeding and aggressive driving. Additional enforcement support will also be provided for older adult countermeasures such as new pedestrian crossing facilities and at signalized intersections with increased older adult pedestrian crossing times.

(iv) New Cyclist Countermeasures

Advanced Green for Cyclists (Leading Cyclist Interval)

Leading cyclist interval is a feature at signalized cyclist crossings which allow cyclists to proceed through the intersection a few seconds earlier than vehicles in order to increase drivers' visibility of cyclists and reduce the likelihood of collisions with left turning vehicles. A pilot study will be conducted on the technological and financial requirements of implementing an advanced green for cyclists at signalized cyclist crossings.

Enhanced Existing Cyclist Countermeasures

Automated Cyclist Detection

Automated cyclist detectors are used to optimize intersection operations and improve safety by reducing the risk of a cyclist being unable to clear an intersection before conflicting vehicular traffic proceeds. These technologies are also an effective tool in collecting valuable data. A program will be created for implementing automated cyclist detection at high cyclist volume intersections.

Signalized Crossings for Cyclists

A program will be developed to expand the use of dedicated traffic signals to facilitate cyclist crossings at intersections and across roadways. Bicycle signals improve safety for cyclists and provide direct connections for off-street and on-street cycling infrastructure. The City has installed approximately 50 new bike signals as part of the Rail/Hydro Corridor trails and downtown cycle track projects and this will be expanded to 5 additional intersections per year.

Enhanced Cycling Facilities

The Ten Year Cycling Network Plan proposes new dedicated and connected cycling facilities across the City. An additional safety enhancement program will implement improvements to existing cycling routes and facilities using cyclist collision data to identify high risk corridors and intersections. Improvements and enhancements could include additional pavement markings, signs and bollards and construction of raised or separated cycling facilities. This also includes pilot studies/evaluations of new and emerging designs, applications, countermeasures and technologies for cyclist safety. Dedicated and separated cycling facilities, such as buffered bike lanes, cycle tracks, bike trails, bike boxes, signage and

pavement markings, provides greater guidance and protection for cyclists from vehicular traffic than shared and unmarked facilities.

Cycling Education and Awareness Initiatives

New, or enhancements to existing, public education materials will be developed dedicated to promoting safe cycling, as well as the safe interaction between cyclists and motorists. This includes developing a communications strategy in support of new and existing cyclist safety campaigns. Effective messaging and means of distribution to target specific age groups and road users will be used, through no- or low-cost means such as social media.

Enhanced Cyclist Safety Enforcement Strategies

Through a data-driven approach, targeted locations for police enforcement of driver behaviours impacting cyclist safety, such as dooring and car use in bicycle lanes, will be identified on major cycling corridors and intersections. In addition to driver infractions, enforcement efforts should also include campaigns focused on cyclist infractions to promote cyclists' understanding, compliance and respect for traffic laws.

(v) Enhanced Existing Aggressive Driving & Distraction Countermeasures:

Traffic Calming Guide for Toronto

On November 12, 2015, Transportation Services was requested by the Chair of the Public Works and Infrastructure Committee, to create an easy-to-use traffic calming manual for use by neighbourhood groups and City Councillors. A "Traffic Calming Guide for Toronto" has been developed and includes discussion of typical traffic calming options available, their impacts, cost and their effectiveness. The Guide also provides an overview of the traffic calming process including applicable Council policies and warrants. The Guide is included in Appendix 9 of this report and has been identified as an immediate action for 2016 of the RSP.

Mobile "Watch Your Speed" Program (WYSP)

WYSP is an on-going education and awareness program which uses mobile radar speed display signs to advise motorists of their speed. Current program operation consists of four portable units that are rotated on a weekly basis throughout the city based on requests from the public, Councillors, Transportation staff and Toronto Police. The proposed plan is to enhance the current program to add additional trailers which will be deployed based on a targeted data-driven approach. Expansion of the program will first involve the procurement of new devices, which will include vendor-provided maintenance and operation services in the first year, and on-going maintenance and operation services starting in the second year. The program addresses speeding behaviour by reminding drivers to be mindful of their speed as they travel through local neighbourhoods.

Geometric Safety Improvements

This initiative would leverage and build upon the existing Transportation Safety and Local Improvements Program (TSLIP) which will be enhanced through the addition of a proactive and data-driven component. Improvements will include implementation of new lane width standards, right-turn channelization removals, painted and textured intersection corner bump-outs and removal of crossing overlaps at intersections. These physical changes reduce safety risk for all road users at intersections by limiting a driver's ability to speed and drive aggressively.

LED Blank-Out Signs

LED signs are currently used at 9 signalized intersections to supplement static left-turn prohibition signs by illuminating during times when left turns are prohibited. Guidelines will be developed for expanded use of LED blank-out signs at signalized intersections to include prohibited left turn, right turn and no-right-turn-on-red and implement a program to install at 5 intersections per year. These signs provide additional protection to road users by providing more visible and clearer guidance to drivers to increase compliance to turn restrictions.

Aggressive Driving and Distraction Education and Awareness Initiatives

New, or enhancements to existing, public education materials will be developed aimed at raising awareness and reducing aggressive driving behaviour and road user distraction. This includes education and awareness campaigns directed at both motorcyclists and drivers on safety risks and challenges facing motorcyclists. As well, distraction education will include messaging directed towards drivers, cyclists and pedestrians about risks and consequences.

Enhanced Aggressive Driving and Distraction Enforcement Strategies

Through a data-driven approach, targeted locations for police enforcement will be identified with a focus on ticketing aggressive driving behaviour and road user distraction such as speeding, texting/using hand held devices while driving etc. Greater emphasis will be placed on enforcement of aggressive driving behaviours and road user distraction in priority pedestrian areas, school zones, on major cycling corridors and near older adult facilities. Distraction enforcement campaigns will not only target drivers, but will also include pedestrian and cyclist distraction.

Role of Transportation Services

Road safety improvements have always been embedded within the many programs and services lead and implemented by Transportation Services. To date, the majority of engineering improvements have been opportunistic, taking advantage of already planned road reconstruction projects. Achieving the 20% reduction in KSI collisions goal proposed by the RSP requires a fundamental shift from opportunistic delivery of programs to a more proactive, data-driven, strategic planning and implementation of proposed countermeasures. The subsections below outline the additional actions to be taken to support all countermeasures.

Enhanced Data Analysis, Reporting

Transportation Services will significantly improve upon the level of data analysis, reporting and transparency through a number of new actions, including:

- Safety reviews at locations of recent fatal collisions, which consists of analyzing a deficiency checklist and hosting quarterly joint reviews of fatal collision events with Toronto Police Service (fatal collision and collision reconstruction reports), Toronto Public Health (hospital trauma centre reports and data) and Transportation Services (collision data, engineering solutions) to identify potential causal factors and countermeasures to reduce the risk and/or severity of serious injury collision events;
- Work collaboratively with Toronto Police Service to develop a strategy to provide collision data through City's Open Data portal;
- Analysis and safety audits of collision prone locations in the City;
- Use KSI collision density mapping to define key locations for engineering improvements and targeted police enforcement opportunities;
- Proactive reviews of traffic collision and volume data for implementation of traffic control and safety measures;
- Conducting before/after evaluations of countermeasures, where feasible;
- An upgrade to the City's existing collision analysis software; and
- Enhancements to the existing Toronto Traffic Safety website to provide additional information regarding safety statistics, the ongoing programs, safety audits and evaluations.

Enhanced Data Collection (Permanent Count Stations)

A data collection strategy and plan will be developed to identify key areas and corridors where permanent data count stations can be deployed using the latest technology in vehicle, cyclist and pedestrian detection systems. Emphasis will be placed on utilizing non-intrusive technologies that avoid issues of pole clutter and on technologies that can serve multiple purposes (e.g. integrated counting/way-finding or information totems). Enhancing and improving staff ability to collect and analyze traffic and safety-related data will improve their ability to determine causal factors, identify and respond to changing trends, target the deployment of countermeasures and improve the overall efficiency and effectiveness of the RSP and its various countermeasures.

Evaluation and Monitoring

Another key aspect of the plan involves the on-going evaluation of the outcomes of the plan. On a macro level, this would entail the development of a strategy for the on-going monitoring of City-wide collision data through various reports and maps to track and report on the City's progress towards achieving the overall goal of reducing KSI collisions.

On a micro level, staff will also work with partner agencies that have technical expertise and experience in evaluating programs and improvements to develop a strategy to evaluate the effectiveness of various specific countermeasures in affecting traffic collisions. The strategy will include evaluating engineering, enforcement and education

countermeasures from each emphasis area and their impacts on KSI collisions for each road user type.

Education and Community Partnerships

Transportation Services will also lead the development of an overall education and communications strategy that consolidates efforts jointly undertaken by Transportation Services, Toronto Police Service and Toronto Public Health under one common banner with high recognition across the City. A new group within Transportation Services dedicated to road safety communications and messaging would:

- Create a comprehensive communications strategy focused on shifting driver, cyclist and pedestrian behaviour, as well building support for road safety infrastructure improvements;
- Develop targeted safety campaign materials including print media, promotional materials, social media messages, images, radio ads and online videos in support of each of the five RSP emphasis areas;
- Implement the communications strategy in support of the new engineering and enforcement campaigns as identified in the RSP (e.g. creation of "School Safety Zones" and Pedestrian Safety Corridors);
- Lead in the co-ordinated dissemination of information regarding the various engineering, enforcement and educational programs underway, the benefits associated with those programs and the upcoming plans to continue improving road safety in Toronto;
- Provide leadership and ongoing maintenance support in the development of the public facing Road Safety Plan website that would allow the public to see the various implementations either underway or planned and allow for online public input and surveys regarding road safety;
- Lead in the development of the Road Safety Calendar which would identify monthly or weekly themes towards road safety and to regularly disseminate road safety information relevant to each monthly theme. An example of a road safety calendar can be found in Appendix 10; and
- Provide oversight for community projects relating to road safety so as to enable broader penetration and uptake of road safety messaging.

Staff Implications

Current staffing levels are already committed to supporting existing programs and to meet current service levels. The operating budget considerations for the RSP identified above in the Financial Implications include additional staff resources for the RSP that will be required to fulfill new roles as follows:

- Enhanced data analysis, safety auditing reviews;
- Oversight of development of education/awareness programs, safety messaging, communications and public outreach; and
- Capital programming, co-ordination and design of engineering improvements including curb radii reductions, channelized right turn removals, intersection neck-downs as well as operational improvements such as timing plan changes, installation of new detection devices, etc.

Role of Toronto Public Health

Toronto Public Health views road safety and the protection of vulnerable road users as a serious and important health and injury prevention issue for the City. From a public health perspective, walking and cycling are important forms of active transportation that have significant health benefits including lower all-cause mortality and reductions in many chronic illnesses such as diabetes, cardiovascular disease and some cancers. Despite the many health benefits, people who walk and cycle are at increased risk of serious injury or death as a result of collisions with motor vehicles compared to people traveling in cars or using public transit.

As such, Toronto Public Health is committed to their role as a partner agency and to supporting the RSP through its research and policy expertise on traffic injuries and their prevention, and through strengthening its community-focused educational programs targeted at school children, youth and seniors. In addition to helping to develop the plan, Toronto Public Health will collaborate with Transportation Services and other partner agencies in the development and communication of education/awareness messaging, campaigns and programs by leveraging their experience in marketing and communications campaigns, public education, community partnerships and data analysis.

Role of Toronto Police Service

Existing road safety enforcement campaigns are conducted periodically through the year and coordinated by the existing Traffic Services Unit in Toronto Police Service. Officers on regular duty are typically required to focus their efforts on enforcement campaigns in between radio calls rather than being specifically dedicated to the campaign.

Having been involved throughout the development process for the RSP and having heard the lessons learned from police forces in other jurisdictions running similar road safety, "Vision Zero" type strategies, Toronto Police Service is proposing to create a dedicated Road Safety Task Force.

This new task force would provide the following services over and above what is currently done:

- Dedicated, data-driven and targeted enforcement towards dangerous driving behaviours such as aggressive and distracted driving;
- Speed enforcement in the areas surrounding schools in support of the creation of "School Safety Zones";
- Speed and prohibited turn movement enforcement in support of the creation of pedestrian safety corridors and near senior citizen facilities;
- Targeted enforcement campaigns for dangerous driving behaviours that impact the safety of cyclists along new and existing cycle tracks, where warranted;
- Participation in the development of road safety educational campaigns targeted towards each of the proposed emphasis areas in the RSP;

- Participation and leadership in quarterly meetings with Transportation Services and Toronto Public Health regarding the review of Motor Vehicle Collision Reports (MVCR) for fatalities and serious injuries for more thorough investigations into potential road safety countermeasures against emerging trends;
- Participation and leadership in the development of a Road Safety Calendar that outlines the specific enforcement themes throughout the year in parallel to the ongoing enforcement support of new RSP implementations;
- Participation, overall support and leadership in a potential pilot for automated speed enforcement pending approval from the Ministry.

Conclusion

Despite the fact that overall traffic collisions in Toronto has been stable for over a decade, Toronto has seen a recent increase in traffic-related fatalities - most notably pedestrians, cyclists and older adults. This trend has emphasized the need for a comprehensive and coordinated road safety strategy that will further protect vulnerable road users and reduce the number of collisions resulting in death and serious injury.

Transportation Services has worked with key partner organizations involved in road safety in the City to develop such a plan, which leverages the experiences from other North American cities that have already joined an international movement to eliminate serious traffic collisions. These plans place emphasis on committed partnerships among road safety agencies and on killed and serious injury (KSI) collisions, which prioritizes vulnerable road users who compose the largest proportion of the KSI experience.

The RSP identifies and addresses five emphasis areas, which were determined through collision data analysis, public engagement and Council direction. They include Pedestrians, School Children, Older Adults, Cyclists and Aggressive Driving and Distraction. For each of these emphasis areas, the plan outlines a diverse range of both new and enhancements to existing countermeasures that includes engineering, education and enforcement programs and initiatives. In order to effectively implement these countermeasures, enhanced geospatial and trending analysis will be used to identify and prioritize areas of need. As well, the RSP calls for a data-driven strategy to evaluate and monitor the effectiveness of countermeasures and the plan's progress towards achieving its goal.

The RSP also includes a strategy for marketing, communications and public outreach which will be the key means of delivering public education/awareness safety messaging, interacting with the public and disseminating information about RSP improvements. The strategy includes public engagement events, a dedicated interactive RSP website, as well as an online and social media presence.

The RSP also calls for the creation of a RSP Task Force, composed of representatives from key partner agencies, such as Transportation Services, Toronto Public Health and Toronto Police Service.

The Road Safety Plan is a made-for-Toronto, data-driven safety strategy that unifies and co-ordinates all the various efforts of all the key partner agencies under one banner with one common goal, to reduce the number of KSI collisions by 20% by 2026. The RSP will reduce redundancies, increase the efficiency and effectiveness of efforts and foster greater collaborations among partner agencies who have all committed to sharing responsibility and lending support to the plan. It is expected that these steps will make all road users in Toronto safer, reverse the recent trend of increasing road user fatalities, and establish Toronto as a national and international leader in urban road safety.

CONTACT

Myles Currie, Director
Traffic Management Centre
Transportation Services Division
Telephone: 416-392-5372
Email: mcurrie@toronto.ca

Roger Browne, Manager
Traffic Safety Unit, Traffic Management Centre
Transportation Services Division
Telephone: 416-397-5016
Email: rbrowne@toronto.ca

SIGNATURE

Stephen Buckley, General Manager
Transportation Services

APPENDICES

- Appendix 1: Road Safety Plan (2017-2021) – Detailed Capital and Operating Cost Summary Table
- Appendix 2: Results of Public Opinion Poll on Road Safety
- Appendix 3: Existing Road Safety Countermeasures
- Appendix 4: New and Enhanced Existing Countermeasures by Emphasis Area
- Appendix 5: Map of Pedestrian KSIs
- Appendix 6: Proposed Amendments to Speed Limits
- Appendix 7: Review of Considerations and Requirements for Automated Enforcement
- Appendix 8: School "Watch Your Speed" Program Pilot Project
- Appendix 9: Traffic Calming Guide for Toronto
- Appendix 10: Example of Road Safety Calendar